



Mawlana Bhashani Science and Technology University

Lab-Report

Report No: 05

Course code: ICT-4202

Course title: Wireless and Mobile Communication Lab

Date of Performance:

Date of Submission: 25.09.2020

Submitted by

Name: Rashedur Rahman Refat
ID: IT-16027
4th year 2nd semester
Session: 2015-2016
Dept. of ICT
MBSTU.

Submitted To

Nazrul Islam
Assistant Professor
Dept. of ICT
MBSTU.

Experiment No: 05

Experiment Name: Comparative Analysis of Wired and Wireless data using Wireshark

Objectives:

1. We have to find out the Wired data packages Using the Wireshark in order to compare with the wireless data packages.
2. Filter the packages
3. Find out the host, IP of the data packages
4. Create the Statistics for both of the data packages.
5. Finally compare the wired and wireless data packages simultaneously with the help of Wireshark.

Capturing Packets:

If we click any menu option, then it will show the available interfaces list.

After clicking the menu, we need to start Capturing on interface that has IP address/Source/Host.

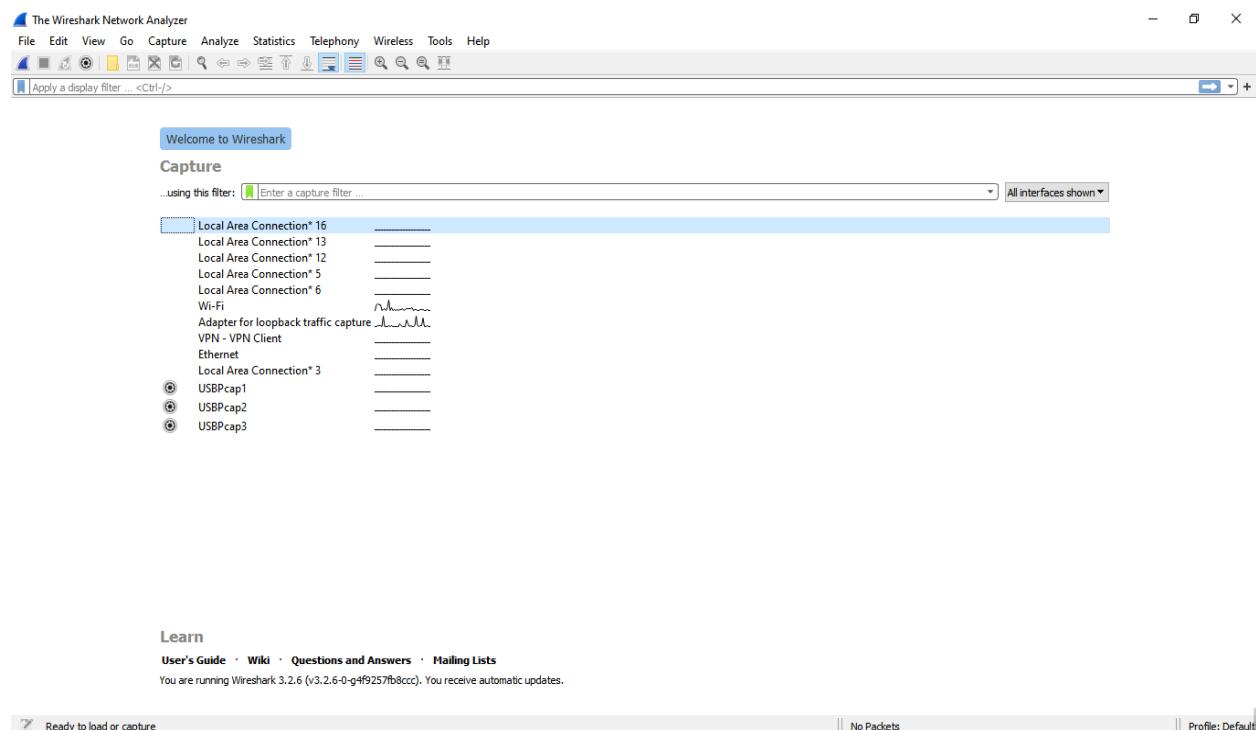


Figure 01: Wireshark Interface List

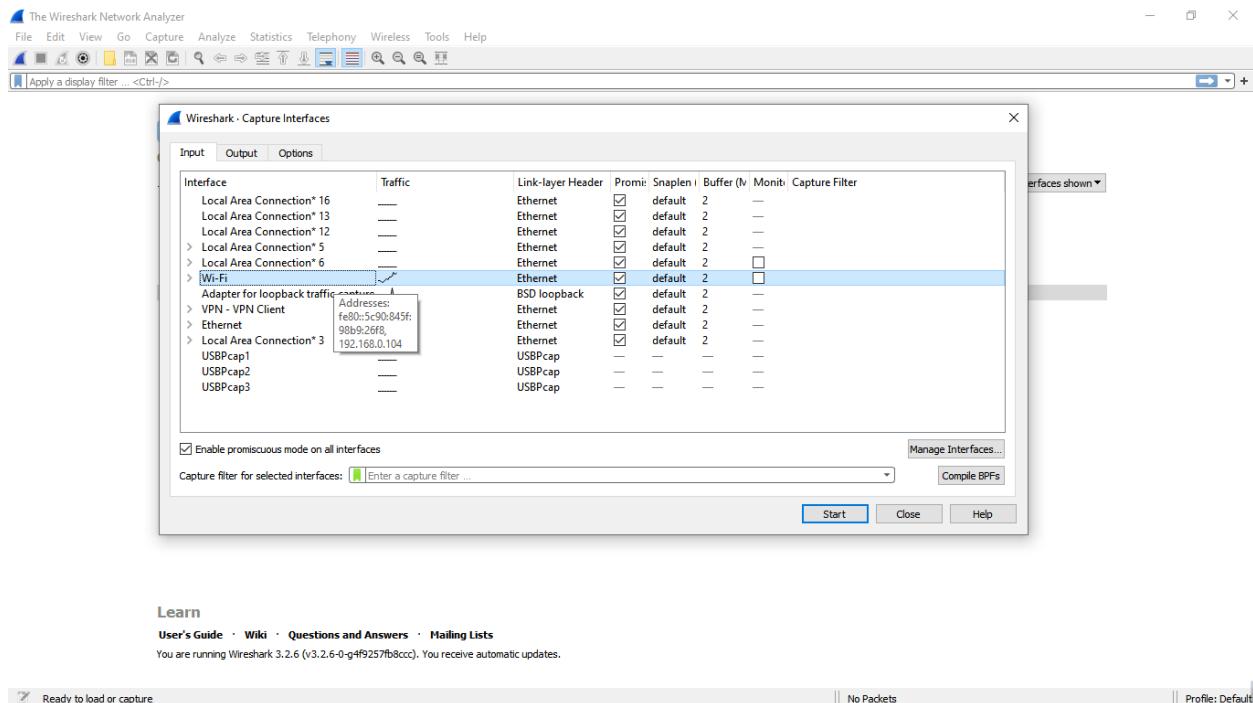


Figure 02-A: Start Capturing Interface that has for Wi-Fi (Wireless)

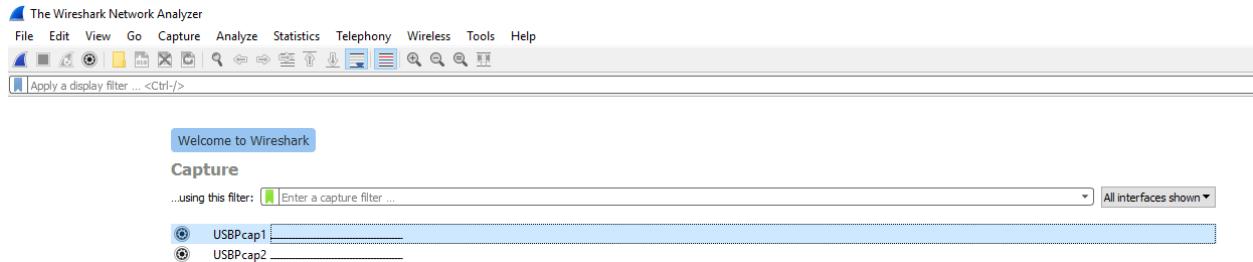


Figure 02-B: Start Capturing Interface that has for USB Tethering(Wired)

