

PROJECT 03

Challenges given in this project are as follows –

select the server and perform challenges

- 1.check for smtp relay
 - 2.check for zone transfer
 - 3.perform netbios enumeration
 - 4.sniff the data of any application using wireshark
 - 5.perform DOS attack using Metasploit framework
-

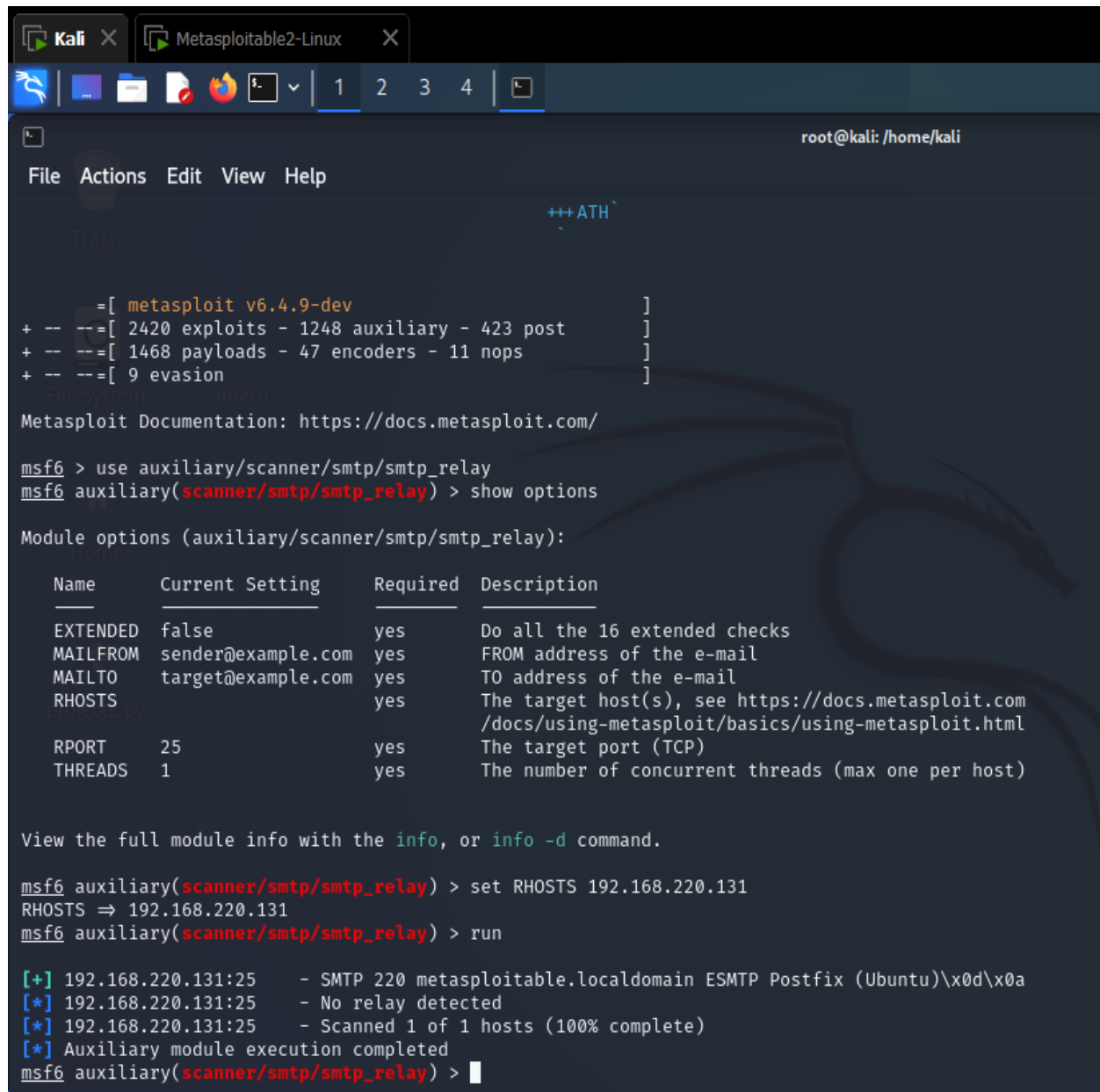
- Server used in this challenge (metasploitable2)

```
To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
No mail.
msfadmin@metasploitable:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:fa:dd:2a
          inet addr:192.168.220.131  Bcast:192.168.220.255  Mask:255.255.255.0
          inet6 addr: fe80::20c:29ff:fefa:dd2a/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:42 errors:0 dropped:0 overruns:0 frame:0
          TX packets:71 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:4374 (4.2 KB)  TX bytes:7370 (7.1 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:107 errors:0 dropped:0 overruns:0 frame:0
          TX packets:107 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:25801 (25.1 KB)  TX bytes:25801 (25.1 KB)

msfadmin@metasploitable:~$ _
```

