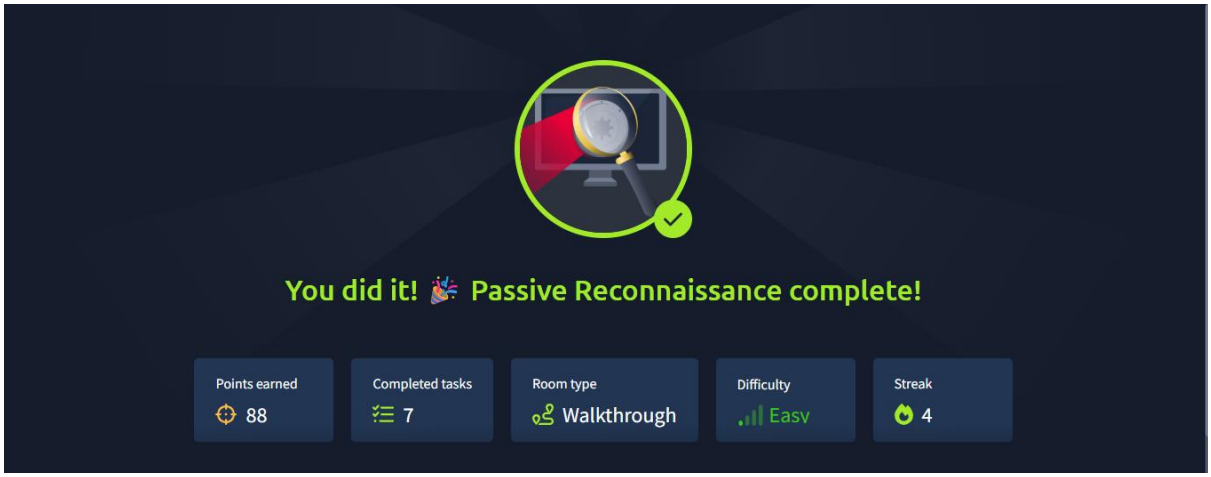
NAME: Diana Wanjiru

ADMISSION NUMBER: CS-EH02-24103

LINK (Completed Module):
https://tryhackme.com/room/passiverecon?sharerId=6606f1847d6a4dfe0cae29a5



PASSIVE RECONNAISSANCE (TRY HACK ME)

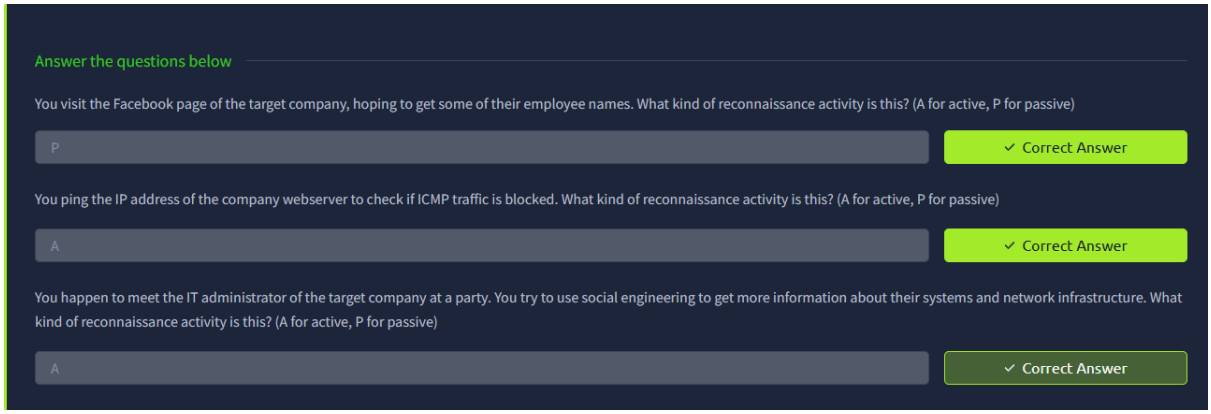
Introduction

Reconnaissance is the information-gathering phase of an attack, where attackers research a target to identify vulnerabilities and plan an exploit. This room takes me deeper into understanding about how to do reconnaissance as an ethical hacker or penetration tester.

Passive VS Active Recon

I got to understand the difference between passive and active recon where passive recon involves you relying on publicly available knowledge. It is the knowledge that you can access from publicly available resources without directly engaging with the target. On the other hand, active recon requires direct engagement with the target.

I answered the questions that followed based on the knowledge gained in this room. Here is the screenshot.

