Aim: Installation of NMAP and using it with different options to scan open ports, perform OS fingerprinting, ping scan, TCP port scan, UDP port scan, etc.

Theory:

Sure, here's a brief overview of Nmap (Network Mapper) installation and usage with different options for various types of scans:

1. Installation of Nmap:

Nmap is available for multiple platforms (Windows, Linux, macOS) and can be installed using different methods such as package managers, source code compilation, or pre-compiled binaries. Here are three points about Nmap installation:

- Package Managers: On Linux-based systems, Nmap can be easily installed using package managers like `apt-get` (Debian/Ubuntu) or `yum` (Red Hat/CentOS). For example, you can use the following commands to install Nmap:

```
bash
sudo apt-get update
sudo apt-get install nmap
```

- Source Code Compilation: Advanced users might prefer compiling Nmap from source. This allows customization and access to the latest features. Download the source code, extract it, navigate to the extracted directory, and run:

```
bash
./configure
make
sudo make install
```

- Windows Installation: On Windows, you can download the Nmap installer executable from the official website and follow the installation wizard. After installation, make sure to add the Nmap installation directory to the system's PATH environment variable.

2. Using Nmap with Different Scanning Options:

Nmap offers various scanning options to gather information about hosts and networks. Here are three types of scans and their key points:

- Ping Scan (ICMP Echo): This basic scan determines whether a host is up by sending ICMP echo requests and analyzing the responses.
  - Command: `nmap -sn <target>`
  - Points:
    - Efficient for quickly identifying live hosts.
    - Does not provide detailed information about open ports.
    - Can be used with the `-Pn` option to skip host discovery and scan regardless of host responses.

- TCP Port Scan: This scan determines which TCP ports on a target system are open, closed, or filtered.
  - Command: `nmap -p <port-range> <target>`
  - Points:
    - Default scan if no scan type is specified.
    - `-p` specifies the port range to scan.
    - Common port ranges: `-p 1-100` or `-p T:22,80,443` (top ports).

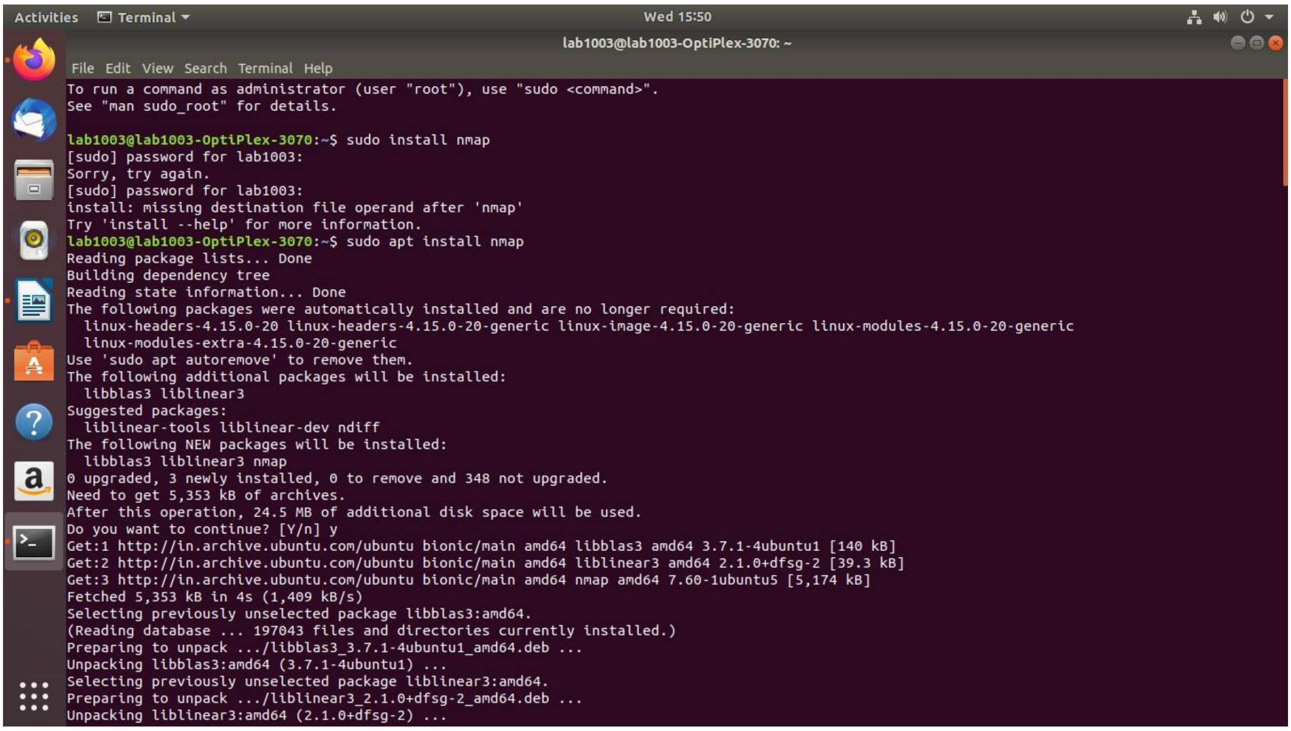
- OS Fingerprinting: This scan attempts to identify the operating system of the target by analyzing its responses to various network packets.
  - Command: `nmap -O <target>`
  - Points:
    - Requires root or administrator privileges.
    - Nmap sends a series of probes and analyzes responses to guess the OS.
    - Accuracy varies based on target's response and configuration.

3. UDP Port Scan and Advanced Scanning Techniques:

- UDP Port Scan: This scan targets UDP ports, which are commonly used for services like DNS and SNMP. UDP scans are more challenging due to the connectionless nature of UDP.
  - Command: `nmap -sU -p <port-range> <target>`
  - Points:
    - `-sU` specifies UDP scan.
    - Some hosts may not respond, leading to potential false negatives.
    - Slower than TCP scans due to the lack of built-in response mechanisms.