1) Check for SMTP relay



```
root@kali: /home/kali
File Actions Edit View Help
+++ATH
Trash
=[ metasploit v6.4.9-dev ]
+ -- --[ 2420 exploits - 1248 auxiliary - 423 post ]
+ -- --[ 1468 payloads - 47 encoders - 11 nops ]
+ -- --[ 9 evasion ]
File System
Metasploit Documentation: https://docs.metasploit.com/
msf6 > use auxiliary/scanner/smtp/smtp_relay
msf6 auxiliary(scanner/smtp/smtp_relay) > show options

Module options (auxiliary/scanner/smtp/smtp_relay):

  Name      Current Setting  Required  Description
  ---      -
  EXTENDED  false           yes       Do all the 16 extended checks
  MAILFROM  sender@example.com yes       FROM address of the e-mail
  MAILTO    target@example.com yes       TO address of the e-mail
  RHOSTS     yes            The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
  RPORT     25             The target port (TCP)
  THREADS   1             The number of concurrent threads (max one per host)

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

msf6 auxiliary(scanner/smtp/smtp_relay) > set RHOSTS 192.168.220.131
RHOSTS => 192.168.220.131
msf6 auxiliary(scanner/smtp/smtp_relay) > run

[+] 192.168.220.131:25 - SMTP 220 metasploitable.localdomain ESMTP Postfix (Ubuntu)\x0d\x0a
[*] 192.168.220.131:25 - No relay detected
[*] 192.168.220.131:25 - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/smtp/smtp_relay) > 
```

