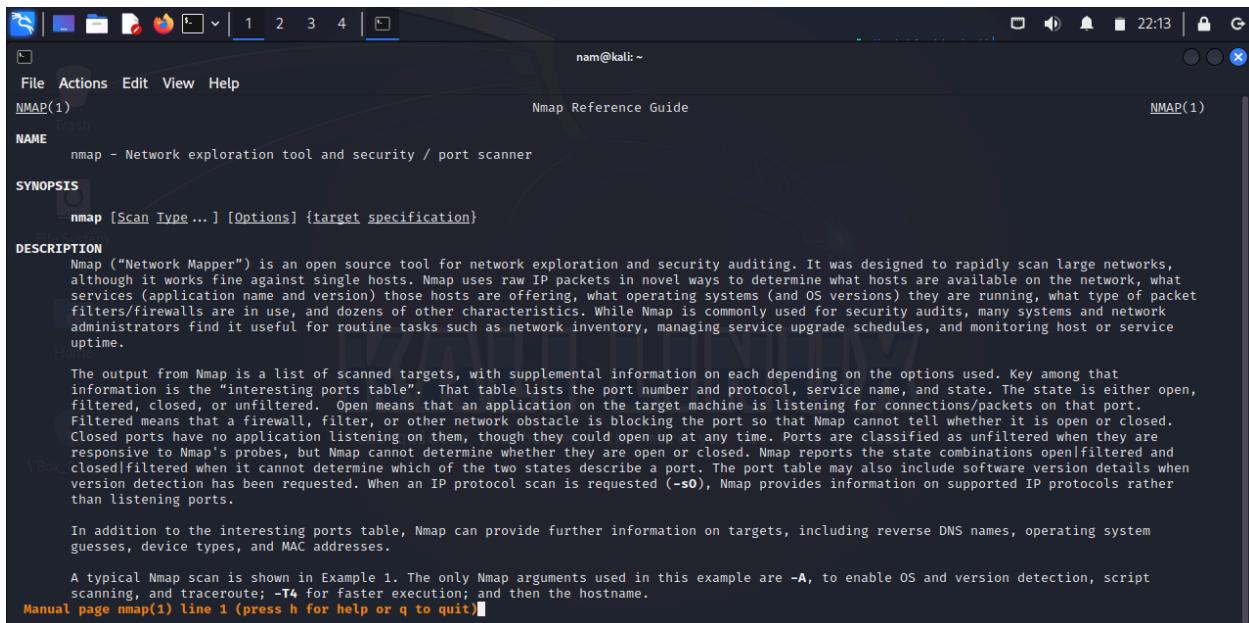


## 16.01

### Kali



```
nam@kali: ~
File Actions Edit View Help
Nmap 7.94 ( https://nmap.org )
Usage: nmap [Scan Type(s)] [Options] {target specification}
TARGET SPECIFICATION:
  Can pass hostnames, IP addresses, networks, etc.
  Ex: scanme.nmap.org, microsoft.com/24, 192.168.0.1; 10.0.0-255.1-254
  -iL <inputfilename>: Input from list of hosts/networks
  -iR <num hosts>: Choose random targets
  --exclude <host1[,host2][,host3], ...>: Exclude hosts/networks
  --excludefile <exclude_file>: Exclude list from file
HOST DISCOVERY:
  -sL: List Scan - simply list targets to scan
  -sn: Ping Scan - disable port scan
  -Pn: Treat all hosts as online -- skip host discovery
  -PS/PA/PU/PY[portlist]: TCP SYN/ACK, UDP or SCTP discovery to given ports
  -PE/PP/PM: ICMP echo, timestamp, and netmask request discovery probes
  -PO[protocol list]: IP Protocol Ping
  -n/-R: Never do DNS resolution/Always resolve [default: sometimes]
  --dns-servers <serv1[,serv2], ...>: Specify custom DNS servers
  --system-dns: Use OS's DNS resolver
  --traceroute: Trace hop path to each host
SCAN TECHNIQUES:
  -SS/S/T/SA/sW/sM: TCP SYN/Connect()/ACK/Window/Maimon scans you become, the more you are able to hear"
  -sU: UDP Scan
  -sN/sF/sX: TCP Null, FIN, and Xmas scans
  --scanflags <flags>: Customize TCP scan flags
  -sI <zombie host[:probeport]>: Idle scan
  -sV/sZ: SCTP INIT/COOKIE-ECHO scans
  -sO: IP protocol scan
  -b <FTP relay host>; FTP bounce scan
PORT SPECIFICATION AND SCAN ORDER:
  -p <port ranges>: Only scan specified ports
  Ex: -p22; -p1-65535; -p U:53,111,137,T:21-25,80,139,8080,S:9
:
```



NMAP(1) NMAP(1)

**NAME**  
nmap - Network exploration tool and security / port scanner

**SYNOPSIS**  
`nmap [Scan Type ...] [Options] {target specification}`

**DESCRIPTION**  
Nmap ("Network Mapper") is an open source tool for network exploration and security auditing. It was designed to rapidly scan large networks, although it works fine against single hosts. Nmap uses raw IP packets in novel ways to determine what hosts are available on the network, what services (application name and version) those hosts are offering, what operating systems (and OS versions) they are running, what type of packet filters/firewalls are in use, and dozens of other characteristics. While Nmap is commonly used for security audits, many systems and network administrators find it useful for routine tasks such as network inventory, managing service upgrade schedules, and monitoring host or service uptime.

The output from Nmap is a list of scanned targets, with supplemental information on each depending on the options used. Key among that information is the "interesting ports table". That table lists the port number and protocol, service name, and state. The state is either open, filtered, closed, or unfiltered. Open means that an application on the target machine is listening for connections/packets on that port. Filtered means that a firewall, filter, or other network obstacle is blocking the port so that Nmap cannot tell whether it is open or closed. Closed ports have no application listening on them, though they could open up at any time. Ports are classified as unfiltered when they are responsive to Nmap's probes, but Nmap cannot determine whether they are open or closed. Nmap reports the state combinations open/filter and closed/filter when it cannot determine which of the two states describe a port. The port table may also include software version details when version detection has been requested. When an IP protocol scan is requested (-sO), Nmap provides information on supported IP protocols rather than listening ports.

In addition to the interesting ports table, Nmap can provide further information on targets, including reverse DNS names, operating system guesses, device types, and MAC addresses.

A typical Nmap scan is shown in Example 1. The only Nmap arguments used in this example are -A, to enable OS and version detection, script scanning, and traceroute; -T4 for faster execution; and then the hostname.

Manual page `nmap(1)` line 1 (press h for help or q to quit)



KALI LINUX  
"the quieter you become, the more you are able to hear"

```
nam@kali: ~
File Actions Edit View Help
valid_lft 2592000sec preferred_lft 604800sec
inet6 fe80::a00:27ff:fedb:712a/64 scope link noprefixroute
    valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state
  DOM group default
link/ether 02:42:32:18:5e:75 brd ff:ff:ff:ff:ff:ff
  inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
    valid_lft forever preferred_lft forever

(nam@kali)-[~]
$ sudo nmap -sS 192.168.1.4
[sudo] password for nam:
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 10:48 EDT
Nmap scan report for 192.168.1.4
Host is up (0.00045s latency).
Not shown: 996 closed tcp ports (reset)
PORT      STATE SERVICE
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds
5357/tcp  open  wsddapi
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 13.15 seconds

(nam@kali)-[~]
$
```



KALI LINUX  
"the quieter you become, the more you are able to hear"

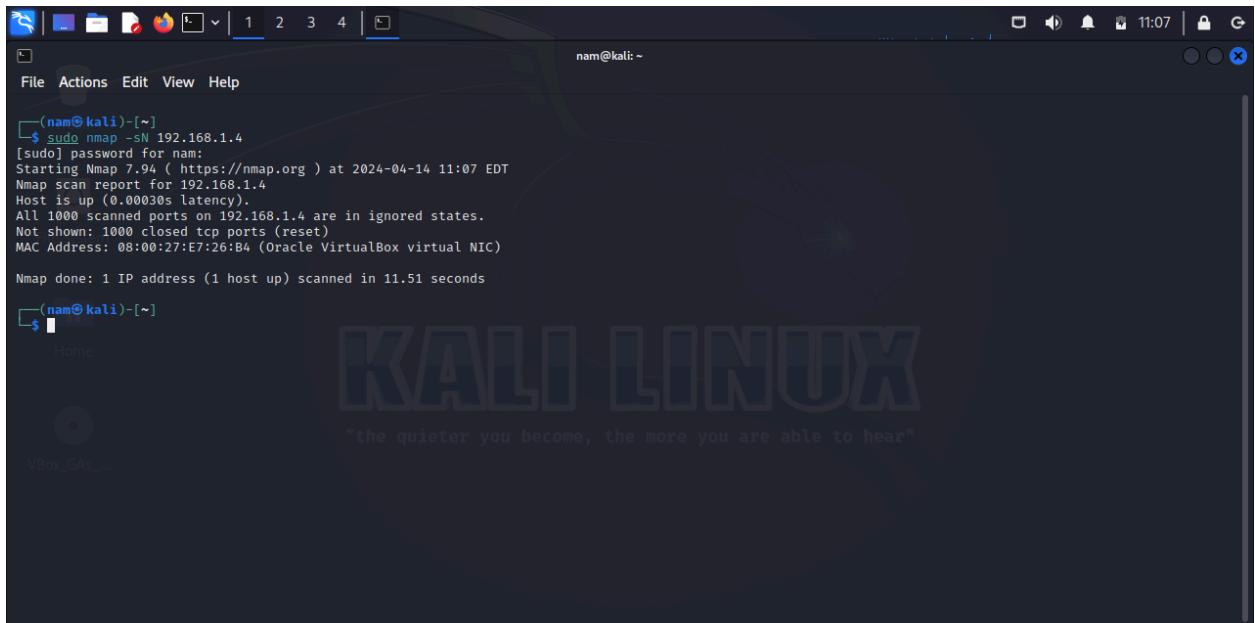
```
nam@kali: ~
File Actions Edit View Help
(nam@kali)-[~]
$ sudo nmap -sS 192.168.1.4
[sudo] password for nam:
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 10:48 EDT
Nmap scan report for 192.168.1.4
Host is up (0.00045s latency).
Not shown: 996 closed tcp ports (reset)
PORT      STATE SERVICE
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds
5357/tcp  open  wsddapi
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 13.15 seconds

(nam@kali)-[~]
$ nmap 192.168.1.4
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:04 EDT
Nmap scan report for 192.168.1.4
Host is up (0.00052s latency).
Not shown: 996 closed tcp ports (conn-refused)
PORT      STATE SERVICE
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds
5357/tcp  open  wsddapi

Nmap done: 1 IP address (1 host up) scanned in 12.54 seconds

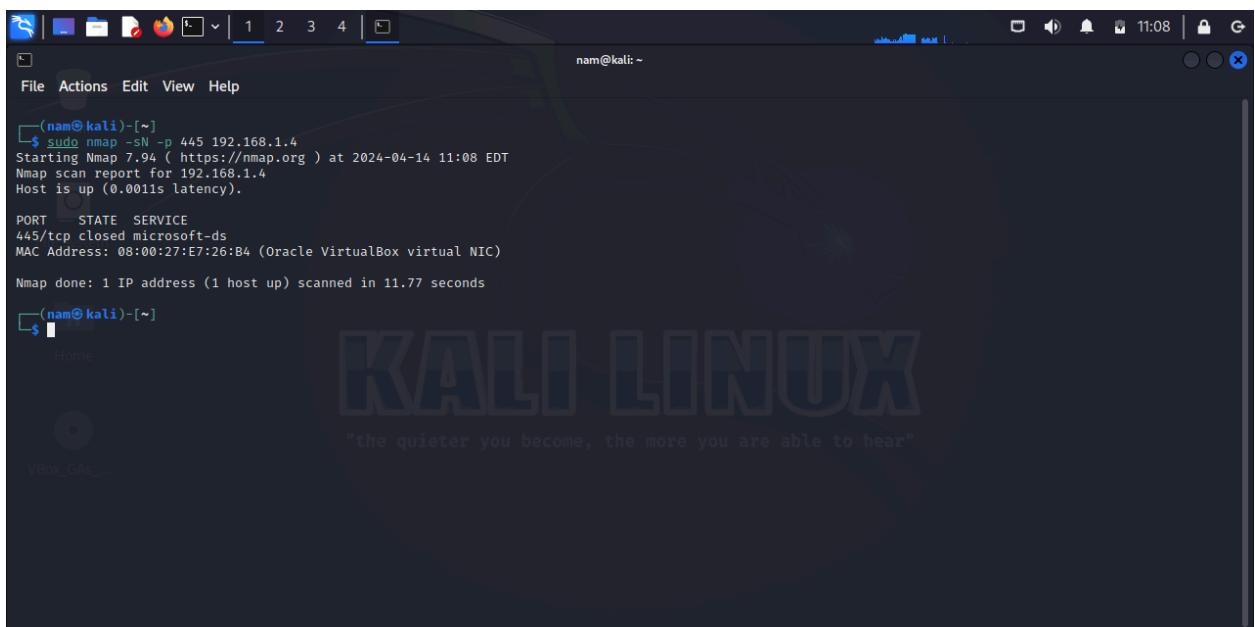
(nam@kali)-[~]
$
```



Kali Linux desktop environment showing a terminal window with Nmap scan results for IP 192.168.1.4.

```
(nam㉿kali)-[~]
$ sudo nmap -SN 192.168.1.4
[sudo] password for nam:
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:07 EDT
Nmap scan report for 192.168.1.4
Host is up (0.00030s latency).
All 1000 scanned ports on 192.168.1.4 are in ignored states.
Not shown: 1000 closed tcp ports (reset)
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 11.51 seconds
```

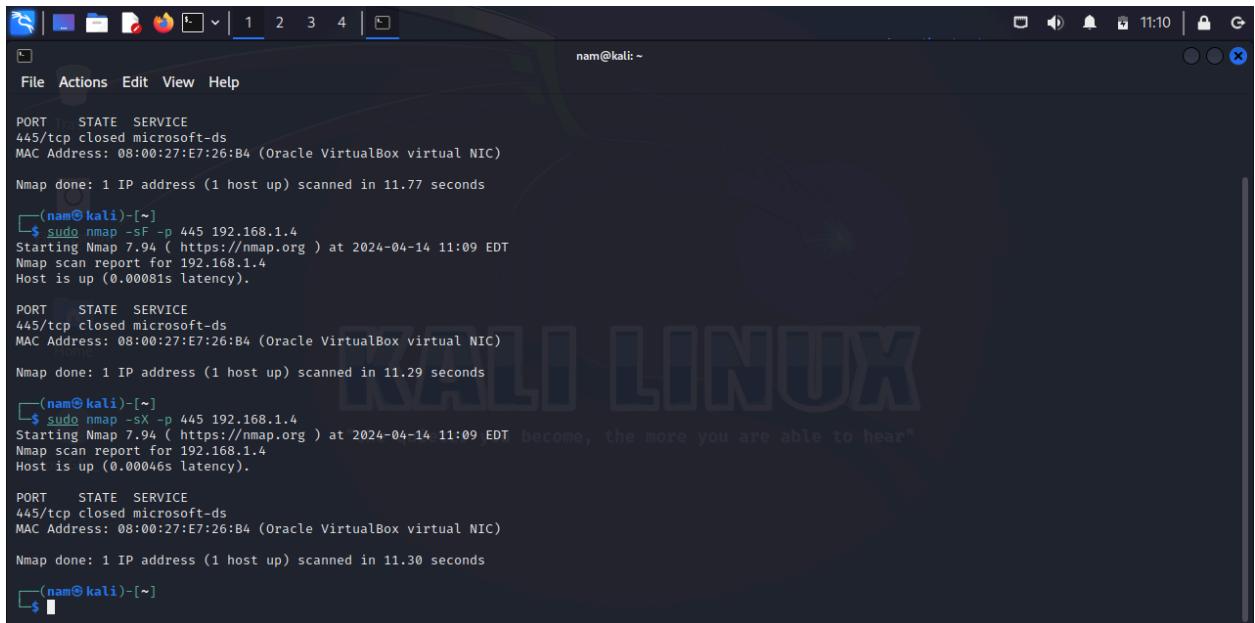


Kali Linux desktop environment showing a terminal window with Nmap scan results for port 445 on IP 192.168.1.4.

```
(nam㉿kali)-[~]
$ sudo nmap -SN -p 445 192.168.1.4
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:08 EDT
Nmap scan report for 192.168.1.4
Host is up (0.0011s latency).

PORT      STATE SERVICE
445/tcp    closed microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 11.77 seconds
```



Kali Linux desktop environment showing a terminal window with Nmap scan results for port 445.

```
nam@kali: ~
PORT      STATE SERVICE
445/tcp    closed microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 11.77 seconds

[nam@kali]-(~)
$ sudo nmap -sF -p 445 192.168.1.4
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:09 EDT
Nmap scan report for 192.168.1.4
Host is up (0.00081s latency).

PORT      STATE SERVICE
445/tcp    closed microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

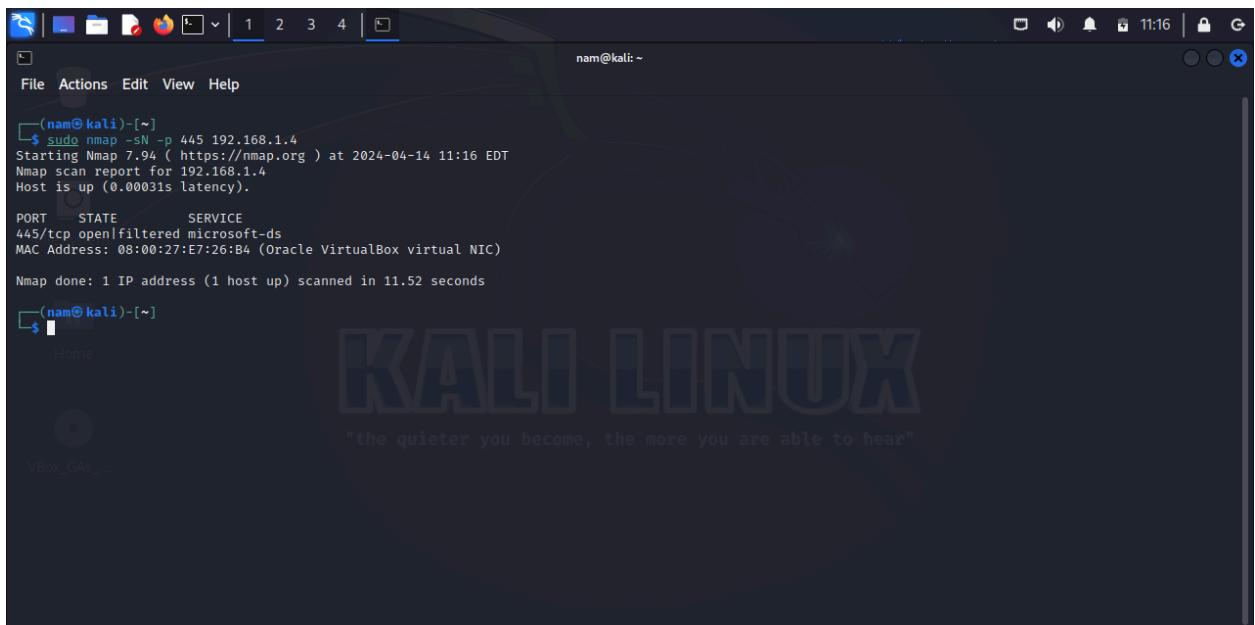
Nmap done: 1 IP address (1 host up) scanned in 11.29 seconds

[nam@kali]-(~)
$ sudo nmap -sX -p 445 192.168.1.4
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:09 EDT "become, the more you are able to hear"
Nmap scan report for 192.168.1.4
Host is up (0.00046s latency).

PORT      STATE SERVICE
445/tcp    closed microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 11.30 seconds

[nam@kali]-(~)
$
```