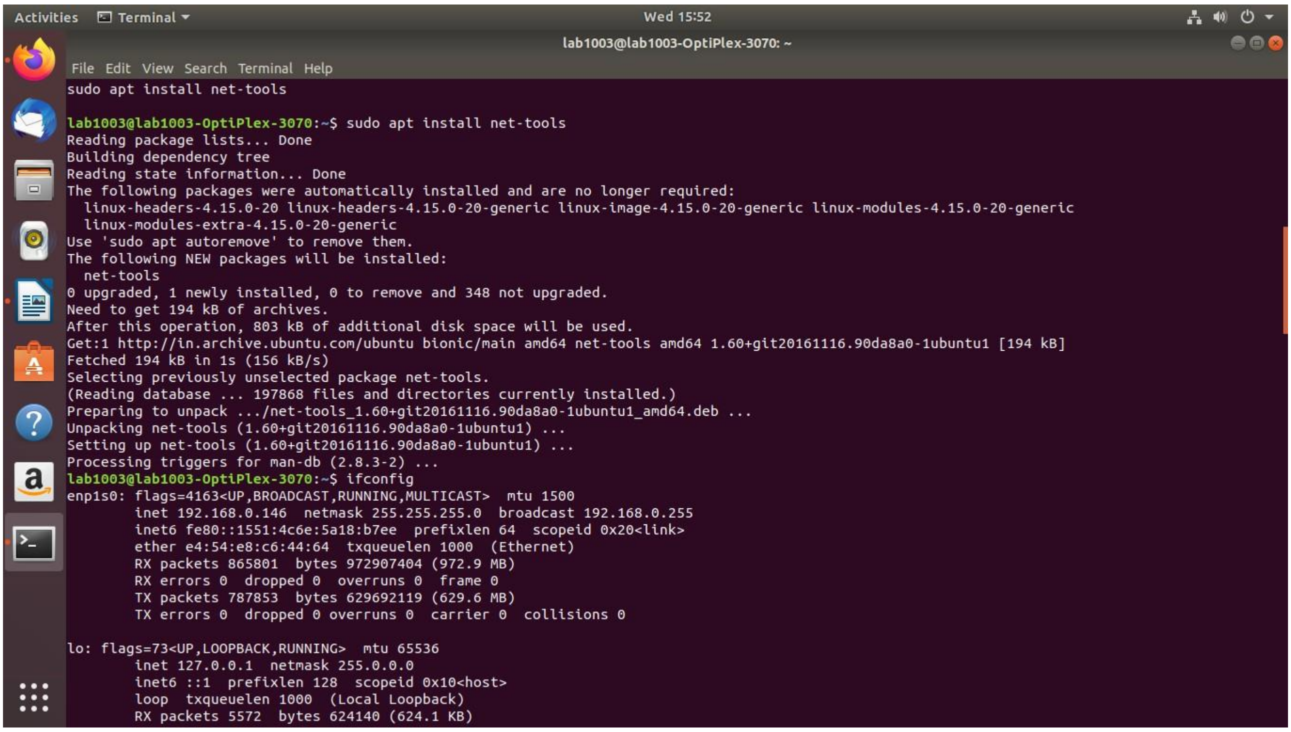
- Aggressive Scan (Version Detection): This scan combines multiple techniques to gather extensive information, including version detection of services running on open ports.
  - Command: `nmap -A <target>`
  - Points:
    - Enables OS and version detection, script scanning, and traceroute.
    - Requires more time and network resources due to extensive probing.
    - Useful for thorough reconnaissance of target systems.

- Script Scanning (NSE): Nmap offers a scripting engine (NSE) that allows users to run custom scripts to automate various network tasks.
  - Command: `nmap -sC -p <port-range> <target>`
  - Points:
    - `-sC` enables default script scanning.
    - NSE scripts can perform tasks like vulnerability detection and service enumeration.
    - Users can create and use their own scripts for specific tasks.



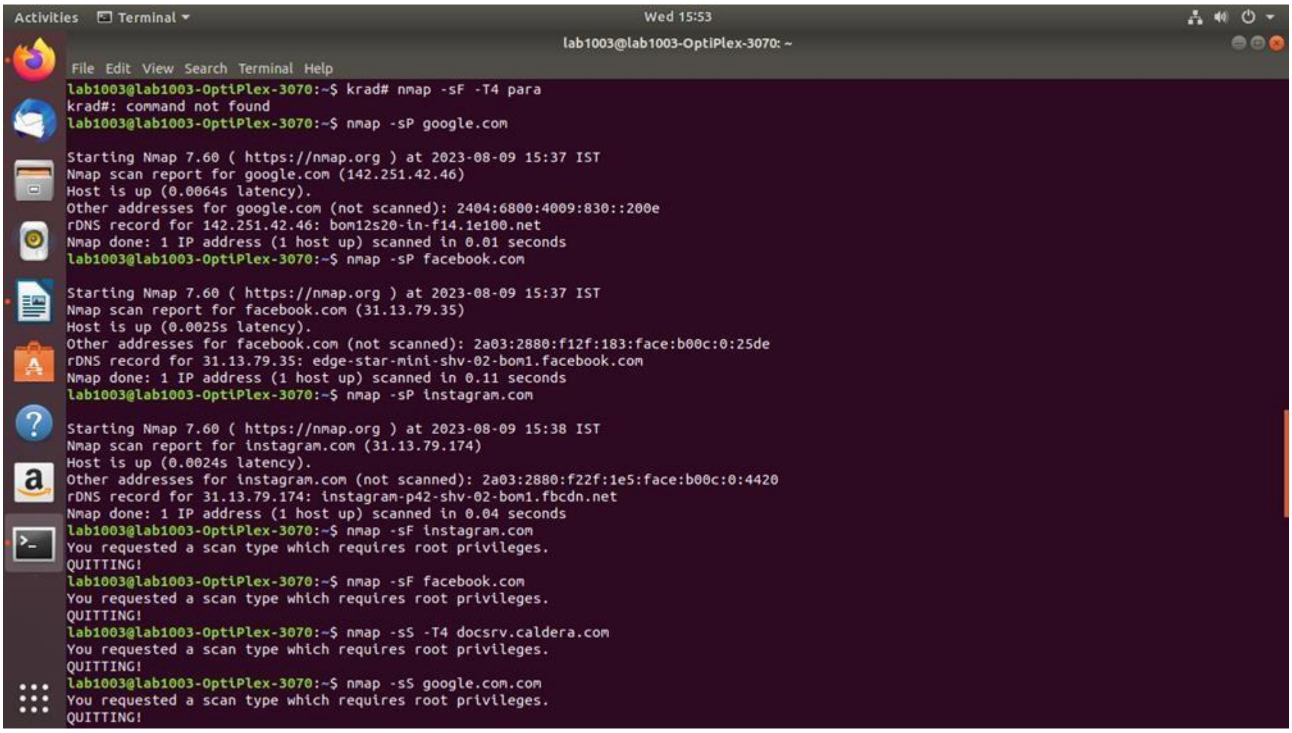
Activities
Terminal
Wed 15:50
lab1003@lab1003-OptiPlex-3070: ~
File Edit View Search Terminal Help

