



Mawlana Bhashani Science and Technology University

Lab-Report

Report No: 05

Course code: ICT-4202

Course title: Wireless and Mobile Communication Lab

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Submitted by

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Session: 2015-2016

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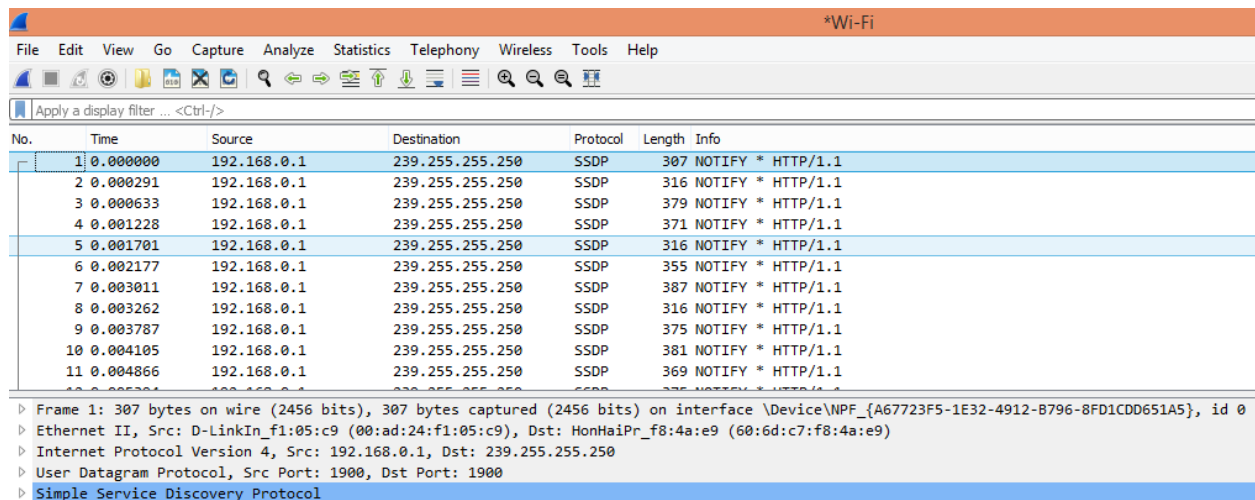
Experiment N0: 05

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

Objective: In this lab, we have to perform the following things for both wired and wireless connection:

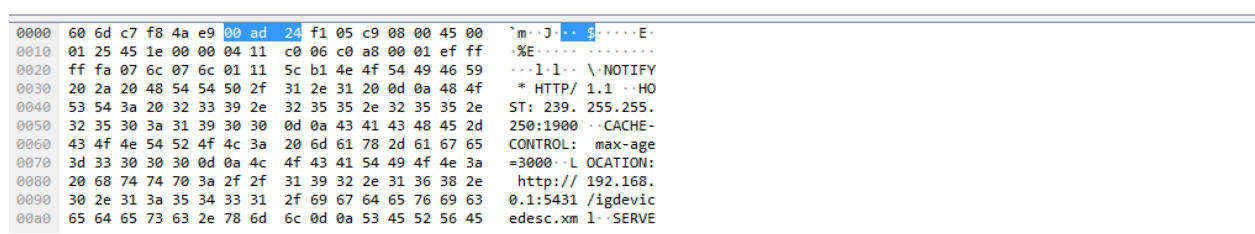
1. Capture protocols at each TCP/IP Layer
2. Generate and record protocol hierarchy statistics for a session
3. Determine the packet length
4. Generate flow graph.
5. Generate I/O graph.

For Wireless Connection:



No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	192.168.0.1	239.255.255.250	SSDP	307	NOTIFY * HTTP/1.1
2	0.000291	192.168.0.1	239.255.255.250	SSDP	316	NOTIFY * HTTP/1.1
3	0.000633	192.168.0.1	239.255.255.250	SSDP	379	NOTIFY * HTTP/1.1
4	0.001228	192.168.0.1	239.255.255.250	SSDP	371	NOTIFY * HTTP/1.1
5	0.001701	192.168.0.1	239.255.255.250	SSDP	316	NOTIFY * HTTP/1.1
6	0.002177	192.168.0.1	239.255.255.250	SSDP	355	NOTIFY * HTTP/1.1
7	0.003011	192.168.0.1	239.255.255.250	SSDP	387	NOTIFY * HTTP/1.1
8	0.003262	192.168.0.1	239.255.255.250	SSDP	316	NOTIFY * HTTP/1.1
9	0.003787	192.168.0.1	239.255.255.250	SSDP	375	NOTIFY * HTTP/1.1
10	0.004105	192.168.0.1	239.255.255.250	SSDP	381	NOTIFY * HTTP/1.1
11	0.004866	192.168.0.1	239.255.255.250	SSDP	369	NOTIFY * HTTP/1.1

