







IITK –ICT Summer Term Program (Cyber Security with Linux and Networking) 2020

Project – Penetration Testing On Web Servers

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Project :- Penetration Testing on Web Server

Website: www.certifiedhacker.com

Project Summary

- You have to harden the security of company website and also secure employees from being social engineered. That requires a lot of Footprinting and reconnaissance and hacking techniques. So, you have to penetrate the website and report all findings. Footprinting and Reconnaissance
- 1. About company
- 2. IP address of Website
- 3. Location of server
- 4. Operating System of server
- 5. Web server technology and version
- 6. Built in technology
- 7. When website first seen
- 8. Previous technology used by website
- 9. Which ISP IP range server is using
- 10. Do any other domains are on same server, if yes domain names

- 11. Ports open on Webserver
- 12. Registrar information of domain
- 13. Email ID of some employees of company
- 14. Social Networking Profiles of employees
- 15. LinkedIn Search for profiles with company name
- 16. Address of company
- 17. Director/CEO of company
- 18. Check firewall and load balancer presence
- 19. Check directory listing, if enabled write the directory structure
- 20. Check for files such as robots.txt and sites.xml



• IP of website- Here we used CMD (i.e command promt) of windows OS to get the IP address of the given website.

By using the ping command.

```
C:\Users\HP>ping certifiedhacker.com

Pinging certifiedhacker.com [162.241.216.11] with 32 bytes of data:
Reply from 162.241.216.11: bytes=32 time=302ms TTL=47
Reply from 162.241.216.11: bytes=32 time=295ms TTL=47
Reply from 162.241.216.11: bytes=32 time=299ms TTL=47
Reply from 162.241.216.11: bytes=32 time=310ms TTL=47

Ping statistics for 162.241.216.11:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:

Minimum = 295ms, Maximum = 310ms, Average = 301ms
```

• This command sends the packet of a default size to that website and get a response from there is the website is live and the packet size if accepted. 2-Getting the max size of the packet that can be send over that website through my IP.

By using ping command.

```
C:\Users\HP>ping -f -l 1472 certifiedhacker.com

Pinging certifiedhacker.com [162.241.216.11] with 1472 bytes of data:

Reply from 162.241.216.11: bytes=1472 time=353ms TTL=47

Reply from 162.241.216.11: bytes=1472 time=328ms TTL=47

Reply from 162.241.216.11: bytes=1472 time=543ms TTL=47

Reply from 162.241.216.11: bytes=1472 time=358ms TTL=47

Ping statistics for 162.241.216.11:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

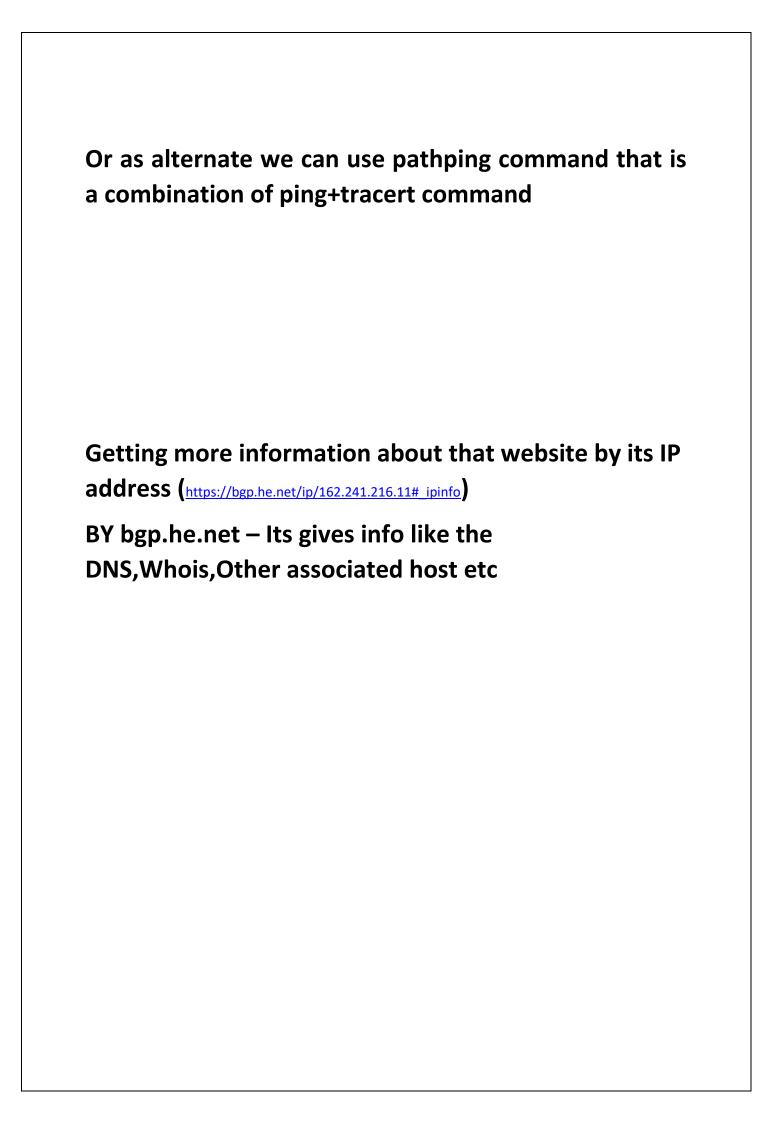
Approximate round trip times in milli-seconds:

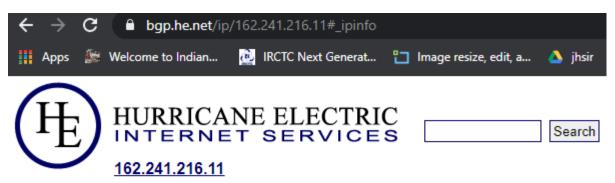
Minimum = 328ms, Maximum = 543ms, Average = 395ms
```