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

lab1003@lab1003-OptiPlex-3070:~$ sudo install nmap
[sudo] password for lab1003:
Sorry, try again.
[sudo] password for lab1003:
install: missing destination file operand after 'nmap'
Try 'install --help' for more information.
lab1003@lab1003-OptiPlex-3070:~$ sudo apt install nmap
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.15.0-20 linux-headers-4.15.0-20-generic linux-image-4.15.0-20-generic linux-modules-4.15.0-20-generic
  linux-modules-extra-4.15.0-20-generic
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libblas3 liblinear3
Suggested packages:
  liblinear-tools liblinear-dev ndiff
The following NEW packages will be installed:
  libblas3 liblinear3 nmap
0 upgraded, 3 newly installed, 0 to remove and 348 not upgraded.
Need to get 5,353 kB of archives.
After this operation, 24.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 libblas3 amd64 3.7.1-4ubuntu1 [140 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 liblinear3 amd64 2.1.0+dfsg-2 [39.3 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 nmap amd64 7.60-1ubuntu5 [5,174 kB]
Fetched 5,353 kB in 4s (1,409 kB/s)
Selecting previously unselected package libblas3:amd64.
(Reading database ... 197043 files and directories currently installed.)
Preparing to unpack .../libblas3_3.7.1-4ubuntu1_amd64.deb ...
Unpacking libblas3:amd64 (3.7.1-4ubuntu1) ...
Selecting previously unselected package liblinear3:amd64.
Preparing to unpack .../liblinear3_2.1.0+dfsg-2_amd64.deb ...
Unpacking liblinear3:amd64 (2.1.0+dfsg-2) ...
```

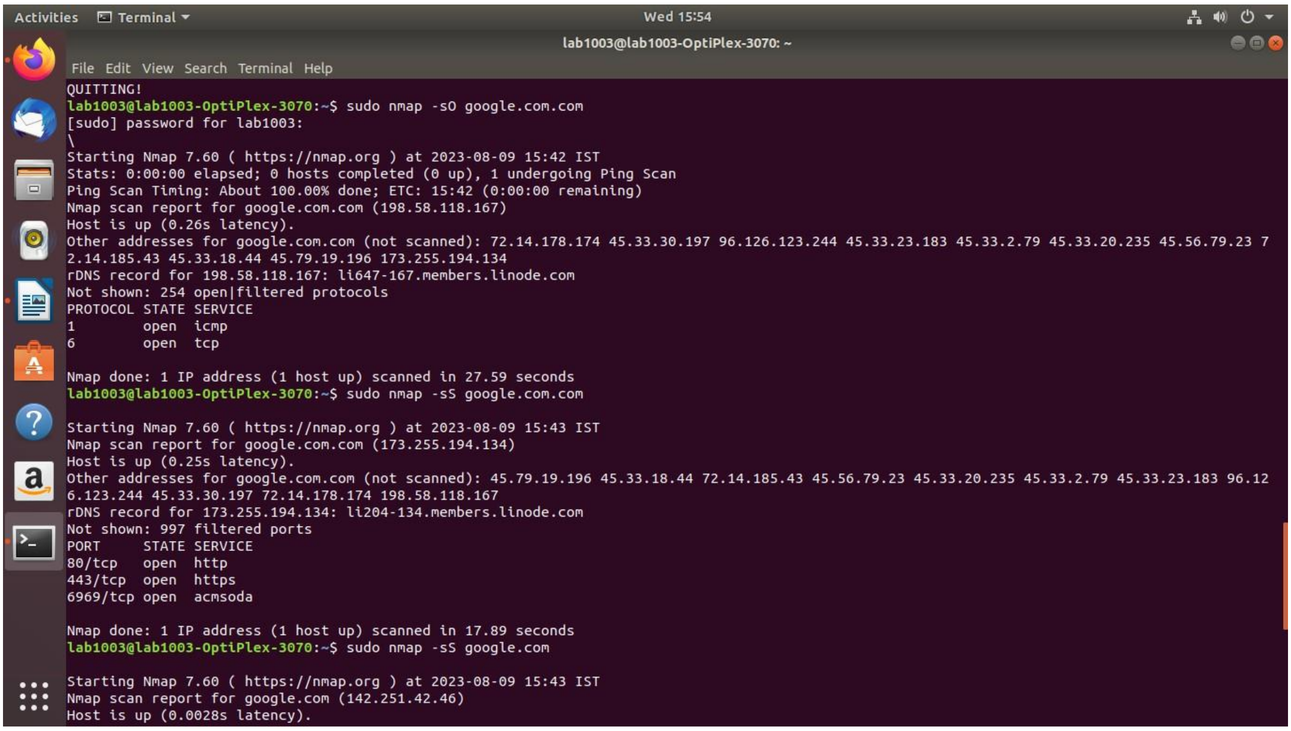


Activities
Terminal
Wed 15:52
lab1003@lab1003-OptiPlex-3070: ~
File Edit View Search Terminal Help

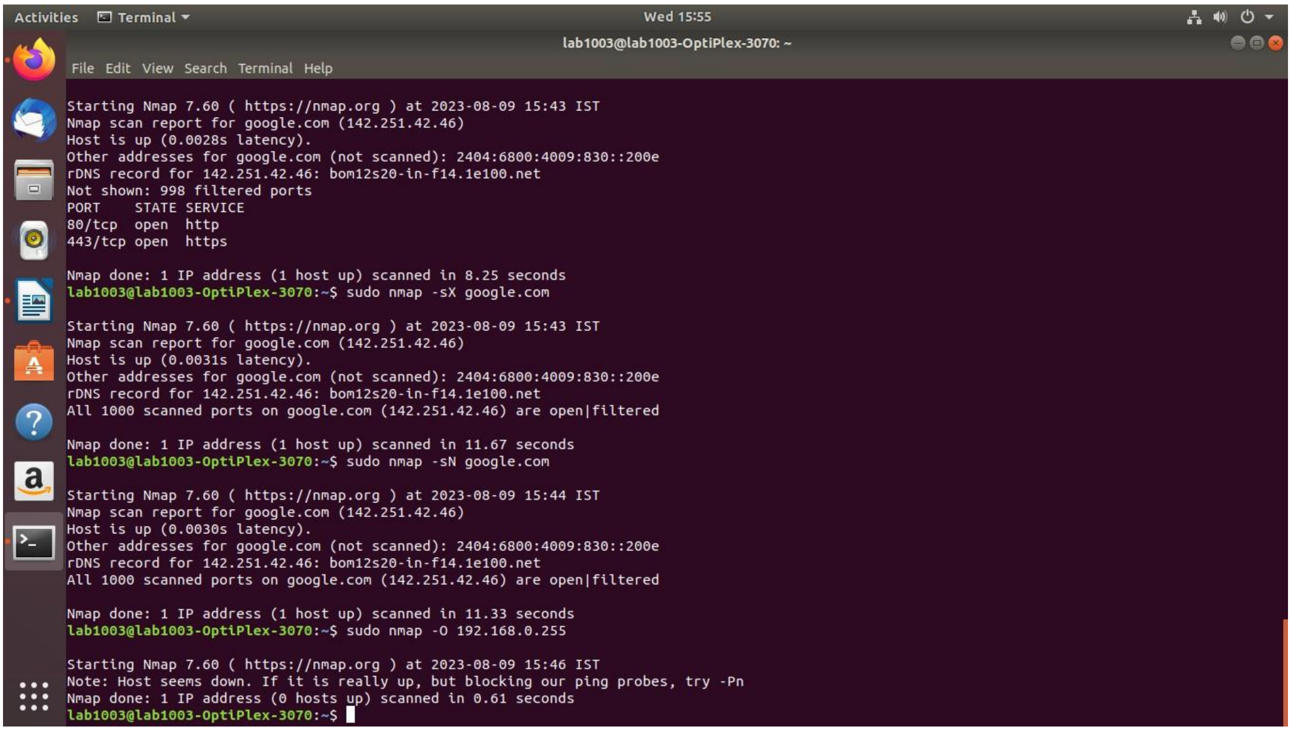
```
sudo apt install net-tools