Kali Linux desktop environment showing a terminal window with Nmap scan results for port 445.

```
nam@kali: ~
PORT      STATE SERVICE
445/tcp open|filtered microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 11.52 seconds

[nam@kali]-(~)
$
```

```

nam@kali: ~
File Actions Edit View Help
└$ sudo nmap -sN -p 445 192.168.1.4
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:16 EDT
Nmap scan report for 192.168.1.4
Host is up (0.0003s latency).

PORT      STATE     SERVICE
445/tcp    open|filtered microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 11.52 seconds

(nam@kali)-[~]
└$ sudo nmap -sf -p 445 192.168.1.4
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:16 EDT
Nmap scan report for 192.168.1.4
Host is up (0.00024s latency).

PORT      STATE     SERVICE
445/tcp    open|filtered microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 11.88 seconds

(nam@kali)-[~]
└$ sudo nmap -Sx -p 445 192.168.1.4
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:17 EDT
Nmap scan report for 192.168.1.4
Host is up (0.00030s latency).

PORT      STATE     SERVICE
445/tcp    open|filtered microsoft-ds
MAC Address: 08:00:27:E7:26:B4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 12.32 seconds

(nam@kali)-[~]

```

```

nam@kali: ~
File Actions Edit View Help
[(nam@kali)-[~]](https://nmap.org) at 2024-04-14 11:16 EDT
[sudo] password for nam:
** ( Wireshark: 1 ) '/tmp/runtime-root'
Capturing from eth0
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter ...<Ctrl-/>
No. Time Source Destination Protocol Length Info
10 1.040141729 192.168.1.1 239.255.255.250 SSDP 421 NOTIFY * HTTP/1.1
11 1.150213606 192.168.1.1 239.255.255.250 SSDP 341 NOTIFY * HTTP/1.1
12 1.269364981 192.168.1.1 239.255.255.250 SSDP 350 NOTIFY * HTTP/1.1
13 1.379318354 192.168.1.1 239.255.255.250 SSDP 393 NOTIFY * HTTP/1.1
14 1.499672496 192.168.1.1 239.255.255.250 SSDP 407 NOTIFY * HTTP/1.1
15 1.609419747 192.168.1.1 239.255.255.250 SSDP 405 NOTIFY * HTTP/1.1
16 1.729224623 192.168.1.1 239.255.255.250 SSDP 421 NOTIFY * HTTP/1.1
17 1.839789782 192.168.1.1 239.255.255.250 SSDP 341 NOTIFY * HTTP/1.1
18 1.948938128 192.168.1.1 239.255.255.250 SSDP 350 NOTIFY * HTTP/1.1
Frame 1: 393 bytes on wire (3144 bits), 393 bytes captured on wire (3144 bits) on interface eth0
Ethernet II, Src: VnptTech_cd:a0:20 (ad:f4:c0), Dst: Microsoft-DNS (08:00:27:e7:26:b4)
Internet Protocol Version 4, Src: 192.168.1.1 (192.168.1.1), Dst: 239.255.255.250 (239.255.255.250)
User Datagram Protocol, Src Port: 40301, Dst Port: 53 (Simple Service Discovery Protocol)
0000  01 00 5e 7f ff fa a4 f4 c2 cd a0 20 00
0010  01 7b 00 00 40 00 04 11 c3 ce c0 a8 00
0020  ff fa 9d 0d 07 6c 01 67 92 e3 4e 4f 50
0030  20 2a 20 48 54 54 50 2f 31 2e 31 0d 00
0040  54 3a 20 32 33 39 2e 32 35 35 2e 32 33
0050  35 30 3a 31 39 30 30 0d 0a 43 41 43 40
0060  4f 4e 54 52 4f 4c 3a 20 6d 61 78 2d 00
0070  31 38 30 30 0d 0a 4c 4f 43 41 54 49 40
0080  68 74 74 70 3a 2f 2f 31 39 32 2e 31 30
0090  2e 31 3a 31 32 33 34 35 2f 64 65 73 00
00a0  71 20 6c 20 30 01 00 00 00 00 00 00 00

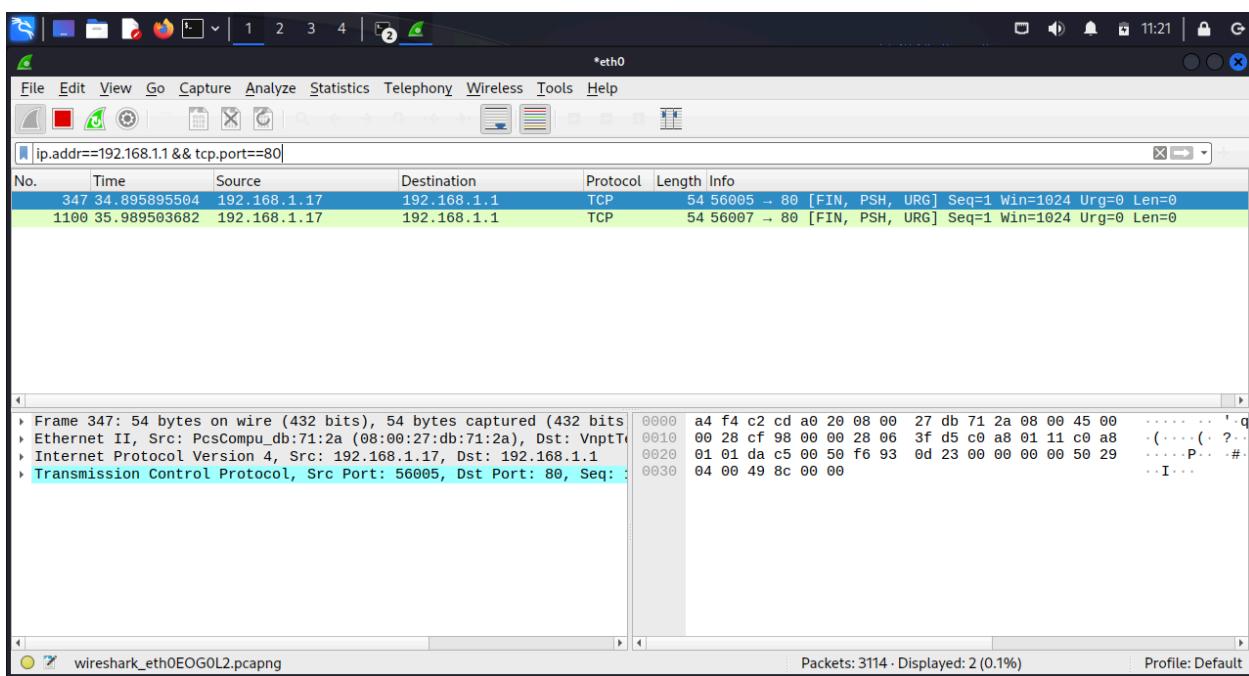
```

```

nam@kali: ~
$ sudo nmap -sX 192.168.1.1
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:20 EDT
Nmap scan report for 192.168.1.1
Host is up (0.0019s latency).
Not shown: 991 closed tcp ports (reset)
PORT      STATE    SERVICE
21/tcp    open|filtered  ftp
22/tcp    open|filtered  ssh
23/tcp    open|filtered  telnet
53/tcp    open|filtered  domain
80/tcp    open|filtered  http
161/tcp   open|filtered  snmp
443/tcp   open|filtered  https
5555/tcp  open|filtered  freeciv
12345/tcp open|filtered  netbus
MAC Address: A4:F4:C2:CD:A0:20 (Vnpt Technology)

Nmap done: 1 IP address (1 host up) scanned in 12.77 seconds

```



```
nam@kali: ~
File Actions Edit View Help Analyze Statistics Telephony Wireless Tools Help

Nmap scan report for 192.168.1.1
Host is up (0.0019s latency).
Not shown: 991 closed tcp ports (reset)
PORT      STATE      SERVICE
21/tcp    open|filtered  ftp
22/tcp    open|filtered  ssh
23/tcp    open|filtered  telnet
53/tcp    open|filtered  domain
80/tcp    open|filtered  http
161/tcp   open|filtered  snmp
443/tcp   open|filtered  https
5555/tcp  open|filtered  freeciv
12345/tcp open|filtered  netbus
MAC Address: A4:F4:C2:CD:A0:20 (Vnpt Technology)

Nmap done: 1 IP address (1 host up) scanned in 12.77 seconds

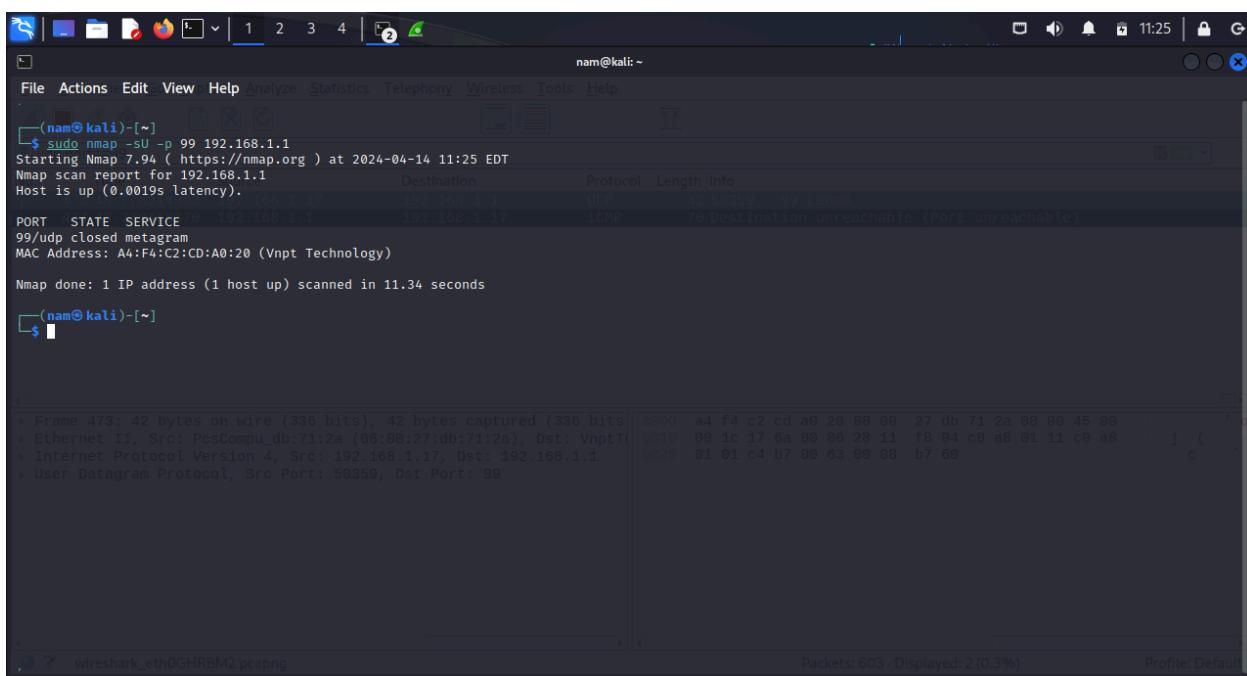
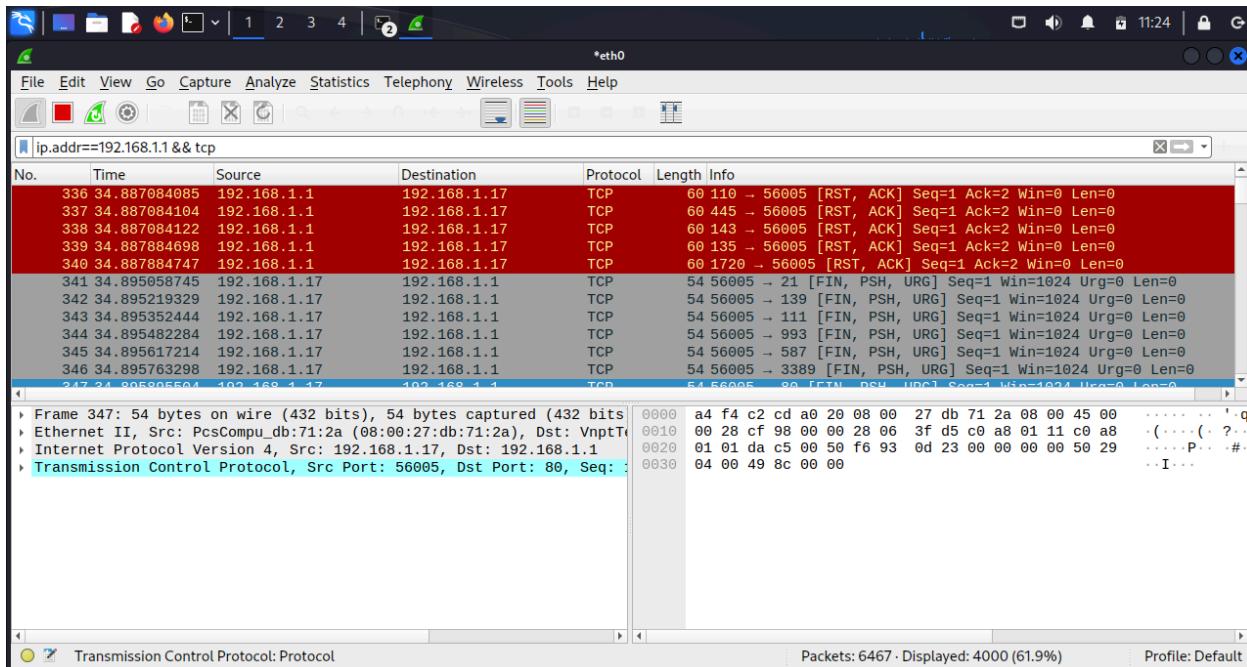
[nam@kali: ~]
$ sudo nmap -sA 192.168.1.1
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:22 EDT
Nmap scan report for 192.168.1.1
Host is up (0.0056s latency).
Not shown: 994 unfiltered tcp ports (reset)
PORT      STATE      SERVICEProtocol, Src Port: 56005, Dst Port: 80, Seq:
21/tcp    filtered  ftp
22/tcp    filtered  ssh
23/tcp    filtered  telnet
161/tcp   filtered  snmp
5555/tcp  filtered  freeciv
12345/tcp filtered  netbus
MAC Address: A4:F4:C2:CD:A0:20 (Vnpt Technology)

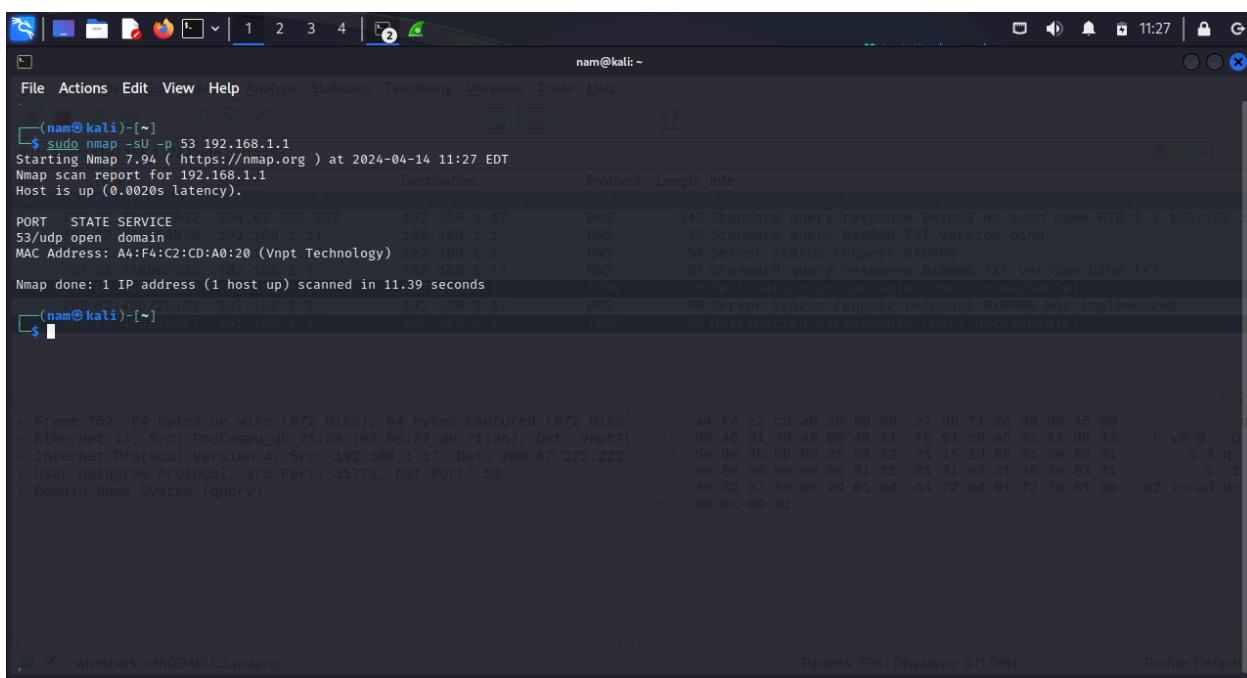
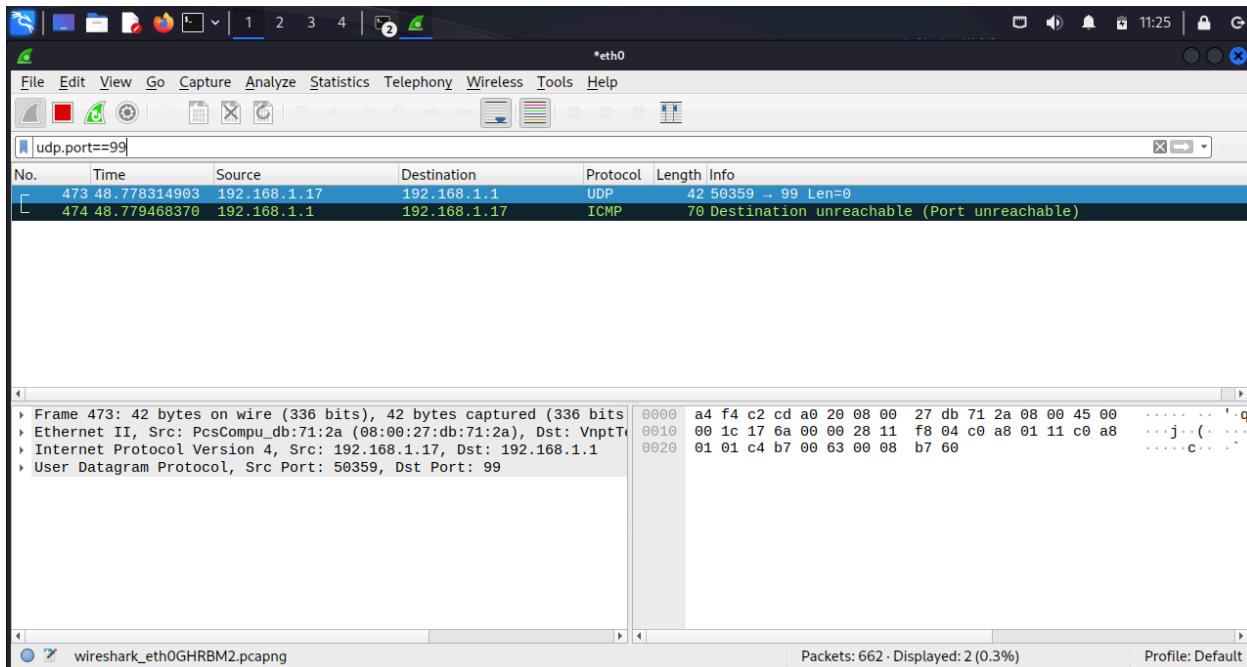
Nmap done: 1 IP address (1 host up) scanned in 12.75 seconds

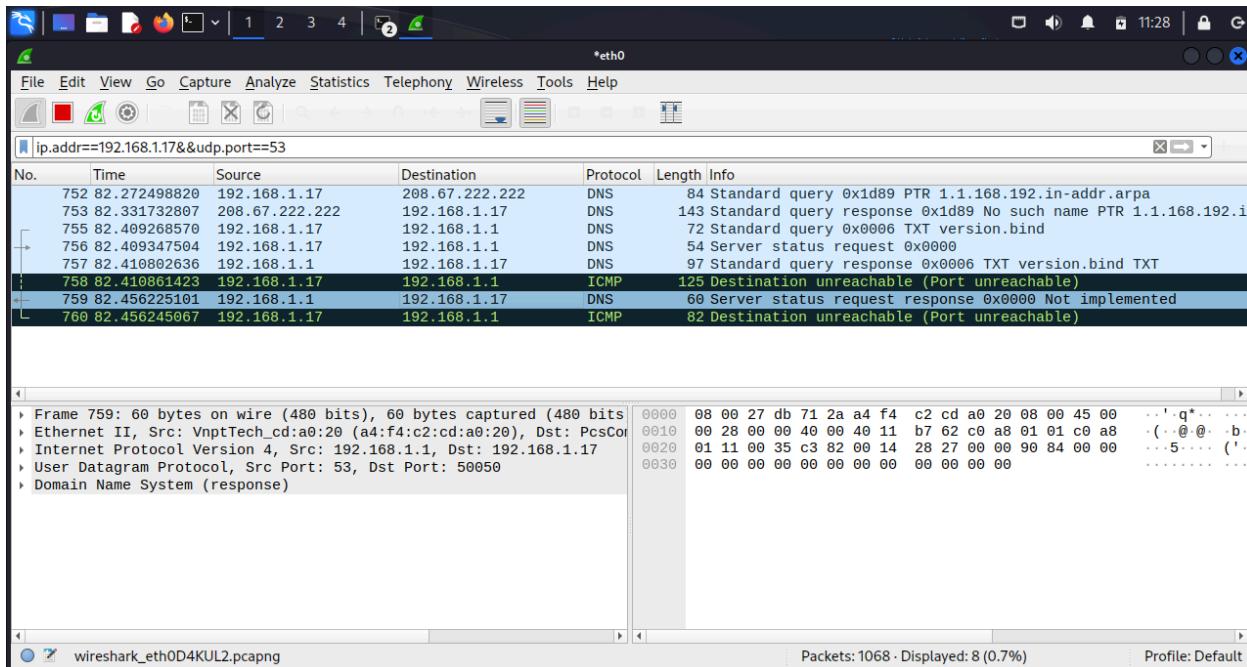
[nam@kali: ~]
$ wireshark_eth0EG0L2.pcapng
Packets: 5699 · Displayed: 4 (0.1%)
Profile: Default
```

