

# UNLEASHING THE DIGITAL SPY: EXPLORING OFFENSIVE OSINT STRATEGIES





#### **About CyberWarFare Labs**

CyberWarFare Labs is an Ed-Tech Cyber Security Focused Platform which is totally engrossed in solving the problem of Cybersecurity by providing them real-time hands-on manner solutions to problems of B2C & B2B Audience.

We provide Practical Labs [Simulation of critical infrastructure] like Healthcare, Nuclear Facility etc.





# **About Speaker**

Abhijeet Kumar (Security Researcher)

Abhijeet Kumar works at CyberWarFare Labs as a Red Team Intern. His areas of interests includes Red Team Operations, Network Security, Cloud Infrastructure, and Linux Systems. Apart from this, he enjoys researching Adversarial TTPs and experimenting in his homelab.



# **Disclaimer**

Be mindful of your local laws

Make sure to do your due diligence beforehand

Use the tools and techniques mentioned as your own risk

 We (Speaker and CyberWarFare Labs) are not liable for any damage caused by the presented material(s)



# Before we begin

This is my very first webinar, kindly provide feedback if possible

 I have tried my hands on PowerPoint after a long time, do pardon my rusty skills

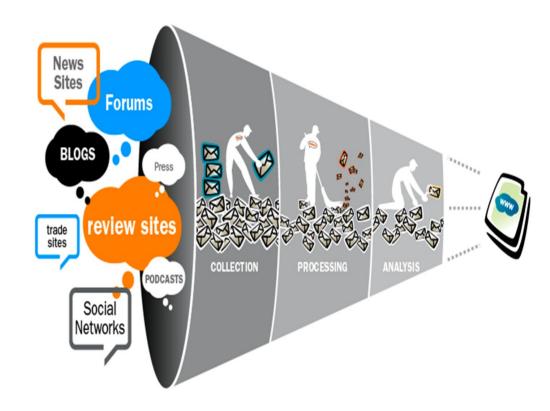
Also not a native English speaker, please bear with me



### **What is OSINT?**

Stands for Open Source Intelligence

 Extracting actionable intel from publicly available sources





# **Why OSINT?**

People love to share details online, sometimes too much

Governments and other institutions make data available online

Helps connect dots between data points

It would be a shame not to use Internet properly



# What to watch out for?

Misinformation is a real thing, verify before trust

Always double (or triple) check facts

Use multiple sources to verify something, don't rely on just one

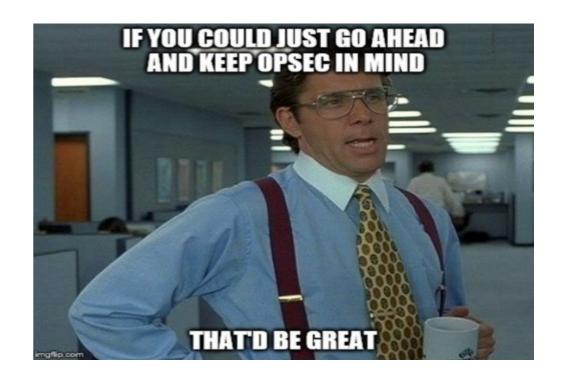


# **OPSEC**

Stands for Operational security

Protecting internal operations and critical information

Preventing disclosure of unnecessary information





### **Device**

 Don't use personal device for OSINT, use a seperate one

Encrypt the drives and harden the OS

Implement anti-tampering measures



One for the wenches and one for the dough

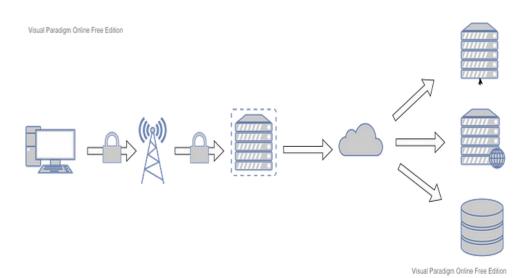


### <u>VPN</u>

Stands for Virtual Private Network

 Creates an encrypted tunnel between user and VPN server

Masks user's domestic IP address



Client → ISP → VPN Server → Internet → Different Servers



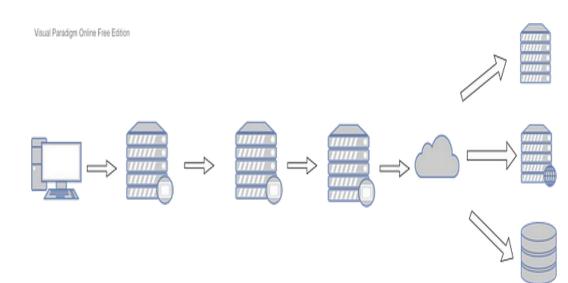
Visual Paradigm Online Free Edition

### **TOR**

Stands for The Onion Router

 Routes user traffic between different tor nodes

 Can help user evade tracking to some extent



Client → TOR entry node → TOR middle node → TOR exit node → Internet → Different servers