Packet
list
pane

Packet
details
pane

Packet
bytes
pane

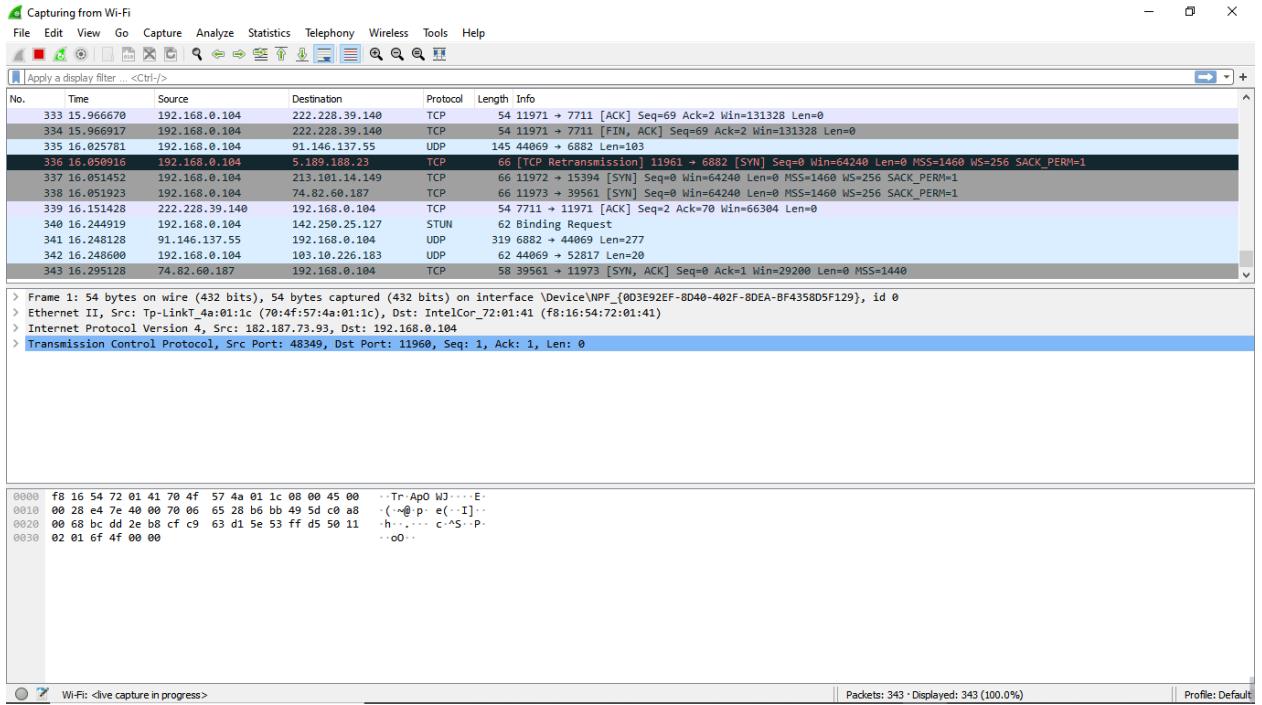


Figure 03-A: A sample packet capture window for Wireless Data Pack

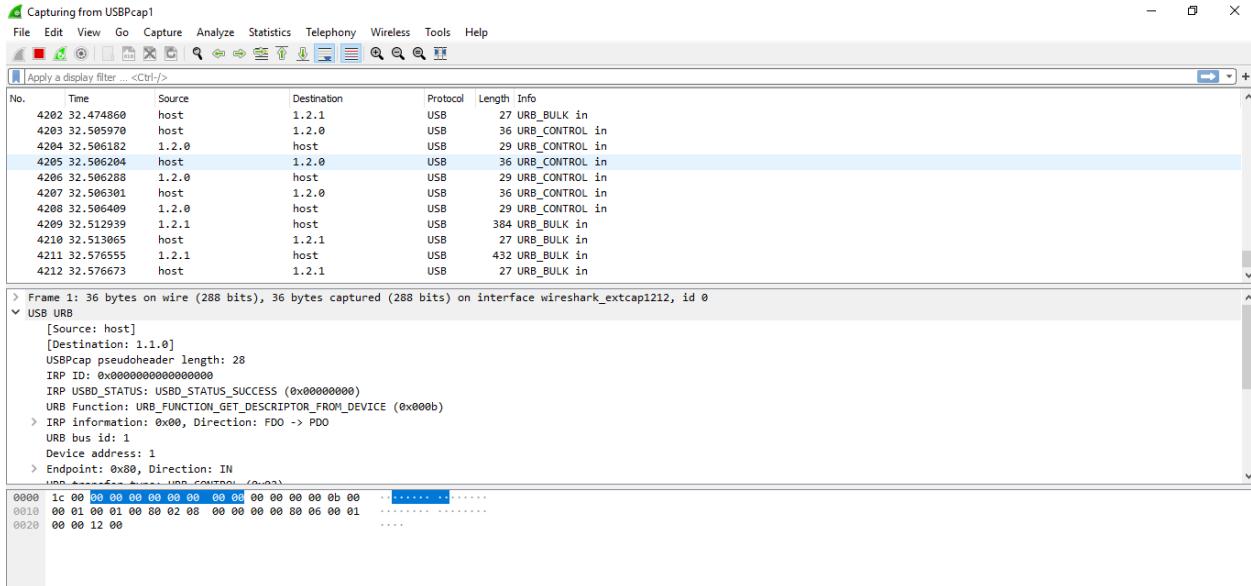