2) Check for zone transfer

```
Kali x Metasploitable2-Linux x
root@kali: /home/kali

File Actions Edit View Help

(root@kali)-[/home/kali]
# dnsenum zonetransfer.me
dnsenum VERSION:1.3.1

zonetransfer.me

Host's addresses: 196.105.14.5

zonetransfer.me. 5 IN A 5.196.105.14

Name Servers:

nsztm2.digi.ninja. 5 IN A 34.225.33.2
nsztm1.digi.ninja. 5 IN A 81.4.108.41

Mail (MX) Servers:

ASPMX5.GOOGLEMAIL.COM. 5 IN A 108.177.104.26
ASPMX2.GOOGLEMAIL.COM. 5 IN A 173.194.202.26
ALT1.ASPMX.L.GOOGLE.COM. 5 IN A 173.194.202.27
ASPMX3.GOOGLEMAIL.COM. 5 IN A 142.250.141.26
ASPMX4.GOOGLEMAIL.COM. 5 IN A 142.250.115.26
ALT2.ASPMX.L.GOOGLE.COM. 5 IN A 142.250.141.27
ASPMX.L.GOOGLE.COM. 5 IN A 74.125.200.27

Trying Zone Transfers and getting Bind Versions:

Trying Zone Transfer for zonetransfer.me on nsztm2.digi.ninja ...
```

```
Kali x Metasploitable2-Linux x
root@kali: /home/kali

File Actions Edit View Help

Trying Zone Transfers and getting Bind Versions:

Trying Zone Transfer for zonetransfer.me on nsztm2.digi.ninja ...
zonetransfer.me. 7200 IN SOA (
zonetransfer.me. 301 IN TXT (
zonetransfer.me. 7200 IN MX 0
zonetransfer.me. 7200 IN MX 10
zonetransfer.me. 7200 IN MX 10
zonetransfer.me. 7200 IN MX 20
zonetransfer.me. 7200 IN MX 20
zonetransfer.me. 7200 IN MX 20
zonetransfer.me. 7200 IN MX 20
zonetransfer.me. 7200 IN A 5.196.105.14
zonetransfer.me. 7200 IN NS nsztm1.digi.ninja.
zonetransfer.me. 7200 IN NS nsztm2.digi.ninja.
zonetransfer.me. 300 IN HINFO "Casio
_acme-challenge.zonetransfer.me. 301 IN TXT (
_acme-challenge.zonetransfer.me. 301 IN TXT (
_sip_tcp.zonetransfer.me. 14000 IN SRV 0
14.105.196.5.IN-ADDR.ARPA.zonetransfer.me. 7200 IN PTR www.zonetransfer.me.
asfdbauthdns.zonetransfer.me. 7900 IN AFSDB 1
asfdbbox.zonetransfer.me. 7200 IN A 127.0.0.1
asfdbvolume.zonetransfer.me. 7800 IN AFSDB 1
canberra-office.zonetransfer.me. 7200 IN A 202.14.81.230
cmdexec.zonetransfer.me. 300 IN TXT "
contact.zonetransfer.me. 2592000 IN TXT (
dc-office.zonetransfer.me. 7200 IN A 143.228.181.132
deadbeef.zonetransfer.me. 7201 IN AAAA dead:beaf::
dr.zonetransfer.me. 300 IN LOC 53
DZC.zonetransfer.me. 7200 IN TXT AbCdEfG
email.zonetransfer.me. 2222 IN NAPTR (
email.zonetransfer.me. 7200 IN A 74.125.206.26
Hello.zonetransfer.me. 7200 IN TXT "Hi
home.zonetransfer.me. 7200 IN A 127.0.0.1
Info.zonetransfer.me. 7200 IN TXT (
internal.zonetransfer.me. 300 IN NS intns1.zonetransfer.me.
```

```
Kali X Metasploitable2-Linux X
root@kali: /home/kali

File Actions Edit View Help

asfdbbox.zonetransfer.me. 7200 IN A 127.0.0.1
asfdbvolume.zonetransfer.me. 7800 IN AFSDb 1
canberra-office.zonetransfer.me. 7200 IN A 202.14.81.230
cmdexec.zonetransfer.me. 300 IN TXT ";"
contact.zonetransfer.me. 2592000 IN TXT (
dc-office.zonetransfer.me. 7200 IN A 143.228.181.132
deadbeef.zonetransfer.me. 7201 IN AAAA dead:beaf::
dr.zonetransfer.me. 300 IN LOC 53
DZC.zonetransfer.me. 7200 IN TXT AbCdEfG
email.zonetransfer.me. 2222 IN NAPTR (
email.zonetransfer.me. 7200 IN A 74.125.206.26
Hello.zonetransfer.me. 7200 IN TXT "Hi
home.zonetransfer.me. 7200 IN A 127.0.0.1
Info.zonetransfer.me. 7200 IN TXT (
internal.zonetransfer.me. 300 IN NS intns1.zonetransfer.me.
internal.zonetransfer.me. 300 IN NS intns2.zonetransfer.me.
intns1.zonetransfer.me. 300 IN A 81.4.108.41
intns2.zonetransfer.me. 300 IN A 167.88.42.94
office.zonetransfer.me. 7200 IN A 4.23.39.254
ipv6actnow.org.zonetransfer.me. 7200 IN AAAA 2001:67c:2e8:11::c100:1332
owa.zonetransfer.me. 7200 IN A 207.46.197.32
robinwood.zonetransfer.me. 302 IN TXT "Robin
rp.zonetransfer.me. 321 IN RP (
sip.zonetransfer.me. 3333 IN NAPTR (
sqli.zonetransfer.me. 300 IN TXT ""
sshock.zonetransfer.me. 7200 IN TXT "()"
staging.zonetransfer.me. 7200 IN CNAME www.sydneyoperahouse.com.
alltcpportsopen.firewall.test.zonetransfer.me. 301 IN A 127.0.0.1
testing.zonetransfer.me. 301 IN CNAME www.zonetransfer.me.
vpn.zonetransfer.me. 4000 IN A 174.36.59.154
www.zonetransfer.me. 7200 IN A 5.196.105.14
xss.zonetransfer.me. 300 IN TXT "'<script>alert('Boo')</script>"

Brute forcing with /usr/share/dnsenum/dns.txt:
```