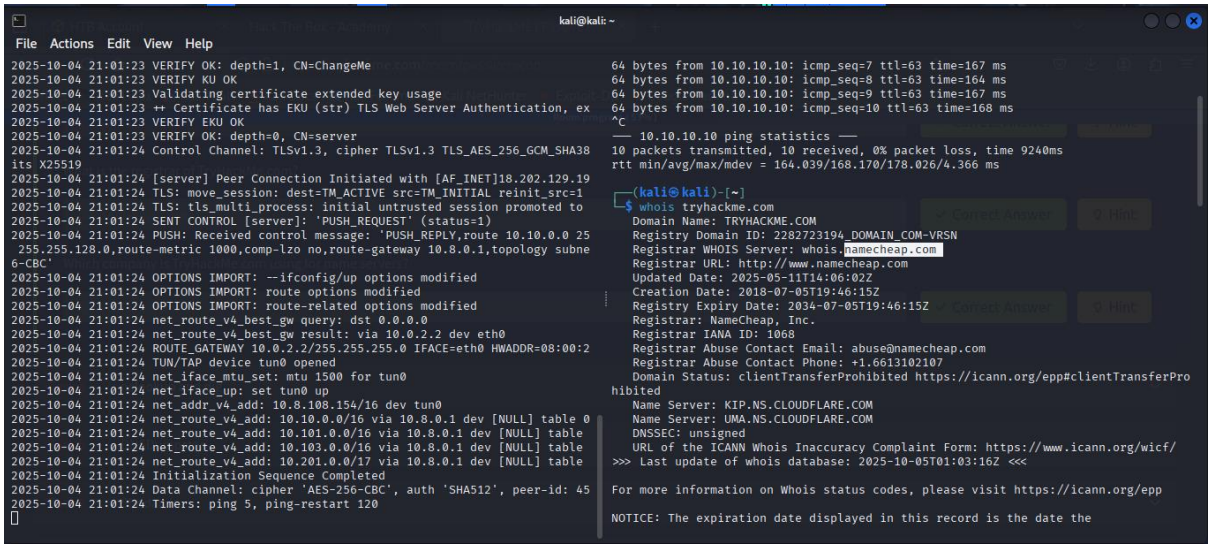


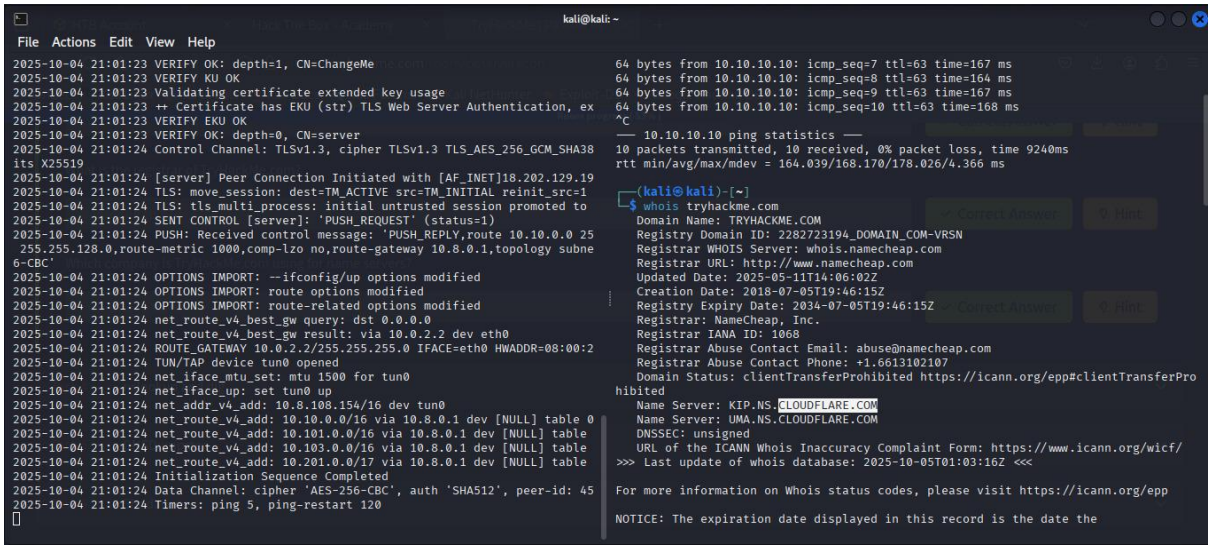
Whois

Looking at this room, I learned that Whois is a request and response protocol that follows the RFC 3912 specification. It listens on TCP port 43 for incoming requests. The WHOIS server replies with various information related to the domain requested.

I did some questions that followed which needed me to use **whois tryhackme.com** where I got the answers from the output. Below are the screenshots.


File Actions Edit View Help
2025-10-04 21:01:23 VERIFY OK: depth=1, CN=ChangeMe
2025-10-04 21:01:23 VERIFY KU OK
2025-10-04 21:01:23 Validating certificate extended key usage
2025-10-04 21:01:23 ++ Certificate has EKU (str) TLS Web Server Authentication,
2025-10-04 21:01:23 VERIFY EKU OK
2025-10-04 21:01:23 VERIFY OK: depth=0, CN=server
2025-10-04 21:01:24 Control Channel: TLSv1.3, cipher TLSv1.3 TLS_AES_256_GCM_SH
its X25519
2025-10-04 21:01:24 [server] Peer Connection Initiated with [AF_INET]18.202.129
2025-10-04 21:01:24 TLS: move_session: dest=TM_ACTIVE src=TM_INITIAL reinit_src
2025-10-04 21:01:24 TLS: tls_multi_process: initial untrusted session promoted
2025-10-04 21:01:24 SENT CONTROL [server]: 'PUSH_REQUEST' (status=1)
2025-10-04 21:01:24 PUSH: Received control message: 'PUSH_REPLY,route 10.10.0.0
255.255.128.0,route-metric 1000,comp-lzo no,route-gateway 10.8.0.1,topology su
6-CBC'
2025-10-04 21:01:24 OPTIONS IMPORT: --ifconfig/up options modified