Frame 1: 307 bytes on wire (2456 bits), 307 bytes captured (2456 bits) on interface \Device\NPF_{A67723F5-1E32-4912-B796-8FD1CDD651A5}, id 0
Ethernet II, Src: D-LinkIn_f1:05:c9 (00:ad:24:f1:05:c9), Dst: HonHaiPr_f8:4a:e9 (60:6d:c7:f8:4a:e9)
Internet Protocol Version 4, Src: 192.168.0.1, Dst: 239.255.255.250
User Datagram Protocol, Src Port: 1900, Dst Port: 1900
Simple Service Discovery Protocol



```
0000 60 6d c7 f8 4a e9 00 ad 24 f1 05 c9 08 00 45 00  `m..J...$.....E`
0010 01 25 45 1e 00 00 04 11 c0 06 c0 a8 00 01 ef ff  %E.....
0020 ff fa 07 6c 07 6c 01 11 5c b1 4e 4f 54 49 46 59  ...l.l.. \NOTIFY
0030 20 2a 20 48 54 54 50 2f 31 2e 31 20 0d 0a 48 4f  * HTTP/ 1.1 ..HO
0040 53 54 3a 20 32 33 39 2e 32 35 35 2e 32 35 35 2e  ST: 239. 255.255.
0050 32 35 30 3a 31 39 30 30 0d 0a 43 41 43 48 45 2d  250:1900 ..CACHE-
0060 43 4f 4e 54 52 4f 4c 3a 20 6d 61 78 2d 61 67 65  CONTROL: max-age
0070 3d 33 30 30 30 0d 0a 4c 4f 43 41 54 49 4f 4e 3a  =3000..L OCATION:
0080 20 68 74 74 70 3a 2f 2f 31 39 32 2e 31 36 38 2e  http:// 192.168.
0090 30 2e 31 3a 35 34 33 31 2f 69 67 64 65 76 69 63  0.1:5431 /igdevic
00a0 65 64 65 73 63 2e 78 6d 6c 0d 0a 53 45 52 56 45  edesc.xml l..SERVE
```

Figure-1: Capturing protocols at each TCP/IP Layer

Protocol	Percent Packets	Packets	Percent Bytes	Bytes	Bits/s	End Packets	End Bytes	End Bits/s
Frame	100.0	32	100.0	11212	29 k	0	0	0
Ethernet	100.0	32	4.0	448	1193	0	0	0
Internet Protocol Version 4	100.0	32	5.7	640	1704	0	0	0
User Datagram Protocol	100.0	32	2.3	256	681	0	0	0
Simple Service Discovery Protocol	100.0	32	88.0	9868	26 k	32	9868	26 k

Figure-2: Generating protocol hierarchy statistics for a session

Topic / Item	Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	Burst start
Packet Lengths	32	350.38	303	387	0.0107	100%	0.1600	0.000
0-19	0	-	-	-	0.0000	0.00%	-	-
20-39	0	-	-	-	0.0000	0.00%	-	-
40-79	0	-	-	-	0.0000	0.00%	-	-
80-159	0	-	-	-	0.0000	0.00%	-	-
160-319	12	311.67	303	316	0.0040	37.50%	0.0600	0.000
320-639	20	373.60	355	387	0.0067	62.50%	0.1000	0.000
640-1279	0	-	-	-	0.0000	0.00%	-	-
1280-2559	0	-	-	-	0.0000	0.00%	-	-
2560-5119	0	-	-	-	0.0000	0.00%	-	-
5120 and greater	0	-	-	-	0.0000	0.00%	-	-

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Figure-3: Determining the packet length