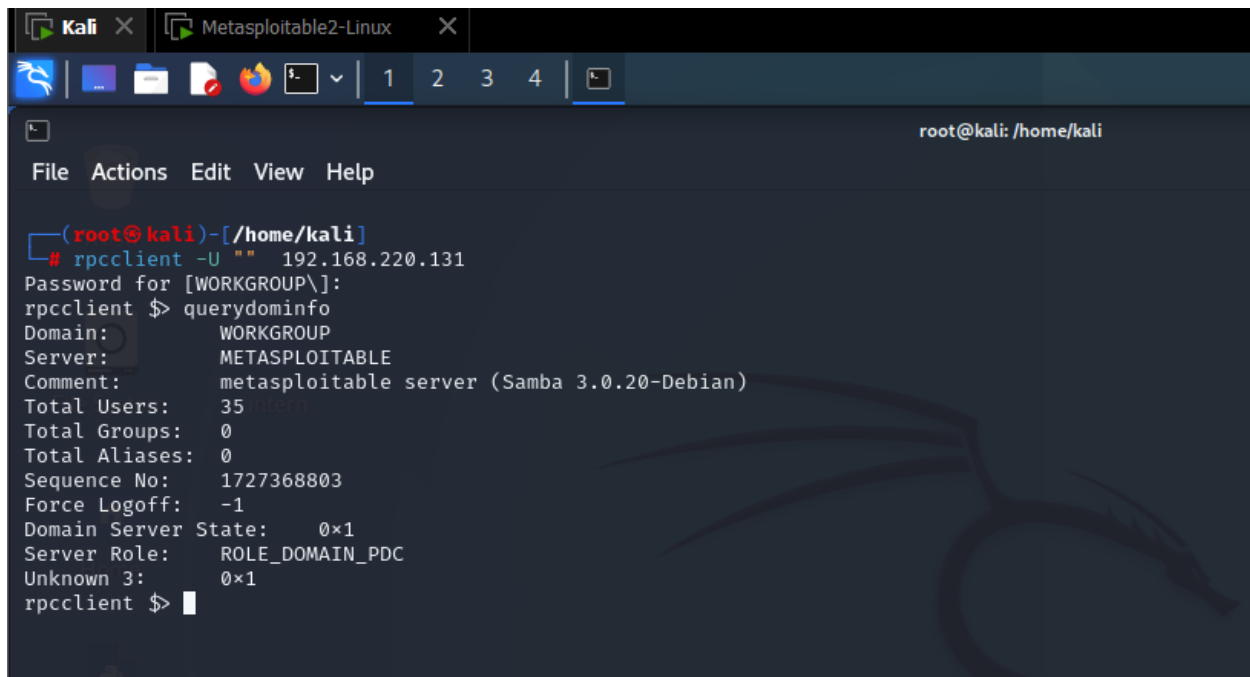
```
Kali X Metasploitable2-Linux X
root@kali: /home/kali

File Actions Edit View Help

(root@kali)-[/home/kali]
# dnsrecon -d zonetransfer.me
[*] std: Performing General Enumeration against: zonetransfer.me ...
[-] DNSSEC is not configured for zonetransfer.me
[*] SOA nsztml.digi.ninja 81.4.108.41
[*] SOA nsztml.digi.ninja 64:ff9b::5104:6c29
[*] NS nsztml.digi.ninja 34.225.33.2
[*] Bind Version for 34.225.33.2 you"
[*] NS nsztml.digi.ninja 64:ff9b::22e1:2102
[*] NS nsztml.digi.ninja 81.4.108.41
[*] Bind Version for 81.4.108.41 secret"
[*] NS nsztml.digi.ninja 64:ff9b::5104:6c29
[*] MX ASpmX2.GOOGLEMAIL.COM 173.194.202.26
[*] MX ALT1.ASPMX.L.GOOGLE.COM 173.194.202.27
[*] MX ASpmX3.GOOGLEMAIL.COM 142.250.141.27
[*] MX ASpmX4.GOOGLEMAIL.COM 142.250.115.26
[*] MX ALT2.ASPMX.L.GOOGLE.COM 142.250.141.27
[*] MX ASpmX.L.GOOGLE.COM 74.125.24.26