kali@kali: ~
File Actions Edit View Help
2025-10-04 21:01:23 VERIFY OK: depth=1, CN=ChangeMe
2025-10-04 21:01:23 VERIFY KU OK
2025-10-04 21:01:23 Validating certificate extended key usage
2025-10-04 21:01:23 ++ Certificate has EKU (str) TLS Web Server Authentication, ex
2025-10-04 21:01:23 VERIFY EKU OK
2025-10-04 21:01:23 VERIFY OK: depth=0, CN=server
2025-10-04 21:01:24 Control Channel: TLSv1.3, cipher TLSv1.3 TLS_AES_256_GCM_SHA38
its X25519
2025-10-04 21:01:24 [server] Peer Connection Initiated with [AF_INET]18.202.129.19
2025-10-04 21:01:24 TLS: move_session: dest=TM_ACTIVE src=TM_INITIAL reinit_src=1
2025-10-04 21:01:24 TLS: tls_multi_process: initial untrusted session promoted to
2025-10-04 21:01:24 SENT CONTROL [server]: 'PUSH_REQUEST' (status=1)
2025-10-04 21:01:24 PUSH: Received control message: 'PUSH_REPLY,route 10.10.0.0 25
255.255.128.0,route-metric 1000,comp-lzo no,route-gateway 10.8.0.1,topology subne
6-CBC'
2025-10-04 21:01:24 OPTIONS IMPORT: --ifconfig/up options modified
2025-10-04 21:01:24 OPTIONS IMPORT: route options modified
2025-10-04 21:01:24 OPTIONS IMPORT: route-related options modified
2025-10-04 21:01:24 net_route_v4_best_gw query: dst 0.0.0.0
2025-10-04 21:01:24 net_route_v4_best_gw result: via 10.0.2.2 dev eth0
2025-10-04 21:01:24 ROUTE_GATEWAY 10.0.2.2/255.255.255.0 IFACE=eth0 HWADDR=08:00:2
2025-10-04 21:01:24 TUN/TAP device tun0 opened
2025-10-04 21:01:24 net_iface_mtu_set: mtu 1500 for tun0
2025-10-04 21:01:24 net_iface_up: set tun0 up
2025-10-04 21:01:24 net_addr_v4_add: 10.8.108.154/16 dev tun0
2025-10-04 21:01:24 net_route_v4_add: 10.10.0.0/16 via 10.8.0.1 dev [NULL] table 0
2025-10-04 21:01:24 net_route_v4_add: 10.101.0.0/16 via 10.8.0.1 dev [NULL] table
2025-10-04 21:01:24 net_route_v4_add: 10.103.0.0/16 via 10.8.0.1 dev [NULL] table
2025-10-04 21:01:24 net_route_v4_add: 10.201.0.0/17 via 10.8.0.1 dev [NULL] table
2025-10-04 21:01:24 Initialization Sequence Completed
2025-10-04 21:01:24 Data Channel: cipher 'AES-256-CBC', auth 'SHA512', peer-id: 45
2025-10-04 21:01:24 Timers: ping 5, ping-restart 120
64 bytes from 10.10.10.10: icmp_seq=7 ttl=63 time=167 ms
64 bytes from 10.10.10.10: icmp_seq=8 ttl=63 time=164 ms
64 bytes from 10.10.10.10: icmp_seq=9 ttl=63 time=167 ms
64 bytes from 10.10.10.10: icmp_seq=10 ttl=63 time=168 ms
^C
— 10.10.10.10 ping statistics —
10 packets transmitted, 10 received, 0% packet loss, time 9240ms
rtt min/avg/max/mdev = 164.039/168.170/178.026/4.366 ms
(kali㉿kali)-[~]
$ whois tryhackme.com
Domain Name: TRYHACKME.COM
Registry Domain ID: 2282723194_DOMAIN_COM-VRSN
Registrar WHOIS Server: whois.namecheap.com
Registrar URL: http://www.namecheap.com
Updated Date: 2025-05-11T14:06:02Z
Creation Date: 2018-07-05T19:46:15Z
Registry Expiry Date: 2034-07-05T19:46:15Z
Registrar: NameCheap, Inc.
Registrar IANA ID: 1068
Registrar Abuse Contact Email: abuse@namecheap.com
Registrar Abuse Contact Phone: +1.6613102107
Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferPro
hibited
Name Server: KIP.NS.CLOUDFLARE.COM
Name Server: UMA.NS.CLOUDFLARE.COM
DNSSEC: unsigned
URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2025-10-05T01:03:16Z <<<
For more information on Whois status codes, please visit https://icann.org/epp
NOTICE: The expiration date displayed in this record is the date the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2025-10-04 21:01:24 net_route_v4_add: 10.103.0.0/16 via 10.8.0.1 dev [NULL] table
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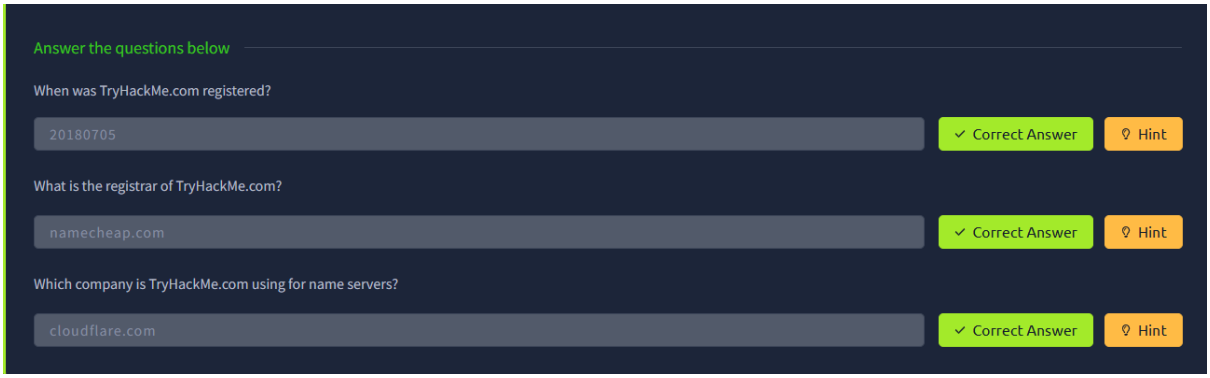
64 bytes from 10.10.10.10: icmp_seq=7 ttl=63 time=167 ms
64 bytes from 10.10.10.10: icmp_seq=8 ttl=63 time=164 ms
64 bytes from 10.10.10.10: icmp_seq=9 ttl=63 time=167 ms
64 bytes from 10.10.10.10: icmp_seq=10 ttl=63 time=168 ms
^C
— 10.10.10.10 ping statistics —
10 packets transmitted, 10 received, 0% packet loss, time 9240ms
rtt min/avg/max/mdev = 164.039/168.170/178.026/4.366 ms
(kali㉿kali)-[~]
$ whois tryhackme.com
Domain Name: TRYHACKME.COM
Registry Domain ID: 2282723194_DOMAIN_COM-VRSN
Registrar WHOIS Server: whois.namecheap.com
Registrar URL: http://www.namecheap.com
Updated Date: 2025-05-11T14:06:02Z
Creation Date: 2018-07-05T19:46:15Z
Registry Expiry Date: 2034-07-05T19:46:15Z
Registrar: NameCheap, Inc.
Registrar IANA ID: 1068
Registrar Abuse Contact Email: abuse@namecheap.com
Registrar Abuse Contact Phone: +1.6613102107
Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferPro
hibited
Name Server: KIP.NS.CLOUDFLARE.COM
Name Server: UMA.NS.CLOUDFLARE.COM
DNSSEC: unsigned
URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2025-10-05T01:03:16Z <<<
For more information on Whois status codes, please visit https://icann.org/epp
NOTICE: The expiration date displayed in this record is the date the

