

Development Tools Assignment

Module 2 – Network Performance Measurement Tools

1) Install Wireshark, take capture on WiFi interface

1. Identify the beacon frame using filter.

2. Apply filters to view specific packet.

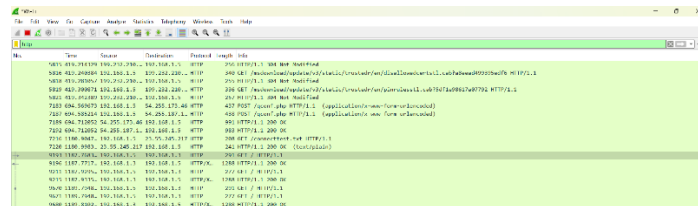
3. Decrypt the wireshark pcap using passphrase, to view the encrypted packets.

4. Point out ethernet and 802.11 frames.

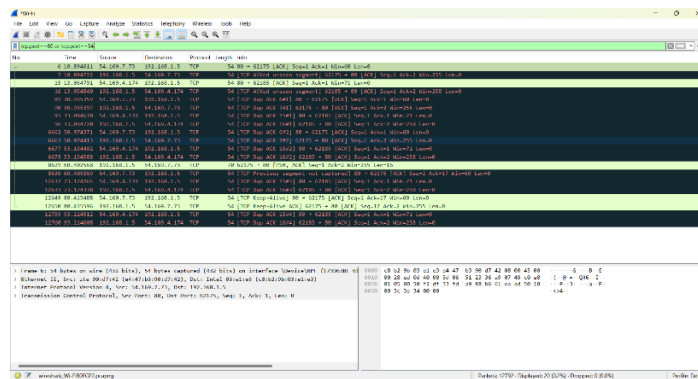
[Solution:](#)

Step 2: Apply filters to view specific packet

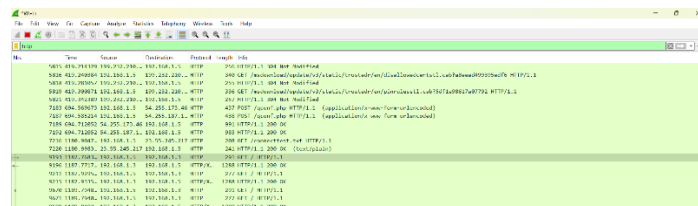
http:

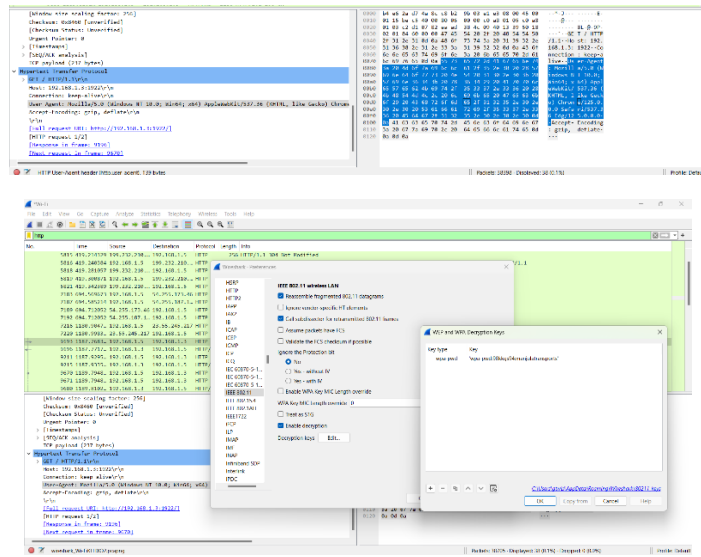


tcp with specific port numbers:

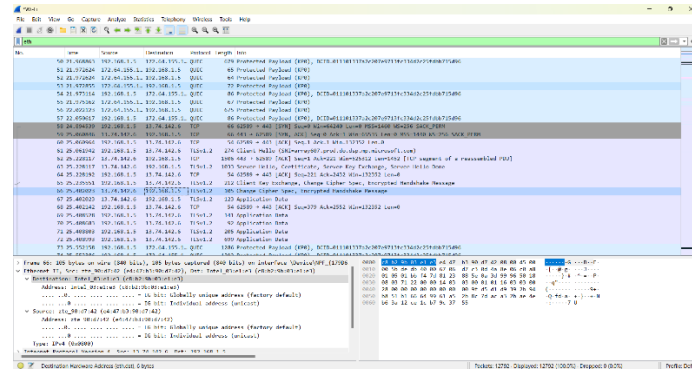


Step 3: Decrypt the wireshark pcap using passphrase, to view the encrypted packets