[*] MX ASpmX5.GOOGLEMAIL.COM 108.177.104.27
[*] MX ASpmX2.GOOGLEMAIL.COM 2607:f8b0:400e:c00::1a
[*] MX ALT1.ASPMX.L.GOOGLE.COM 2607:f8b0:400e:c00::1a
[*] MX ASpmX3.GOOGLEMAIL.COM 2607:f8b0:4023:c0b::1a
[*] MX ASpmX4.GOOGLEMAIL.COM 2607:f8b0:4023:1004::1a
[*] MX ALT2.ASPMX.L.GOOGLE.COM 2607:f8b0:4023:c0b::1b
[*] MX ASpmX.L.GOOGLE.COM 2404:6800:4003:c03::1a
[*] MX ASpmX5.GOOGLEMAIL.COM 2607:f8b0:4003:c04::1b
[*] A zonetransfer.me 5.196.105.14
[*] AAAA zonetransfer.me 64:ff9b::5c4:690e
[*] TXT zonetransfer.me google-site-verification=tyP28J7JAUHA9fw2sHXMgccc0I6XBmmoVi04VlMewx
[*] Enumerating SRV Records
[*] SRV _sip._tcp.zonetransfer.me www.zonetransfer.me 5.196.105.14 5060
[*] SRV _sip._tcp.zonetransfer.me www.zonetransfer.me 64:ff9b::5c4:690e 5060
[*] 2 Records Found

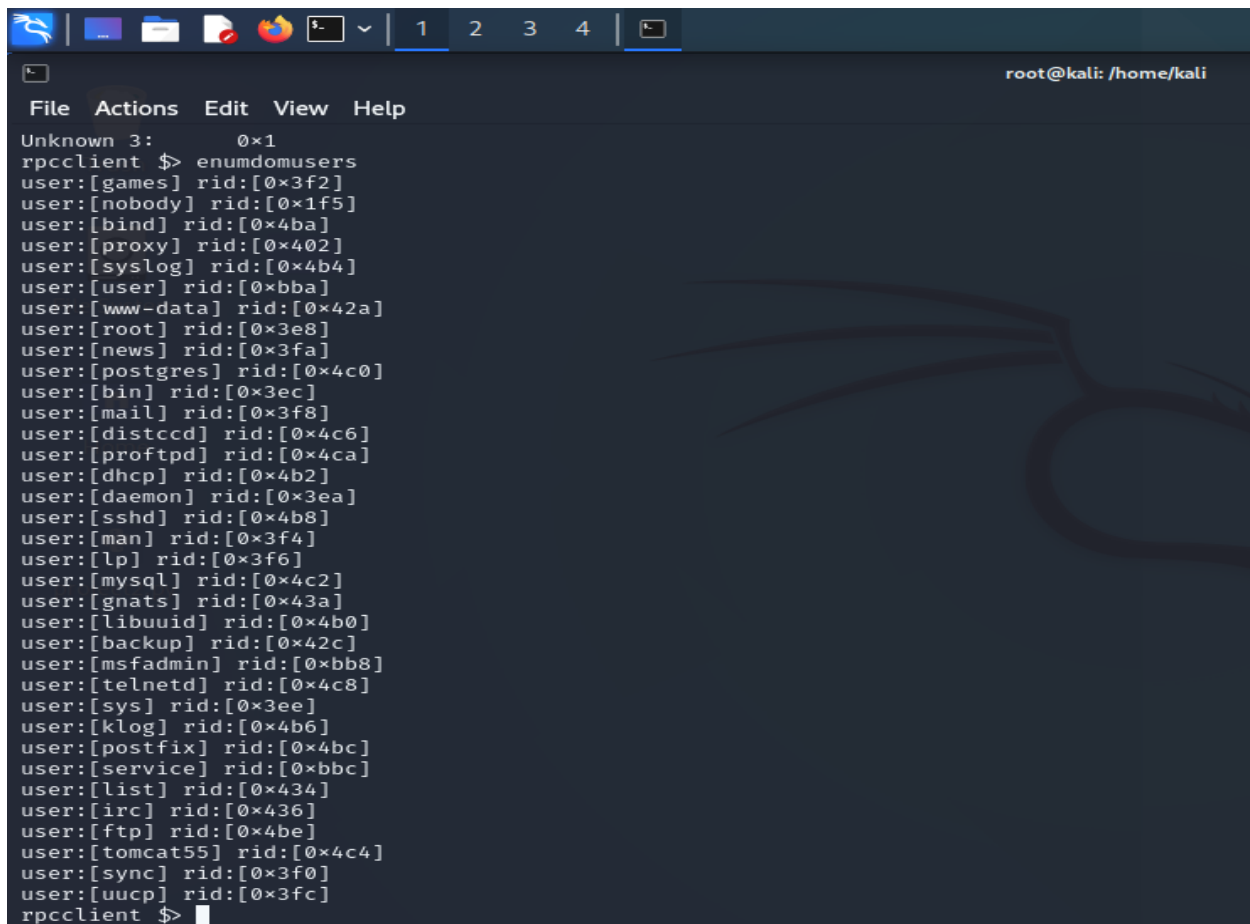
(root@kali)-[/home/kali]
#
```