# VPN + TOR

Best of both worlds

Combining both technologies can be more effective

Start VPN → Connect TOR → Browse Internet





# **Browser(s)**

Customizing browser(s) for investigation purposes

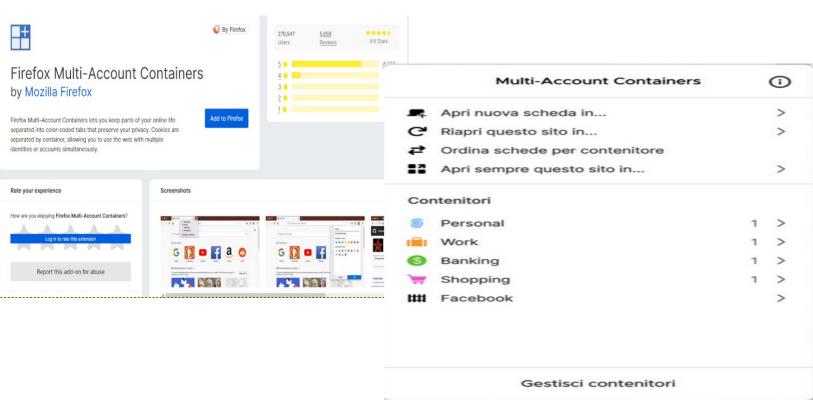
Disabling telemetry, stopping trackers, isolating cookies

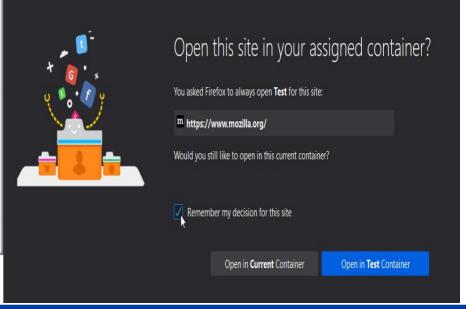
Hardening security configurations and normalize fingerprint

• Firefox, TOR, and Brave are well suited for research purposes



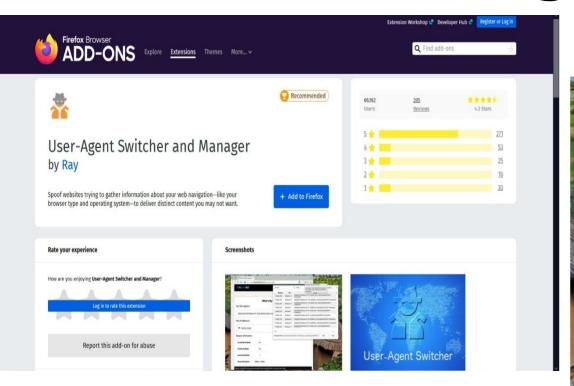
# **Tab Containers**

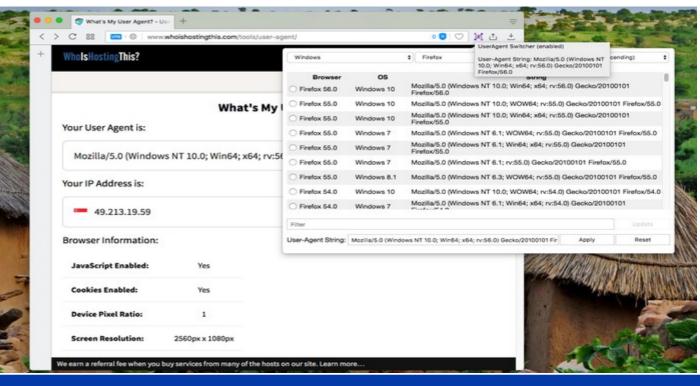






# <u>User Agent Changer</u>







# **Sock Puppet**

Identities made solely for investigation

Comprised of fake details

Help protect real individual

Reduces attack surface





# **Using Sock Puppet**

Aim is to blend with regular traffic/users

Disposable email addresses and phone numbers

Different devices, browsers, and ISPs



"All human actions have one or more of these seven causes: chance, nature, compulsion, habit, reason, passion, and desire."

— Aristotle



# **Intro to Offensive OSINT**

 Using OSINT to identify relevant information for pentesting and red team activities

 Analyzing client's online presence thoroughly, in order to identify weakness (human or otherwise)

Thinking like an adversary while determining relevance of information



### **Data Breaches**

 Scenario when sensitive data is exfiltrated from an organization by threat actors

 Lots and lots of sensitive information related to users and organization

 Dark web marketplaces are where distribution and sale happens





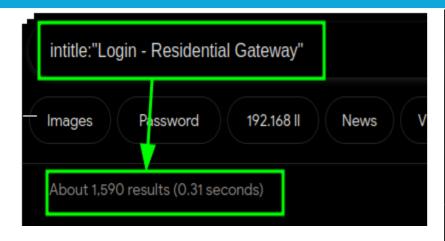
# **Google Dorking**

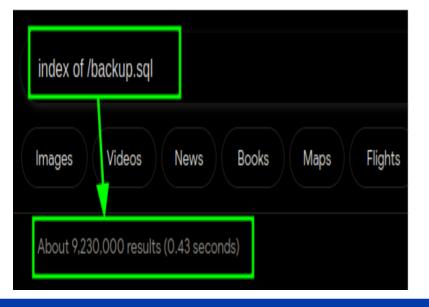
Extracting information using Google's powerful search operators