Step 4: Point out ethernet and 802.11 frames

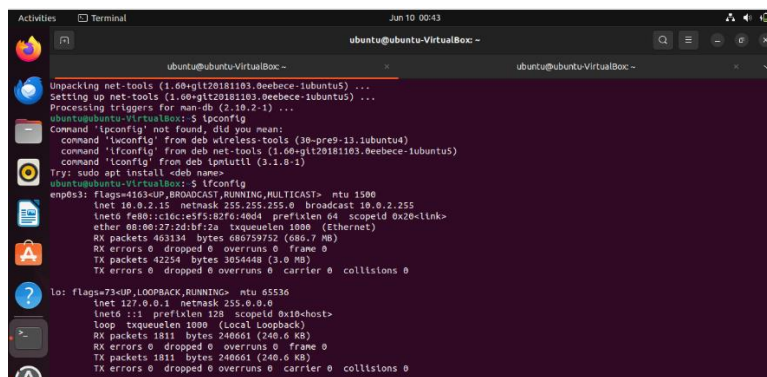


2) Install Iperf on client and server device

1. Run TCP traffic

Solution:

Installing the necessary net-tools and determining the IP of the PC



Server side:

```
ubuntu@ubuntu-VirtualBox:~$ iperf -s
-----
Server listening on TCP port 5001
TCP window size: 128 KByte (default)
-----
[ 1] local 127.0.0.1 port 5001 connected with 127.0.0.1 port 33542
[ ID] Interval      Transfer    Bandwidth
[ 1] 0.0000-10.0032 sec 20.5 GBytes 17.6 Gbits/sec
```

Client Side:

```
ubuntu@ubuntu-VirtualBox:~$ iperf -c 127.0.0.1
-----
Client connecting to 127.0.0.1, TCP port 5001
TCP window size: 2.50 MByte (default)
-----
[ 1] local 127.0.0.1 port 33542 connected with 127.0.0.1 port 5001
[ ID] Interval      Transfer    Bandwidth
[ 1] 0.0000-10.0165 sec 20.5 GBytes 17.6 Gbits/sec
ubuntu@ubuntu-VirtualBox:~$
```

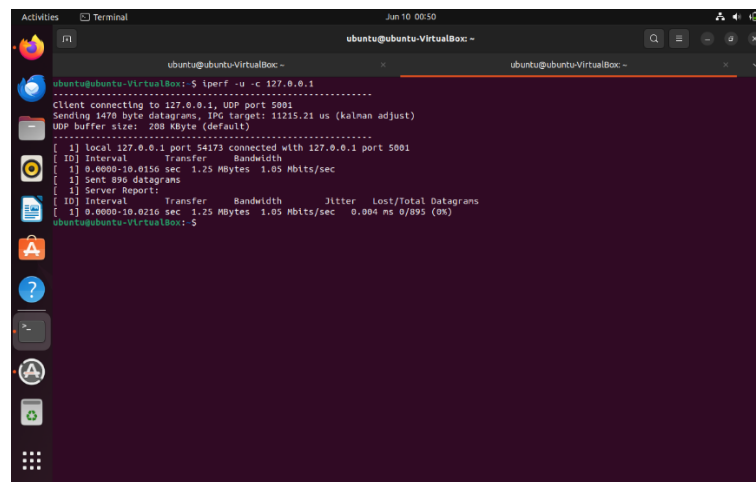
2. Run UDP traffic

Check for the bandwidth and drops reported in the results.

Server side:

```
ubuntu@ubuntu-VirtualBox:~$ iperf -u -s
-----
Server listening on UDP port 5001
UDP buffer size: 204 KByte (default)
-----
[ 1] local 127.0.0.1 port 5001 connected with 127.0.0.1 port 50179
[ ID] Interval      Transfer    Bandwidth    Jitter    Lost/Total Datagrams
[ 1] 0.0000-10.0210 sec 1.25 MBytes 1.05 Mbits/sec 0.004 ns 0/895 (0%)
```

Client Side:

A terminal window titled 'Terminal' with a date and time of 'Jun 10 00:50'. The window shows the output of the 'iperf -u -c 127.0.0.1' command. The output includes connection details, a table of interval statistics, and a server report. The terminal has a dark background with light-colored text. The window title bar includes 'Activities', 'Terminal', and system icons. The left sidebar shows various application icons.

```
ubuntu@ubuntu-VirtualBox: ~  
ubuntu@ubuntu-VirtualBox:~$ iperf -u -c 127.0.0.1  
.....  
Client connecting to 127.0.0.1, UDP port 5001  
Sending 1470 byte datagrams, IPG target: 11215.21 us (kalman adjust)  
UDP buffer size: 208 Kbyte (default)  
.....  
[ 1] local 127.0.0.1 port 54173 connected with 127.0.0.1 port 5001  
ID Interval      Transfer    Bandwidth  
[ 1] 0.0000-10.0156 sec 1.25 Mbytes 1.05 Mbits/sec  
[ 1] Sent 896 datagrams  
[ 1] Server Report:  
ID Interval      Transfer    Bandwidth      Jitter  Lost/Total Datagrams  
[ 1] 0.0000-10.0216 sec 1.25 Mbytes 1.05 Mbits/sec  0.004 ms 0/895 (0%)  
ubuntu@ubuntu-VirtualBox:~$
```