Figure 03-B: A sample packet capture window for Wired Data Pack

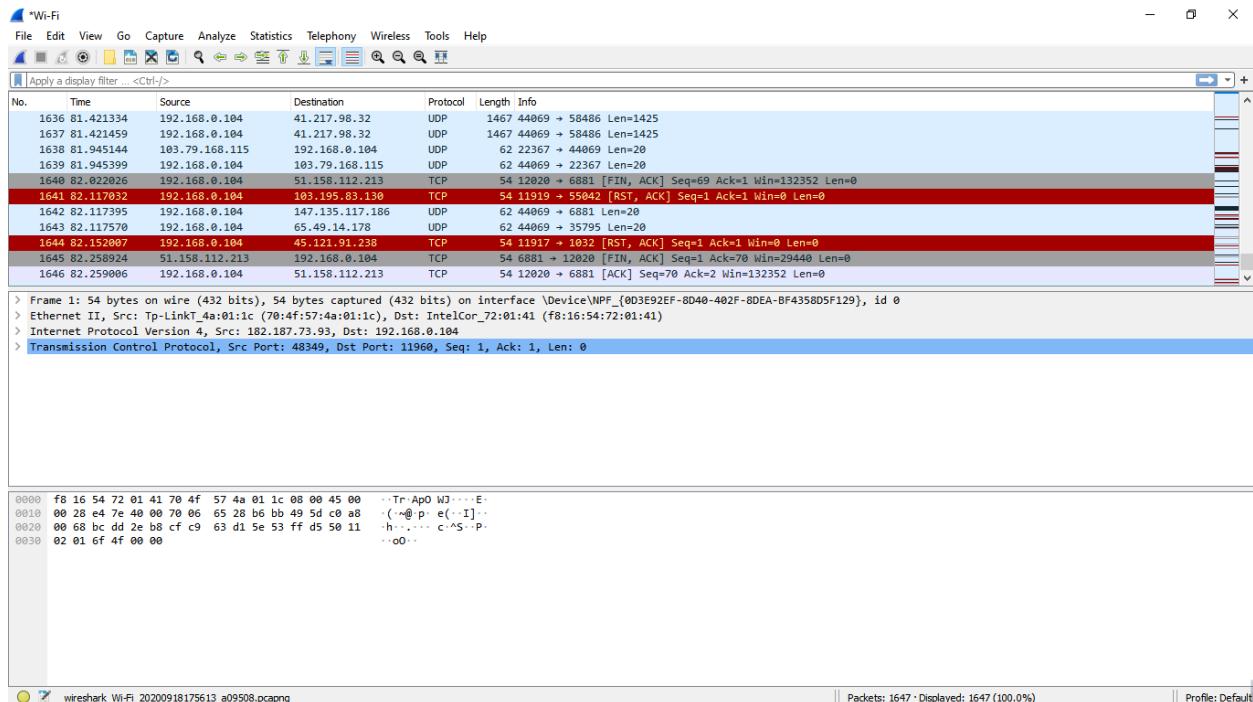


Figure 04-A: Stopping Capture for Wi-Fi (Wireless)

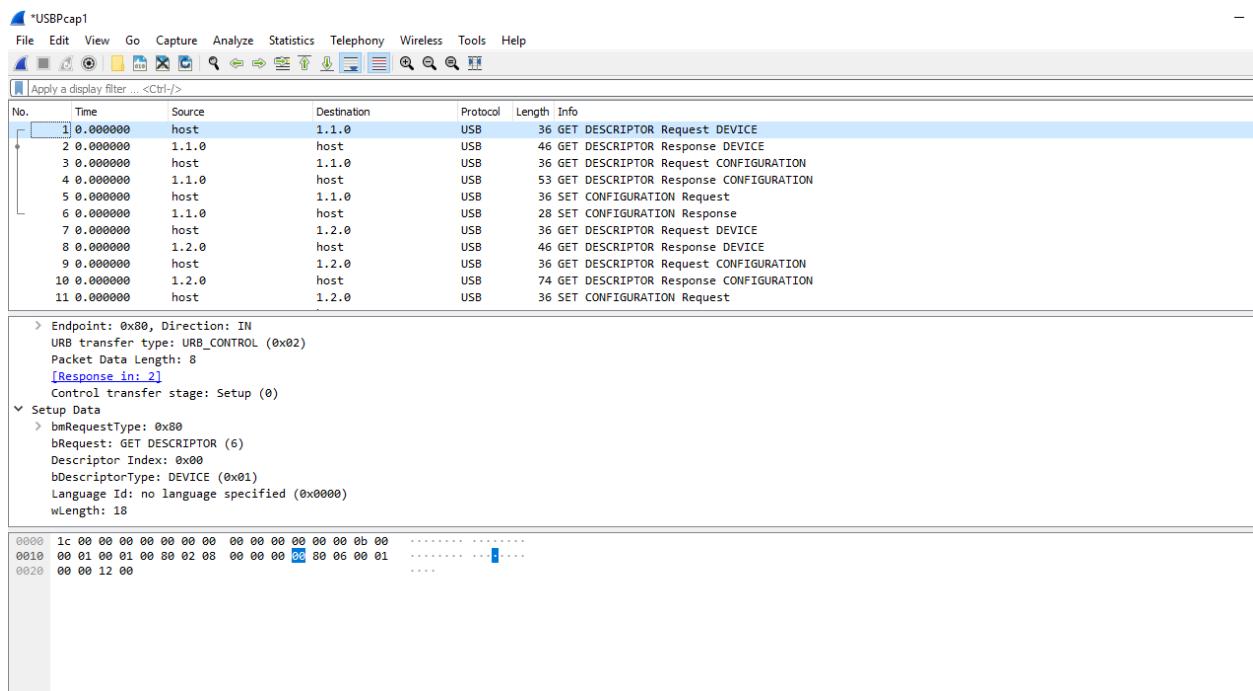


Figure 04-B: Stopping Capture for Wi-Fi (Wired)

Filtering:

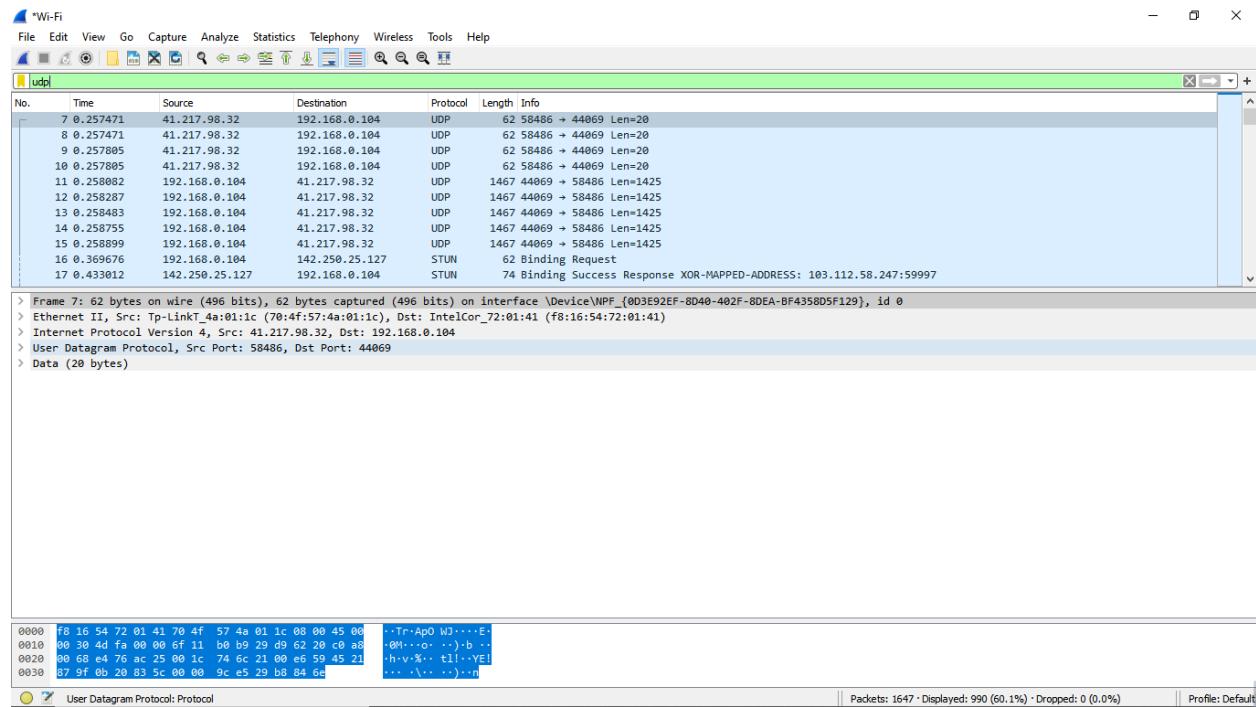


Figure 05-A: Filter by Protocol Wireless Data Packages

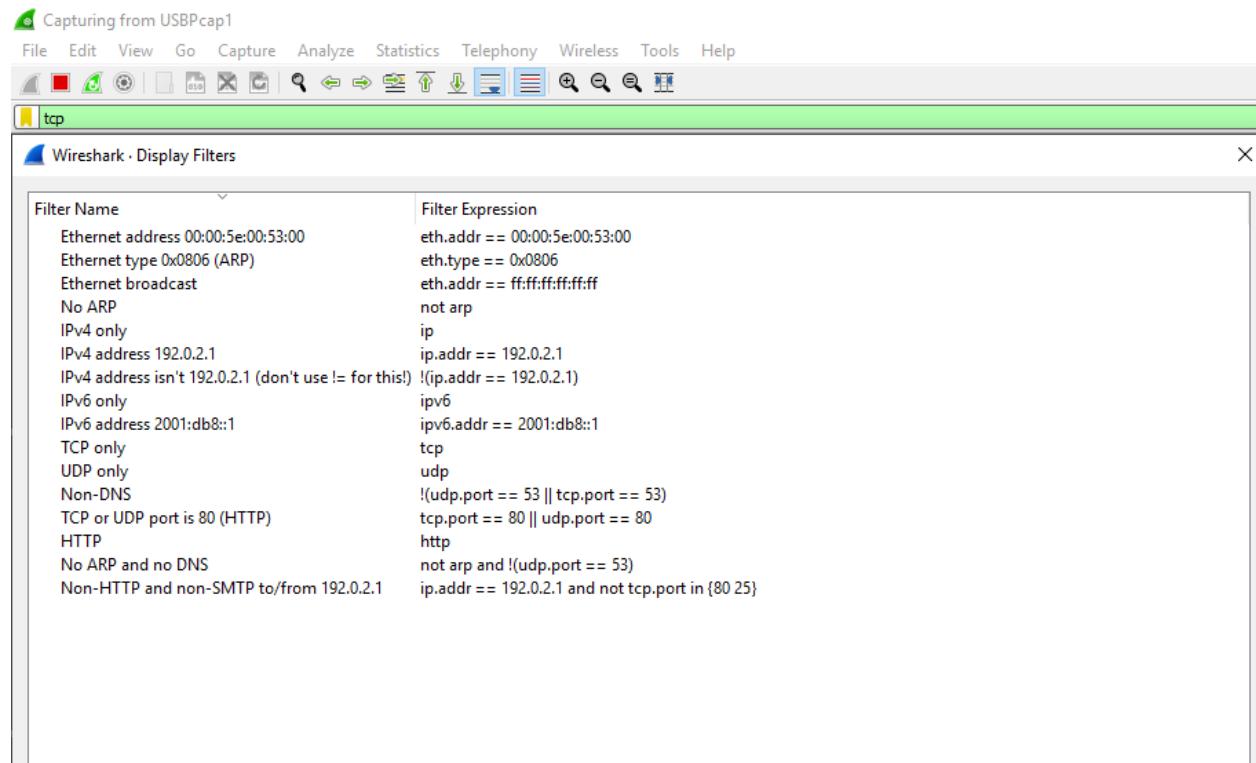


Figure 05-B: Filter by Protocol Wired Data Packages

```

Capturing from USBPcap1
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter... <Ctrl-/>
No. Time Source Destination Protocol Length Info
Encapsulation type: USB packets with USBPcap header (152)
Arrival Time: Sep 25, 2020 19:34:13.920600000 Bangladesh Standard Time
[Time shift for this packet: 0.000000000 seconds]
Epoch Time: 1601040853.920600000 seconds
[Time delta from previous captured frame: 0.000000000 seconds]
[Time delta from previous displayed frame: 0.000000000 seconds]
[Time since reference or first frame: 0.000000000 seconds]
Frame Number: 1
Frame Length: 36 bytes (288 bits)
Capture Length: 36 bytes (288 bits)
[Frame is marked: False]
[Frame is ignored: False]
[Protocols in frame: usb]
USB URB
[Source: host]
[Destination: 1.1.0]
USBPcap pseudoheader length: 28
IRP ID: 0x0000000000000000
IRP USBD_STATUS_SUCCESS (0x00000000)
URB Function: URB_FUNCTION_GET_DESCRIPTOR_FROM_DEVICE (0x000b)
> IRP information: 0x00, Direction: FDO -> PDO
URB bus id: 1
Device address: 1
> Endpoint: 0x80, Direction: IN
URB transfer type: URB_CONTROL (0x02)
Packet Data Length: 8
[Response in: 2]
Control transfer stage: Setup (0)
Setup Data
> bmRequestType: 0x80
bRequest: GET_DESCRIPTOR (6)
Descriptor Index: 0x00
bDescriptorType: DEVICE (0x01)
Language Id: no language specified (0x0000)
wLength: 18

```

Figure 06-A: Packet Details Pane (Frame segment) for Wired Data Packages.