The figure shows a Wireshark interface with the following details:

- Network Interface:** \*eth0
- Filter:** ip.addr==192.168.1.1 & tcp.port==80
- Packets:** 6061 · Displayed: 4 (0.1%)
- Selected Packet (Frame 347):**
  - Source:** 192.168.1.17
  - Destination:** 192.168.1.1
  - Protocol:** TCP
  - Length:** 54
  - Info:** 54 56005 → 80 [FIN, PSH, URG] Seq=1 Win=1024 Urg=0 Len=0
- Hex View:** Shows the raw bytes of the selected packet.
- Selected Bytes:** a4 f4 c2 cd a0 20 08 00 27 db 71 2a 08 00 45 00 0010 00 28 cf 98 00 00 28 06 3f d5 c0 a8 01 11 c0 a8 0020 01 01 da c5 00 50 f6 93 0d 23 00 00 00 00 50 29 0030 04 00 49 8c 00 00



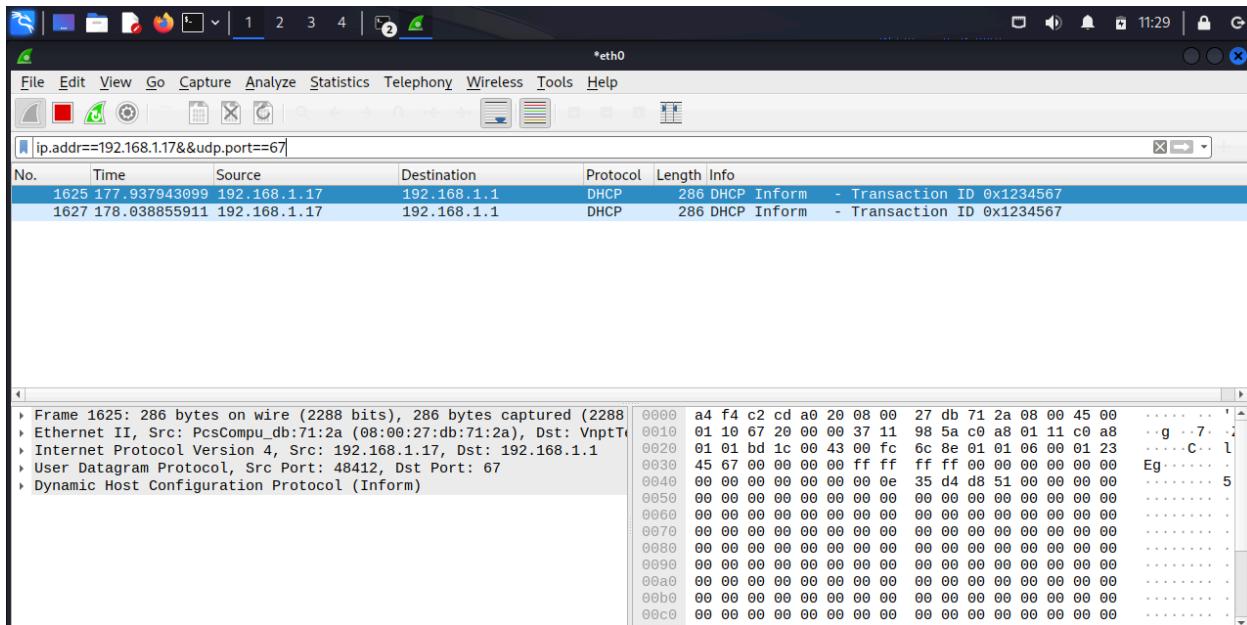




```

nam@kali:[~]
$ sudo nmap -sU -p 53 192.168.1.1
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:27 EDT
Nmap scan report for 192.168.1.1
Host is up (0.0020s latency).
PORT      STATE SERVICE
53/udp    open  domain
MAC Address: A4:F4:C2:CD:A0:20 (Vnpt Technology)
Nmap done: 1 IP address (1 host up) scanned in 11.39 seconds
nam@kali:[~]
$ sudo nmap -sU -p 67 192.168.1.1
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 11:28 EDT
Nmap scan report for 192.168.1.1
Host is up (0.0022s latency).
PORT      STATE SERVICE
67/udp    open/filtered dhcps
MAC Address: A4:F4:C2:CD:A0:20 (Vnpt Technology)
Nmap done: 1 IP address (1 host up) scanned in 11.55 seconds
nam@kali:[~]
$ 

```



```

nam@kali:~$ nmap -v scanme.nmap.org
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 12:08 EDT
Initiating Ping Scan at 12:08
Scanning scanme.nmap.org (45.33.32.156) [2 ports]
Completed Ping Scan at 12:08, 0.17s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 12:08
Completed Parallel DNS resolution of 1 host. at 12:08, 12.32s elapsed
Initiating Connect Scan at 12:08
Scanning scanme.nmap.org (45.33.32.156) [1000 ports]
Discovered open port 80/tcp on 45.33.32.156
Discovered open port 22/tcp on 45.33.32.156
Discovered open port 9929/tcp on 45.33.32.156
Discovered open port 31337/tcp on 45.33.32.156
Completed Connect Scan at 12:08, 7.11s elapsed (1000 total ports)
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.19s latency).
Other addresses for scanme.nmap.org (not scanned): 2600:3c01::f03c:91ff:fe18:bb2f
Not shown: 996 closed tcp ports (conn-refused)
PORT      STATE SERVICE          PORT      STATE SERVICE
80/tcp    open  http
22/tcp    open  ssh
80/tcp    open  http
9929/tcp  open  nping-echo
31337/tcp open  Elite
Read data files from: /usr/bin/../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 19.84 seconds
[Timestamps]
nam@kali:~$ 
nam@kali:~$ Dynamic Host Configuration Protocol (Inform)

```

```
nam@kali: ~
File Actions Edit View Help Analyze Statistics Telephony Wireless Tools Help
[sudo] password for nam:
$ sudo nmap -sS -oN scanme.nmap.org/24
Starting Nmap 7.94 ( https://nmap.org ) at 2024-04-14 12:09 EDT
Stats: 0:02:50 elapsed; 52 hosts completed (64 up), 64 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 33.69% done; ETC: 12:17 (0:05:05 remaining)
Stats: 0:02:54 elapsed; 52 hosts completed (64 up), 64 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 34.31% done; ETC: 12:17 (0:05:04 remaining)
Stats: 0:04:35 elapsed; 52 hosts completed (64 up), 64 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 51.17% done; ETC: 12:18 (0:04:08 remaining)
Stats: 0:05:54 elapsed; 52 hosts completed (64 up), 64 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 64.30% done; ETC: 12:18 (0:03:08 remaining)
Nmap scan report for business-software.shop (45.33.32.4)
Host is up (0.19s latency).
Not shown: 997 filtered tcp ports (no-response)
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
443/tcp   closed https
Device type: general purpose|storage-misc|media device|WAP
Running (JUST GUESSING): Linux 5.X|4.X|2.6.X|3.X (98%), HP embedded (89%), Infomir embedded (88%), Ubiquiti embedded (88%)
OS CPE: cpe:/o:linux:linux_kernel:5 cpe:/o:linux:linux_kernel:4 cpe:/o:linux:linux_kernel:2.6 cpe:/o:linux:linux_kernel:3 cpe:/h:hp:p2000_g3 cpe:/h:infomir:mag-250 cpe:/o:linux:linux_kernel:2.6.32 cpe:/h:ubnt:airmax_nanostation
Aggressive OS guesses: Linux 5.0 - 5.4 (98%), Linux 4.15 - 5.8 (94%), Linux 2.6.32 - 3.13 (93%), Linux 2.6.39 (93%), Linux 5.0 - 5.5 (92%), Linux 5.1 (92%), Linux 2.6.22 - 2.6.36 (91%), Linux 3.10 - 4.11 (91%), Linux 5.0 (91%), Linux 2.6.32 (90%)
No exact OS matches for host (test conditions non-ideal).

Nmap scan report for 45-33-32-5.ip.linodeusercontent.com (45.33.32.5)
Host is up (0.19s latency).
Not shown: 996 filtered tcp ports (no-response)
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
443/tcp   closed https
8080/tcp  open  http-proxy
Device type: general purpose|storage-misc|WAP
Running (JUST GUESSING): Linux 5.X|4.X|2.6.X|3.X (97%), HP embedded (89%), Ubiquiti embedded (88%), Ubiquiti AirOS 5.X (88%)
OS CPE: cpe:/o:linux:linux_kernel:5 cpe:/o:linux:linux_kernel:4 cpe:/o:linux:linux_kernel:2.6 cpe:/o:linux:linux_kernel:3 cpe:/h:hp:p2000_g3 cpe:/o:linux:linux_kernel:2.6.32 cpe:/h:ubnt:airmax_nanostation cpe:/o:ubnt:airos:5.2.6
Aggressive OS guesses: Linux 5.0 - 5.4 (97%), Linux 4.15 - 5.8 (94%), Linux 5.0 - 5.5 (93%), Linux 5.1 (93%), Linux 2.6.32 - 3.13 (93%), Linux 2.6.39 (93%), Linux 2.6.22 - 2.6.36 (91%), Linux 3.10 (91%), Linux 3.10 - 4.11 (91%), Linux 5.0 (91%)
No exact OS matches for host (test conditions non-ideal).

Nmap scan report for 45-33-32-8.ip.linodeusercontent.com (45.33.32.8)
Host is up (0.18s latency).
Not shown: 998 closed tcp ports (reset)
PORT      STATE SERVICE
22/tcp    open  ssh
```

```
nam@kali:~
```

File Actions Edit View Help

Nmap scan report for 45-33-32-244.ip.linodeusercontent.com (45.33.32.244)  
Host is up (0.18s latency).  
Not shown: 999 filtered tcp ports (no-response)  
PORT STATE SERVICE  
22/tcp open ssh  
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port  
Device type: general purpose/storage-misc  
Running (JUST GUESSING): Linux 4.15[X]2.6[X]9.X (97%), Synology DiskStation Manager 5.X (88%)  
OS CPE: cpe:/o:linux:linux\_kernel:4 cpe:/o:linux:linux\_kernel:5 cpe:/o:linux:linux\_kernel:2.6.32 cpe:/o:linux:linux\_kernel:3 cpe:/a:synology:diskstation\_manager:5.2  
Aggressive OS guesses: Linux 4.15 - 5.8 (97%), Linux 5.0 - 5.4 (97%), Linux 5.0 - 5.5 (95%), Linux 2.6.32 (91%), Linux 3.10 - 4.11 (91%), Linux 3.2 - 4.9 (91%), Linux 3.4 - 3.1  
0 (91%), Linux 2.6.32 - 3.10 (91%), Linux 2.6.32 - 3.13 (91%), Linux 2.6.39 (91%)  
No exact OS matches for host (test conditions non-ideal).