lab1003@lab1003-OptiPlex-3070:~$ sudo apt install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.15.0-20 linux-headers-4.15.0-20-generic linux-image-4.15.0-20-generic linux-modules-4.15.0-20-generic
  linux-modules-extra-4.15.0-20-generic
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 348 not upgraded.
Need to get 194 kB of archives.
After this operation, 803 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 net-tools amd64 1.60+git20161116.90da8a0-1ubuntu1 [194 kB]
Fetched 194 kB in 1s (156 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 197868 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20161116.90da8a0-1ubuntu1_amd64.deb ...
Unpacking net-tools (1.60+git20161116.90da8a0-1ubuntu1) ...
Setting up net-tools (1.60+git20161116.90da8a0-1ubuntu1) ...
Processing triggers for man-db (2.8.3-2) ...
lab1003@lab1003-OptiPlex-3070:~$ ifconfig
enp1s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.0.146  netmask 255.255.255.0  broadcast 192.168.0.255
        inet6 fe80::1551:4c6e:5a18:b7ee  prefixlen 64  scopeid 0x20<link>
        ether e4:54:e8:c6:44:64  txqueuelen 1000  (Ethernet)
        RX packets 865801  bytes 972907404 (972.9 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 787853  bytes 629692119 (629.6 MB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 5572  bytes 624140 (624.1 KB)
```


Activities
Terminal
Wed 15:53
lab1003@lab1003-OptiPlex-3070: ~
File Edit View Search Terminal Help

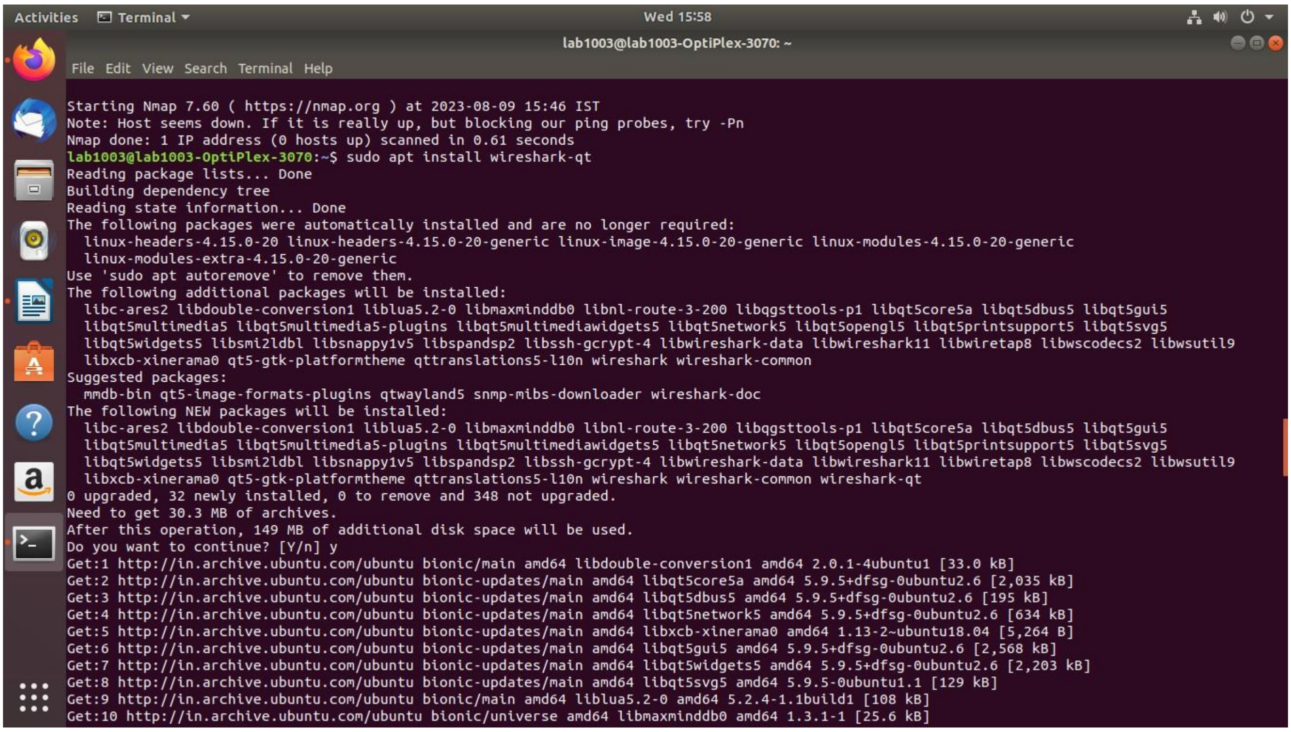
```
lab1003@lab1003-OptiPlex-3070:~$ krad# nmap -sF -T4 para
krad#: command not found
lab1003@lab1003-OptiPlex-3070:~$ nmap -sP google.com