2) Perform Netbios enumeration



A terminal window titled 'Kali' and 'Metasploitable2-Linux' showing a Netbios enumeration process. The user is at the root prompt in the /home/kali directory. They run the command `rpcclient -U "" 192.168.220.131` and then `querydomaininfo`. The output displays domain information for WORKGROUP, including server name, total users, groups, aliases, sequence number, force logoff, domain server state, server role, and unknown 3.

```
(root@kali)-[/home/kali]
# rpcclient -U "" 192.168.220.131
Password for [WORKGROUP\]:
rpcclient $> querydomaininfo
Domain:          WORKGROUP
Server:          METASPLOITABLE
Comment:         metasploitable server (Samba 3.0.20-Debian)
Total Users:     35
Total Groups:    0
Total Aliases:   0
Sequence No:     1727368803
Force Logoff:    -1
Domain Server State: 0x1
Server Role:     ROLE_DOMAIN_PDC
Unknown 3:       0x1
rpcclient $>
```



A terminal window titled 'Kali' and 'Metasploitable2-Linux' showing the continuation of Netbios enumeration. The user runs the command `enumdomusers`, which lists all domain users and their RIDs.

```
Unknown 3:       0x1
rpcclient $> enumdomusers
user:[games] rid:[0x3f2]
user:[nobody] rid:[0x1f5]
user:[bind] rid:[0x4ba]
user:[proxy] rid:[0x402]
user:[syslog] rid:[0x4b4]
user:[user] rid:[0xbba]
user:[www-data] rid:[0x42a]
user:[root] rid:[0x3e8]
user:[news] rid:[0x3fa]
user:[postgres] rid:[0x4c0]
user:[bin] rid:[0x3ec]
user:[mail] rid:[0x3f8]
user:[distccd] rid:[0x4c6]
user:[proftpd] rid:[0x4ca]
user:[dhcp] rid:[0x4b2]
user:[daemon] rid:[0x3ea]
user:[sshd] rid:[0x4b8]
user:[man] rid:[0x3f4]
user:[lp] rid:[0x3f6]
user:[mysql] rid:[0x4c2]
user:[gnats] rid:[0x43a]
user:[libuuid] rid:[0x4b0]
user:[backup] rid:[0x42c]
user:[msfadmin] rid:[0xbb8]
user:[telnetd] rid:[0x4c8]
user:[sys] rid:[0x3ee]
user:[klog] rid:[0x4b6]
user:[postfix] rid:[0x4bc]
user:[service] rid:[0xbbc]
user:[list] rid:[0x434]
user:[irc] rid:[0x436]
user:[ftp] rid:[0x4be]
user:[tomcat55] rid:[0x4c4]
user:[sync] rid:[0x3f0]
user:[uucp] rid:[0x3fc]
rpcclient $>
```

```

rpcclient $> queryuser msfadmin
User Name      : msfadmin
Full Name      : msfadmin,,
Home Drive     : \\metasploitable\msfadmin
Dir Drive      :
Profile Path   : \\metasploitable\msfadmin\profile
Logon Script   :
Description    :
Workstations   :
Comment        : (null)
Remote Dial    :
Logon Time     : Wed, 31 Dec 1969 19:00:00 EST
Logoff Time    : Wed, 13 Sep 30828 22:48:05 EDT
Kickoff Time   : Wed, 13 Sep 30828 22:48:05 EDT
Password last set Time : Wed, 28 Apr 2010 02:56:18 EDT
Password can change Time : Wed, 28 Apr 2010 02:56:18 EDT
Password must change Time : Wed, 13 Sep 30828 22:48:05 EDT
unknown_2[0..31] ...
user_rid       : 0xbb8
group_rid      : 0xbb9
acb_info       : 0x00000010
fields_present : 0x00ffffff
logon_divs     : 168
bad_password_count : 0x00000000
logon_count    : 0x00000000
padding1[0..7] ...
logon_hrs[0..21] ...
rpcclient $>

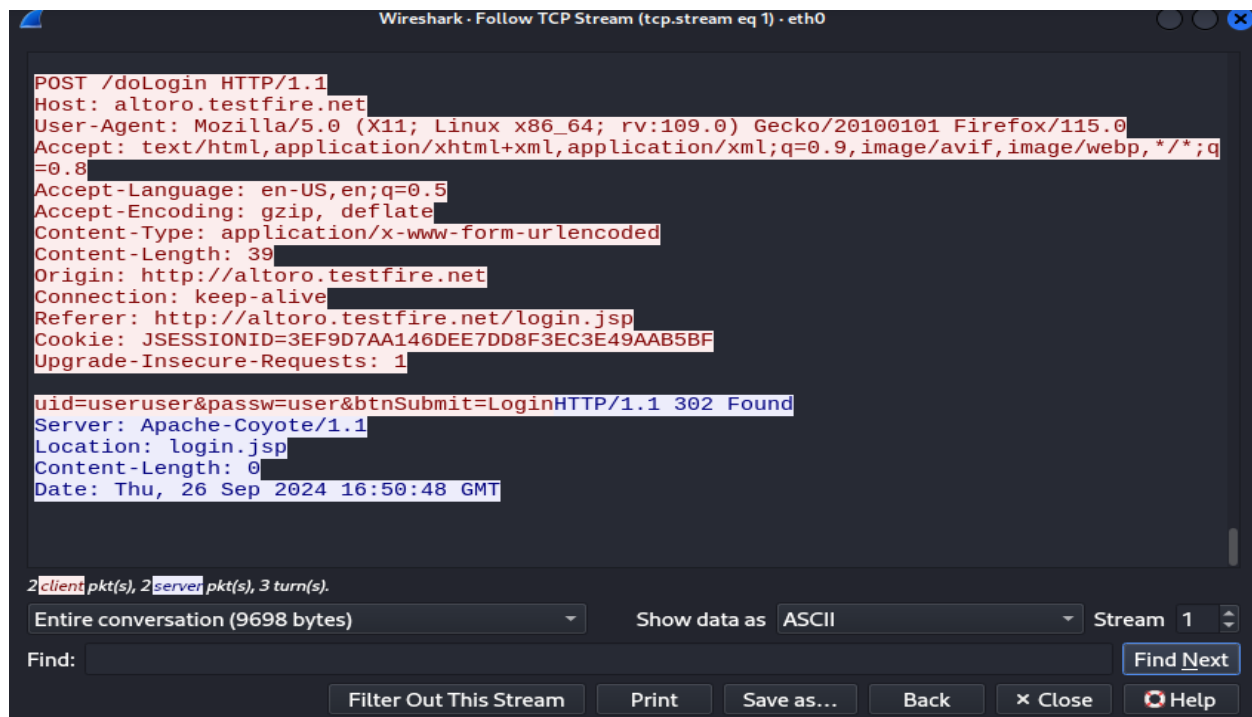
```