BY the above command we found that size of 1472 bytes can be send over there from my IP(It's not same all the time it varries)

3-Getting the pathway how many IP it will travel to get our requested things to us by tracert command in CMD.(It also gives the roundtrip time)

```
C:\Users\HP>tracert certifiedhacker.com
Tracing route to certifiedhacker.com [162.241.216.11]
over a maximum of 30 hops:
           1 ms
                         9 ms
                                       2 ms 192.168.43.1
                                                Request timed out.
                                    51 ms 10.40.19.125
45 ms 10.50.73.185
49 ms dsl-tn-dynamic-145.222.22.125.airtelbroadband.in [125.22.222.145]
                       55 ms
         61 ms
          60 ms
                        53 ms
         58 ms
                       50 ms
                                    159 ms 182.79.134.112
174 ms mei-b3-link.telia.net [62.115.42.118]
        149 ms
                      165 ms
        155 ms
                      159 ms
                                   296 ms prs-bb3-link.telia.net [62.115.118.94]
285 ms ash-bb2-link.telia.net [62.115.112.242]
281 ms atl-b24-link.telia.net [62.115.125.128]
        302 ms
                      301 ms
        298 ms
                      300 ms
 10
        296 ms
                      296 ms
        310 ms
                      299 ms
                                    299 ms hou-b1-link.telia.net [62.115.116.46]
                                   292 ms cyrusone-svc067800-lag002969.c.telia.net [62.115.184.145]
304 ms 72-250-192-6.cyrusone.com [72.250.192.6]
290 ms po101.router2a.hou1.net.unifiedlayer.com [162.241.0.7]
292 ms 108-167-150-118.unifiedlayer.com [108.167.150.118]
                      298 ms
        300 ms
 13
        293 ms
                      300 ms
 14
        300 ms
                      287 ms
        293 ms
                      291 ms
                                    298 ms box5331.bluehost.com [162.241.216.11]
        294 ms
race complete.
```





Quick Links

BGP Toolkit Home BGP Prefix Report BGP Peer Report Exchange Report Bogon Routes World Report Multi Origin Routes DNS Report Top Host Report Internet Statistics Looking Glass Network Tools App Free IPv6 Tunnel IPv6 Certification IPv6 Progress Going Native Contact Us

IP Info Whois DNS RBL

162.241.216.11 (box5331.bluehost.com)

Announced By						
Origin AS	Announcement	Description				
AS46606	162.240.0.0/15	Unified Layer				
AS46606	162.241.0.0/16	Unified Layer				

Address has 1448 hosts associated with it.