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:37 IST
Nmap scan report for google.com (142.251.42.46)
Host is up (0.0064s latency).
Other addresses for google.com (not scanned): 2404:6800:4009:830::200e
rDNS record for 142.251.42.46: bom12s20-in-f14.1e100.net
Nmap done: 1 IP address (1 host up) scanned in 0.01 seconds
lab1003@lab1003-OptiPlex-3070:~$ nmap -sP facebook.com

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:37 IST
Nmap scan report for facebook.com (31.13.79.35)
Host is up (0.0025s latency).
Other addresses for facebook.com (not scanned): 2a03:2880:f12f:183:face:b00c:0:25de
rDNS record for 31.13.79.35: edge-star-mini-shv-02-bom1.facebook.com
Nmap done: 1 IP address (1 host up) scanned in 0.11 seconds
lab1003@lab1003-OptiPlex-3070:~$ nmap -sP instagram.com

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:38 IST
Nmap scan report for instagram.com (31.13.79.174)
Host is up (0.0024s latency).
Other addresses for instagram.com (not scanned): 2a03:2880:f22f:1e5:face:b00c:0:4420
rDNS record for 31.13.79.174: instagram-p42-shv-02-bom1.fbcdn.net
Nmap done: 1 IP address (1 host up) scanned in 0.04 seconds
lab1003@lab1003-OptiPlex-3070:~$ nmap -sF instagram.com
You requested a scan type which requires root privileges.
QUITTING!
lab1003@lab1003-OptiPlex-3070:~$ nmap -sF facebook.com
You requested a scan type which requires root privileges.
QUITTING!
lab1003@lab1003-OptiPlex-3070:~$ nmap -sS -T4 docsrv.caldera.com
You requested a scan type which requires root privileges.
QUITTING!
lab1003@lab1003-OptiPlex-3070:~$ nmap -sS google.com.com
You requested a scan type which requires root privileges.
QUITTING!
```


Activities
Terminal
Wed 15:54
lab1003@lab1003-OptiPlex-3070: ~
File Edit View Search Terminal Help

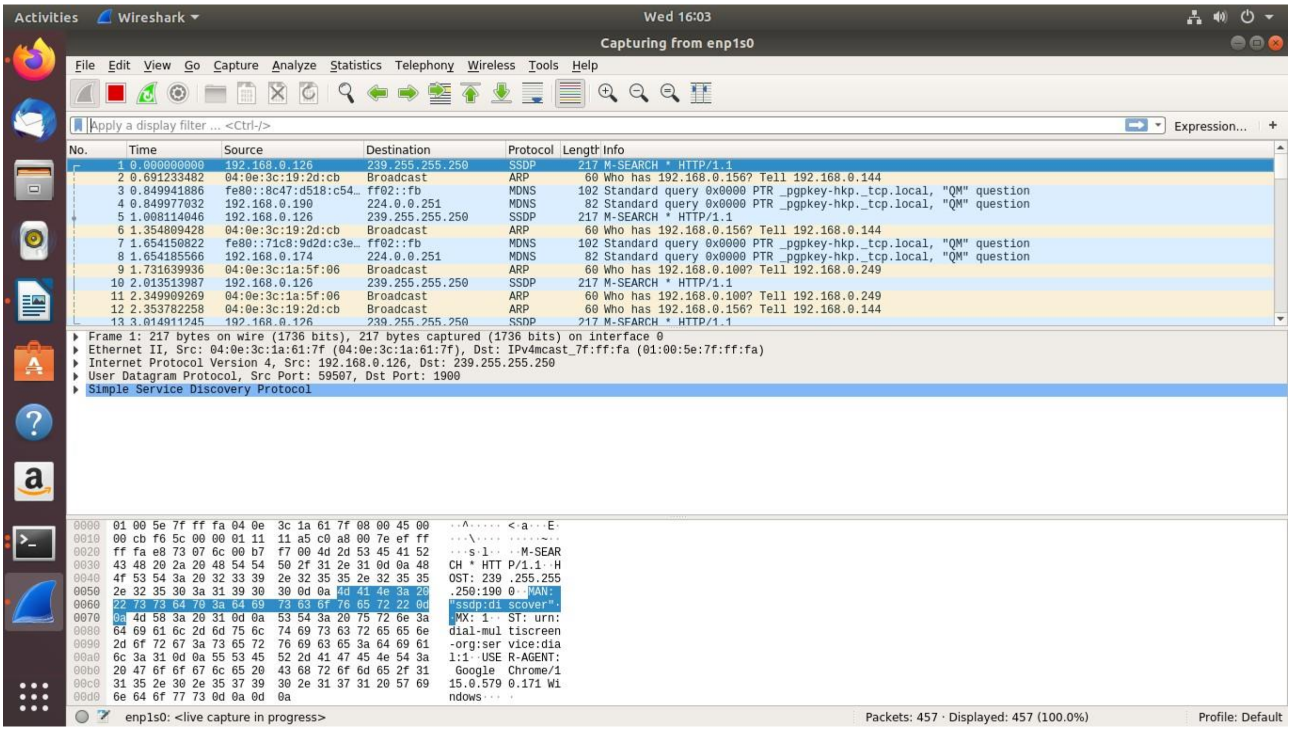
```
QUITTING!
lab1003@lab1003-OptiPlex-3070:~$ sudo nmap -sO google.com.com
[sudo] password for lab1003:
\
Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:42 IST
Stats: 0:00:00 elapsed; 0 hosts completed (0 up), 1 undergoing Ping Scan
Ping Scan Timing: About 100.00% done; ETC: 15:42 (0:00:00 remaining)
Nmap scan report for google.com.com (198.58.118.167)
Host is up (0.26s latency).
Other addresses for google.com.com (not scanned): 72.14.178.174 45.33.30.197 96.126.123.244 45.33.23.183 45.33.2.79 45.33.20.235 45.56.79.23 7
2.14.185.43 45.33.18.44 45.79.19.196 173.255.194.134
rDNS record for 198.58.118.167: li647-167.members.linode.com
Not shown: 254 open|filtered protocols
PROTOCOL STATE SERVICE
1        open  icmp
6        open  tcp