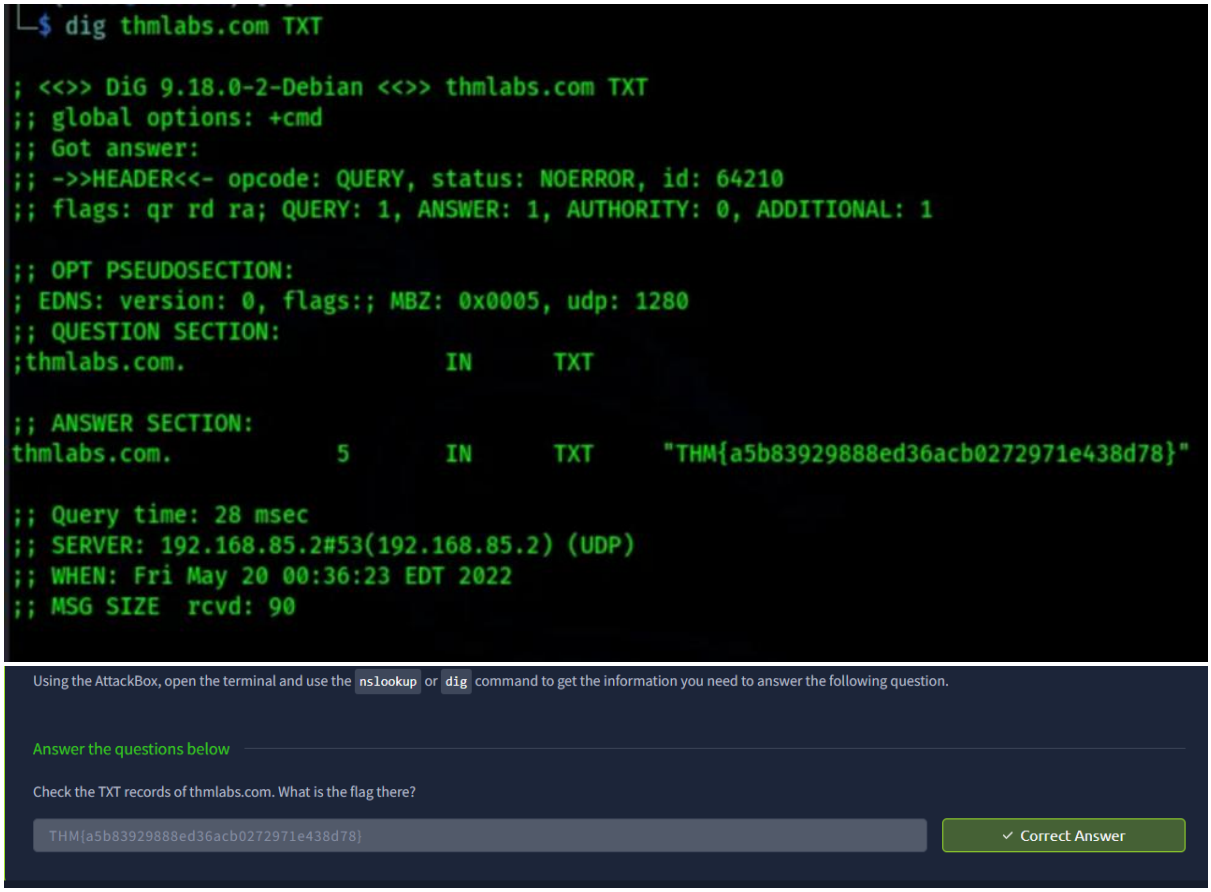


Nslookup and dig

I understood that Nslookup stands for Name Server Look Up and is used to find the ip address of a domain name. We can use the following command **nslookup DOMAIN_NAME**, for example**, nslookup tryhackme.com**. Or, more generally, you can use **nslookup OPTIONS DOMAIN_NAME SERVER** where.

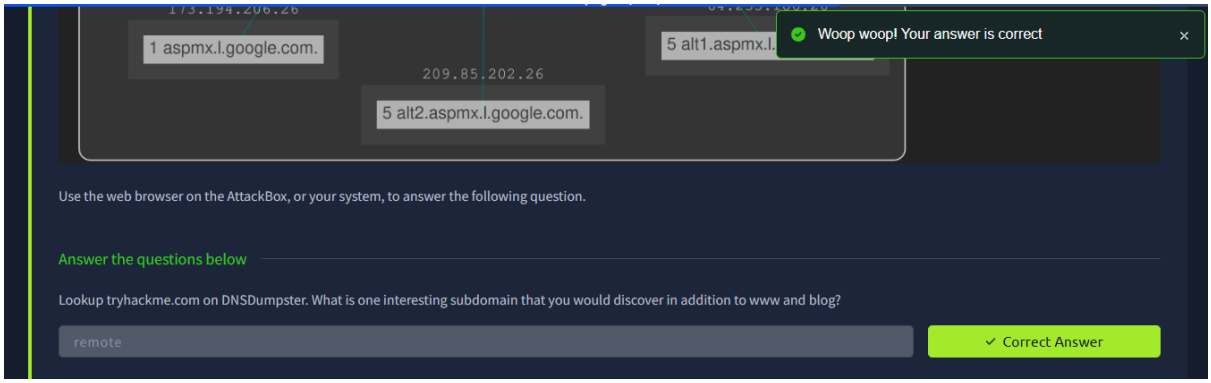
- **OPTIONS** contains the query type. For instance, you can use A for IPv4 addresses and AAAA for IPv6 addresses.
- **DOMAIN_NAME** is the domain name you are looking up.
- **SERVER** is the DNS server that you want to query.

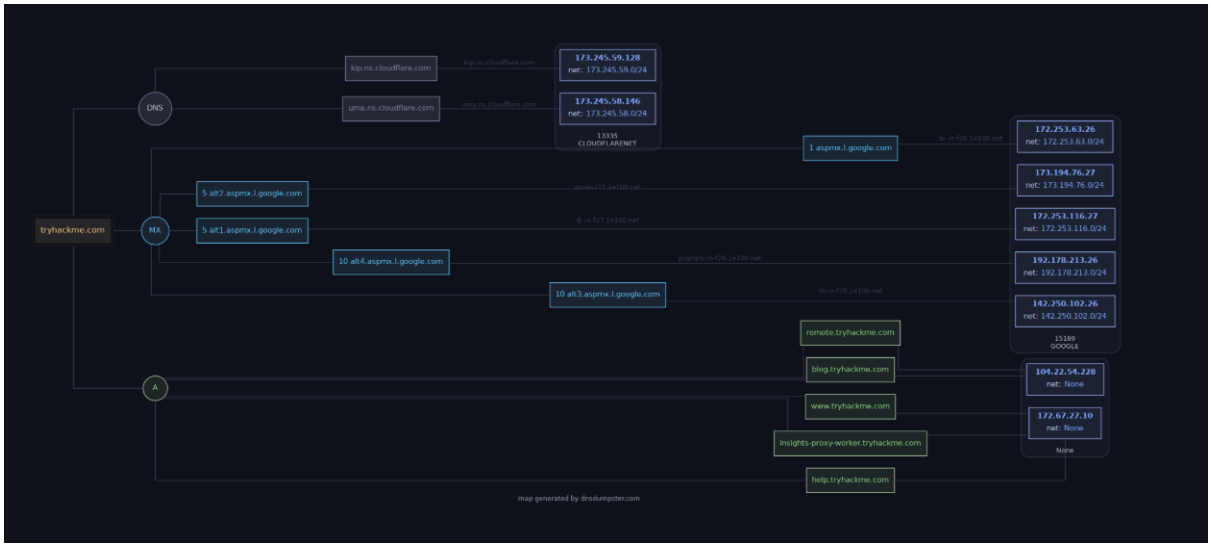
Dig on the other hand stands for Domain Information Groper is used for more advanced DNS queries and additional functionality. The commands you can use are **dig DOMAIN_NAME, dig DOMAIN_NAME TYPE** or **dig @SERVER DOMAIN_NAME TYPE.**



DNSDumpster

The beauty of this tool is that it will assist in **extracting the target's "subdomains"** rather than going through search engines and hunting for it one by one, reducing the time-consuming search.