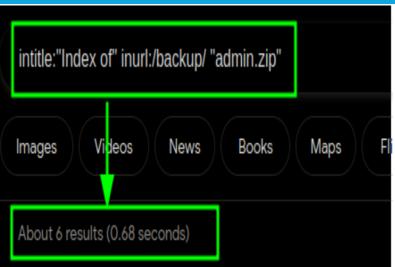
From simple few word queries to complex piped (1) queries

 Google Hacking Database (GHDB) is one of the largest collection of publicly available queries

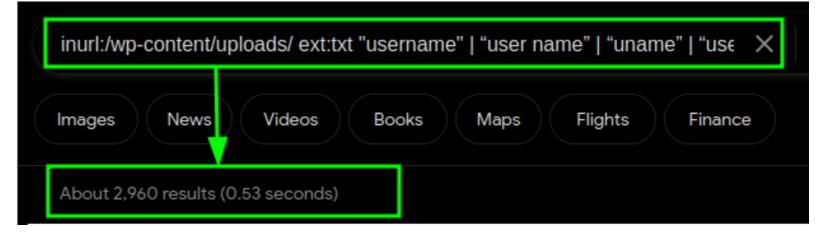














# **LinkedIn**

Professional version of FaceBook

 High chances of target(s) having a regular presence here

Has suffered data breaches in past

Excellent platform for mining data





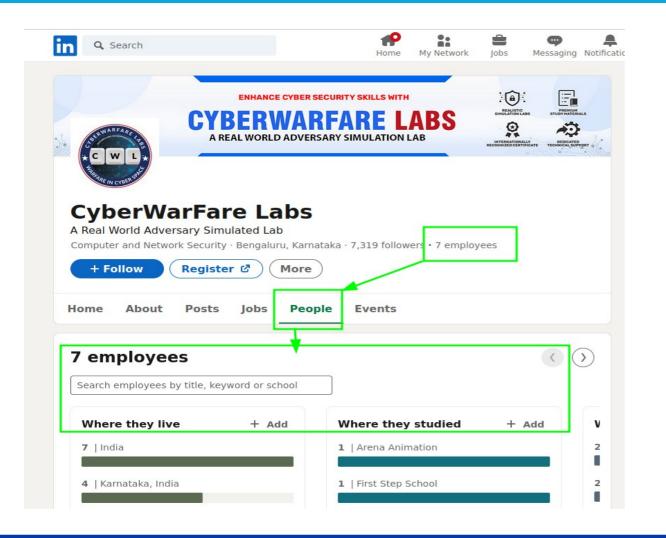
Employee list can be extracted from company page

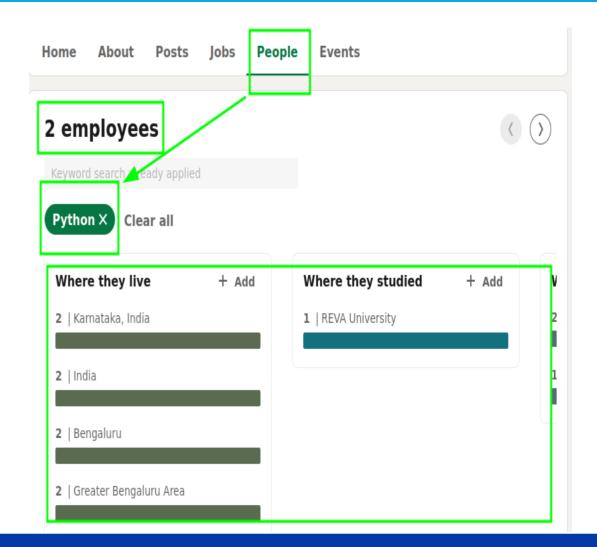
- Employees sometimes reveal sensitive information on LinkedIn
  - E.g:- Office images, tech stack(s), welcome kits, certificates, etc

Employees often comment on each other's posts.