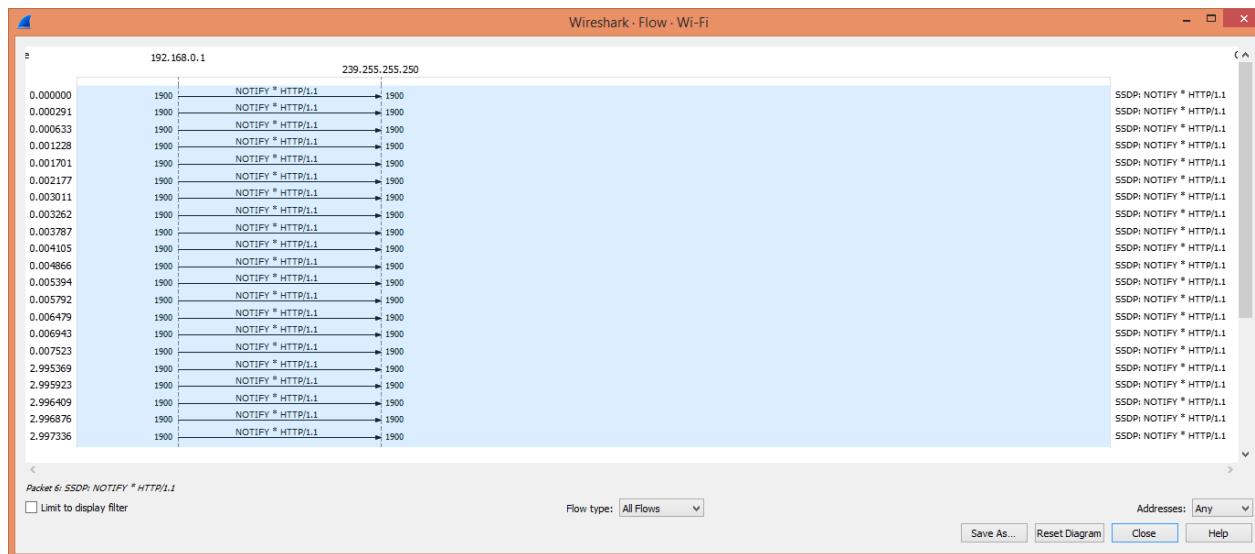


Figure-4: Generating flow graph.