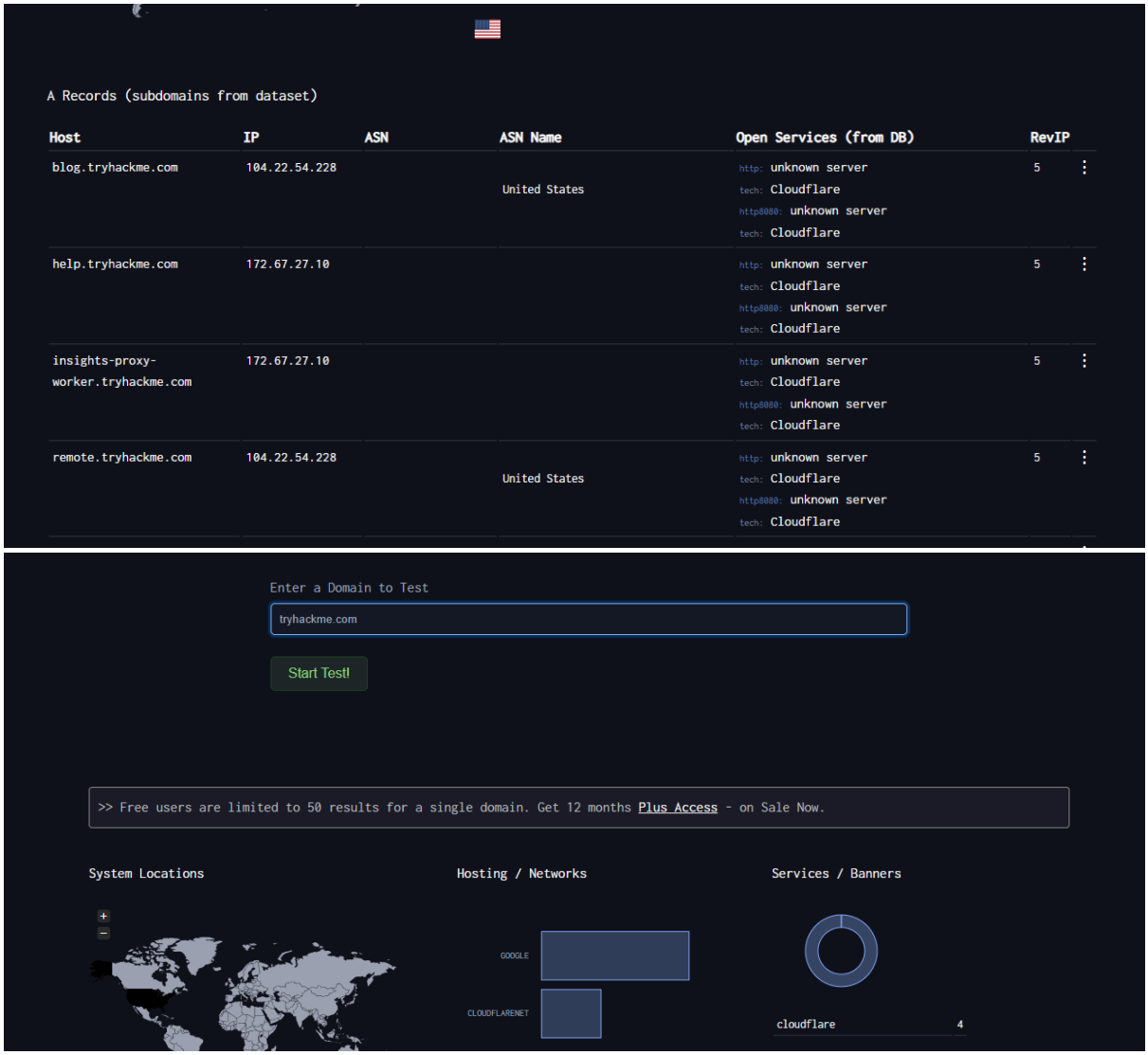


MX Records

5 alt1.aspmx.l.google.com	172.253.116.27 dj-in-f27.1e100.net	ASN:15169 172.253.116.0/24	GOOGLE United States	
10 alt4.aspmx.l.google.com	192.178.213.26 yugrqzs-in-f26.1e100.net	ASN:15169 192.178.213.0/24	GOOGLE United States	
10 alt3.aspmx.l.google.com	142.250.102.26 rb-in-f26.1e100.net	ASN:15169 142.250.102.0/24	GOOGLE United States	
1 aspmx.l.google.com	172.253.63.26 bi-in-f26.1e100.net	ASN:15169 172.253.63.0/24	GOOGLE United States	
5 alt2.aspmx.l.google.com	173.194.76.27 ws-in-f27.1e100.net	ASN:15169 173.194.76.0/24	GOOGLE United States	