4) Sniff the data of any application using wireshark

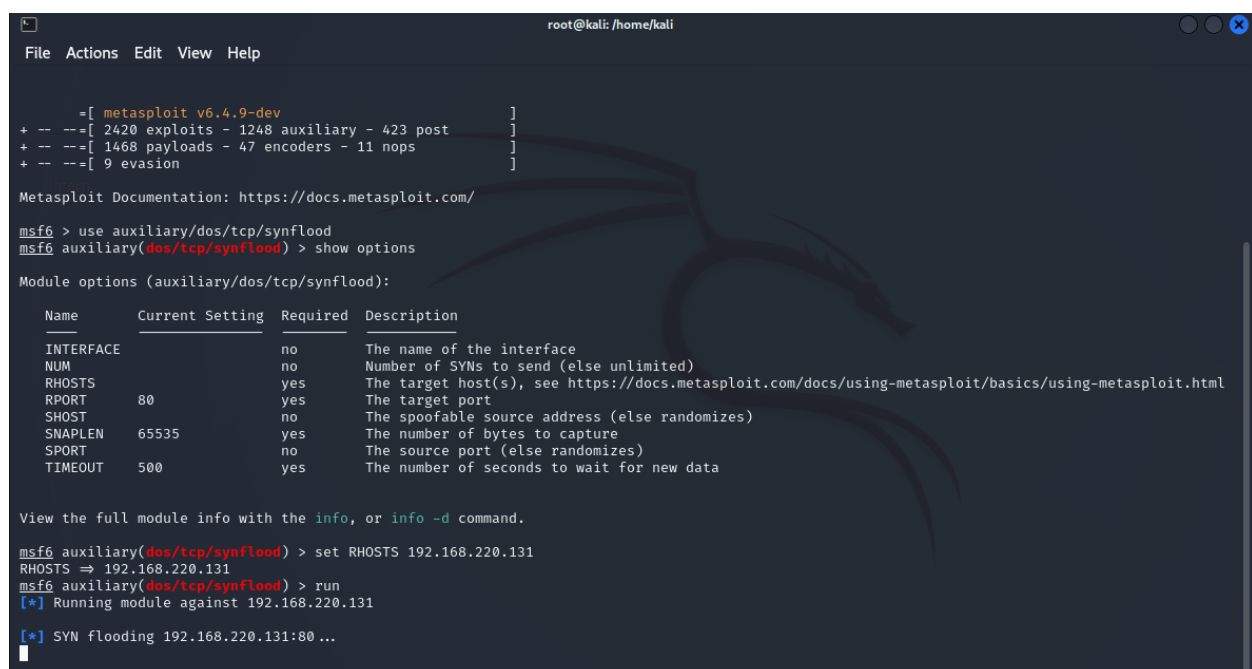
The screenshot shows a Kali Linux virtual machine environment. In the foreground, Wireshark is running on the interface `eth0`, capturing traffic from the IP address `65.61.137.117`. The packet list shows several TCP and HTTP packets. The selected packet (Frame 1) is a TCP segment with source port 56182 and destination port 80. The packet details show it's a FIN, ACK segment. In the background, a web browser is open to the URL `altoro.testfire.net/login.jsp`, displaying the 'Altoro Mutual Online Banking Login' page. The page has a 'Login Failed' message and input fields for Username and Password.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	192.168.228.128	65.61.137.117	TCP	54	56182 → 80 [FIN, ACK] Seq=1 Ack=1 W
2	0.001855439	65.61.137.117	192.168.228.128	TCP	60	80 → 56182 [ACK] Seq=1 Ack=2 Win=64
3	0.123190767	192.168.228.128	65.61.137.117	TCP	74	56196 → 80 [SYN] Seq=0 Win=32128 Le
4	0.417827629	65.61.137.117	192.168.228.128	TCP	60	80 → 56182 [FIN, PSH, ACK] Seq=1 Ac
5	0.417930826	192.168.228.128	65.61.137.117	TCP	54	56182 → 80 [ACK] Seq=2 Ack=2 Win=32
6	0.509403929	192.168.228.128	65.61.137.117	TCP	74	56204 → 80 [SYN] Seq=0 Win=32128 Le
7	0.524377044	65.61.137.117	192.168.228.128	TCP	60	80 → 56196 [SYN, ACK] Seq=0 Ack=1 W
8	0.524534339	192.168.228.128	65.61.137.117	TCP	54	56196 → 80 [ACK] Seq=1 Ack=1 Win=32
9	0.929666588	65.61.137.117	192.168.228.128	TCP	60	80 → 56204 [SYN, ACK] Seq=0 Ack=1 W
10	0.929881281	192.168.228.128	65.61.137.117	TCP	54	56204 → 80 [ACK] Seq=1 Ack=1 Win=32
27	3.056864408	192.168.228.128	65.61.137.117	HTTP	497	GET /login.jsp HTTP/1.1
28	3.057527286	65.61.137.117	192.168.228.128	TCP	60	80 → 56196 [ACK] Seq=1 Ack=444 Win=
29	3.502975358	65.61.137.117	192.168.228.128	HTTP	8588	HTTP/1.1 200 OK (text/html)
30	3.503116054	192.168.228.128	65.61.137.117	TCP	54	56196 → 80 [ACK] Seq=444 Ack=8535 W
31	6.046947797	192.168.228.128	65.61.137.117	TCP	54	56204 → 80 [FIN, ACK] Seq=1 Ack=1 W
32	6.047428282	65.61.137.117	192.168.228.128	TCP	60	80 → 56204 [ACK] Seq=1 Ack=2 Win=64