Updated 16 Jun 2020 01:36 PST @ 2020

Whois info-



Quick Links

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IP Info Whois DNS RBL

NetRange: 162.240.0.0 - 162.241.255.255

CIDR: 162.240.0.0/15

NetName: UNIFIEDLAYER-NETWORK-16
NetHandle: NET-162-240-0-0-1
Parent: NET162 (NET-162-0-0-0)
NetType: Direct Allocation

OriginAS: AS46606

Organization: Unified Layer (BLUEH-2)

RegDate: 2013-08-22 Updated: 2013-08-22

Ref: https://rdap.arin.net/registry/ip/162.240.0.0

OrgName: Unified Layer

OrgId: BLUEH-2

Address: 1958 South 950 East

City: Provo StateProv: UT PostalCode: 84606 Country: US

RegDate: 2006-08-08 Updated: 2020-01-31

Ref: https://rdap.arin.net/registry/entity/BLUEH-2

ReferralServer: rwhois://rwhois.unifiedlayer.com:4321

OrgTechHandle: ENO74-ARIN

OrgTechName: EIG Network Operations
OrgTechPhone: +1-877-659-6181
OrgTechEmail: eig-noc@endurance.com

OrgTechRef: https://rdap.arin.net/registry/entity/ENO74-ARIN

For DNS we can also use the CMD by nslookup command.

C:\Users\HP>nslookup certifiedhacker.com

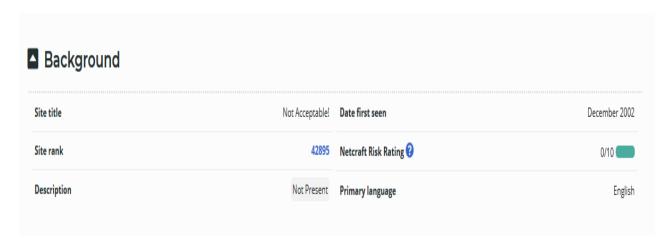
Server: UnKnown

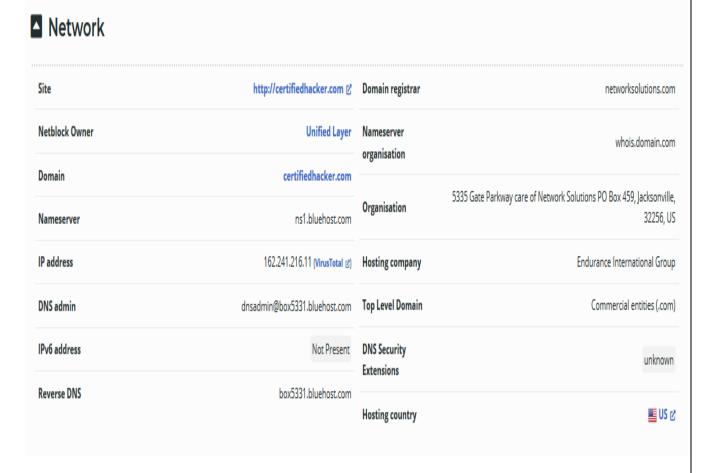
Address: 192.168.43.1

Non-authoritative answer: Name: certifiedhacker.com Address: 162.241.216.11

Getting information about some of its background, network, hosting history by netcraft.com

(https://sitereport.netcraft.com/?url=http://certified hacker.com/)





Hosting History

Netblock owner	IP address	OS	Web server	Last seen
Unified Layer 1958 South 950 East Provo UT US 84606	162.241.216.11	Linux	Apache	15-Jun-2020
Unified Layer 1958 South 950 East Provo UT US 84606	162.241.216.11	Linux	nginx/1.14.1	29-May-2019
Unified Layer 1958 South 950 East Provo UT US 84606	162.241.216.11	Linux	nginx/1.12.2	28-Nov-2018
Unified Layer 1958 South 950 East Provo UT US 84606	69.89.31.193	-	nginx/1.12.1	5-Nov-2017
Unified Layer 1958 South 950 East Provo UT US 84606	69.89.31.193	Linux	Apache	17-Oct-2017
Unified Layer 1958 South 950 East Provo UT US 84606	69.89.31.193	Linux	nginx/1.12.1	6-Oct-2017
Unified Layer 1958 South 950 East Provo UT US 84606	69.89.31.193	Linux	nginx/1.12.0	28-May-2017
Unified Layer 1958 South 950 East Provo UT US 84606	69.89.31.193	Linux	nginx/1.10.2	15-Apr-2017
Unified Layer 1958 South 950 East Provo UT US 84606	69.89.31.193	Linux	nginx/1.10.1	19-Oct-2016