```

*Wi-Fi
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter... <Ctrl-/>
No. Time Source Destination Protocol Length Info
1... 58.504447 192.168.0.104 124.211.191.1... TCP 54 12018 -> 19256 [ACK] Seq=69 Ack=2 Win=132352 Len=0
1... 58.504771 192.168.0.104 124.211.191.1... TCP 54 12018 -> 19256 [FIN, ACK] Seq=69 Ack=2 Win=132352 Len=0
Frame 1343: 54 bytes on wire (432 bits), 54 bytes captured (432 bits) on interface \Device\NPF_{0D3E92EF-8D40-402F-8DEA-BF4358D5F12...
> Interface id: 0 (\Device\NPF_{0D3E92EF-8D40-402F-8DEA-BF4358D5F129})
Encapsulation type: Ethernet (1)
Arrival Time: Sep 18, 2020 17:57:11.954819000 Bangladesh Standard Time
[Time shift for this packet: 0.000000000 seconds]
Epoch Time: 1600430231.954819000 seconds
[Time delta from previous captured frame: 0.000324000 seconds]
[Time delta from previous displayed frame: 0.000324000 seconds]
[Time since reference or first frame: 58.504771000 seconds]
Frame Number: 1343
Frame Length: 54 bytes (432 bits)
Capture Length: 54 bytes (432 bits)
[Frame is marked: False]
[Frame is ignored: False]
[Protocols in frame: eth:ethertype:ip:tcp]
[Coloring Rule Name: TCP SYN/FIN]
[Coloring Rule String: tcp.flags & 0x02 || tcp.flags.fin == 1]
0000 70 4f 57 4a 01 1c f8 16 54 72 01 41 08 00 45 00 pOWJ..... Tr A...E...
0010 00 28 ab 0b 40 00 80 06 52 66 c0 a8 00 68 7c d3 .(.-@... Rf...h|...
0020 bf 7a 2e f2 4b 38 fa 55 f5 58 f4 4e ea 6b 50 11 .z..K8-U X-N-kP...
0030 02 05 67 dc 00 00 ..g...

```

Figure 06-B: Packet Details Pane (Frame segment) for Wireless Data Packages.