Nmap done: 1 IP address (1 host up) scanned in 27.59 seconds
lab1003@lab1003-OptiPlex-3070:~$ sudo nmap -sS google.com.com

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:43 IST
Nmap scan report for google.com.com (173.255.194.134)
Host is up (0.25s latency).
Other addresses for google.com.com (not scanned): 45.79.19.196 45.33.18.44 72.14.185.43 45.56.79.23 45.33.20.235 45.33.2.79 45.33.23.183 96.12
6.123.244 45.33.30.197 72.14.178.174 198.58.118.167
rDNS record for 173.255.194.134: li204-134.members.linode.com
Not shown: 997 filtered ports
PORT     STATE SERVICE
80/tcp   open  http
443/tcp  open  https
6969/tcp open  acmsoda

Nmap done: 1 IP address (1 host up) scanned in 17.89 seconds
lab1003@lab1003-OptiPlex-3070:~$ sudo nmap -sS google.com

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:43 IST
Nmap scan report for google.com (142.251.42.46)
Host is up (0.0028s latency).
```


Activities
Terminal ▾
Wed 15:55
lab1003@lab1003-OptiPlex-3070: ~
File Edit View Search Terminal Help

```
Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:43 IST
Nmap scan report for google.com (142.251.42.46)
Host is up (0.0028s latency).
Other addresses for google.com (not scanned): 2404:6800:4009:830::200e
rDNS record for 142.251.42.46: bom12s20-in-f14.1e100.net
Not shown: 998 filtered ports
PORT    STATE SERVICE
80/tcp  open  http
443/tcp open  https

Nmap done: 1 IP address (1 host up) scanned in 8.25 seconds
lab1003@lab1003-OptiPlex-3070:~$ sudo nmap -sX google.com

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:43 IST
Nmap scan report for google.com (142.251.42.46)
Host is up (0.0031s latency).
Other addresses for google.com (not scanned): 2404:6800:4009:830::200e
rDNS record for 142.251.42.46: bom12s20-in-f14.1e100.net
All 1000 scanned ports on google.com (142.251.42.46) are open|filtered

Nmap done: 1 IP address (1 host up) scanned in 11.67 seconds
lab1003@lab1003-OptiPlex-3070:~$ sudo nmap -sN google.com

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:44 IST
Nmap scan report for google.com (142.251.42.46)
Host is up (0.0030s latency).
Other addresses for google.com (not scanned): 2404:6800:4009:830::200e
rDNS record for 142.251.42.46: bom12s20-in-f14.1e100.net
All 1000 scanned ports on google.com (142.251.42.46) are open|filtered

Nmap done: 1 IP address (1 host up) scanned in 11.33 seconds
lab1003@lab1003-OptiPlex-3070:~$ sudo nmap -O 192.168.0.255

Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:46 IST
Note: Host seems down. If it is really up, but blocking our ping probes, try -Pn
Nmap done: 1 IP address (0 hosts up) scanned in 0.61 seconds
lab1003@lab1003-OptiPlex-3070:~$
```

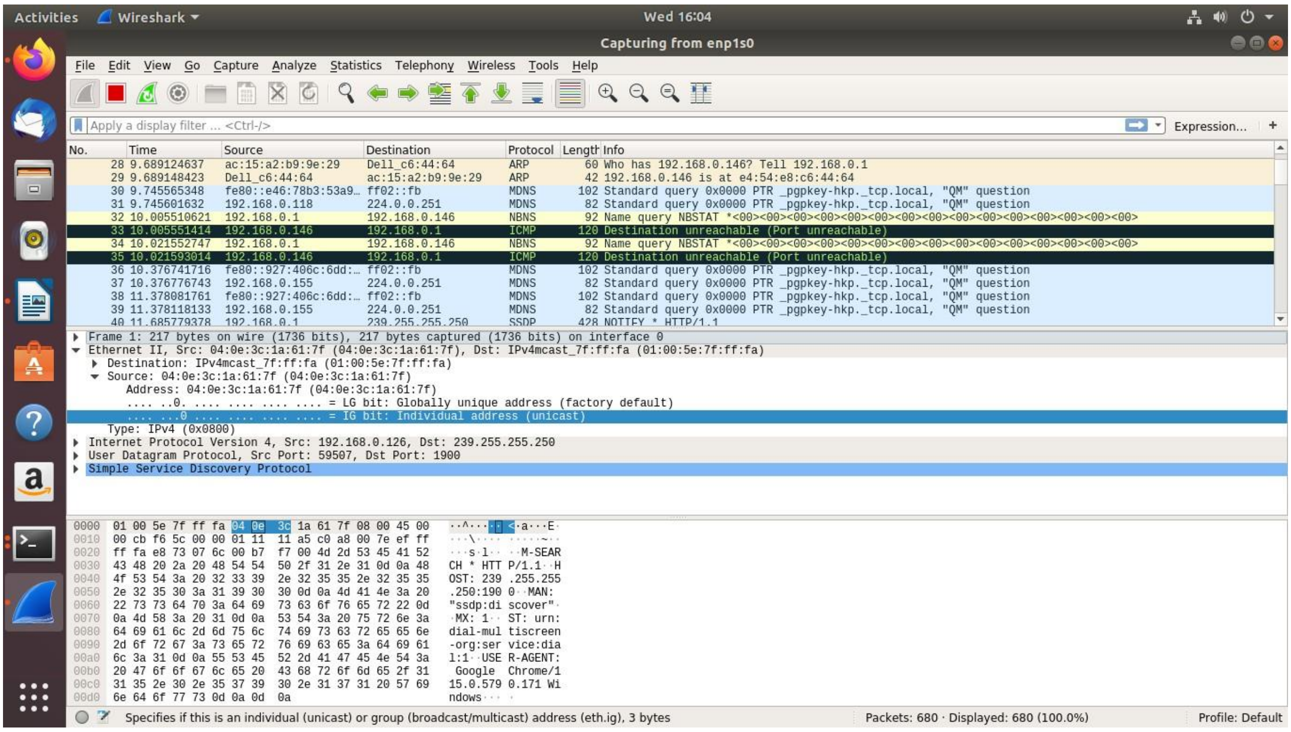

Activities
Terminal ▾
Wed 15:58
lab1003@lab1003-OptiPlex-3070: ~
File Edit View Search Terminal Help

