ICSI 516
Computer Communication Networks – I
Project – I

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<u>Wireshark evaluation</u>

Expression/Implementation	1+1	5+5	20+20	50+50
Overall Delays (TCP)	2.672367	3.014974	4.306923	4.640239
Overall Delays (UDP)	0.079229	0.081185	0.071335	0.069093

Expression/Implementation	1+1	5+5	20+20	50+50
Achieved Throughput (TCP), bps	1706.352	1801.674	1164.636	1175.802
Achieved Throughput (UDP), bps	10804.124	10593.089	12167.940	12562.777

NOTE: In UDP Socket, I have used the concept of port forwarding.
I have used port as 8095, in which itsunix server replies to that port. UDP Client program fetches the result from the same port.

Observation about TCP delays and throughput:

As we can see, delays in the TCP increases as the value to be transmitted increases. For example delay for 1+1 is 2.672367 and on the other hand, delay for 50+50 is 4.640239.

Throughput, in the case of TCP decreases as the values to be transmitted increases. For example, throughput for 1+1 is 1706.352 and on the other hand, throughput for 50+50 is 1175.802.

Observation about UDP delays and throughput:

As we can see, delays in the UDP is very less compared to delays in TCP. This is the result because TCP does provides the reliability and does the connection establishment through the three way handshaking. UDP is unreliable protocol, as it receives the data, it calculates value to be sent and sends it to the specified port. Delay for 1+1 in TCP is 2.672367, and on the other hand, in UDP delay for 1+1 is 0.079229.

Throughput, in the case of UDP increases as the values to be transmitted increases. For example, throughput for 1+1 is 10804.124 and on the other hand, throughput for 50+50 is 12562.777.

Conclusion:

Thus, overall if one wants to achieve higher throughput and less delay, without the need of reliability, UDP is the better option. On the other hand, TCP provides better reliability.