And #hashtags are a thing













# **Discord**

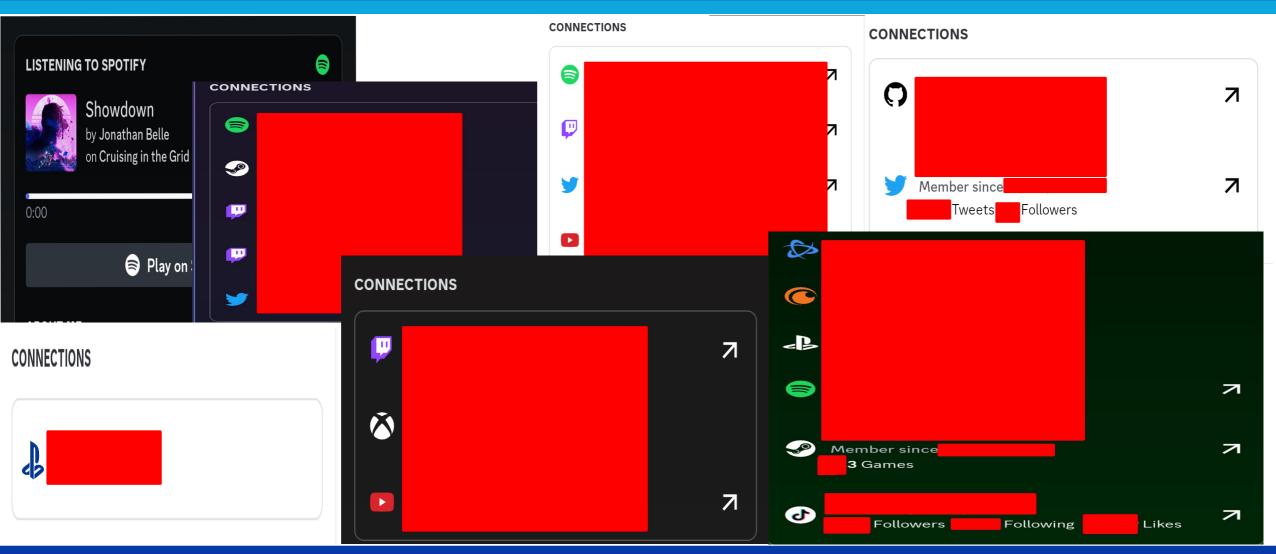
Popular communication application

Used by lots of tech communities and individuals alike

People also connect their other accounts here

And, they write status too







# **WHOIS**

Query-Response protocol

Can lookup domain names and IP addresses, and ASNs

Provides ownership and other registration data



#### cyberwarfare.live

whois information

Whois

**DNS Records** 

Diagnostics

cache expires in 23 hours, 59 minutes and 59 seconds

	101	POP	- 100	+0
Reg			- 111	1()
9				

Name GoDaddy.com, LLC

Whois Server whois.godaddy.com/

Referral URL http://www.godaddy.com/domains/search.aspx?ci=8990

Status clientDeleteProhibited https://icann.org/epp#clientDeleteP

clientRenewProhibited https://icann.org/epp#clientRenewf

clientTransferProhibited https://icann.org/epp#clientTransf

clientUpdateProhibited https://icann.org/epp#clientUpdate

#### Important Dates

Expires On 2024-04-26

Registered On 2020-04-26

Updated On 2022-04-05

#### Name Servers

jermaine.ns.cloudflare.com 172.64.35.157

joyce.ns.cloudflare.com 162.159.38.14

Registrant Contact Information:

Name REDACTED FOR PRIVACY
Organization Domains By Proxy, LLC

Address REDACTED FOR PRIVACY

City REDACTED FOR PRIVACY
State / Province Arizona

Postal Code REDACTED FOR PRIVACY

Country US

Phone REDACTED FOR PRIVACY
Fax REDACTED FOR PRIVACY

Email Please query the RDDS service of the Registrar of Record identified in this output for information on how to contact the Reg.

#### Administrative Contact Information:

Name REDACTED FOR PRIVACY

Organization Domains By Proxy, LLC
Address REDACTED FOR PRIVACY

City REDACTED FOR PRIVACY

State / Province Arizona

Postal Code REDACTED FOR PRIVACY

Country US

Phone REDACTED FOR PRIVACY

Fax REDACTED FOR PRIVACY

Email Please query the RDDS service of the Registrar of Record identified in this output for information on how to contact the Reg.

#### Technical Contact Information:

Name REDACTED FOR PRIVACY

 Organization
 Domains By Proxy, LLC

 Address
 REDACTED FOR PRIVACY

City REDACTED FOR PRIVACY

State / Province Arizona

Postal Code REDACTED FOR PRIVACY

Country US

Phone REDACTED FOR PRIVACY
Fax REDACTED FOR PRIVACY

Email Please query the RDDS service of the Registrar of Record identified in this output for information on how to contact the Reg.



# **Subdomains**

Provide additional targets

Often act as an initial entry point

Could be used for integrating third party services



crt.sh (Identity Search) Scroup by Issuer



Criteria	Type: Identity	Match: ILIKE	Search: 'cyberwarfare.live'