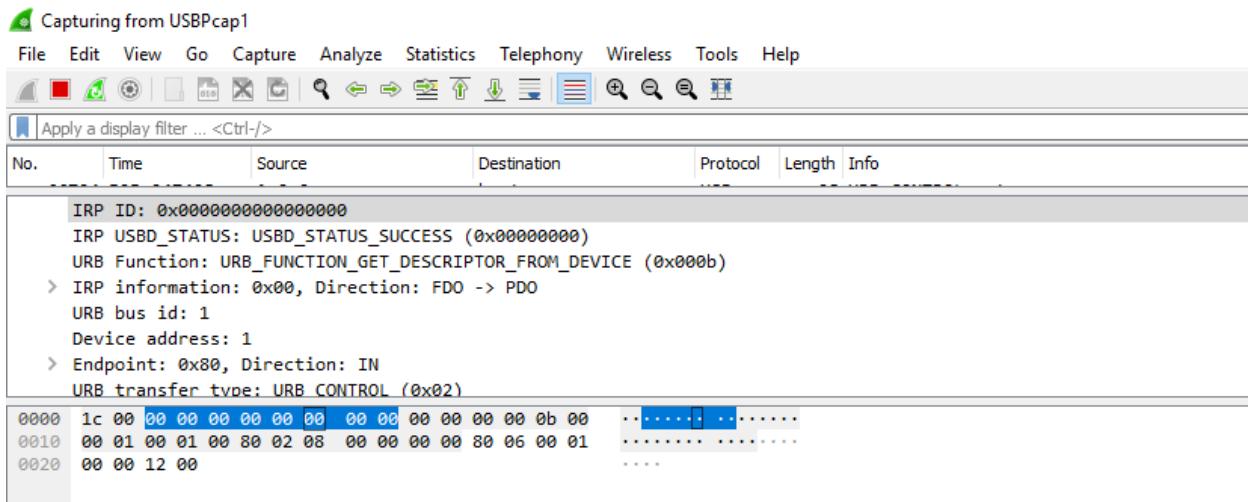


Figure 07-A: Packet Byte Pane for Wireless (USB Tethering)

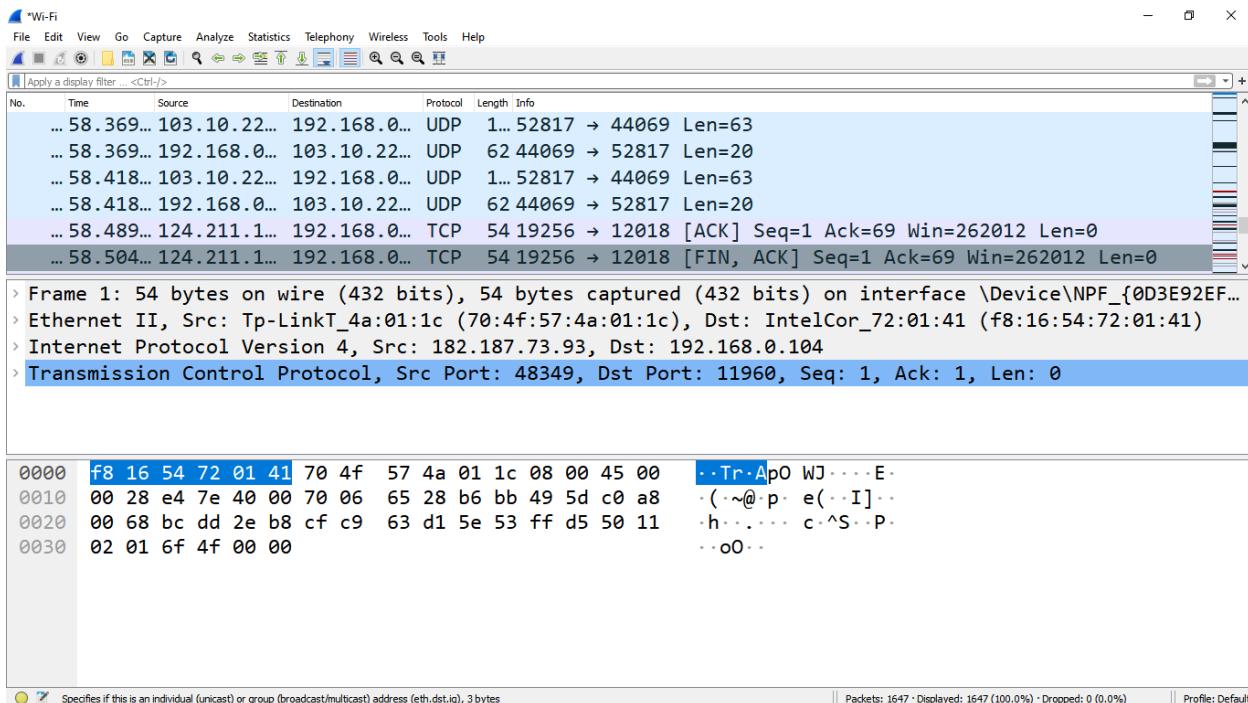


Figure 07-B: Packet Byte Pane (For Wi-Fi)