Nmap scan report for 45-33-32-248.ip.linodeusercontent.com (45.33.32.248)  
Host is up (0.18s latency).  
Not shown: 999 closed tcp ports (reset)  
PORT STATE SERVICE  
22/tcp open ssh  
Device type: general purpose  
Running: Linux 5.X  
OS CPE: cpe:/o:linux:linux\_kernel:5  
OS details: Linux 5.0 - 5.4  
Network Distance: 17 hops

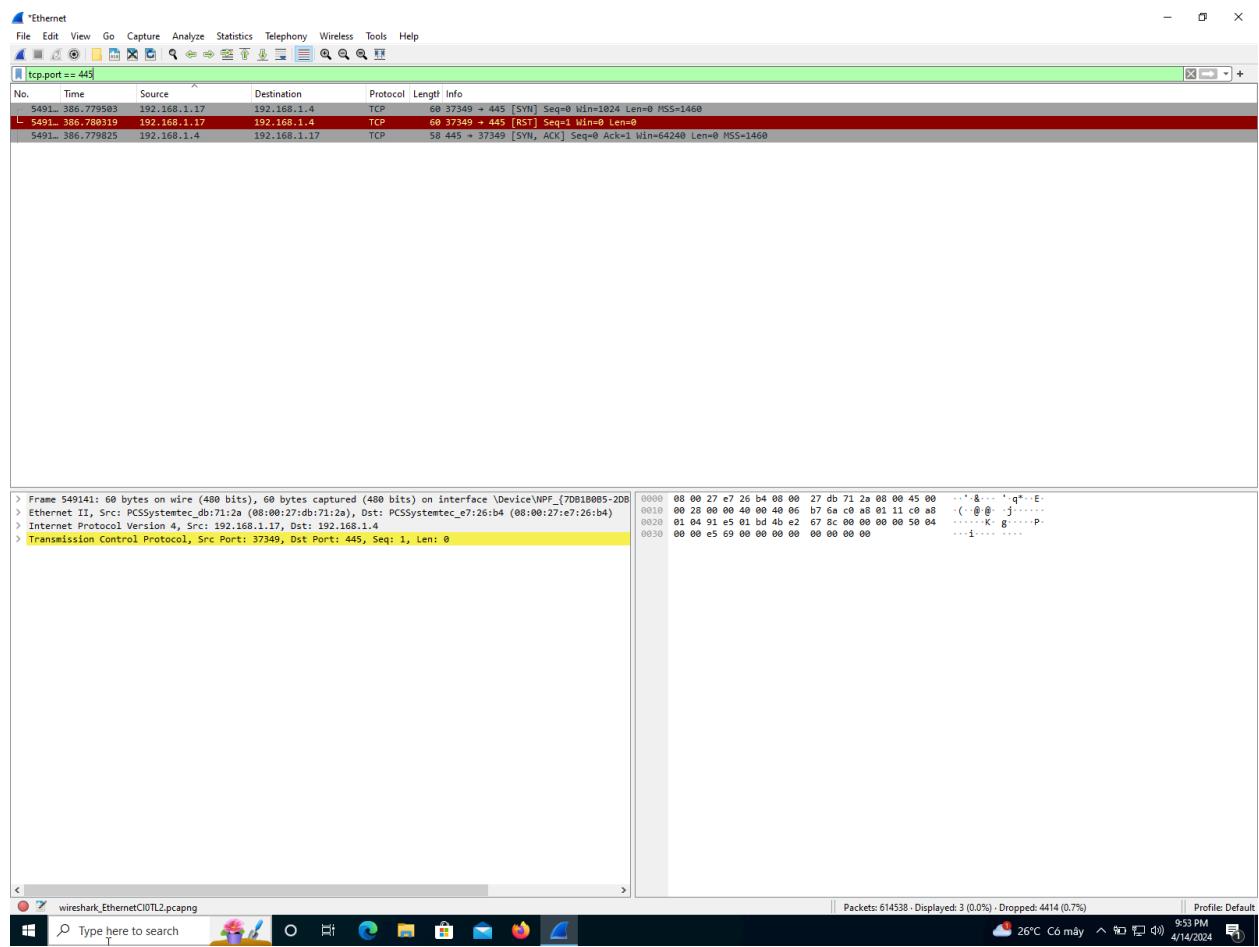
Nmap scan report for l1982-249.members.linode.com (45.33.32.249)  
Host is up (0.18s latency).  
Not shown: 999 closed tcp ports (reset)  
PORT STATE SERVICE  
3306/tcp open mysql  
Too many fingerprints match this host to give specific OS details  
Network Distance: 15 hops

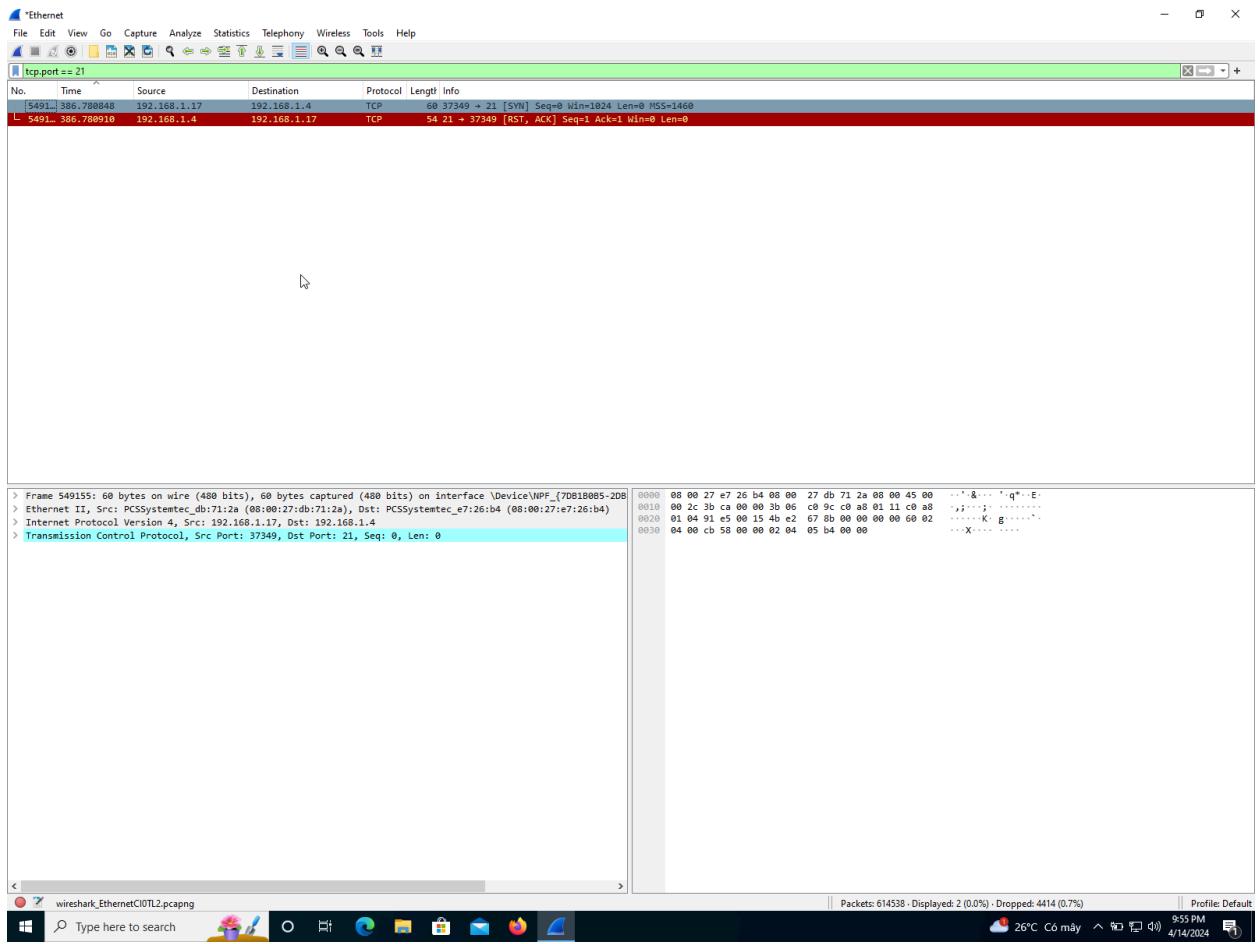
Nmap scan report for 45-33-32-250.ip.linodeusercontent.com (45.33.32.250)  
Host is up (0.19s latency).  
Not shown: 998 closed tcp ports (reset)  
PORT STATE SERVICE  
22/tcp open ssh  
443/tcp open https  
Device type: general purpose  
Running: Linux 5.X  
OS CPE: cpe:/o:linux:linux\_kernel:5  
OS details: Linux 5.0 - 5.4  
Network Distance: 15 hops

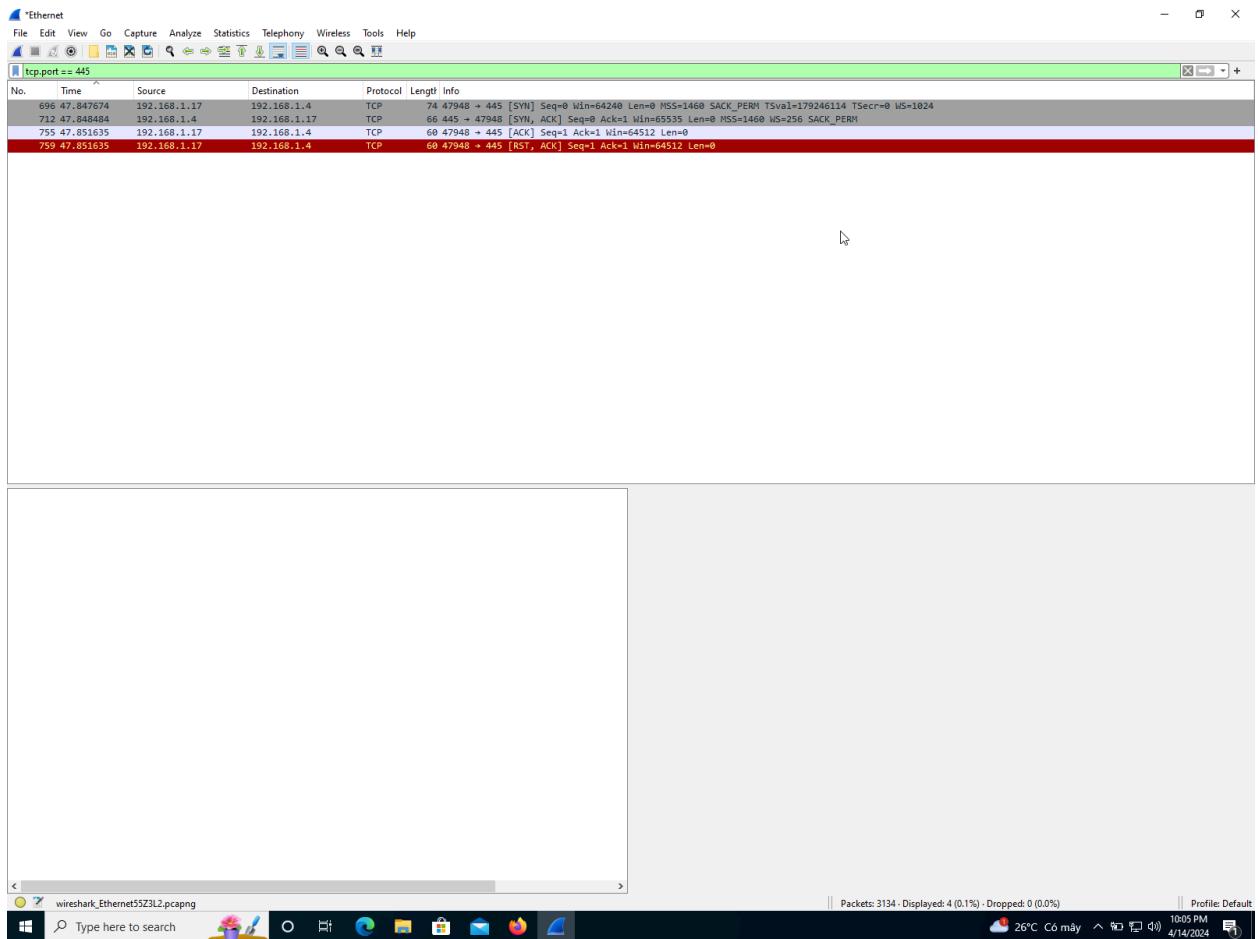
OS detection performed. Please report any incorrect results at <https://nmap.org/submit/>.  
Nmap done: 256 IP addresses (135 hosts up) scanned in 1282.47 seconds

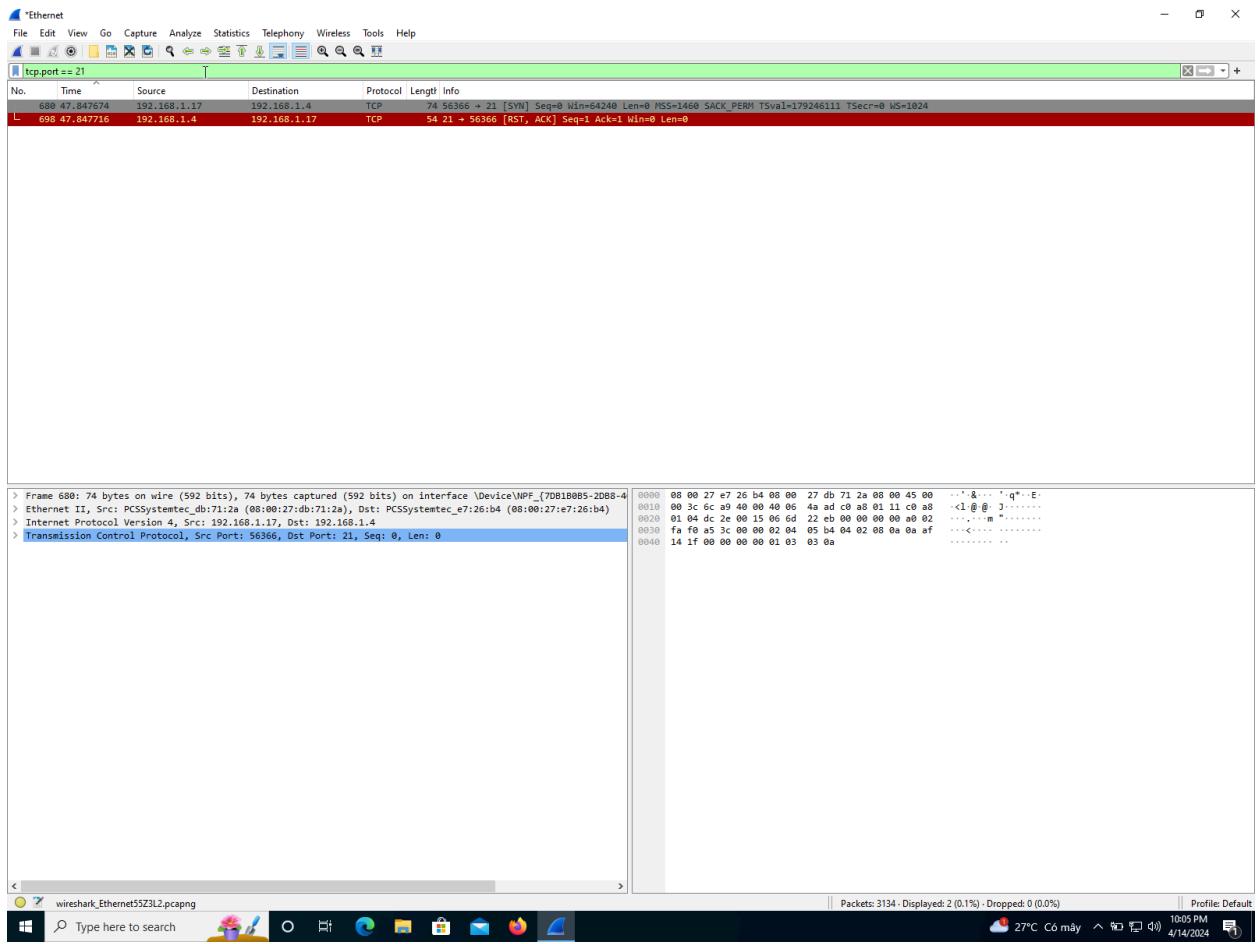
```
nam@kali:[~]
```

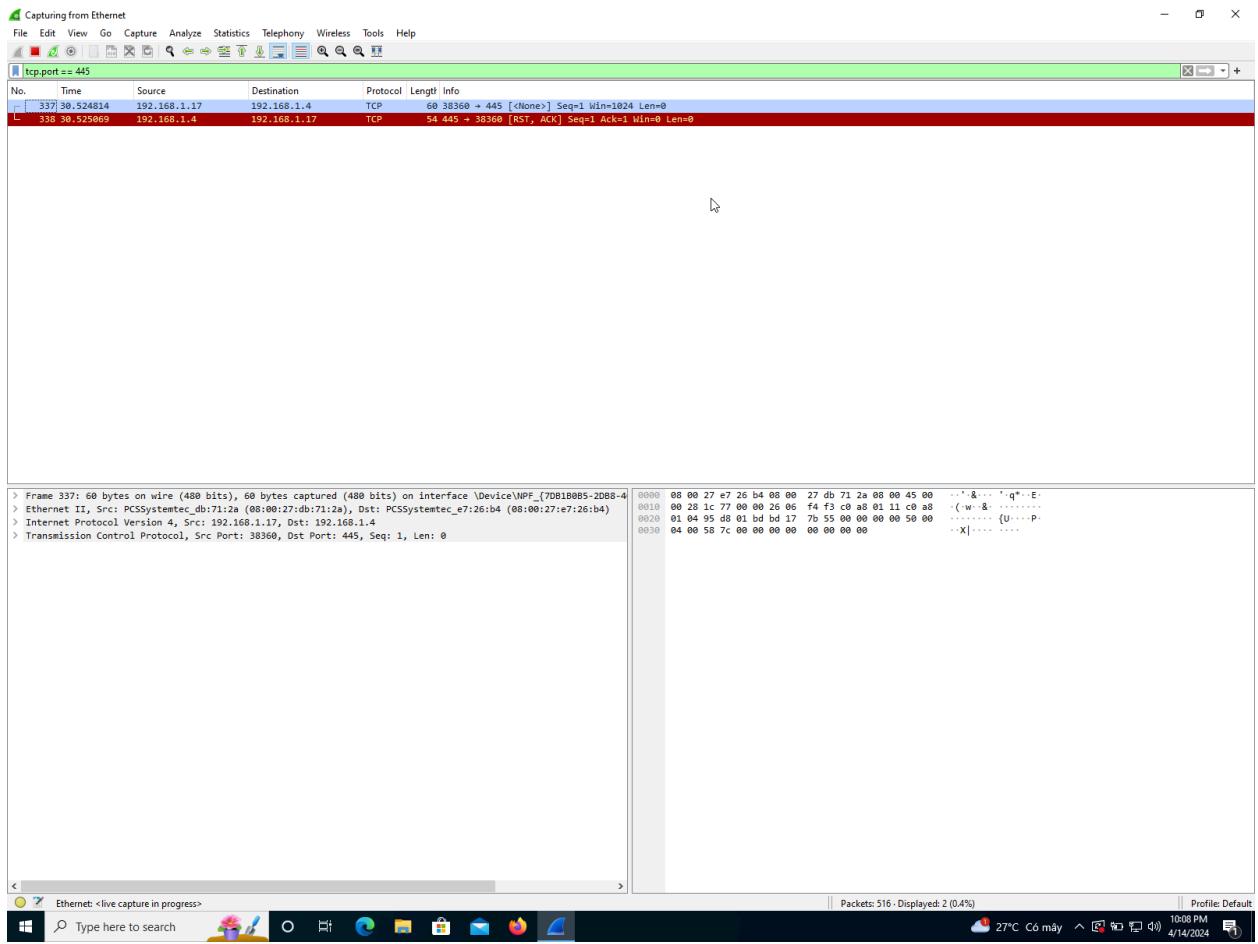
## Windows:

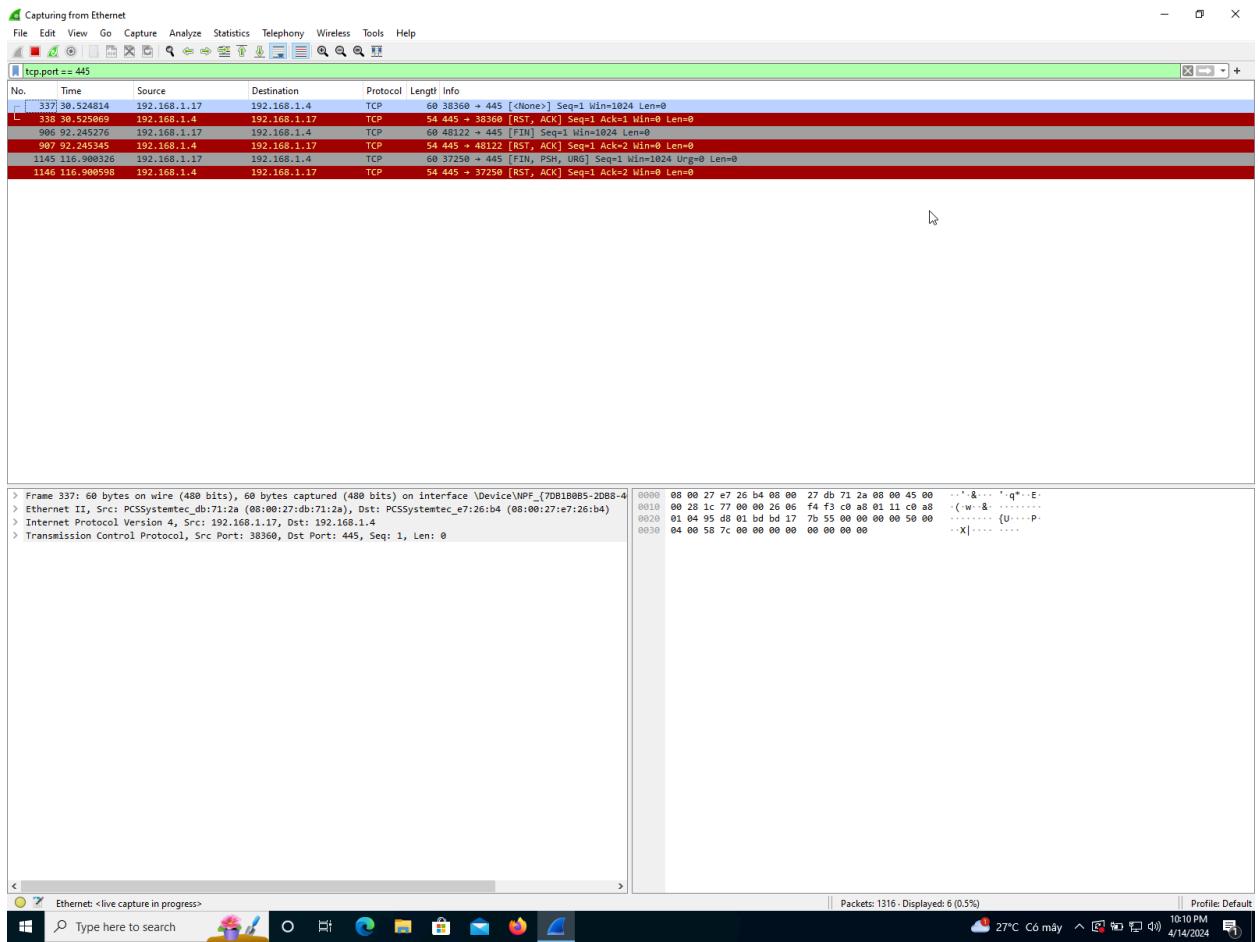


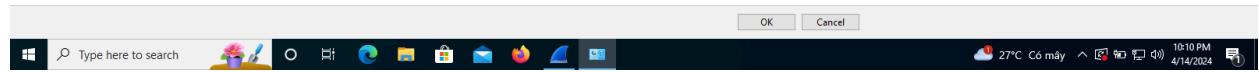
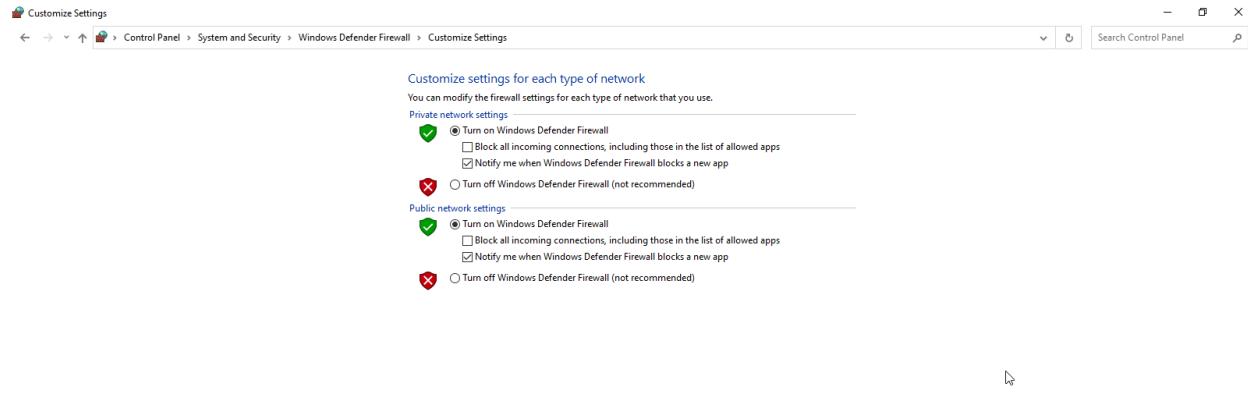


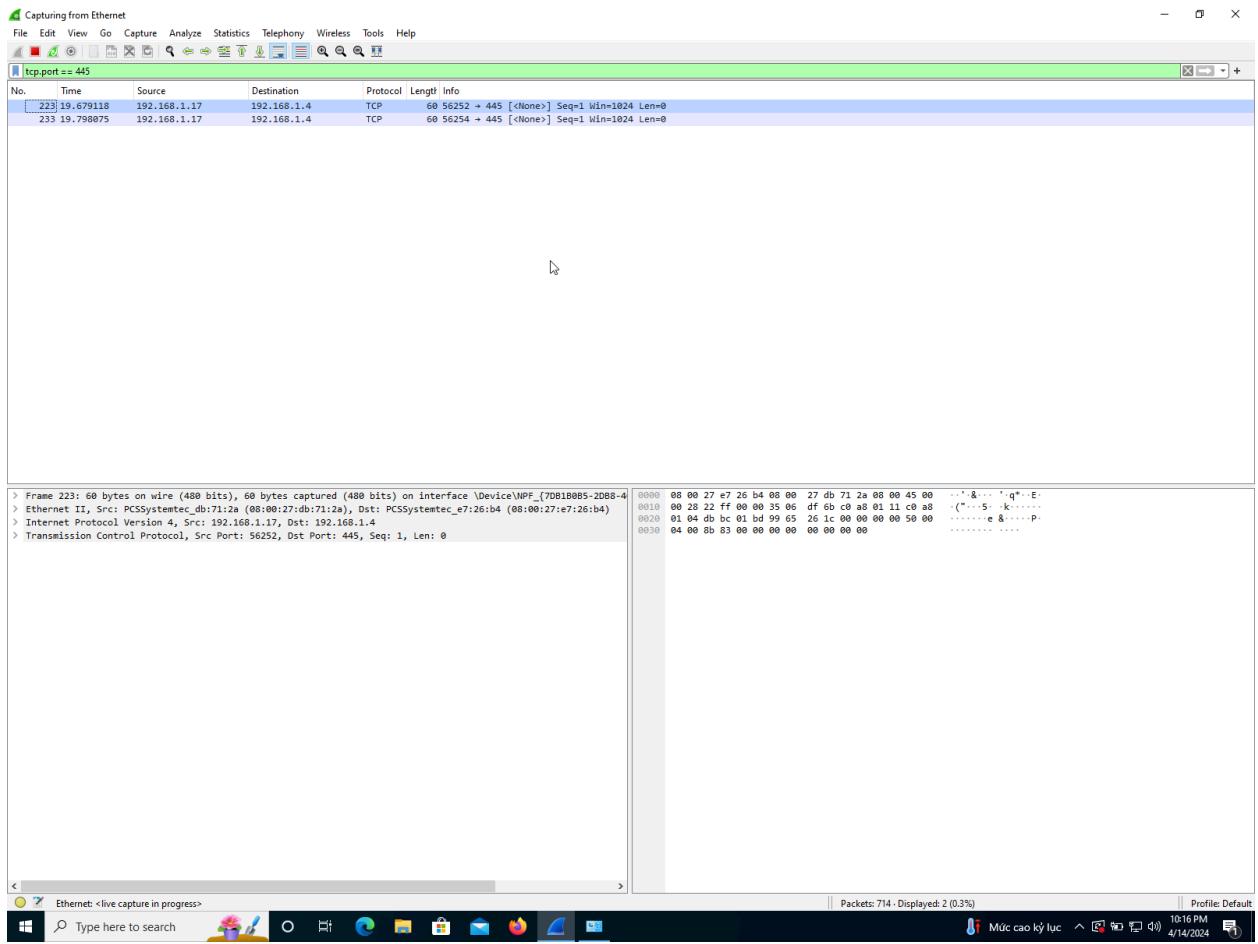


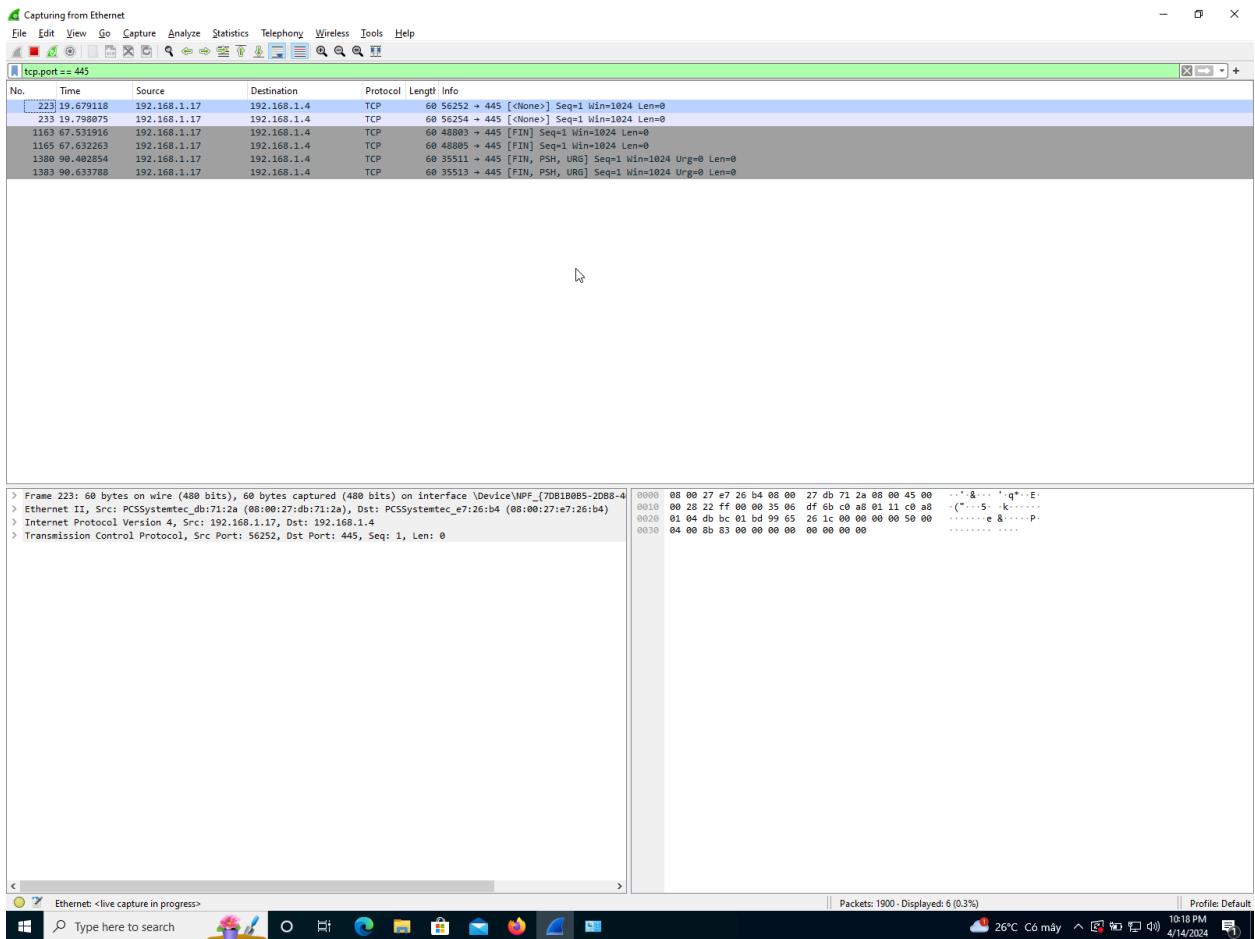












16.02

```

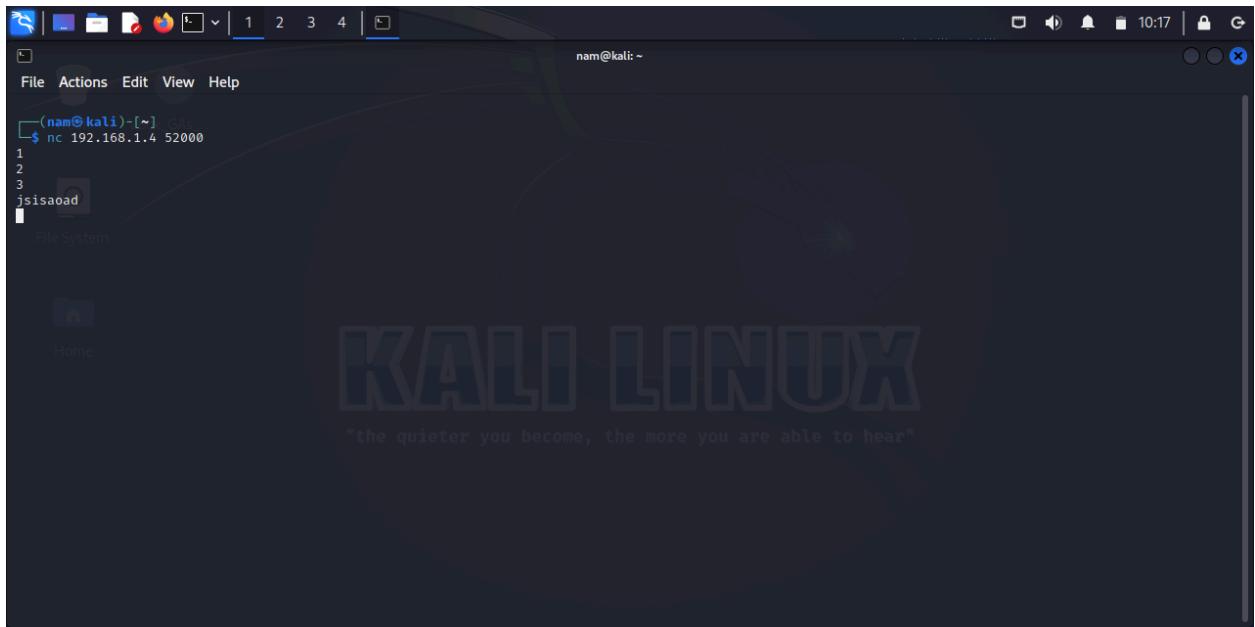
nam@kali: ~
File Actions Edit View Help
inet 127.0.0.1/8 scope host lo
    valid_lft forever preferred_lft forever
inet6 ::1/128 scope host noprefixroute
    valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP
    link/ether 08:00:27:db:71:2a brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.17/24 brd 192.168.1.255 scope global dynamic noprefixroute
    eth0
        valid_lft 84646sec preferred_lft 84646sec
    inet6 2001:ee0:4001:86f9:7e14:326/64 scope global temporary dynamic
        amic
            valid_lft 603048sec preferred_lft 84521sec
    inet6 2001:ee0:4001:86f9:a0:27ff:fedb:712a/64 scope global dynamic mngtmpm
    paddr noprefixroute
        valid_lft 2591769sec preferred_lft 604569sec
    inet6 fe80::a00:27ff:fedb:712a/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN
    link/ether 02:42:57:c6:71:8b brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever

```

```

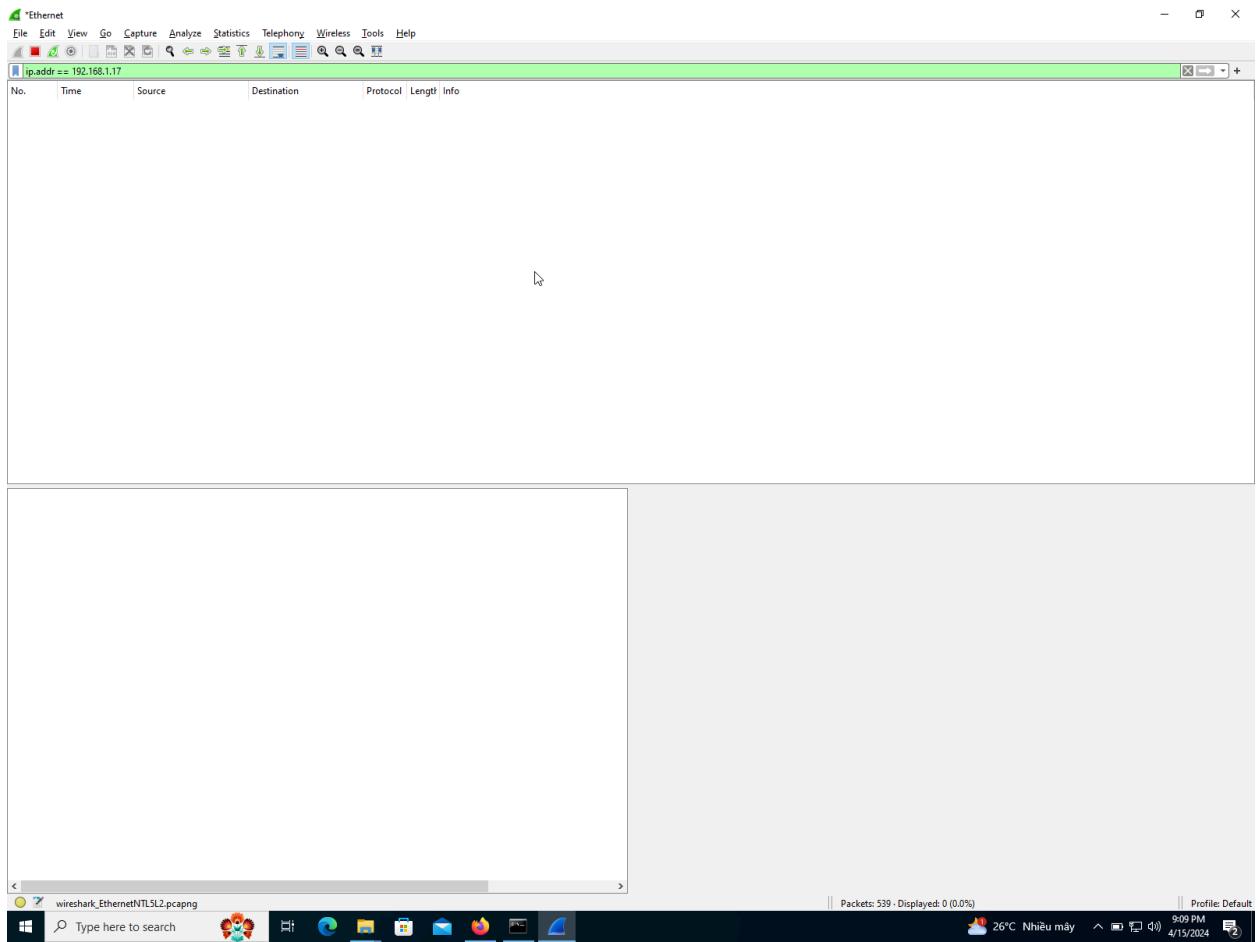
[~] $ nc 192.168.1.4 52000

```



```
cmd Select Administrator: Command Prompt - ncat -l p 52000
C:\>cd C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1
C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1>ncat -l p 52000
```





```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\system32>netstat -an | more

Active Connections

  Proto  Local Address        Foreign Address      State
  TCP    0.0.0.0:135          0.0.0.0:0          LISTENING
  TCP    0.0.0.0:445          0.0.0.0:0          LISTENING
  TCP    0.0.0.0:5046          0.0.0.0:0          LISTENING
  TCP    0.0.0.0:5357          0.0.0.0:0          LISTENING
  TCP    0.0.0.0:49664         0.0.0.0:0          LISTENING
  TCP    0.0.0.0:49665         0.0.0.0:0          LISTENING
  TCP    0.0.0.0:49666         0.0.0.0:0          LISTENING
  TCP    0.0.0.0:49667         0.0.0.0:0          LISTENING
  TCP    0.0.0.0:49668         0.0.0.0:0          LISTENING
  TCP    0.0.0.0:49671         0.0.0.0:0          LISTENING
  TCP    0.0.0.0:52080          0.0.0.0:0          LISTENING
  TCP    127.0.0.1:49851        127.0.0.1:49852     ESTABLISHED
  TCP    127.0.0.1:49852        127.0.0.1:49851     ESTABLISHED
  TCP    127.0.0.1:49853        127.0.0.1:49854     ESTABLISHED
  TCP    127.0.0.1:49854        127.0.0.1:49853     ESTABLISHED
  TCP    192.168.1.4:1139        0.0.0.0:0          LISTENING
  TCP    192.168.1.4:49758       28.198.118.190:443 ESTABLISHED
  TCP    192.168.1.4:49838       28.198.118.190:443 ESTABLISHED
  TCP    192.168.1.4:49871       34.107.243.93:443 ESTABLISHED
  TCP    192.168.1.4:49932       28.295.115.102:443 TIME_WAIT
  TCP    192.168.1.4:49933       28.295.115.102:443 TIME_WAIT
  TCP    192.168.1.4:49937       52.113.195.132:443 TIME_WAIT
  TCP    192.168.1.4:49939       52.182.143.268:443 TIME_WAIT
  TCP    192.168.1.4:49940       23.219.100.100:443 ESTABLISHED
  TCP    192.168.1.4:49945       118.171.231.85:443 ESTABLISHED
  TCP    192.168.1.4:49946       172.64.154.167:443 ESTABLISHED
  TCP    192.168.1.4:49947       52.182.141.63:443 ESTABLISHED
  TCP    192.168.1.4:49948       284.79.197.222:443 TIME_WAIT
  TCP    192.168.1.4:49949       34.117.237.239:443 ESTABLISHED
  TCP    192.168.1.4:49950       52.152.180.151:443 TIME_WAIT
  TCP    192.168.1.4:49951       113.171.231.110:443 ESTABLISHED
  TCP    192.168.1.4:49952       204.79.197.222:443 ESTABLISHED
  TCP    192.168.1.4:49953       13.109.246.254:443 ESTABLISHED
  TCP    192.168.1.4:49954       4.109.246.254:443 ESTABLISHED
  TCP    192.168.1.4:49955       152.199.43.62:443 ESTABLISHED
  TCP    [::]:135              [::]:0          LISTENING
  TCP    [::]:445              [::]:0          LISTENING
  TCP    [::]:5357              [::]:0          LISTENING
  TCP    [::]:49664              [::]:0          LISTENING
  TCP    [::]:49665              [::]:0          LISTENING
  TCP    [::]:49666              [::]:0          LISTENING
  TCP    [::]:49667              [::]:0          LISTENING
  TCP    [::]:49668              [::]:0          LISTENING
  TCP    [::]:49671              [::]:0          LISTENING
  UDP    0.0.0.0:5000             *:*          *
  UDP    0.0.0.0:3702             *:*          *
  UDP    0.0.0.0:3702             *:*          *
  UDP    0.0.0.0:3702             *:*          *
  UDP    0.0.0.0:4580             *:*          *
  UDP    0.0.0.0:5030             *:*          *
  UDP    0.0.0.0:5353             *:*          *
  UDP    0.0.0.0:5355             *:*          *
  UDP    0.0.0.0:60310            *:*          *
  UDP    0.0.0.0:60317            *:*          *
  UDP    127.0.0.1:1900            *:*          *
  UDP    127.0.0.1:60312            *:*          *
  UDP    127.0.0.1:60316            *:*          *
  UDP    127.0.0.1:41417             *:*          *
  UDP    192.168.1.4:1138             *:*          *
  UDP    192.168.1.4:19000            *:*          *
  UDP    192.168.1.4:60315            *:*          *
  UDP    [::]:5000               *:*          *
```



```
Administrator: Command Prompt - ncat -lp 52000
C:\>cd C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1
C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1>ncat -lp 52000
C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1>ncat -lp 52000
'ncat' is not recognized as an internal or external command,
operable program or batch file.

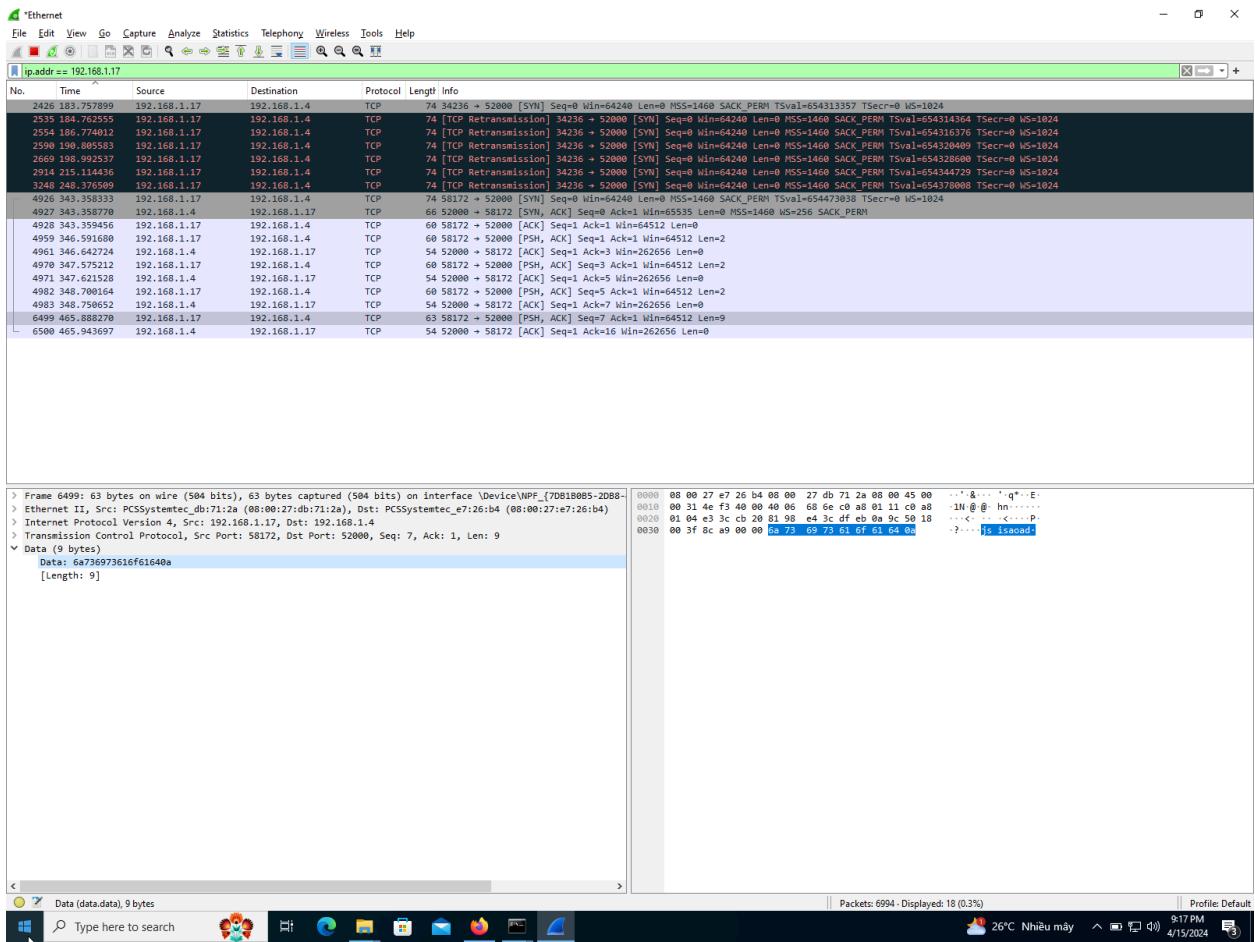
C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1>ls
'ls' is not recognized as an internal or external command,
operable program or batch file.

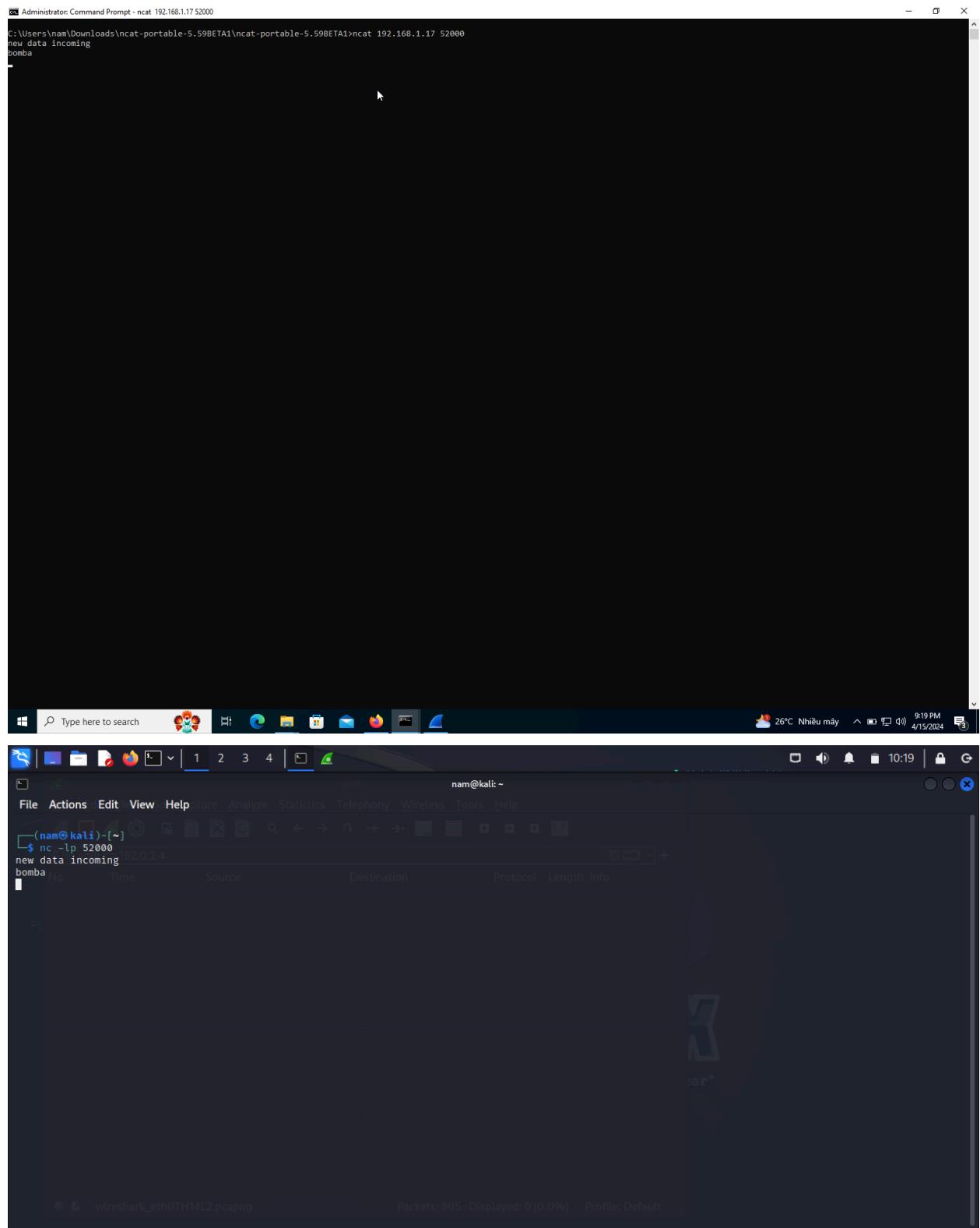
C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1>dir
Volume in drive C has no label.
Volume Serial Number is 6095-6426

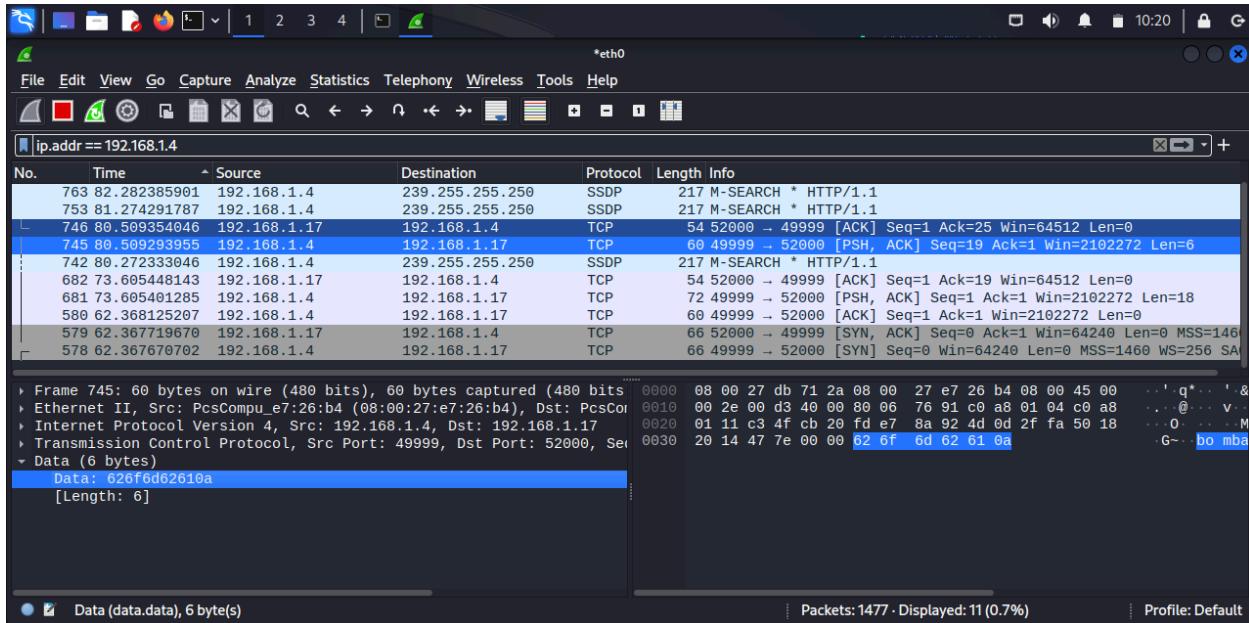
Directory of C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1

04/15/2024  09:11 PM    <DIR>      .
04/15/2024  09:11 PM    <DIR>      ..
04/15/2024  09:06 PM           640 README
               1 File(s)   640 Bytes
               2 Dir(s)  24,535,871,488 bytes free

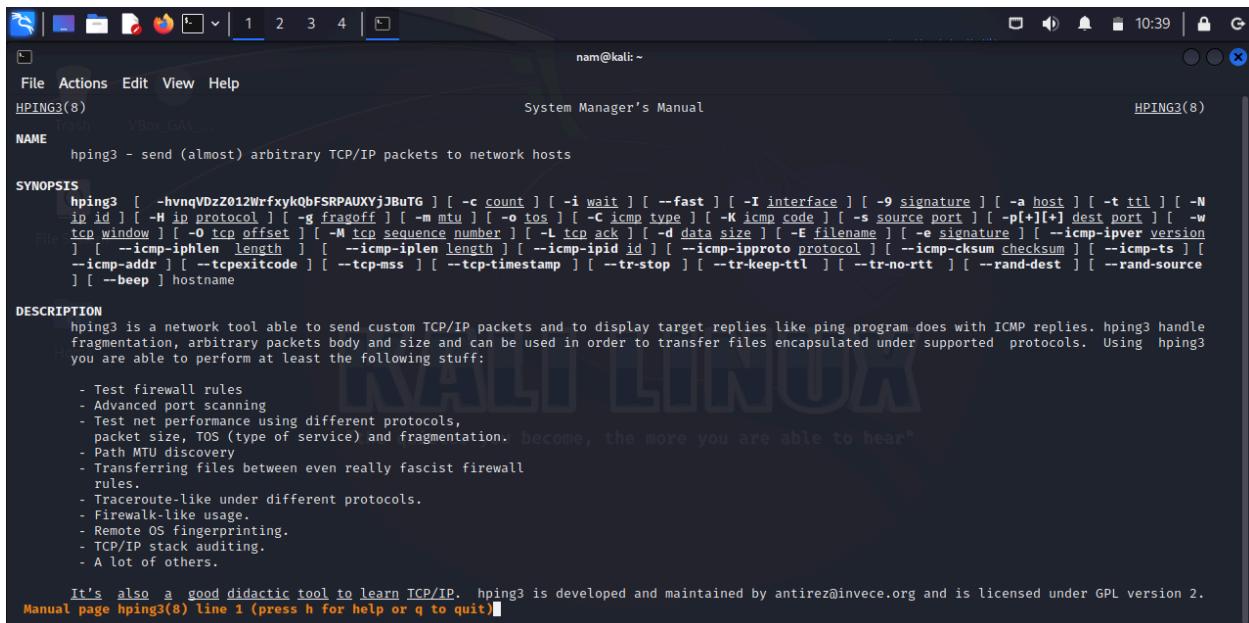
C:\Users\nam\Downloads\ncat-portable-5.59BETA1\ncat-portable-5.59BETA1>ncat -lp 52000
1
2
3
assosjjssisaoad
```