crt.sh ID	Logged At 1	Not Before	Not After	Common Name	Matching Identities	Issuer Name
				cyberwarfare.live		G=US, O=Google Trust Services LLC, CN=GTS CA 1P5
9591730791	2023-06-05	2023-06-05	2023-09-03	air.cyberwarfare.live	air.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
9576289007	2023-06-05	2023-06-05	2023-09-03	air.cyberwarfare.live	air.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
9345352712	2023-05-08	2023-05-08	2023-08-06	email.kjbm.cyberwarfare.liv	email.kjbm.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
9338676756	2023-05-08	2023-05-08	2023-08-06	email.kjbm.cyberwarfare.liv	email.kjbm.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
9171165033	2023-04-17	2023-04-17	2023-07-16	test.cyberwarfare.live	test.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
9171154830	2023-04-17	2023-04-17	2023-07-16	test.cyberwarfare.live	test.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
9145962490	2023-04-14	2023-04-14	2023-07-13	cyberwarfare.live	*.cyberwarfare.live cyberwarfare.live	G=US, O=Google Trust Services LLC, CN=GTS CA 1P5
9086245743	2023-04-05	2023-04-05	2023-07-04	air.cyberwarfare.live	air.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
9065665848	2023-04-05	2023-04-05	2023-07-04	air.cyberwarfare.live	air.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8880628135	2023-03-09	2023-03-09	2023-06-07	email.kjbm.cyberwarfare.liv	email.kjbm.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8845624871	2023-03-09	2023-03-09	2023-06-07	email.kjbm.cyberwarfare.liv	email.kjbm.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
8865137851	2023-03-07	2023-03-07	2023-06-05	cwlab.cyberwarfare.live	cwlab.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
8828802080	2023-03-07	2023-03-07	2023-06-05	cwlab.cyberwarfare.live	cwlab.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8860331554	2023-03-06	2023-03-06	2023-06-04	cwlab.cyberwarfare.live	cwlab.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8820640358	2023-03-06	2023-03-06	2023-06-04	cwlab.cyberwarfare.live	cwlab.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
8817328924	2023-03-06	2023-03-06	2023-06-04	rt.cyberwarfare.live	rt.cyberwarfare.live	C=AT, O=ZeroSSL, CN=ZeroSSL RSA Domain Secure Site CA
8817328671	2023-03-06	2023-03-06	2023-06-04	rt.cyberwarfare.live	rt.cyberwarfare.live	C=AT, O=ZeroSSL, CN=ZeroSSL RSA Domain Secure Site CA
8854476746	2023-03-05	2023-03-05	2023-06-03	rt.cyberwarfare.live	rt.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
				rt.cyberwarfare.live	rt.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
8853555439	2023-03-05	2023-03-05	2023-06-03	fluke.cyberwarfare.live	fluke.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
8809525712	2023-03-05	2023-03-05	2023-06-03	fluke.cyberwarfare.live	fluke.cyberwarfare.live	C=US, O=Let's Encrypt, CN=R3
8706348368	2023-02-21	2023-02-21	2024-02-21	*.cyberwarfare.live	*.cyberwarfare.live cyberwarfare.live	GEGB, ST=Greater Manchester, L=Salford, O=Sectigo Limited, CN=Sectigo ECC Domain Validation Secure Server CA
8706347102	2023-02-21	2023-02-21	2024-02-21	*.cyberwarfare.live	*.cyberwarfare.live cyberwarfare.live	GEGB, ST=Greater Manchester, L=Salford, O=Sectigo Limited, CN=Sectigo ECC Domain Validation Secure Server CA
8655542156	2023-02-14	2023-02-14	2023-05-15	*.cyberwarfare.live	*.cyberwarfare.live cyberwarfare.live	GEUS, O=Google Trust Services LLC, CN=GTS CA 1P5
8465014181	2023-01-13	2023-01-13	2023-04-13	defense.cyberwarfare.live	defense.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8428271593	2023-01-13	2023-01-13	2023-04-13	defense.cyberwarfare.live	defense.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8456443785	2023-01-12	2023-01-12	2023-04-12	nuclear.cyberwarfare.live	nuclear.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8397560310	2023-01-12	2023-01-12	2023-04-12	nuclear.cyberwarfare.live	nuclear.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8456059295	2023-01-12	2023-01-12	2023-04-12	flopster.cyberwarfare.live	flopster.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8397331679	2023-01-12	2023-01-12	2023-04-12	flopster.cyberwarfare.live	flopster.cyberwarfare.live	G=US, O=Let's Encrypt, CN=R3
8222527062	2022-12-17	2022-12-17	2023-12-17	*.cyberwarfare.live	*.cyberwarfare.live	=GB, ST=Greater Manchester, L=Salford, O=Sectigo Limited, CN=Sectigo ECC Domain Validation Secure Server CA

```
[*] Target: cyberwarfare.live
[*] Searching Brave.
[*] No IPs found.
[*] Emails found: 2
careers@cyberwarfare.live
info@cyberwarfare.live
[*] Hosts found: 1
cyberwarfare.live
[*] Virtual hosts:
```



# **DNS Records**

Naming system of Internet

Maps IP addresses to domains and vice versa

Provides critical insights into client's attack surface



Whois DNS Records Diagnostics

#### DNS Records for cyberwarfare.live

Hostname	Type	TTL	Priority	Content
cyberwarfare.live	SOA	1800		jermaine.ns.cloudflare.com dns@cloudflare.com 2312053932 10000 2400 604800 1800
cyberwarfare.live	NS	21600		jermaine.ns.cloudflare.com
cyberwarfare.live	NS	21600		joyce.ns.cloudflare.com
cyberwarfare.live	Α	300		172.67.197.22
cyberwarfare.live	Α	300		104.21.92.181
cyberwarfare.live	AAAA	300		2606:4700:3030::6815:5cb5
cyberwarfare.live	AAAA	300		2606:4700:3030::ac43:c516
cyberwarfare.live	MX	300	1	aspmx.l.google.com
cyberwarfare.live	MX	300	10	alt3.aspmx.l.google.com
cyberwarfare.live	MX	300	10	alt4.aspmx.l.google.com
cyberwarfare.live	MX	300	5	alt1.aspmx.l.google.com
cyberwarfare.live	MX	300	5	alt2.aspmx.l.google.com
www.cyberwarfare.live	Α	282		172.64.80.1
www.cyberwarfare.live	AAAA	300		2606:4700:3030::6815:5cb5
www.cyberwarfare.live	AAAA	300		2606:4700:3030::ac43:c516

