# CS 39006: Networks Lab

# Assignment 3: Basic Socket Programing (Working with A Single Threaded File Transfer Application)

Assignment Date: 25th January, 2018

# **Lab Report By:**

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## **Observation for TCP server:**

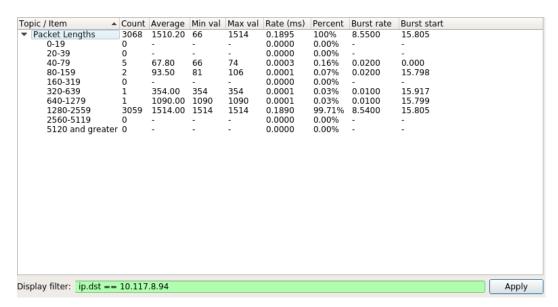
## Q1. Total number of segments received for TCP and the segment size distribution

#### Ans.

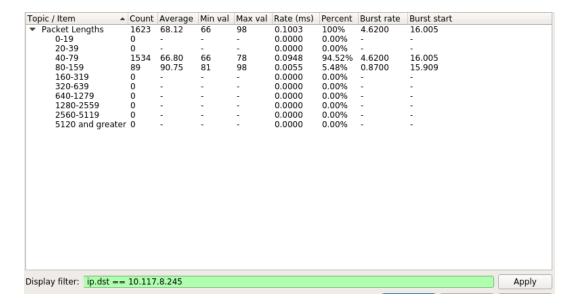
i) For file1 (IGD.pdf):

Total Size - 4731875 Bytes Segments received by the Server – 3068 Segments received by the Client – 1623

Segment size distribution for Server side (all in Bytes): 66, 74, 81, 106, 354, 1090, 1514, 1515



Segment size distribution for Client side (all in Bytes): 66, 74, 78, 81, 86, 94, 98



## ii) For file2 (sample.jpg):

Total Size – 4299451 Bytes Segments received by the Server – 2787

Segments received by the Client – 1455

Segment size distribution for Server side (all in Bytes): 66, 74, 84, 647, 970, 1090, 1514

Topic / Item -	Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	Burst start	
▼ Packet Lengths	2787	1509.72	66	1514	0.0060	100%	8.6600	5.595	
0-19	0	-	-	-	0.0000	0.00%	-	-	
20-39	0	-	-	-	0.0000	0.00%	-	-	
40-79	6	68.67	66	74	0.0000	0.22%	0.0200	0.000	
80-159	1	84.00	84	84	0.0000	0.04%	0.0100	5.595	
160-319	0	-	-	-	0.0000	0.00%	-	-	
320-639	0	-	-	-	0.0000	0.00%	-	-	
640-1279	3	902.33	647	1090	0.0000	0.11%	0.0100	5.595	
1280-2559	2777	1514.00	1514	1514	0.0060	99.64%	8.6300	5.595	
2560-5119	0	-	-	-	0.0000	0.00%	-	-	
5120 and greater	0	-	-	-	0.0000	0.00%	-	-	
Display filter: ip.dst ==	10.117	.8.94							Apply
bispidy interi ipidat ==	10.117	10.5-7							приу

Segment size distribution for Client side (all in Bytes): 66,74,78,84,86,94,98

Topic / Item	•	Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	Burst start	
<ul> <li>Packet Lengths</li> </ul>		1455	67.31	66	98	0.0032	100%	4.7000	5.660	
0-19		0	-	-	-	0.0000	0.00%	-	-	
20-39		0	-	-	-	0.0000	0.00%	-	-	
40-79		1389	66.25	66	78	0.0030	95.46%	4.2100	5.712	
80-159		66	89.55	84	98	0.0001	4.54%	0.6400	5.704	
160-319		0	-	-	-	0.0000	0.00%	-	-	
320-639		0	-	-	-	0.0000	0.00%	-	-	
640-1279		0	-	-	-	0.0000	0.00%	-	-	
1280-2559		0	-	-	-	0.0000	0.00%	-	-	
2560-5119		0	-	-	-	0.0000	0.00%	-	-	
5120 and greate	er	0	-	-	-	0.0000	0.00%	-	-	
splay filter: ip.dst =	=	10.117	.8.245							Apply

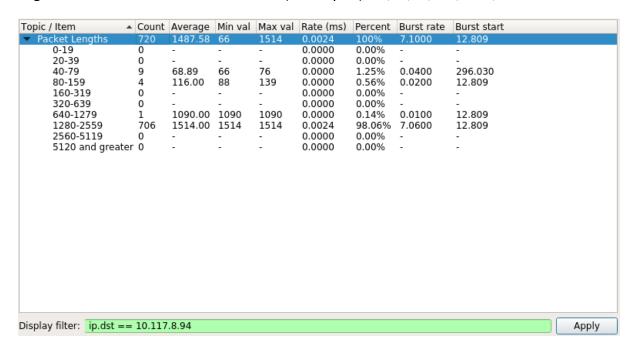
iii) For file3 (sampletext.txt):

Total Size – 1094614 Bytes

Segments received by the Server – 720

Segments received by the Client – 361

Segment size distribution for Server side (all in Bytes): 66,74,88,139,1090,1514



Segment size distribution for Client side (all in Bytes): 66, 74, 78, 88, 98

		Average	Min val		Rate (ms)	Percent		Burst start	
<ul><li>Packet Lengths</li></ul>	367	67.62	66	568	0.0012	100%	3.5500	12.809	
0-19	0	-	-	-	0.0000	0.00%	-	-	
20-39	0	-	-	-	0.0000	0.00%	-	-	
40-79	364	66.10	66	78	0.0012	99.18%	3.5400	12.809	
80-159	2	93.00	88	98	0.0000	0.54%	0.0100	12.809	
160-319	0	-	-	-	0.0000	0.00%	-	-	
320-639	1	568.00	568	568	0.0000	0.27%	0.0100	296.031	
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%	-	-	
Display filter: ip.dst ==	10.117	.8.245							Apply

## Q2) Total number of retransmitted segments for TCP

## Ans.

- i) For file1 (IGD.pdf): 8 packets retransmitted
- ii) For file2 (sample.jpg): 3 packets retransmitted
- iii) For file3 (sampletext.txt): 1 packet retransmitted

## Q3) Total time to receive the file

## Ans.

- i) For file1 (IGD.pdf): 16.187s
- ii) For file2 (sample.pdf): 5.948s
- iii) For file3 (sampletext.txt): 12.918s