```
Starting Nmap 7.60 ( https://nmap.org ) at 2023-08-09 15:46 IST
Note: Host seems down. If it is really up, but blocking our ping probes, try -Pn
Nmap done: 1 IP address (0 hosts up) scanned in 0.61 seconds
lab1003@lab1003-OptiPlex-3070:~$ sudo apt install wireshark-qt
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.15.0-20 linux-headers-4.15.0-20-generic linux-image-4.15.0-20-generic linux-modules-4.15.0-20-generic
  linux-modules-extra-4.15.0-20-generic
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libc-ares2 libdouble-conversion1 liblua5.2-0 libmaxminddb0 libnl-route-3-200 libqgsttools-p1 libqt5core5a libqt5dbus5 libqt5gui5
  libqt5multimedia5 libqt5multimedia5-plugins libqt5multimediawidgets5 libqt5network5 libqt5opengl5 libqt5printsupport5 libqt5svg5
  libqt5widgets5 libsmi2ldbl libsnappy1v5 libspandsp2 libssh-gcrypt-4 libwireshark-data libwireshark11 libwiretap8 libwscodecs2 libwsutil9
  libxcb-xinerama0 qt5-gtk-platformtheme qttranslations5-l10n wireshark wireshark-common
Suggested packages:
  mmdb-bin qt5-image-formats-plugins qtwayland5 snmp-mibs-downloader wireshark-doc
The following NEW packages will be installed:
  libc-ares2 libdouble-conversion1 liblua5.2-0 libmaxminddb0 libnl-route-3-200 libqgsttools-p1 libqt5core5a libqt5dbus5 libqt5gui5
  libqt5multimedia5 libqt5multimedia5-plugins libqt5multimediawidgets5 libqt5network5 libqt5opengl5 libqt5printsupport5 libqt5svg5
  libqt5widgets5 libsmi2ldbl libsnappy1v5 libspandsp2 libssh-gcrypt-4 libwireshark-data libwireshark11 libwiretap8 libwscodecs2 libwsutil9
  libxcb-xinerama0 qt5-gtk-platformtheme qttranslations5-l10n wireshark wireshark-common wireshark-qt
0 upgraded, 32 newly installed, 0 to remove and 348 not upgraded.
Need to get 30.3 MB of archives.
After this operation, 149 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 libdouble-conversion1 amd64 2.0.1-4ubuntu1 [33.0 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5core5a amd64 5.9.5+dfsg-0ubuntu2.6 [2,035 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5dbus5 amd64 5.9.5+dfsg-0ubuntu2.6 [195 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5network5 amd64 5.9.5+dfsg-0ubuntu2.6 [634 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libxcb-xinerama0 amd64 1.13-2~ubuntu18.04 [5,264 B]
Get:6 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5gui5 amd64 5.9.5+dfsg-0ubuntu2.6 [2,568 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5widgets5 amd64 5.9.5+dfsg-0ubuntu2.6 [2,203 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5svg5 amd64 5.9.5-0ubuntu1.1 [129 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 liblua5.2-0 amd64 5.2.4-1.1build1 [108 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu bionic/universe amd64 libmaxminddb0 amd64 1.3.1-1 [25.6 kB]
```



Activities
Wireshark
Wed 16:03
Capturing from enp1s0
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter … <Ctrl-/>
Expression…

```
No.  Time         Source                 Destination      Protocol Length Info
   1 0.000000000  192.168.0.126          239.255.255.250  SSDP     217 M-SEARCH * HTTP/1.1
   2 0.691233482  04:0e:3c:19:2d:cb      Broadcast        ARP       60 Who has 192.168.0.156? Tell 192.168.0.144
   3 0.849941886  fe80::8c47:d518:c54…   ff02::fb         MDNS     102 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
   4 0.849977032  192.168.0.190          224.0.0.251      MDNS      82 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
   5 1.008114046  192.168.0.126          239.255.255.250  SSDP     217 M-SEARCH * HTTP/1.1
   6 1.354809428  04:0e:3c:19:2d:cb      Broadcast        ARP       60 Who has 192.168.0.156? Tell 192.168.0.144
   7 1.654150822  fe80::71c8:9d2d:c3e…   ff02::fb         MDNS     102 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
   8 1.654185566  192.168.0.174          224.0.0.251      MDNS      82 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
   9 1.731639936  04:0e:3c:1a:5f:06      Broadcast        ARP       60 Who has 192.168.0.100? Tell 192.168.0.249
  10 2.013513987  192.168.0.126          239.255.255.250  SSDP     217 M-SEARCH * HTTP/1.1
  11 2.349909269  04:0e:3c:1a:5f:06      Broadcast        ARP       60 Who has 192.168.0.100? Tell 192.168.0.249
  12 2.353782258  04:0e:3c:19:2d:cb      Broadcast        ARP       60 Who has 192.168.0.156? Tell 192.168.0.144
  13 3.014911245  192.168.0.126          239.255.255.250  SSDP     217 M-SEARCH * HTTP/1.1

▸ Frame 1: 217 bytes on wire (1736 bits), 217 bytes captured (1736 bits) on interface 0
▸ Ethernet II, Src: 04:0e:3c:1a:61:7f (04:0e:3c:1a:61:7f), Dst: IPv4mcast_7f:ff:fa (01:00:5e:7f:ff:fa)
▸ Internet Protocol Version 4, Src: 192.168.0.126, Dst: 239.255.255.250
▸ User Datagram Protocol, Src Port: 59507, Dst Port: 1900
▸ Simple Service Discovery Protocol