DNS Servers					
jermaine.ns.cloudflare.com. ② •⊃ ×4 •↑ • ◆	172.64.35.157 jermaine.ns.cloudflare.com	CLOUDFLARENET United States	Ä	U	F
joyce.ns.cloudflare.com.	172.64.34.14 joyce.ns.cloudflare.com	CLOUDFLARENET United States			
MX Records ** This is where email for the					
1 aspmx.l.google.com. ∰ 攻 ❖ ❖	74.125.205.26 1e-in-f26.1e100.net	GOOGLE United States			
10 alt3.aspmx.l.google.com. <b>Ⅲ 攻 •</b> ♦	142.250.141.26 dd-in-f26.1e100.net	GOOGLE United States			
10 alt4.aspmx.l.google.com. <b>Ⅲ 攻 ⊙</b> ♦	142.250.115.26 rq-in-f26.1e100.net	GOOGLE United States			
5 alt1.aspmx.l.google.com. <b>Ⅲ 攻 ⊙</b> ∜	142.250.157.26 ta-in-f26.1e100.net	GOOGLE United States			
5 alt2.aspmx.l.google.com. ∰ 攻 ◈ ∜	173.194.202.26 pf-in-f26.1e100.net	GOOGLE United States			
TXT Records ** Find more hosts in Sender F					
"MS=ms41957772"					
"google-site-verification=f-7oucGuCtckXn0	R4v6zNpFNxQQBBV4r1Ls0aHuoKdQ"				Γ
"v=spf1 include:_spf.google.com ~all"					
Host Records (A) ** this data may not be					
www.cyberwarfare.live Ⅲ ❷ ૐ ❖ http: cloudflare	104.21.92.181	CLOUDFLARENET unknown			
cwlab.cyberwarfare.live <b>Ⅲ ② ☆ ◆</b>	4.193.141.23	MICROSOFT-CORP-MSN-AS- Singapore	MICROSOFT-CORP-MSN-AS-BLOCK singapore		



# **Tech Stack**

Technologies implemented in client's infrastructure

Provide deep insight while planning attack paths

Ranges from software products to hardware appliances



Analytics and Tracking

View Global Trends

G Google Analytics

#### Google Analytics Usage Statistics · Download List of All Websites using Google Analytics

Google Analytics offers a host of compelling features and benefits for everyone from senior executives and advertising and marketing professionals to site owners and content developers.

Application Performance · Audience Measurement · Visitor Count Tracking

Google Analytics 4

Google Analytics 4 Usage Statistics · Download List of All Websites using Google Analytics 4

Google Analytics 4 formerly known as App + Web is a new version of Google Analytics that was released in October 2020.

Global Site Tag

Global Site Tag Usage Statistics · Download List of All Websites using Global Site Tag

Google's primary tag for Google Measurement/Conversion Tracking, Adwords and DoubleClick.

Widgets

View Global Trends

Zoho SalesIQ

Zoho SalesIQ Usage Statistics · Download List of All Websites using Zoho SalesIQ

Website visitor tracking and live chat, integrates with Zoho's CRM and other apps Live Chat