NS Records

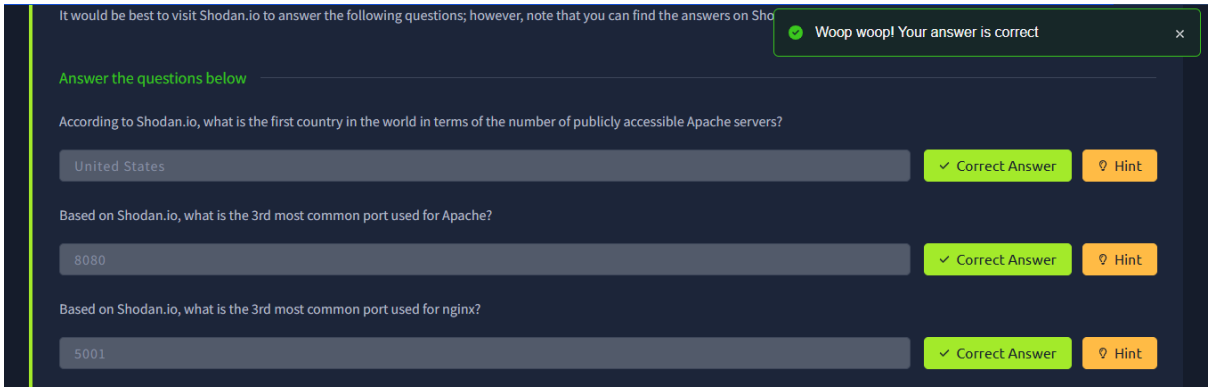
kip.ns.cloudflare.com	173.245.59.128 kip.ns.cloudflare.com	ASN:13335 173.245.59.0/24	CLOUDFLARENET	http: cloudflare title: Direct IP access not allowed tech: Cloudflare http8080: cloudflare title: Direct IP access not allowed tech: Cloudflare