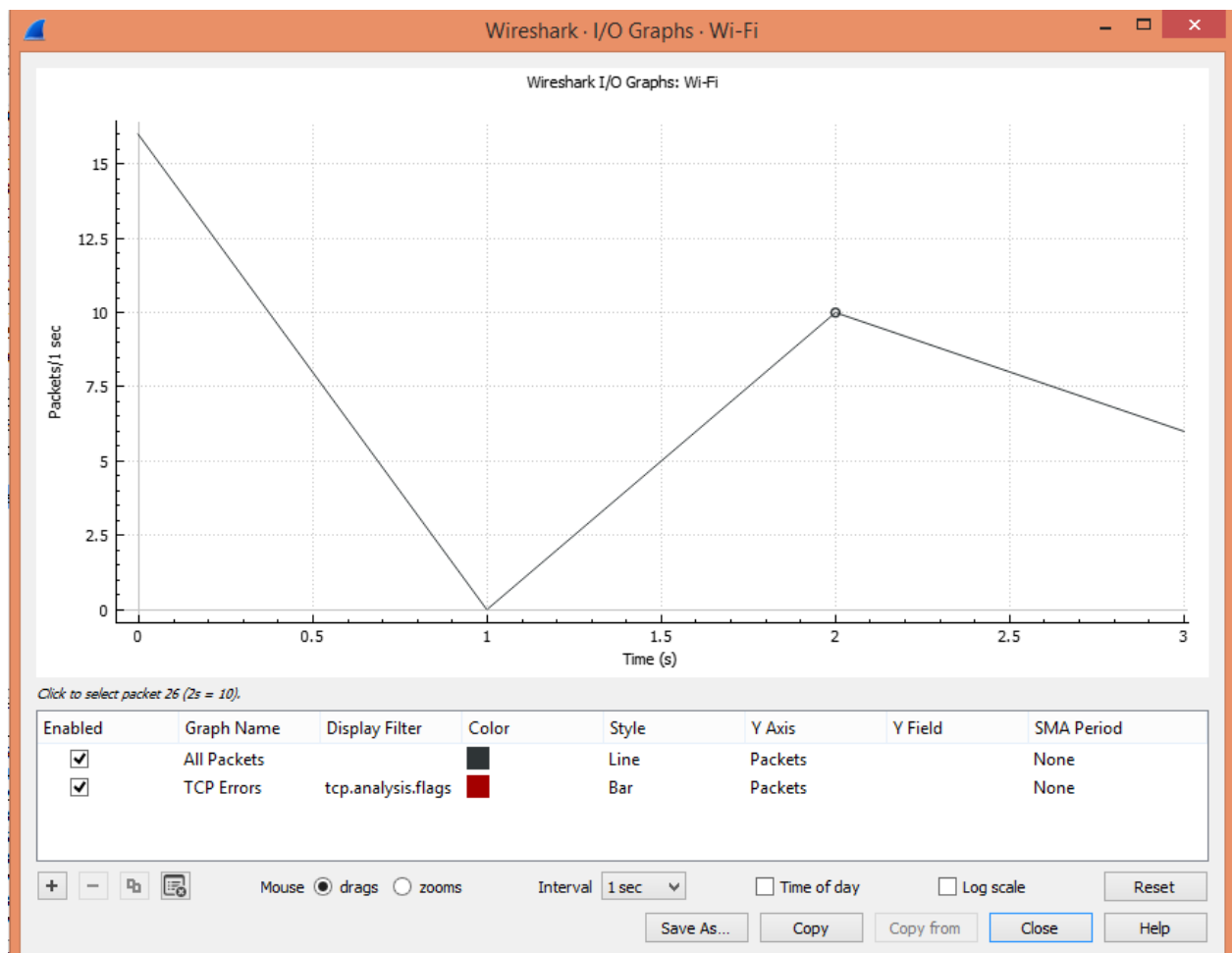


Figure-5: Generating I/O graph.

For Wired Connection:

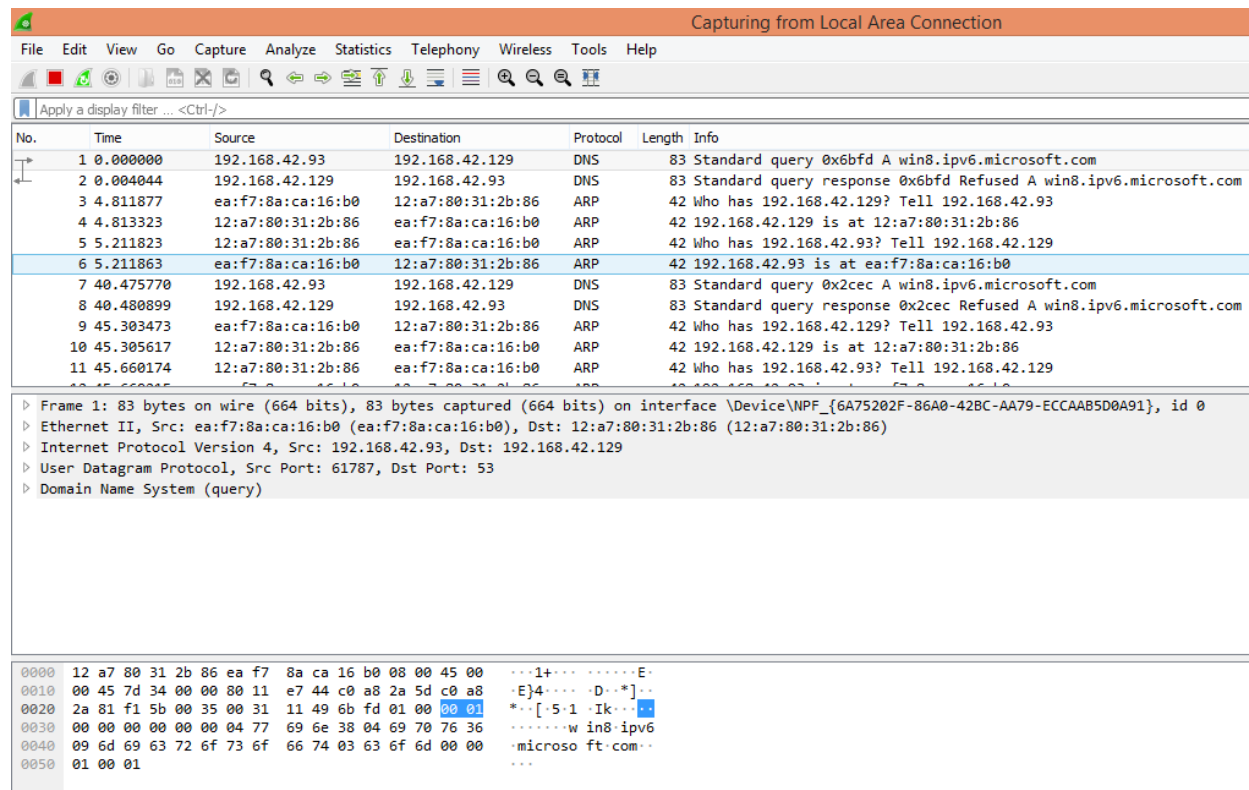


Figure-1: Capturing protocols at each TCP/IP Layer

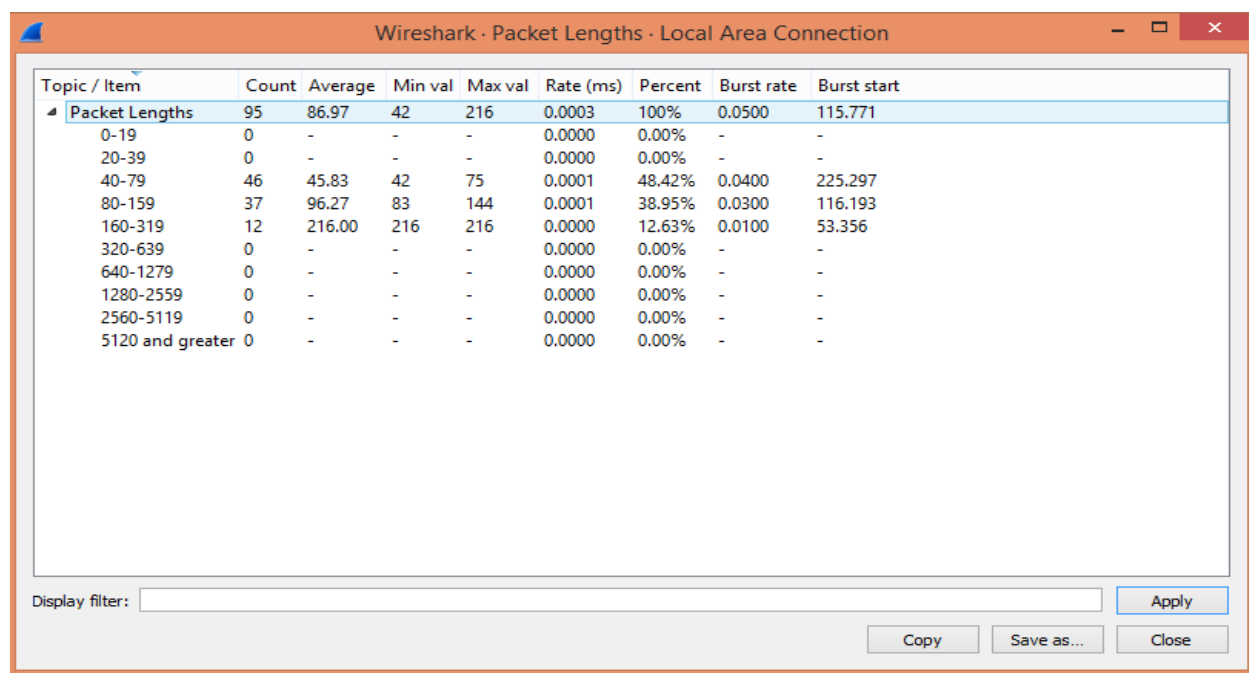


Figure-2: Generating protocol hierarchy statistics for a session