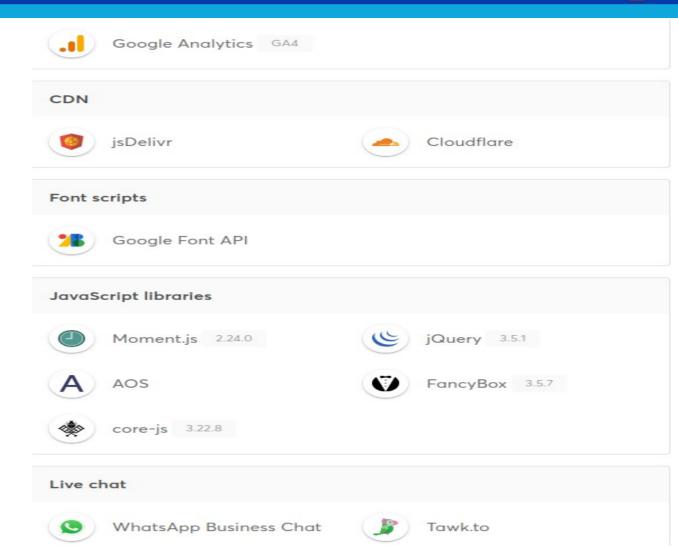
Kajabi

Kajabi Usage Statistics · Download List of All Websites using Kajabi

Sell Your Content Online

eCommerce

Font Awesome





# **WayBack Machine**

The actual, living, capturing, Time Machine of World Wide Web

Anyone can captures a site's snapshots

Can track a website's evolution

And the statistics it gives, real awesome



968

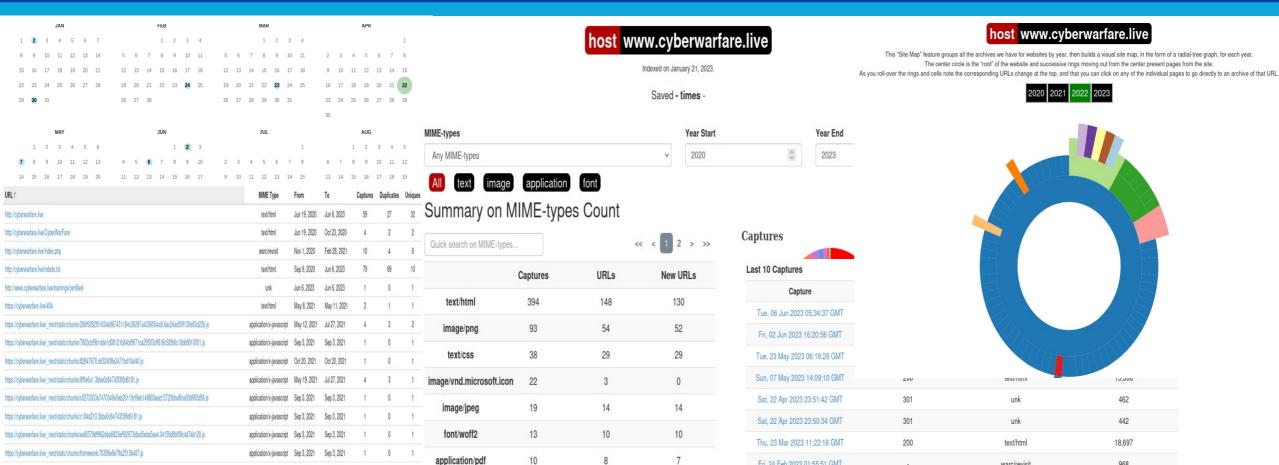
18,573

15,129

warc/revisit

text/html

text/html



8

Fri, 24 Feb 2023 01:55:51 GMT

Mon, 30 Jan 2023 01:40:29 GMT

Mon, 02 Jan 2023 17:35:02 GMT

200

200

application/pdf

application/xml

image/svg+xml

application/x-javascript May 12, 2021 Jul 27, 2021

application/x-javascript Sep 3, 2021 Sep 3, 2021

application/x-javascript May 12, 2021 Jul 27, 2021

application/x-javascript Sep 3, 2021 Sep 3, 2021

https://cyberwarfare.live/\_next/static/chunks/framework.d99d6172e6226ce70dc1.js

https://cyberwarfare.live/ next/static/chunks/main-7d35e8e56333122be82b.js

https://cyberwarfare.live/\_next/static/chunks/main-cbb84a0e138d09798141.js

https://cyberwarfare.live/\_next/static/chunks/pages/\_app-db89ed568a75be7efb16.js



### <u>Shodan</u>

Records of almost every device with an IP address

Publicly exposed devices with vulnerable components

Can find IP cameras to Industrial systems, and everything in between

Queries are welcome here with an account







Boa Web Server 1,477
D-Link/Airlink IP webcam http config 1,090
More...

TOP OPERATING SYSTEMS

Windows (Build 10.0.14393) 119,044
Windows (Build 10.0.17763) 116,024
Windows (Build 10.0.19041) 55,631
Windows (Build 10.0.20348) 53,961
More...

#### ATTENTION!!! Read Before I

Your system has been hacked !!! Your system recover files on your own will result in their notify the management of your company al communication: helpforyou@gmx.com or have the recovery keys, before agreeing on companies, ask OUR price