 Getting information of OS of server, Technology used Ports and services over that website, we are using

shodan.io(https://www.shodan.io/host/162.241.
216.11
)

♦ 162.241.216.11 box5331.bluehost.com

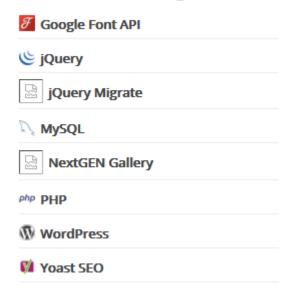
starttls Database

ASN

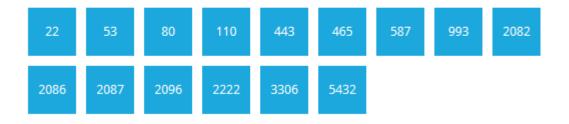


AS46606

Web Technologies



Ports





22 tcp ssh

OpenSSH Version: 5.3

SSH-2.0-OpenSSH_5.3 Key type: ssh-rsa

Key: AAAAB3NzaC1yc2EAAAABIwAAAQEAzWY7a5YXkotfyVQXp4K/w/3qkPREhYS6b8Cf89YCCYYuIPyV
THfRdZ12PybQq/1Cr57qi/csGcY98DjwI3xpYcDAHgr6uTPprJJvF6WBbPxwU6gyb8m2XjX40VeH
MOhCBIh//36817BiLQRy71APuUgcnh3wIsjz+sObd1rlvRAdzLVk0Ru+JmioWcon83IPqnwLsWKY
f35N7olSdzwEQXfGDtgd2BHr9fnMeXKEBCfyPCs/DZ7dd6xPBmqFzaQZQLua4+L/EuOHRFGwgN5v
04fyusL321Zw1B3u2MkUoh6Zz6DDlQqXhaWyrzSHPwb9i1ucUT0RvK+PP8gLwpj6iw==

Fingerprint: c5:65:11:7c:5b:03:60:8e:be:13:1e:d9:b6:8d:80:ac

Kex Algorithms:

diffie-hellman-group-exchange-sha256

Server Host Key Algorithms:

ssh-rsa ssh-dss

Encryption Algorithms:

aes256-ctr aes192-ctr aes128-ctr

MAC Algorithms:

hmac-sha2-512 hmac-sha2-256 hmac-ripemd160 hmac-ripemd160@openssh.com

Compression Algorithms:

none

zlib@openssh.com

53 tcp dns-tcp 9.8.2rc1-RedHat-9.8.2-0.62.rc1.el6_9.4

53 udp dns-udp

9.8.2rc1-RedHat-9.8.2-0.62.rc1.el6_9.4

80 tcp http

Apache httpd

HTTP/1.1 404 Not Found

Date: Fri, 12 Jun 2020 22:04:36 GMT

Server: Apache Content-Length: 315

Content-Type: text/html; charset=iso-8859-1

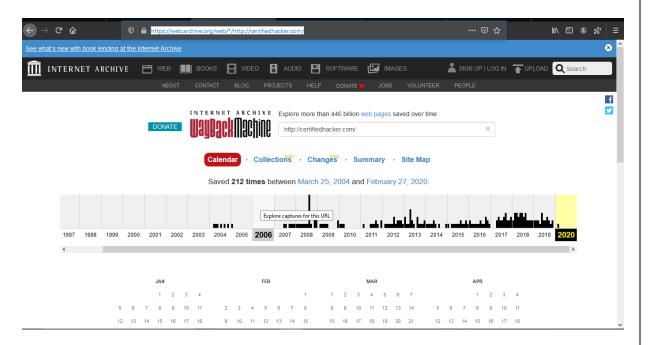
 Checking for domain hosted on the same webserver as certifiedhacker.com by using website