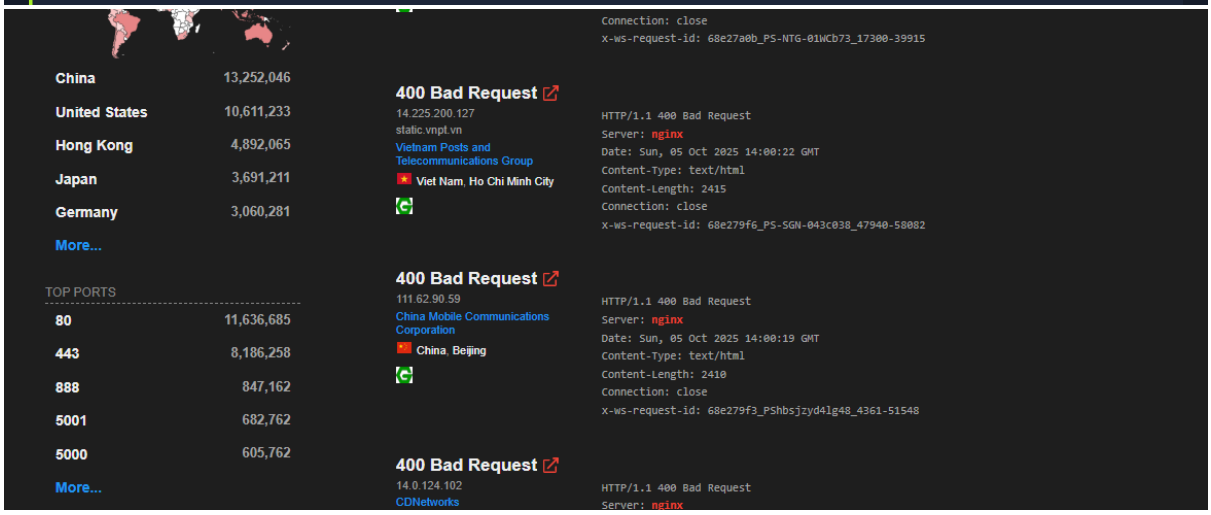


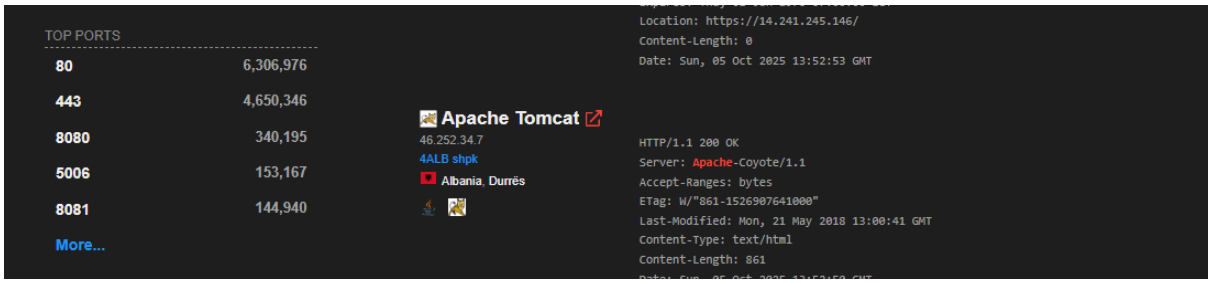
Shodan.io

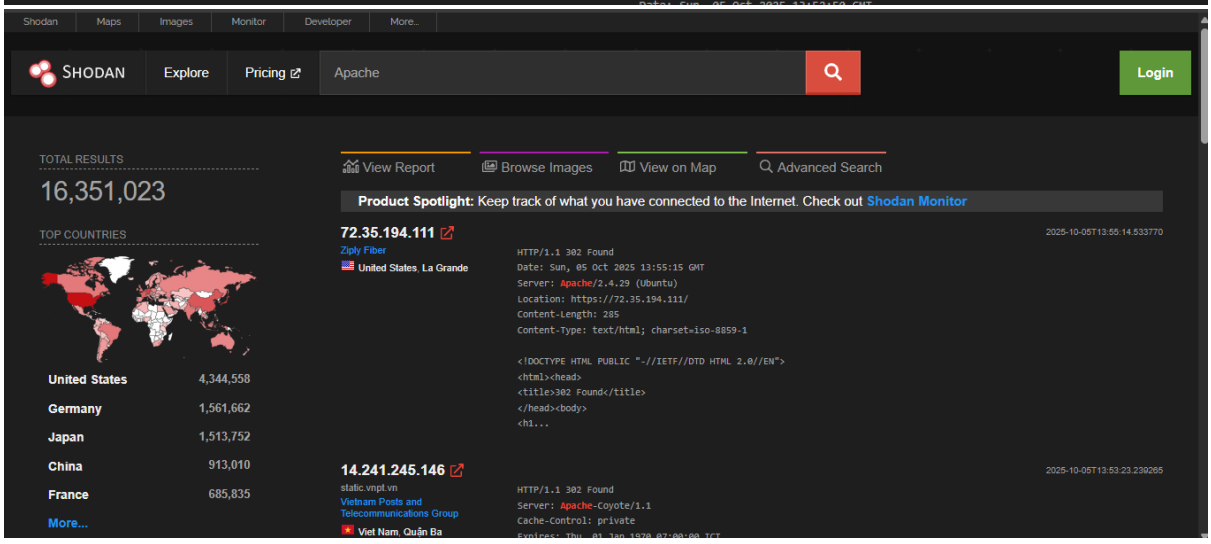
A tool such as this is notably useful for **learning various pieces of information about the client's network** during penetration testing (**without actively connecting to it**).

- Because, on the defensive side, it enables us to leverage various Shodan.io services to **learn about connected and exposed devices** belonging to the organization.
- In contrast to a search engine for web pages, **it attempts to connect to any device reachable online in order to develop a search engine of connected "things,"** and once connected, it collects all information linked to the service and saves it in the database to make it accessible.


It would be best to visit Shodan.io to answer the following questions; however, note that you can find the answers on Sho
Woop woop! Your answer is correct
Answer the questions below
According to Shodan.io, what is the first country in the world in terms of the number of publicly accessible Apache servers?
United States
Correct Answer
Hint
Based on Shodan.io, what is the 3rd most common port used for Apache?
8080
Correct Answer
Hint
Based on Shodan.io, what is the 3rd most common port used for nginx?
5001
Correct Answer
Hint


China 13,252,046
United States 10,611,233
Hong Kong 4,892,065
Japan 3,691,211
Germany 3,060,281
More...
TOP PORTS
80 11,636,685
443 8,186,258
888 847,162
5001 682,762
5000 605,762
More...
400 Bad Request
14.225.200.127
static.vnpt.vn
Vietnam Posts and Telecommunications Group
Viet Nam, Ho Chi Minh City
HTTP/1.1 400 Bad Request
Server: nginx
Date: Sun, 05 Oct 2025 14:00:22 GMT
Content-Type: text/html
Content-Length: 2415
Connection: close
x-ws-request-id: 68e279f6_PS-SGN-043c038_47940-58082
400 Bad Request
111.62.90.59
China Mobile Communications Corporation
China, Beijing
HTTP/1.1 400 Bad Request