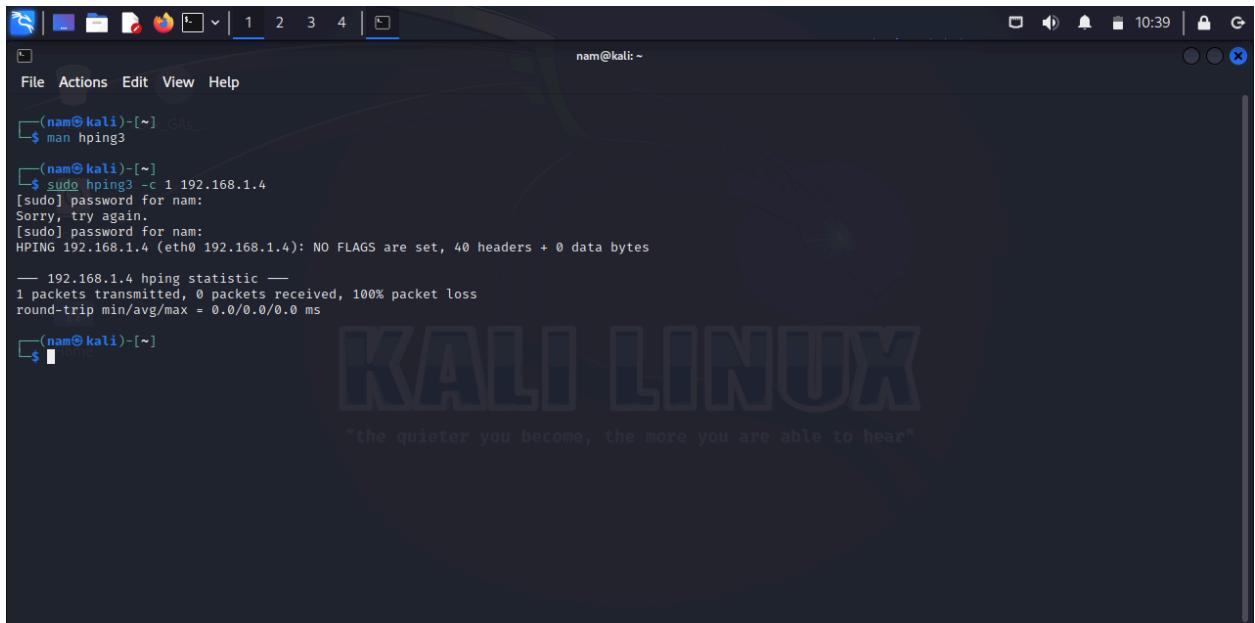






## 16.03:





Kali Linux desktop environment showing a terminal window with hping3 usage. The terminal shows:

```
(nam㉿kali)-[~] ~$ man hping3
(nam㉿kali)-[~] ~$ sudo hping3 -c 1 192.168.1.4
[sudo] password for nam:
Sorry, try again.
[sudo] password for nam:
HPING 192.168.1.4 (eth0 192.168.1.4): NO FLAGS are set, 40 headers + 0 data bytes
-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms
```



Kali Linux desktop environment showing a terminal window with hping3 usage. The terminal shows:

```
(nam㉿kali)-[~] ~$ sudo hping3 -c 1 192.168.1.4 -e "CompTIA Security+"
HPING 192.168.1.4 (eth0 192.168.1.4): NO FLAGS are set, 40 headers + 17 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms
```

Screenshot of NetworkMiner tool showing a packet capture from interface "wlan0" (MAC address 00:0C:29:1A:0B:0D) to port 17 (TCP). The packet details pane shows the following information:

```

No. Time Source Destination Protocol Length Info
666 71.842314 192.168.1.4 TCP 66 1640 > 0 [closed] Seq=1 Win=512 Len=0
1387 139.138798 192.168.1.4 [TCP] 73 CompTIA Security+

```

The packet bytes pane shows the raw hex and ASCII data for the captured packet.

Below the NetworkMiner window, a terminal window on Kali Linux shows the following session:

```

nam@kali: ~
$ sudo hping3 -c 1 192.168.1.4 -e "CompTIA Security+"
HPING 192.168.1.4 (eth0 192.168.1.4): NO FLAGS are set, 40 headers + 17 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

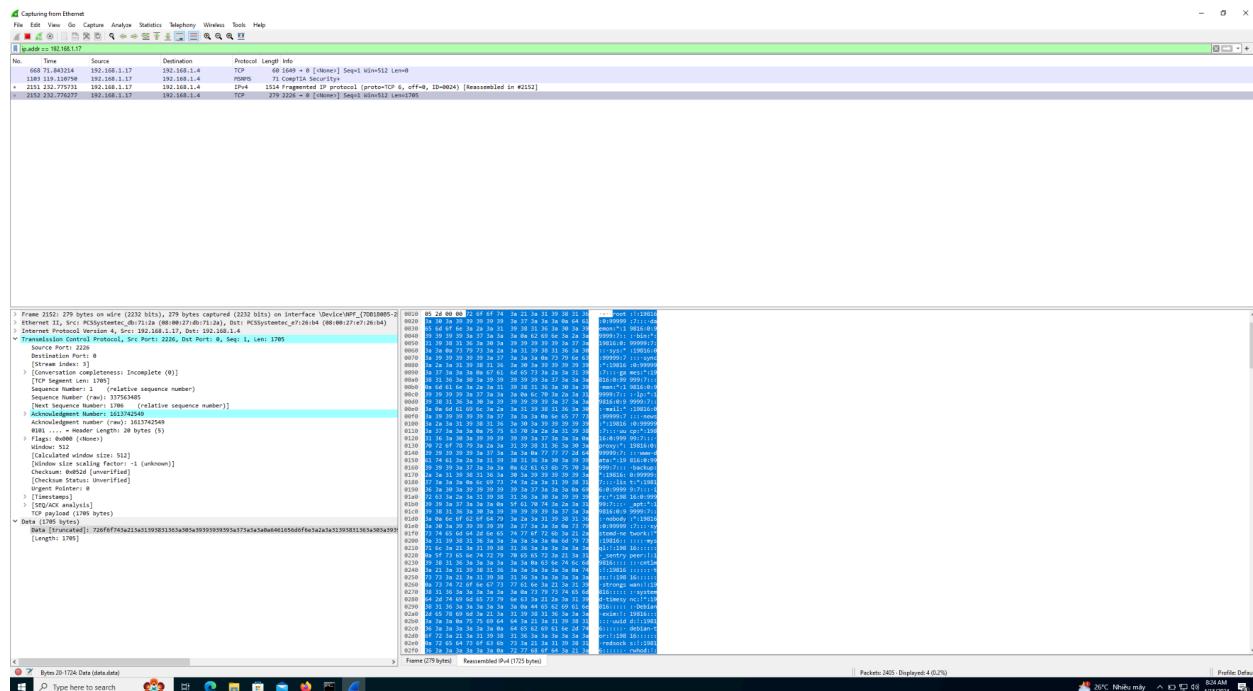
nam@kali: ~
$ ls -l /etc/shadow
-rw-r----- 1 root shadow 1705 Apr  3 13:43 /etc/shadow

nam@kali: ~
$ sudo hping3 -c 1 192.168.1.4 -d 1705 -E /etc/shadow
HPING 192.168.1.4 (eth0 192.168.1.4): NO FLAGS are set, 40 headers + 1705 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

nam@kali: ~
$ 

```



```
nam@kali:~
```

File Actions Edit View Help

Warning: can't disable memory paging!

— 192.168.1.4 hping statistic —  
1 packets transmitted, 0 packets received, 100% packet loss  
round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam@kali)-[~]  
\$ ls -l /etc/shadow  
-rw-r----- 1 root shadow 1705 Apr 3 13:43 /etc/shadow

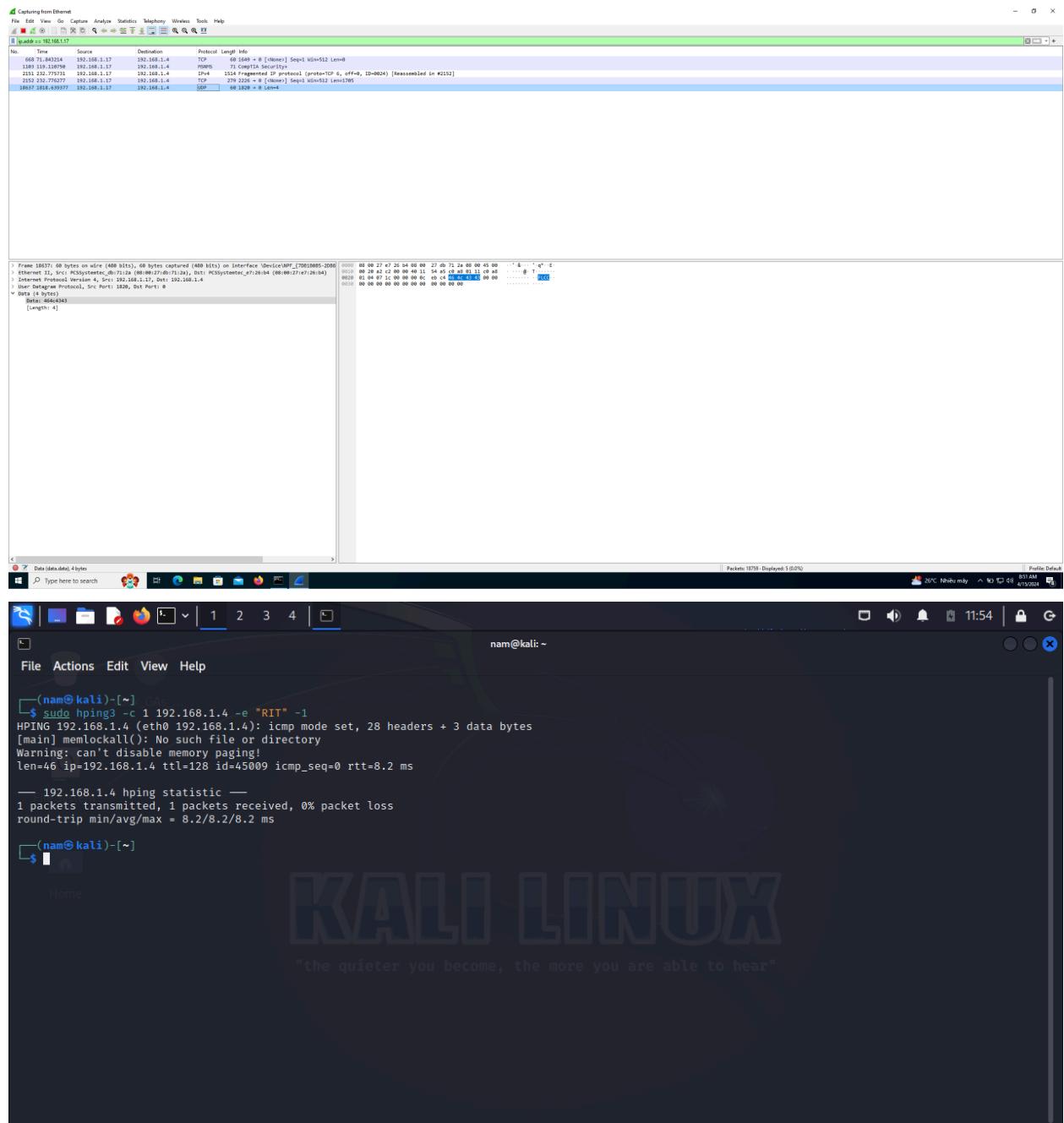
(nam@kali)-[~]  
\$ sudo hping3 -c 1 192.168.1.4 -d 1705 -E /etc/shadow  
HPING 192.168.1.4 (eth0 192.168.1.4): NO FLAGS are set, 40 headers + 1705 data bytes  
[main] memlockall(): No such file or directory  
Warning: can't disable memory paging!

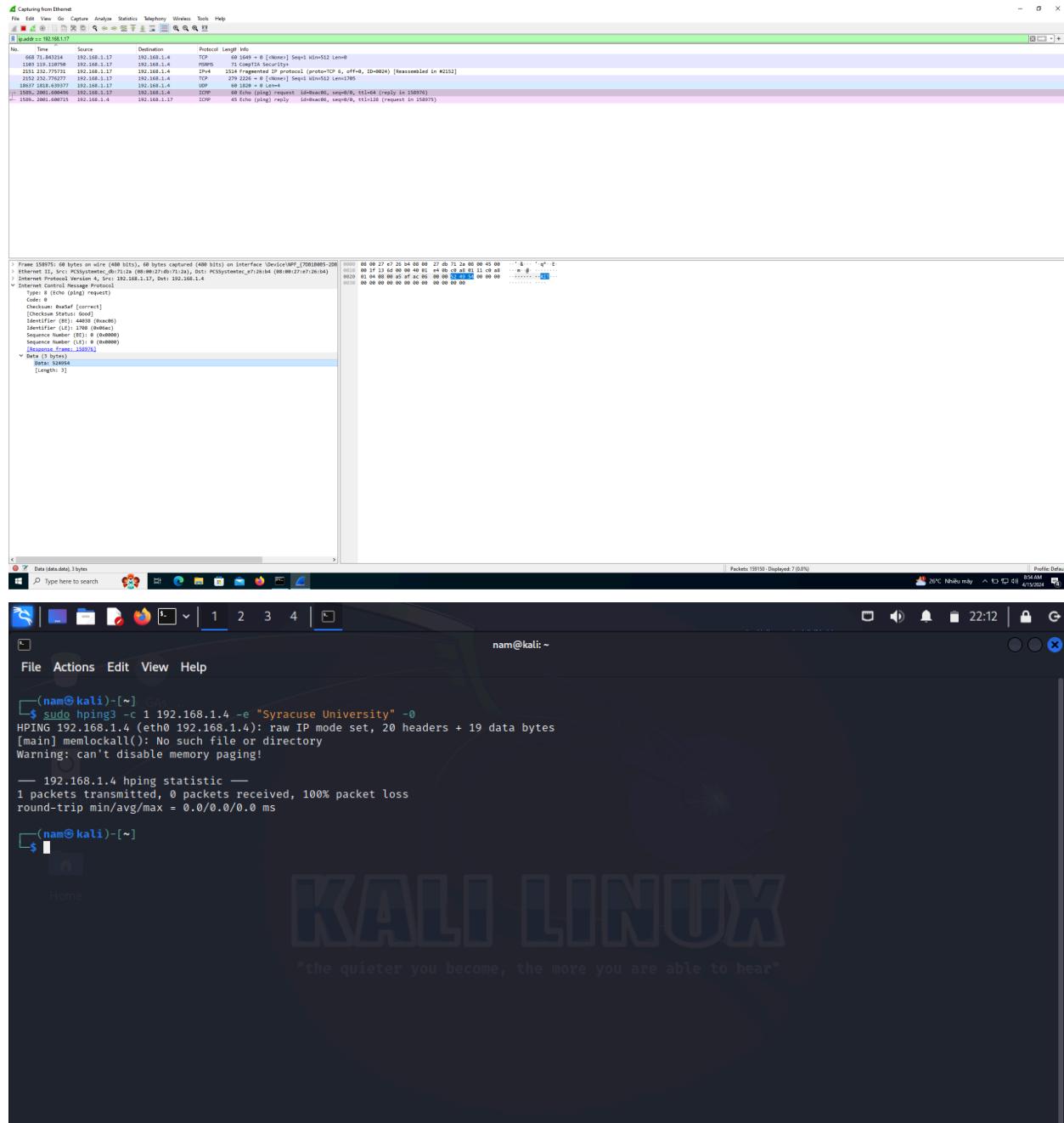
— 192.168.1.4 hping statistic —  
1 packets transmitted, 0 packets received, 100% packet loss  
round-trip min/avg/max = 0.0/0.0/0.0 ms

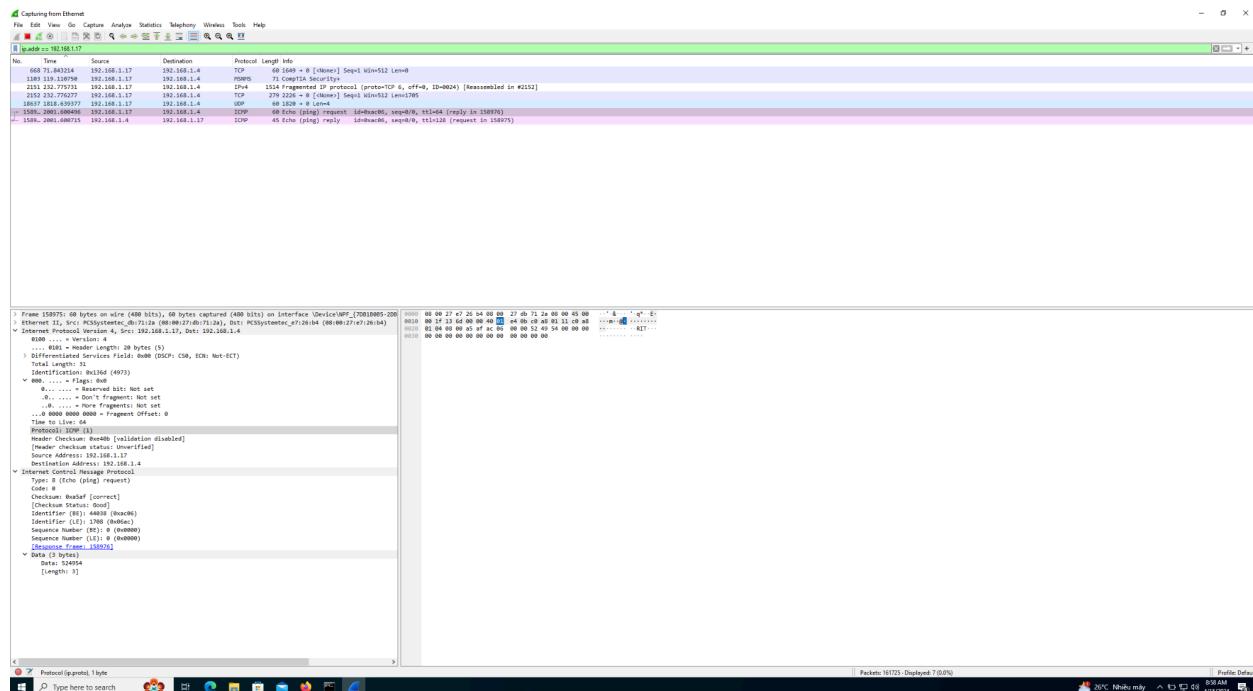
(nam@kali)-[~]  
\$ sudo hping3 -c 1 192.168.1.4 -e "FLCC" -2  
[sudo] password for nam:  
HPING 192.168.1.4 (eth0 192.168.1.4): udp mode set, 28 headers + 4 data bytes  
[main] memlockall(): No such file or directory  
Warning: can't disable memory paging!