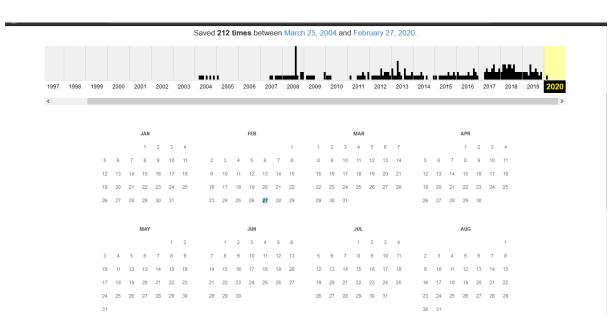
yougetsignal.com(https://www.yougetsignal.com

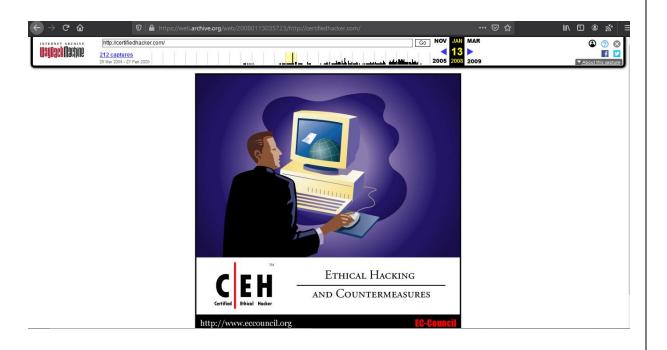
/tools/web-sites-on-web-server/)

SECURING TODAY'S DISTRIBUTED WORKFORCE you get signal Reverse IP Domain Check Remote Address certifiedhacker.com Found 8 domains hosted on the same web server as certifiedhacker.com (162.241.216.11). box5331.bluehost.com certifiedhacker.com eis.ga oakoffer.com humancarehealth.com www.certifiedhacker.com www.lststl.org about Note: For those of you interested, as of May 2014, my database has grown to over 100 million domain names. I am now offering this domain list for purchase A reverse IP domain check takes a domain name or IP address pointing to a web server and searches for other sites known to be hosted on that same web server. Data is gathered from search engine results, which are not guaranteed to be complete. IP-Address.org provides interesting visual reverse IP lookup tool. Knowing the other web sites hosted on a web server is important from both an SEO and web filtering perspective, particularly for those on shared web hosting plans. More about this tool. Set an API Key. help me pay for school (PayPal)

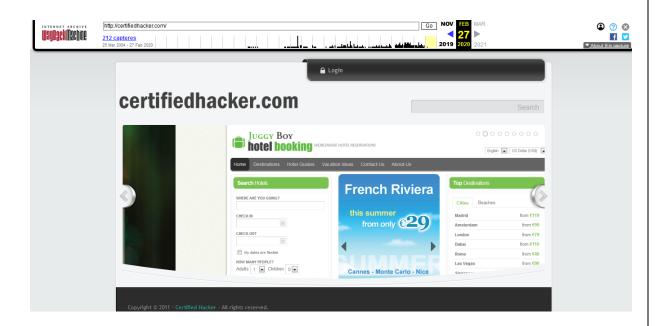
 Previous technology used and previous view of that website we can get this info by archive.org(https://web.archive.org/web/*/http://certifiedhacker.com/)











 E-mail id of some employee or contacts and profiles related to that website using Kali linux recon-ng tool.



```
[recon-ng][Anubhav][whois_pocs] > options set SOURCE certifiedhacker.com
SOURCE => certifiedhacker.com
[recon-ng][Anubhav][whois_pocs] > info
      Name: Whois POC Harvester
    Author: Tim Tomes (@lanmaster53)
  Version: 1.0
Description:
 Uses the ARIN Whois RWS to harvest POC data from whois queries for the given domain. Updates the
  'contacts' table with the results.
Options:
 Name Current Value Required Description
 SOURCE certifiedhacker.com yes source of input (see 'info' for details)
 default SELECT DISTINCT domain FROM domains WHERE domain IS NOT NULL
<string> string representing a single input
<path> path to a file containing
Source Options:
 query <sql> database query returning one column of inputs
[recon-ng][Anubhav][whois_pocs] > run
CERTIFIEDHACKER.COM
 *] URL: http://whois.arin.net/rest/pocs;domain=certifiedhacker.com
*] No contacts found.
[recon-ng][Anubhav][whois_pocs] > modules load recons
```