Server: nginx
Date: Sun, 05 Oct 2025 14:00:19 GMT
Content-Type: text/html
Content-Length: 2410
Connection: close
x-ws-request-id: 68e279f3_PShbsjzyd4lg48_4361-51548
400 Bad Request
14.0.124.102
CDNetworks
HTTP/1.1 400 Bad Request
Server: nginx


TOP PORTS
80 6,306,976
443 4,650,346
8080 340,195
5006 153,167
8081 144,940
More...
Location: https://14.241.245.146/
Content-Length: 0
Date: Sun, 05 Oct 2025 13:52:53 GMT
Apache Tomcat
46.252.34.7
4ALB shpk
Albania, Durrës
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
Accept-Ranges: bytes
ETag: W/"861-1526907641000"
Last-Modified: Mon, 21 May 2018 13:00:41 GMT
Content-Type: text/html
Content-Length: 861


Shodan
Maps
Images
Monitor
Developer
More...
SHODAN
Explore
Pricing
Apache
Login
TOTAL RESULTS
16,351,023
TOP COUNTRIES
United States 4,344,558
Germany 1,561,662
Japan 1,513,752
China 913,010
France 685,835
More...
View Report
Browse Images
View on Map
Advanced Search
Product Spotlight: Keep track of what you have connected to the Internet. Check out Shodan Monitor
72.35.194.111
Ziply Fiber
United States, La Grande
2025-10-05T13:55:14.533770
HTTP/1.1 302 Found
Date: Sun, 05 Oct 2025 13:55:15 GMT
Server: Apache/2.4.29 (Ubuntu)
Location: https://72.35.194.111/
Content-Length: 285
Content-Type: text/html; charset=iso-8859-1
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>302 Found</title>
</head><body>
<h1...
14.241.245.146
static.vnpt.vn
Vietnam Posts and Telecommunications Group
Viet Nam, Quận Ba
2025-10-05T13:53:23.239265
HTTP/1.1 302 Found
Server: Apache-Coyote/1.1
Cache-Control: private

CONCLUSION

We focused on passive reconnaissance. We covered command-line tools**, whois, nslookup**, and **dig**. We also discussed two publicly available services DNSDumpster and Shodan.io. The power of such tools is that you can collect information about your targets without directly connecting to them. This one was exciting to learn and explore.