— 192.168.1.4 hping statistic —  
1 packets transmitted, 0 packets received, 100% packet loss  
round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam@kali)-[~]







Capturing from Ethernet

File Edit View Go Capture Analyze Statistics Telephone Wireless Tools Help

ip.addr == 192.168.1.17

No.	Time	Source	Destination	Protocol	Length	Info
526	53.021077	192.168.1.17	192.168.1.4	TCP	60	21369 + 29281 [FIN, RST, URG, ECE, Reserved] Seq=1668641637 Win=29299[Malformed Packet]

[Header checksum status: Unverified]  
 Source Address: 192.168.1.17  
 Destination Address: 192.168.1.4  
 Transmission Control Protocol, Src Port: 21369, Dst Port: 29281  
 [Stream index: 6]  
 > [Conversation completeness: Incomplete (32)]  
 > Short segment. Segment/fragment does not contain Sequence Number: 1668641637 (relative sequence number: 0) Sequence Number (raw): 1668641637  
 > Acknowledgment Number: 542469737  
 Acknowledgment number (raw): 542469737  
 0111 .... = Header Length: 28 bytes (7)  
 > Flags: 0x665 (FIN, RST, URG, ECE, Reserved)

Packets: 1274 - Displayed: 1 (0.1%) | Profile: Default

Type here to search 26°C Nhiều máy 7:14 PM 4/15/2024

nam@kali: ~

(nam@kali)-[~] \$ sudo hping3 -c 1 192.168.1.4 -e "Syracuse University" -o  
 HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 19 data bytes  
 [main] memlockall(): No such file or directory  
 Warning: can't disable memory paging!

— 192.168.1.4 hping statistic —  
 1 packets transmitted, 0 packets received, 100% packet loss  
 round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam@kali)-[~] \$ sudo hping3 -c 1 192.168.1.4 -e "Syracuse" -o  
 HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 8 data bytes  
 [main] memlockall(): No such file or directory  
 Warning: can't disable memory paging!

— 192.168.1.4 hping statistic —  
 1 packets transmitted, 0 packets received, 100% packet loss  
 round-trip min/avg/max = 0.0/0.0/0.0 ms

"the quieter you become, the more you are able to hear"

Capturing from Ethernet

File Edit View Go Capture Analyze Statistics Telephone Wireless Tools Help

ip.addr == 192.168.1.17

No.	Time	Source	Destination	Protocol	Length	Info
526	53.021077	192.168.1.17	192.168.1.4	TCP	60	21369 + 29281 [FIN, RST, URG, ECE, Reserved] Seq=1668641637 Win=29299 [Malformed Packet]
2207	230.386745	192.168.1.17	192.168.1.4	TCP	60	21369 + 29281 [Malformed Packet]

...0 0000 0000 0000 = Fragment Offset: 0  
 Time to Live: 64  
 Protocol: TCP (6)  
 Header Checksum: 0x74fa [validation disabled]  
 [Header checksum status: Unverified]  
 Source Address: 192.168.1.17  
 Destination Address: 192.168.1.4

Transmission Control Protocol, Src Port: 21369, Dst  
 Source Port: 21369  
 Destination Port: 29281

[Malformed Packet: TCP]  
 [Expert info (Error/Malformed): Malformed Packet  
 [Malformed Packet (Exception occurred)]  
 [Severity level: Error]  
 [Group: Malformed]

Bytes 34-41: Transmission Control Protocol (tcp)

Packets: 2637 - Displayed: 2 (0.1%) | Profile: Default

Windows Taskbar: Type here to search, 7:16 PM, 26°C Nhiều máy, 4/15/2024

KALI LINUX

nam@kali: ~

File Actions Edit View Help

```

(nam@kali)-[~] $ sudo hping3 -c 1 192.168.1.4 -e "Syracuse University" -o
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 19 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam@kali)-[~] $ sudo hping3 -c 1 192.168.1.4 -e "Syracuse" -o
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 8 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam@kali)-[~] $ sudo hping3 -c 1 192.168.1.4 -e "Nazareth College" -o -H 17
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 16 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam@kali)-[~]
$ 

```

Capturing from Ethernet

File Edit View Go Capture Analyze Statistics Telephone Wireless Tools Help

ip.addr == 192.168.1.17

No.	Time	Source	Destination	Protocol	Length	Info
526	53.021077	192.168.1.17	192.168.1.4	TCP	60	21369 + 29281 [FIN, RST, URG, ECE, Reserved] Seq=1668641637 Win=29299[Malformed Packet]
2207	230.386745	192.168.1.17	192.168.1.4	TCP	60	21369 + 29281[Malformed Packet]
3101	327.949558	192.168.1.17	192.168.1.4	UDP	60	20065 + 31329 [BAD UDP LENGTH 29285 > IP PAYLOAD LENGTH] Len=29277

Source Address: 192.168.1.17  
 Destination Address: 192.168.1.4  
 User Datagram Protocol, Src Port: 20065, Dst Port:  
 Source Port: 20065  
 Destination Port: 31329  
 Length: 29285 (bogus, payload length 16)  
 [Expert Info (Error/Malformed): Bad length value 29285 > IP payload length  
 [Severity level: Error]  
 [Group: Malformed]  
 Checksum: 0x7468 [unverified]  
 [Checksum Status: Unverified]  
 [Stream index: 1883]  
 > [Timestamps]  
 UDP payload (8 bytes)

Packets: 3435 - Displayed: 3 (0.1%) | Profile: Default  
 7:17 PM 4/15/2024

KALI LINUX

```

nam@kali: ~
File Actions Edit View Help
└$ sudo hping3 -c 1 192.168.1.4 -e "Syracuse" -0
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 8 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

— 192.168.1.4 hping statistic —
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

[(nam@kali)-~]
└$ sudo hping3 -c 1 192.168.1.4 -e "Nazareth College" -0 -H 17
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 16 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

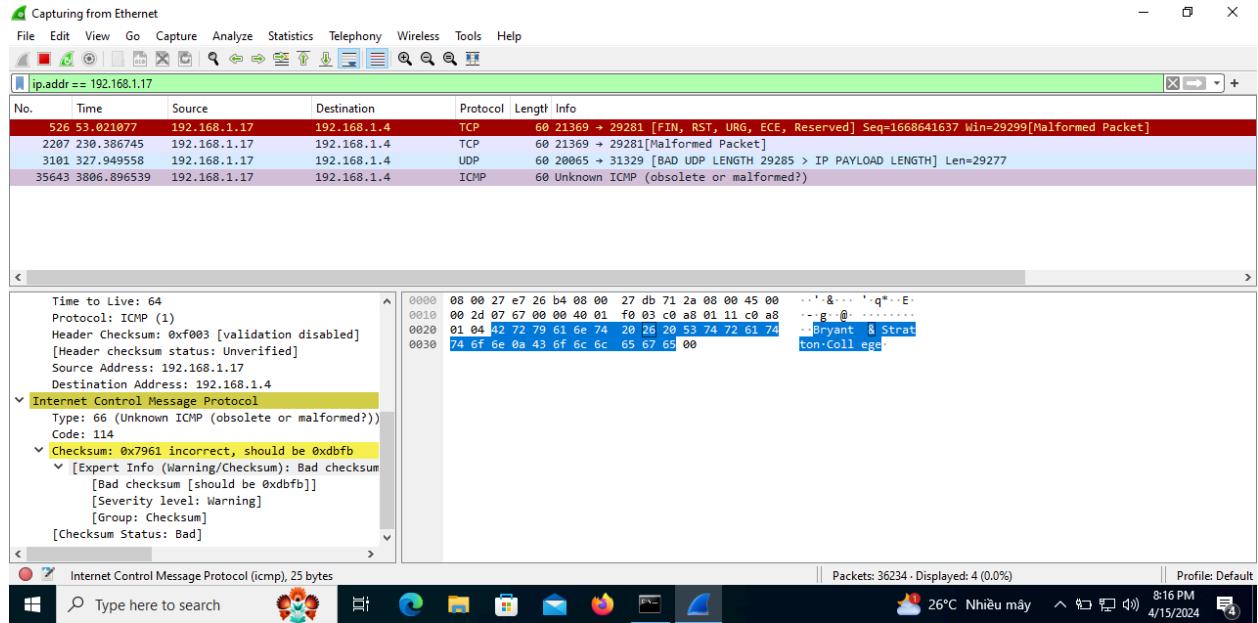
— 192.168.1.4 hping statistic —
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

[(nam@kali)-~]
└$ sudo hping3 -c 1 192.168.1.4 -e "Bryant & Stratton
College" -0 -H 1
[sudo] password for nam:
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 25 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

— 192.168.1.4 hping statistic —
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

[(nam@kali)-~]
└$ 

```



KALI LINUX  
"the quieter you become, the more you are able to hear"

```
(nam㉿kali)-[~]
$ sudo hping3 -c 1 192.168.1.4 -e "Essex County College" -0 -H 89
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 20 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam㉿kali)-[~]
$ sudo hping3 -c 1 192.168.1.4 -e "Kean University" -0 -H 41
HPING 192.168.1.4 (eth0 192.168.1.4): raw IP mode set, 20 headers + 15 data bytes
[main] memlockall(): No such file or directory
Warning: can't disable memory paging!

-- 192.168.1.4 hping statistic --
1 packets transmitted, 0 packets received, 100% packet loss
round-trip min/avg/max = 0.0/0.0/0.0 ms

(nam㉿kali)-[~]
$
```

Capturing from Ethernet

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

ip.addr == 192.168.1.17

No.	Time	Source	Destination	Protocol	Length	Info
116	11.989698	192.168.1.17	192.168.1.4	OSPF	60	Unknown (115)
1032	112.387778	192.168.1.17	192.168.1.4	IPv6	60	IPv6 (41)

Frame 116: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface Ethernet II, Src: PCSSystemtec\_db71:2a (08:00:27:c0:01:00), Dst: 192.168.1.17 (08:00:27:e7:26:b4)
Ethernet II, Src: PCSSystemtec\_db71:2a (08:00:27:c0:01:00), Dst: 192.168.1.17 (08:00:27:e7:26:b4) [ethertype IPv6 (480 bytes on wire, 480 bytes captured)]
Internet Protocol Version 4, Src: 192.168.1.17, Dst: 192.168.1.4 [version: 4.0, ttl: 64, identification: 0x0098c (2444)]
Flags: 0x0000 [not fragm., more frags., don't fragm.]
Time to live: 64
Protocol: OSPF IGP (89)

Packets: 1116 · Displayed: 2 (0.2%)

Ethernet: <live capture in progress>

16.04

- : sudo scapy — Konsole

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New Tab Split View Copy Paste Find

```
(nam@kali)-[~]
$ sudo scapy
[sudo] password for nam:
INFO: Can't import PyX. Won't be able to use psdump() or pdfdump().

      aSPY//YASA
      apvvyyCY/////////YC
      s/////////YSpes  scpCY//Pp
      ayp ayyyyyySCP//Pp  sy//C
AYAsAYYYYYYYY//Ps  cY//S
      pCCCCY//p  cSSps y//Y
      SPPP //a  pP//AC//Y
      A//A  cyp///C
      p///Ac  sc///a
      P///YCpc  A//A
      scccccp///pS//p  p//Y
      sY/////////Ycaa  S//P
      cayCyayP//Ya  pY/Ya
      sY/PsY//Y/Cc  ac//Yp
      sc  sccacY//PCyapaCP//Yss
      spCPY//Y/PSps
      ccaacs

      Welcome to Scapy
      Version 2.5.0+git20240324.2b58b51
      https://github.com/secdev/scapy
      Have fun!
      To craft a packet, you have to be a
      packet, and learn how to swim in
      the wires and in the waves.
      -- Jean-Claude Van Damme

using IPython 8.20.0

>>> exit()

(nam@kali)-[~]
$
```

01:21 23 Apr 2024

- : sudo scapy — Konsole

File Edit View Bookmarks Plugins Settings Help

New Tab Split View

```
(nam@kali)-[~/media]
$ cd ..
└─[nam@kali]-(~)
$ sudo scapy
[some host to
INFO: Can't import PyX. Won't be able to use psdump() or pdfdump().
inet[0]: eth0: no route to interface
valid life[aSPY//YASA] ed life forever
apyyvycY/////////YCa | are 1500 bytes in code! state UP group default qlen 1000
sY/////////YSpCs scpCY//Pp | Welcome to Scapy
ayp ayyyyyyCP//Pp sY//C | Version 2.5.0+git20240324.2b58b51 eth0
AYAsAYYYYYYYY//Ps cY//S | 0x00000000000000000000000000000000
inet[1]: eth1: no route to interface
pCCCCY//p cSSps y//Y | https://github.com/secdev/scapy dynamic
SPPP//a pP//AC//Y | 0x00000000000000000000000000000000
inet[2]: eth2: no route to interface
A//A cyp///C | Have fun! ope global dynamic mgmtipaddr noperfixroute
inet[3]: eth3: no route to interface
p///Ac 901e0000 sc//a | 0x00000000000000000000000000000000
inet[4]: eth4: no route to interface
P///YCpc A//A | What is dead may never die!
sccccP///pSp///p p//Y | -- Python 2
S//P| caa S//P |
cayCayP//Ya pY/Ya
sY/Ps//Ycc ac//Yp
sc sccaCY//PCpypCP//Yss
spCP//YPPsp
ccaaacs
```

using Python 8.20.0

```
>>> send(IP(dst="192.168.1.15")/ICMP()/"Staten Island, NY")
Sent 1 packets.
```

```
>>> send(IP(dst="192.168.1.15")/ICMP()/"Staten Island, NY")
```

01:47 23 Apr 2024

Ethernet

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

ip.addr == 192.168.1.16

No.	Time	Source	Destination	Protocol	Length	Info
1882	119.805499	192.168.1.16	192.168.1.15	ICMP	60	Echo (ping) request id=0x0000, seq=0/0, ttl=64 (no response found)

> Frame 1882: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)  
> Ethernet II, Src: PCSsystemtec\_b7:c0:a1 (08:00:27:b7:c0:a1), Dst: PCS  
> Internet Protocol Version 4, Src: 192.168.1.16, Dst: 192.168.1.15  
▼ Internet Control Message Protocol  
Type: 8 (Echo (ping) request)  
Code: 0  
Checksum: 0x0b0a [correct]  
[Checksum Status: Good]  
Identifier (BE): 0 (0x0000)  
Identifier (LE): 0 (0x0000)  
Sequence Number (BE): 0 (0x0000)  
Sequence Number (LE): 0 (0x0000)  
▶ [No response seen]  
▼ Data (17 bytes)  
Data: 53746174656e2049736c616e642c204e59  
[Length: 17]

0000 08 00 27 ed fc 27 08 00 27 b7 c0 a1 08 00 45 00 ...  
0010 00 2d 00 01 00 00 40 01 f7 5f c0 a8 01 10 c0 a8 ...@...  
0020 01 0f 08 00 0b 0a 00 00 00 00 53 74 61 74 65 6e ....Stat...  
0030 20 49 73 6c 61 6e 64 2c 20 4e 59 00 Island, NY.

Packets: 2195 - Displayed: 1 (0.0%) Profile: Default

Data (data.data), 17 bytes

Type here to search

```
- : sudo scapy — Konsole

File Edit View Bookmarks Plugins Settings Help

New Tab Split View

(nam@kal1) [~]
$ sudo scapy
INFO: Can't import PyX. Won't be able to use psdump() or pdfdump(). group default qlen 1000
Link layer broadcast 00:0c:29:00:00:00 b6:00:00:00:00:00
inet 192.168.1.15 brd 192.168.1.255 netmask 255.255.255.0
      |           asPY//YAsa
      |           valid apyyyyCY/////////yCa
      |           user SY/////////YSpCs scpCY//Pp
      |           Welcome to Scapy
      |           Version 2.5.0+git20240324.2b58b51
      |           cY//S
      |           pCCSp y//Y https://github.com/secdev/scapy
      |           pPPP//a pP///AC//Y | scope global dynamic noprefixroute eth0
      |           valid A//A
      |           ineth 0|/Ac cyP///C | Have fun!
      |           p///Ac sC//A | common scope global temporary dynamic
      |           valid P///YCpc A//A | Craft packets like I craft my beer.
      |           in scccccP///PSP//p p//Y | crafted scope -- Jean De Clerck tapaddr noprefixroute
      |           sY/////////y caa S//P | 0x047915sec
      |           tacayCayP//y ca yP//Ya | link noprefixroute
      |           sY/PsY//YCc aC//Yp forever
      |           sc sccaCY//PCpayaPyCP//ySs
      |           spCPV//YSPs
      |           ccaacs
      |           using IPython 8.20.0
>>> send(IP(src="1.0.9.7", dst="192.168.1.15")/ICMP()/"College of Staten Island")
.
Sent 1 packets.
>>> send(IP(src="2.0.0.5", dst="192.168.1.15")/ICMP()/"Brooklyn College")
.
Sent 1 packets.
>>>
```