OK





## **Censys**

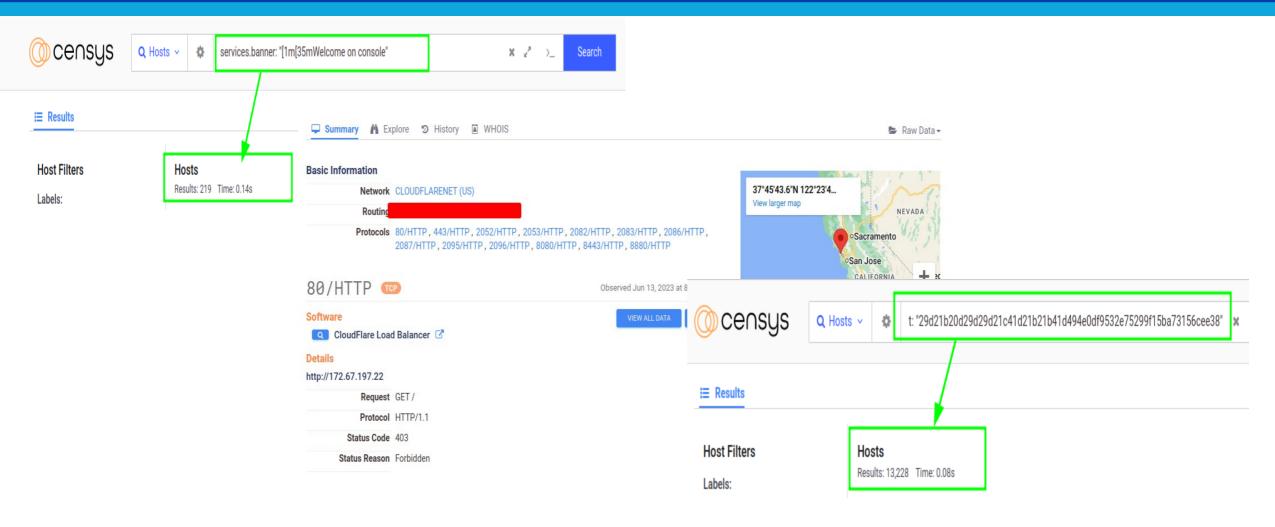
Attack Surface Monitoring

Large database of Internet connected devices

Provides high quality information

Supports queries without signing up







# **Automating OSINT**

Efficient by reducing workload

More time analyzing data

• First learn manual, then move to automation



### **How To Automate OSINT**

• Use software like Maltego, Recon-ng, etc

• Use websites like OSINT Framework, linteltechniques, etc

Write custom tools as per use case



### **Bonus: Twitch**

Find all NightBot commands of a Twitch streamer:-

https://nightbot.tv/t/<username>/commands

#### Nobody:

NightBot as soon as i chat something on live stream:





Channel Commands		
Show 100 v entries Search:		
Command 👢	Message 11	Userlevel
!academy	Get your hackin' knowledge on: https://academy.tcm-sec.com	everyone
!discord	Come hang out and chat: https://tcm-sec.com/discord	everyone
!donate	If you want to support the channel, you can donate at: https://streamlabs.com/thecybermentor	everyone
!howtohack	https://tcm-sec.com/so-you-want-to-be-a-hacker-2022-edition/	everyone
linstagram	Follow me on Instagram: https://instagram.com/thecybermentor Follow TCM Security on Instagram: https://instagram.com/tcmsecurity	everyone
!linkedin	Follow me on LinkedIn: https://linkedin.com/in/thecybermentor Follow TCM Security on LinkedIn: https://linkedin.com/company/tcm-security-inc	everyone
!merch	Get awesome TCM merch at https://merch.tcm-sec.com	everyone
!patreon	If you'd like to support the channel, get exclusive access to content, and even some cool swag: https://www.patreon.com/thecybermentor	everyone
!pnpt	Get PNPT certified: https://certifications.tcm-sec.com/pnpt	everyone
!pnptlive	Join our free class: https://academy.tcm-sec.com/p/pnpt-live	everyone
!socials	Add us on social media! https://pastebin.com/y9S5MbXt	everyone
!specs	https://pastebin.com/EQFYjLX5	everyone
!sub	Love the content? Please consider supporting with a sub on Twitch: https://subs.twitch.tv/thecybermentor	everyone
!twitter	Tweet tweet: https://www.twitter.com/tcmsecurity	everyone
!uptime	Stream uptime: [twitch]	everyone
!youtube	Subscribe to my YouTube: https://www.youtube.com/c/thecybermentor	everyone
Showing 1 to 16 of	16 entries	1 Next Last

https://nightbot.tv/t/thecybermentor/commands



#### Resources

- OSINT Collections →
  - https://start.me/p/DPYPMz/the-ultimate-osint-collection
  - https://start.me/p/rx6Qj8/nixintel-s-osint-resource-list
  - https://cheatsheet.haax.fr/resources/osint/
  - https://osintframework.com/
  - https://map.malfrats.industries/
  - https://inteltechniques.com/tools/index.html
- Google Dorking →
  - https://www.googleguide.com/
  - https://www.exploit-db.com/google-hacking-database
  - https://pentest-tools.com/information-gathering/google-hacking
  - https://dorkgpt.com/



#### Resources

- Other Dorks →
  - https://techofide.com/blogs/uncovering-vulnerabilities-shodan-github-dorks-and-linkedin-osint-tools-for-bug-hunting/
  - https://github.com/cipher387/Dorks-collections-list
  - https://github.com/mathis2001/Dorking
- Domain →
  - https://who.is/
  - https://lookup.icann.org/
- IP →
- https://www.shodan.io/
- https://search.censys.io/
- https://app.netlas.io/
- https://pulsedive.com/



#### Resources

- DNS →
  - https://www.osintme.com/index.php/2021/01/16/ultimate-osint-with-shodan-100-great-shodan-queries/
  - https://nasniconsultants.com/top-40-shodan-dorks-for-finding-sensitive-iot-data/cybersecurity/2021/05/27/diran/
  - https://github.com/mr-exo/shodan-dorks
- Subdomain →
  - https://dnsdumpster.com
  - https://crt.sh/



# THANK YOU:)