

### Assignment 3 : Reliably transferring file over UDP

File transferred : dolbycanyon.3gp

File size : 1.9 MB (19,16,873 bytes)

SERVER : 10.5.22.250

CLIENT : 10.109.65.37

Client :

```
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
attempting to send packet 1872  
packet sent  
sending successful seq number did match with ack 1872  
33 bytes received of checksum received  
MD5 Matched
```

Server:

```
shikha@shikha-HP-Pavilion-Notebook:~/Document/Academics/Semester 6/Networks lab/  
socket programming/UDPS ./server 8000
```

B ) Total number of segments received for UDP and the segment size distribution

Client :

Topic / Item	Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	
▼ Packet Lengths	2000	998.92	62	1072	0.0258	100%	1.5400	206.518
0-19	0	-	-	-	0.0000	0.00%	-	-
20-39	0	-	-	-	0.0000	0.00%	-	-
40-79	141	76.89	62	77	0.0018	7.05%	1.4000	206.605
80-159	6	105.00	105	105	0.0001	0.30%	0.0600	206.605
160-319	0	-	-	-	0.0000	0.00%	-	-
320-639	0	-	-	-	0.0000	0.00%	-	-
640-1279	1853	1071.97	1017	1072	0.0239	92.65%	0.8000	129.280
1280-2559	0	-	-	-	0.0000	0.00%	-	-
2560-5119	0	-	-	-	0.0000	0.00%	-	-
5120 and greater	0	-	-	-	0.0000	0.00%	-	-

**Fig:-** Total no of packets received.

Topic / Item	Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	
▼ Packet Lengths	798554	1071.80	52	1072	10.2338	100%	12.0800	206.510
0-19	0	-	-	-	0.0000	0.00%	-	-
20-39	0	-	-	-	0.0000	0.00%	-	-
40-79	143	76.72	52	77	0.0018	0.02%	1.4100	206.605
80-159	6	105.00	105	105	0.0001	0.00%	0.0600	206.605
160-319	0	-	-	-	0.0000	0.00%	-	-
320-639	0	-	-	-	0.0000	0.00%	-	-
640-1279	798405	1071.99	1017	1072	10.2319	99.98%	12.0100	185.320
1280-2559	0	-	-	-	0.0000	0.00%	-	-
2560-5119	0	-	-	-	0.0000	0.00%	-	-
5120 and greater	0	-	-	-	0.0000	0.00%	-	-

**Fig:-** Total no of packets sent and received.

Server :

Packets received : 789094

Wireshark · Packet Lengths · client_report								
Topic / Item	▲ Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	Burst start
▼ Packet Lengths	789094	1071.98	62	1072	10.1124	100%	11.4400	103.620
0-19	0	-	-	-	0.0000	0.00%	-	-
20-39	0	-	-	-	0.0000	0.00%	-	-
40-79	2	69.50	62	77	0.0000	0.00%	0.0100	101.030
80-159	6	105.00	105	105	0.0001	0.00%	0.0600	179.060
160-319	0	-	-	-	0.0000	0.00%	-	-
320-639	0	-	-	-	0.0000	0.00%	-	-
640-1279	789086	1071.99	1017	1072	10.1123	100.00%	11.4400	103.620
1280-2559	0	-	-	-	0.0000	0.00%	-	-
2560-5119	0	-	-	-	0.0000	0.00%	-	-
5120 and greater	0	-	-	-	0.0000	0.00%	-	-

Fig : src.ip == 10.109.65.37 and dst.ip == 10.5.22.250

Wireshark · Packet Lengths · client_report								
Topic / Item	▲ Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	Burst start
▼ Packet Lengths	791107	1071.80	52	1072	10.1382	100%	12.7000	178.965
0-19	0	-	-	-	0.0000	0.00%	-	-
20-39	0	-	-	-	0.0000	0.00%	-	-
40-79	143	76.72	52	77	0.0018	0.02%	1.4100	179.059
80-159	6	105.00	105	105	0.0001	0.00%	0.0600	179.060
160-319	0	-	-	-	0.0000	0.00%	-	-
320-639	0	-	-	-	0.0000	0.00%	-	-
640-1279	790958	1071.99	1017	1072	10.1363	99.98%	11.5200	178.960
1280-2559	0	-	-	-	0.0000	0.00%	-	-
2560-5119	0	-	-	-	0.0000	0.00%	-	-
5120 and greater	0	-	-	-	0.0000	0.00%	-	-

Fig : Filter : ip.addr == 10.109.65.37 and ip.addr == 10.5.22.250 (total packets b/w the systems)

### ***TOTAL TIME of connection***

Client : total time = 77.5644 s

Server : total time = 78.0322 s

The time taken for transferring file through UDP is considerably higher. This is because, the UDP implementation we have used is stop and wait for 1 second. A lot of packets are dropped and are resent which takes a lot of time.