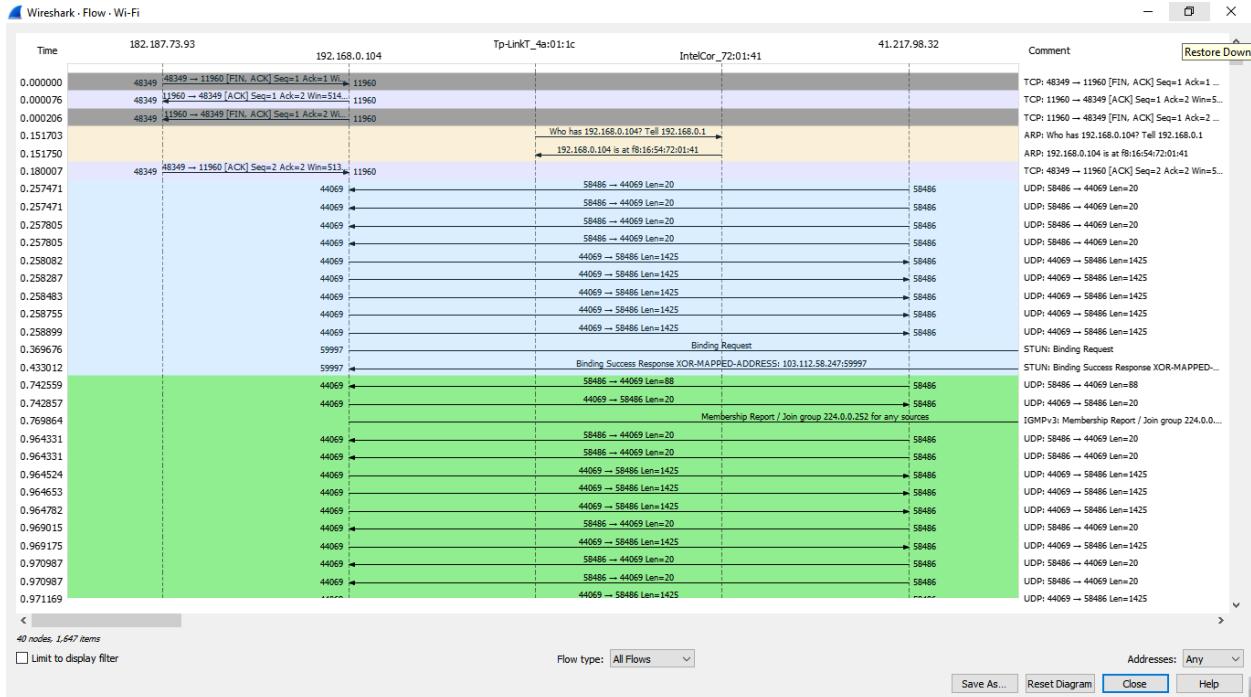


Figure 08-A: Statistics- Flow Graph -All Flows for Wi-Fi (Wireless Data Packages)

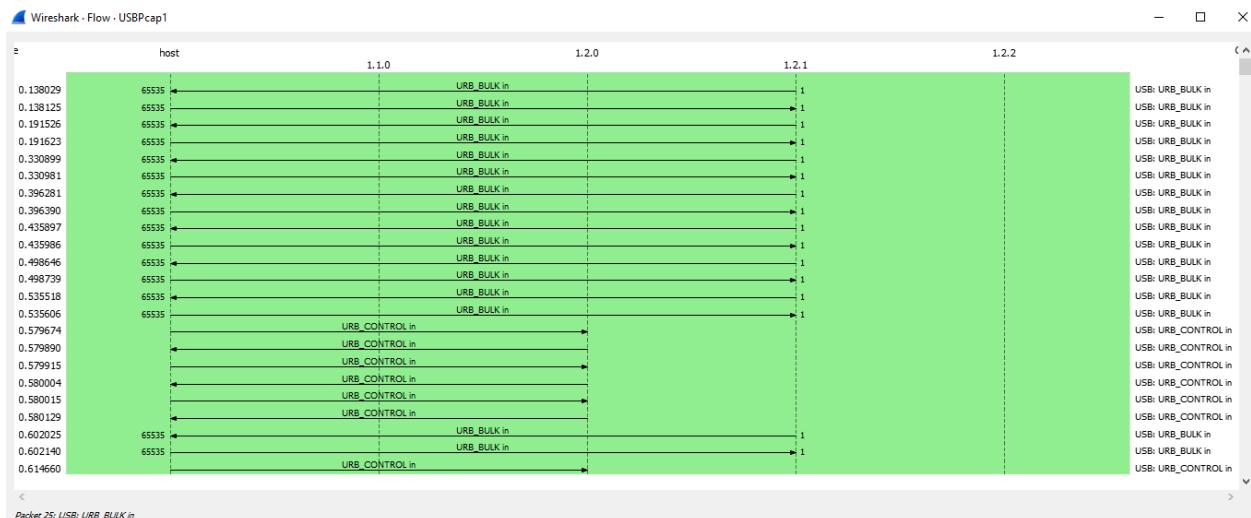


Figure 08-B: Statistics- Flow Graph -All Flows for Wi-Fi (Wired Data Packages)

Conclusion:

Between Wired and Wireless Network, wired network is much more efficient than wireless network. Because Wired data packages transfer rate are very much smoother than Wireless.

Wired data are more secure and high speedy, On the other hand wireless data are less secure and low speedy.