 Checking the open ports of the website using the dmitry tool in kali linux

```
i:~# dmitry -p -f certifiedhacker.com
Deepmagic Information Gathering Tool
"There be some deep magic going on"
HostIP:162.241.216.11
HostName:certifiedhacker.com
Gathered TCP Port information for 162.241.216.11
 Port
              State
21/tcp
               open
22/tcp
               open
25/tcp
                open
26/tcp
                open
53/tcp
                open
80/tcp
                open
110/tcp
                open
143/tcp
                open
Portscan Finished: Scanned 150 ports, 141 ports were in state closed
All scans completed, exiting
 oot@kali:~#
```

More details about DNS and Domain by Dmitry.

```
:~# dmitry -w -f -p certifiedhacker.com -o host.txt
Deepmagic Information Gathering Tool
"There be some deep magic going on"
Writing output to 'host.txt.txt'
HostIP:162.241.216.11
HostName:certifiedhacker.com
Gathered Inic-whois information for certifiedhacker.com
  Domain Name: CERTIFIEDHACKER.COM
   Registry Domain ID: 88849376_DOMAIN_COM-VRSN
   Registrar WHOIS Server: whois.networksolutions.com
   Registrar URL: http://networksolutions.com
   Updated Date: 2016-03-16T12:38:41Z
   Creation Date: 2002-07-30T00:32:00Z
   Registry Expiry Date: 2021-07-30T00:32:00Z
   Registrar: Network Solutions, LLC
   Registrar IANA ID: 2
   Registrar Abuse Contact Email: abuse@web.com
   Registrar Abuse Contact Phone: +1.8003337680
   Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
   Name Server: NS1.BLUEHOST.COM
   Name Server: NS2.BLUEHOST.COM
   DNSSEC: unsigned
  URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2020-06-17T07:58:05Z <<<
```

Using the OSR framework to find some more information about that website using the command of usufy on klai linux.

```
Coded with w by Yaiza Rubio & Félix Brezo
 -- With 'phonefy' you can guess if a given phone number is linked to spam. --
                                 Starting search in 3 platform(s)... Relax!
2020-06-17 04:32:13.563452
        Press <Ctrl + C> to stop...
  si, ciu, pychono, uisc-packages, pyekcec, ueprecateu.py.zvo. oserwarning. Deprecateu usage
orted.
 warnings.warn(
Objects recovered (2020-6-17_4h36m).:
                                               | com.i3visio.Alias | com.i3visio.Platform |
 http://twitter.com/certifiedhacker
                                               certifiedhacker
                                                                Twitter
 https://www.youtube.com/user/certifiedhacker/about certifiedhacker
                                                                Youtube
 http://www.instagram.com/certifiedhacker
                                               | certifiedhacker | Instagram
2020-06-17 04:36:38.706640 You can find all the information here:
       ./profiles.csv
2020-06-17 04:36:38.706920
                            Finishing execution...
Total time consumed: 0:04:25.143468
Average seconds/query: 88.38115599999999 seconds
Did something go wrong? Is a platform reporting false positives? Do you need to
integrate a new one and you don't know how to start? Then, you can always place
an issue in the Github project:
   https://github.com/i3visio/osrframework/issues
Note that otherwise, we won't know about it!
```