Frame 1: 54 bytes on wire (432 bits), 54 bytes captured (Ethernet II, Src: VMware_e9:91:69 (00:0c:29:e9:91:69), Ds Internet Protocol Version 4, Src: 192.168.228.128, Dst: 65.61.137.117, Transmission Control Protocol, Src Port: 56182, Dst Port: 80)



5) Perform DOS attack using Metasploit framework



KaliMetasploitable2-Linux

1234

eth0

FileEditViewGoCaptureAnalyzeStatisticsTelephonyWirelessToolsHelp

Apply a display filter ... <Ctrl-/>

+

No.	Time	Source	Destination	Protocol	Length	Info
8261	12.373980183	192.168.220.131	104.128.20.150	TCP	60	80 → 19333 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
8262	12.374005804	104.128.20.150	192.168.220.131	TCP	60	19333 → 80 [RST] Seq=1 Win=32767 Len=0
8263	12.376915098	104.128.20.150	192.168.220.131	TCP	54	4254 → 80 [SYN] Seq=0 Win=46 Len=0
8264	12.377707096	192.168.220.131	104.128.20.150	TCP	60	80 → 4254 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
8265	12.377731796	104.128.20.150	192.168.220.131	TCP	60	4254 → 80 [RST] Seq=1 Win=32767 Len=0
8266	12.379804592	104.128.20.150	192.168.220.131	TCP	54	43391 → 80 [SYN] Seq=0 Win=756 Len=0
8267	12.380897190	192.168.220.131	104.128.20.150	TCP	60	80 → 43391 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
8268	12.380922590	104.128.20.150	192.168.220.131	TCP	60	43391 → 80 [RST] Seq=1 Win=32767 Len=0
8269	12.382871886	104.128.20.150	192.168.220.131	TCP	54	13343 → 80 [SYN] Seq=0 Win=2162 Len=0
8270	12.383904584	192.168.220.131	104.128.20.150	TCP	60	80 → 13343 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
8271	12.383930384	104.128.20.150	192.168.220.131	TCP	60	13343 → 80 [RST] Seq=1 Win=32767 Len=0
8272	12.385857280	104.128.20.150	192.168.220.131	TCP	54	39362 → 80 [SYN] Seq=0 Win=1445 Len=0
8273	12.387876476	192.168.220.131	104.128.20.150	TCP	60	80 → 39362 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
8274	12.387908876	104.128.20.150	192.168.220.131	TCP	60	39362 → 80 [RST] Seq=1 Win=32767 Len=0

Frame 1: 54 bytes on wire (432 bits), 54 bytes captured (432 bits) on interface eth0, id 0000

Ethernet II, Src: VMware_e9:91:69 (00:0c:29:e9:91:69), Dst: VMware_fa:dd:2a (00:0c:29:fa:dd:2a)

Internet Protocol Version 4, Src: 104.128.20.150, Dst: 192.168.220.131

Transmission Control Protocol, Src Port: 45646, Dst Port: 80, Seq: 0, Len: 0

0000 00 0c 29 fa dd 2a 00 0c 29 e9 91 69 08 00 45 00 ..).*. .i.E

0010 00 28 c8 ef 00 00 c1 06 16 9e 68 00 14 96 c0 a8 (.....h....

0020 dc 83 b2 4e 00 50 b8 7e f3 e5 00 00 00 50 02 ...N.P.~.....P

0030 03 c0 32 dd 00 00 ..2...

wireshark_eth0SSJYU2.pcapngPackets: 8317 - Displayed: 8317 (100.0%) - Dropped: 0 (0.0%)Profile: Default