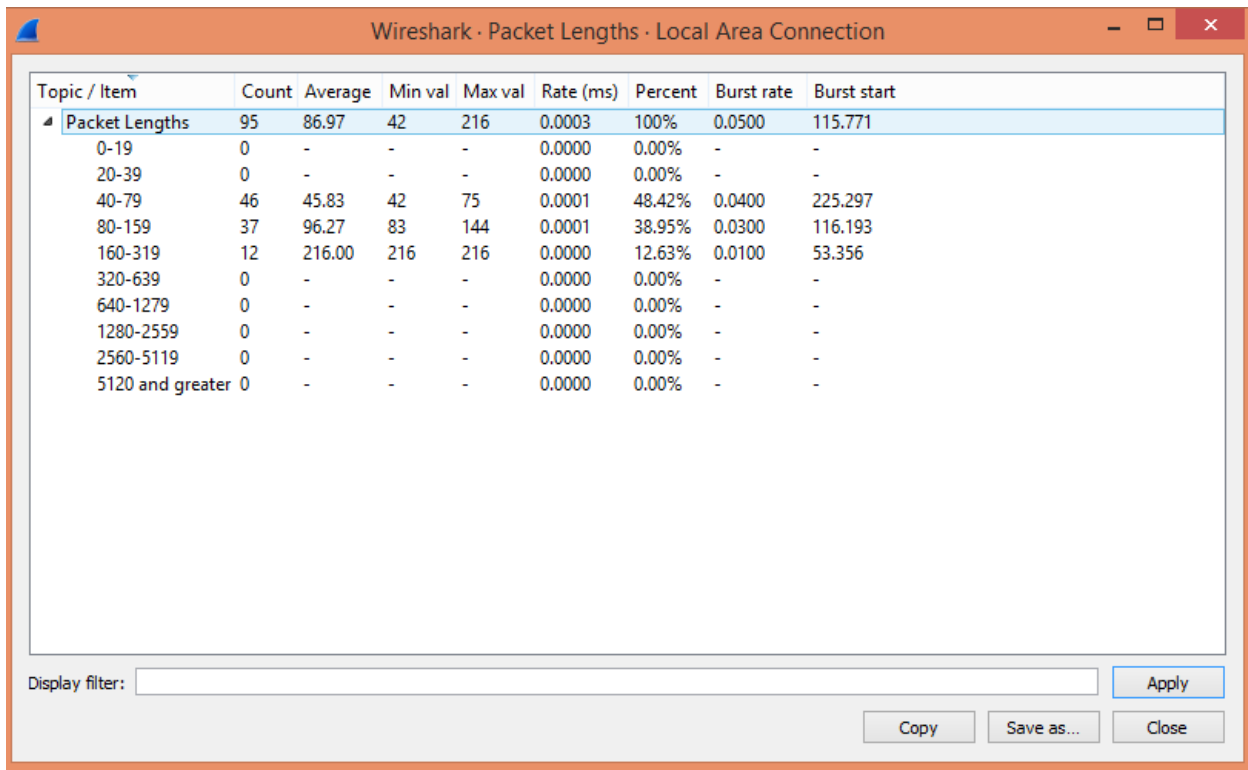


Figure-3: Determining the packet length

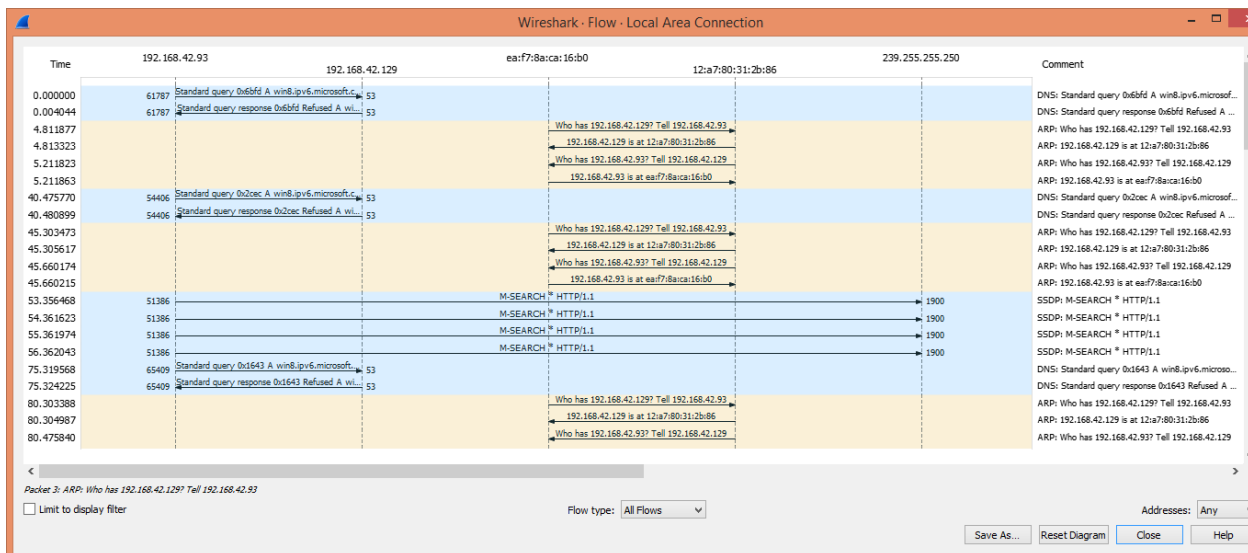


Figure-4: Generating flow graph.