0000  01 00 5e 7f ff fa 04 0e  3c 1a 61 7f 08 00 45 00   ··^····· <·a···E·
0010  00 cb f6 5c 00 00 01 11  11 a5 c0 a8 00 7e ef ff   ···\···· ·····~··
0020  ff fa e8 73 07 6c 00 b7  f7 00 4d 2d 53 45 41 52   ···s·l·· ··M-SEAR
0030  43 48 20 2a 20 48 54 54  50 2f 31 2e 31 0d 0a 48   CH * HTT P/1.1··H
0040  4f 53 54 3a 20 32 33 39  2e 32 35 35 2e 32 35 35   OST: 239 .255.255
0050  2e 32 35 30 3a 31 39 30  30 0d 0a 4d 41 4e 3a 20   .250:190 0··MAN:
0060  22 73 73 64 70 3a 64 69  73 63 6f 76 65 72 22 0d   "ssdp:di scover"·
0070  0a 4d 58 3a 20 31 0d 0a  53 54 3a 20 75 72 6e 3a   ·MX: 1·· ST: urn:
0080  64 69 61 6c 2d 6d 75 6c  74 69 73 63 72 65 65 6e   dial-mul tiscreen
0090  2d 6f 72 67 3a 73 65 72  76 69 63 65 3a 64 69 61   -org:ser vice:dia
00a0  6c 3a 31 0d 0a 55 53 45  52 2d 41 47 45 4e 54 3a   l:1··USE R-AGENT:
00b0  20 47 6f 6f 67 6c 65 20  43 68 72 6f 6d 65 2f 31    Google  Chrome/1
00c0  31 35 2e 30 2e 35 37 39  30 2e 31 37 31 20 57 69   15.0.579 0.171 Wi
00d0  6e 64 6f 77 73 0d 0a 0d  0a                        ndows····

enp1s0: <live capture in progress>          Packets: 457 · Displayed: 457 (100.0%)          Profile: Default
```



Activities
Wireshark
Wed 16:04
Capturing from enp1s0
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter … <Ctrl-/>
Expression…

```
No.  Time          Source                 Destination      Protocol Length Info
  28 9.689124637   ac:15:a2:b9:9e:29      Dell_c6:44:64    ARP       60 Who has 192.168.0.146? Tell 192.168.0.1
  29 9.689148423   Dell_c6:44:64          ac:15:a2:b9:9e:29 ARP      42 192.168.0.146 is at e4:54:e8:c6:44:64
  30 9.745565348   fe80::e46:78b3:53a9…   ff02::fb         MDNS     102 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
  31 9.745601632   192.168.0.118          224.0.0.251      MDNS      82 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
  32 10.005510621  192.168.0.1            192.168.0.146    NBNS      92 Name query NBSTAT *<00><00><00><00><00><00><00><00><00><00><00><00><00><00><00>
  33 10.005551414  192.168.0.146          192.168.0.1      ICMP     120 Destination unreachable (Port unreachable)
  34 10.021552747  192.168.0.1            192.168.0.146    NBNS      92 Name query NBSTAT *<00><00><00><00><00><00><00><00><00><00><00><00><00><00><00>
  35 10.021593014  192.168.0.146          192.168.0.1      ICMP     120 Destination unreachable (Port unreachable)
  36 10.376741716  fe80::927:406c:6dd:…   ff02::fb         MDNS     102 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
  37 10.376776743  192.168.0.155          224.0.0.251      MDNS      82 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
  38 11.378081761  fe80::927:406c:6dd:…   ff02::fb         MDNS     102 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
  39 11.378118133  192.168.0.155          224.0.0.251      MDNS      82 Standard query 0x0000 PTR _pgpkey-hkp._tcp.local, "QM" question
  40 11.685779378  192.168.0.1            239.255.255.250  SSDP     428 NOTIFY * HTTP/1.1

▸ Frame 1: 217 bytes on wire (1736 bits), 217 bytes captured (1736 bits) on interface 0
▾ Ethernet II, Src: 04:0e:3c:1a:61:7f (04:0e:3c:1a:61:7f), Dst: IPv4mcast_7f:ff:fa (01:00:5e:7f:ff:fa)
  ▸ Destination: IPv4mcast_7f:ff:fa (01:00:5e:7f:ff:fa)
  ▾ Source: 04:0e:3c:1a:61:7f (04:0e:3c:1a:61:7f)
      Address: 04:0e:3c:1a:61:7f (04:0e:3c:1a:61:7f)
      .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
      .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
    Type: IPv4 (0x0800)
▸ Internet Protocol Version 4, Src: 192.168.0.126, Dst: 239.255.255.250
▸ User Datagram Protocol, Src Port: 59507, Dst Port: 1900
▸ Simple Service Discovery Protocol

0000  01 00 5e 7f ff fa 04 0e  3c 1a 61 7f 08 00 45 00   ··^····· <·a···E·
0010  00 cb f6 5c 00 00 01 11  11 a5 c0 a8 00 7e ef ff   ···\···· ·····~··
0020  ff fa e8 73 07 6c 00 b7  f7 00 4d 2d 53 45 41 52   ···s·l·· ··M-SEAR
0030  43 48 20 2a 20 48 54 54  50 2f 31 2e 31 0d 0a 48   CH * HTT P/1.1··H
0040  4f 53 54 3a 20 32 33 39  2e 32 35 35 2e 32 35 35   OST: 239 .255.255
0050  2e 32 35 30 3a 31 39 30  30 0d 0a 4d 41 4e 3a 20   .250:190 0··MAN:
0060  22 73 73 64 70 3a 64 69  73 63 6f 76 65 72 22 0d   "ssdp:di scover"·
0070  0a 4d 58 3a 20 31 0d 0a  53 54 3a 20 75 72 6e 3a   ·MX: 1·· ST: urn:
0080  64 69 61 6c 2d 6d 75 6c  74 69 73 63 72 65 65 6e   dial-mul tiscreen
0090  2d 6f 72 67 3a 73 65 72  76 69 63 65 3a 64 69 61   -org:ser vice:dia
00a0  6c 3a 31 0d 0a 55 53 45  52 2d 41 47 45 4e 54 3a   l:1··USE R-AGENT:
00b0  20 47 6f 6f 67 6c 65 20  43 68 72 6f 6d 65 2f 31    Google  Chrome/1
00c0  31 35 2e 30 2e 35 37 39  30 2e 31 37 31 20 57 69   15.0.579 0.171 Wi
00d0  6e 64 6f 77 73 0d 0a 0d  0a                        ndows····

Specifies if this is an individual (unicast) or group (broadcast/multicast) address (eth.ig), 3 bytes          Packets: 680 · Displayed: 680 (100.0%)          Profile: Default
```

Conclusion: Nmap is a powerful tool, using it maliciously or without proper authorization is unethical and potentially illegal. Always ensure you have permission to scan the target network or host before performing any scanning activities.