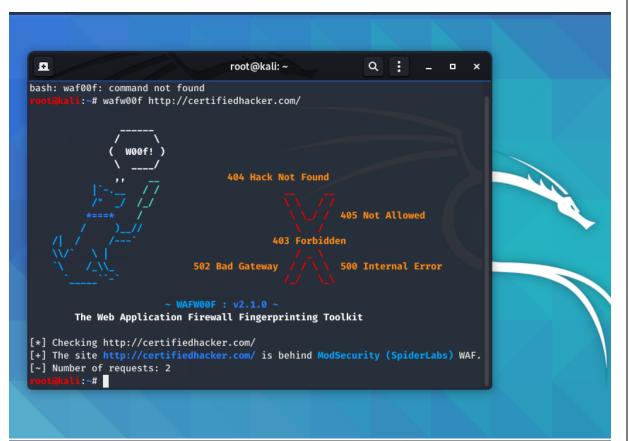
warnings.warn(Objects recovered (2020	-6-17_5h20m).:		
com.i3visio.Platform	com.i3visio.Alias	com.i3visio.URI	
Youtube	CertifiedxHacker	https://www.youtube.com/user/CertifiedxHacker/about	
Youtube	MrPanthers893417	https://www.youtube.com/user/MrPanthers893417/about	
Youtube	IanTraceur5	https://www.youtube.com/user/IanTraceur5/about	
Youtube	RobsTechTips	https://www.youtube.com/user/RobsTechTips/about	
Youtube	dtwazere	https://www.youtube.com/user/dtwazere/about	
Youtube	starduel	https://www.youtube.com/user/starduel/about	
Youtube	chinmaybhat123	https://www.youtube.com/user/chinmaybhat123/about	
2020-06-17 05:20:33.270: ./profiles.csv	234 You can fin	d all the information collected in the following files	
2020-06-17 05:20:33.270508 Finishing execution			
Total time used: 0:32:49.829591 Average seconds/query: 1969.829591 seconds			
		IWUbGEEv.jpeg mynew.exe	
		ting false positives? Do you need to to start? Then, you can always place	

 Checking for load balancer on the website certified hacker



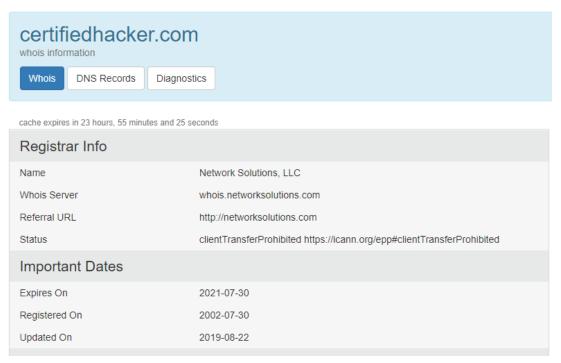
By using the lbd command in kali linux terminal

Checking firewall at the website using wafw00f tool





 Using Who.is for getting the registrar information and other information regarding the website certifiedhacker.com



 Information regarding the name servers and similar domains.

Name Servers			
NS1.BLUEHOST.COM	162.159.24.80		
NS2.BLUEHOST.COM	162.159.25.175		
Similar Domains			
certi-5oils.com certi-air.eu certi-api.org certi-box.com certi-bru.com certi-bruxelles.net certi-buy.com certi-cable- 1.com certi-call.com certi-camp.com certi-camp.net certi-car.com certi-car.net certi-care.com certi-cares.com certi-cars.com certi-cast.com certi-chain.com certi-chef.com certi-clean.com			

• Registrar Information

Registrar Data

We will display stored WHOIS data for up to 30 days.

Make Private Now

Registrant Contact Information:

Name PERFECT PRIVACY, LLC

Organization

Address 5335 Gate Parkway care of Network Solutions PO Box 459

City Jacksonville

State / Province FL
Postal Code 32256

Phone +1.5707088780

Email nd2re72e6jz@networksolutionsprivateregistration.com

Administrative Contact Information:

Name PERFECT PRIVACY, LLC

Organization

Address 5335 Gate Parkway care of Network Solutions PO Box 459

City Jacksonville

State / Province FL
Postal Code 32256
Country US

Phone +1.5707088780

Email nd2re72e6jz@networksolutionsprivateregistration.com

Technical Contact Information:

Name PERFECT PRIVACY, LLC

Organization

Address 5335 Gate Parkway care of Network Solutions PO Box 459

City Jacksonville

State / Province FL
Postal Code 32256
Country US

Phone +1.5707088780

Email nd2re72e6jz@networksolutionsprivateregistration.com