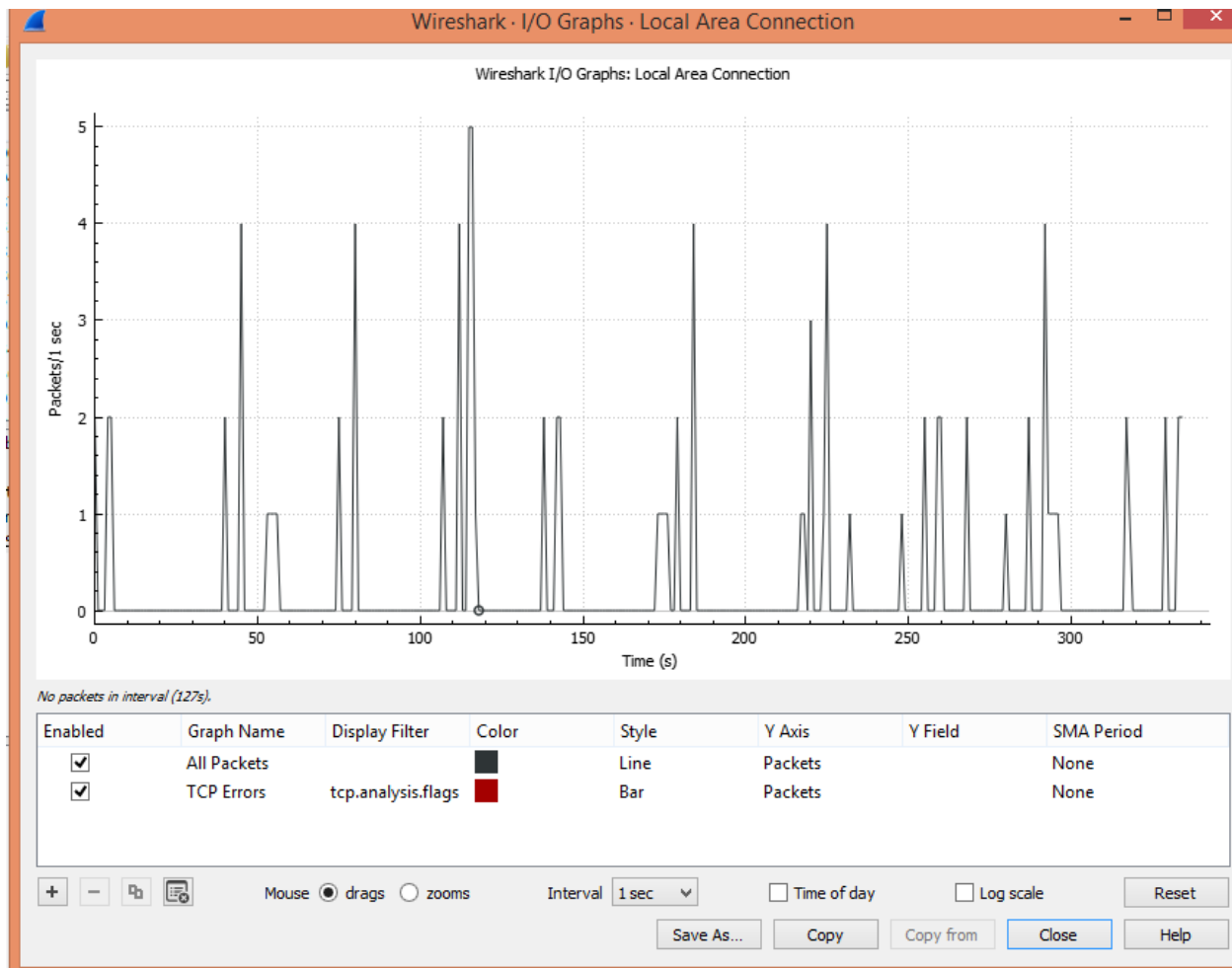


Figure-5: Generating I/O graph.

Conclusion:

In this lab, we learned about Comparative Analysis of Wired and Wireless data using Wireshark.

For this we first start captured data with wireshark for both wired and wireless. After that we also generate the packet length, protocol hierarchy, flow graph and I/O graph for a particular session. As a result we get different data for wired and wireless connection.

After analyzing the data, we can say that Wired networks are generally much faster than Wireless networks. Because wired data packages are very much smoother than wireless.