

CS 349
NETWORKS LAB

ASSIGNMENT – 1

DATE: June 17, 2018

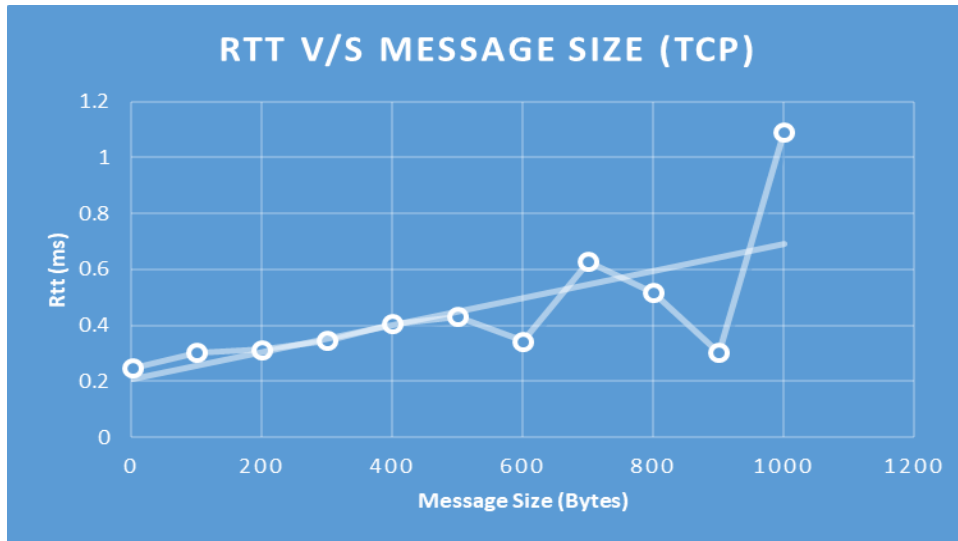
SUBMITTED BY: TARUN GENWA (150123043)

MATHEMATICS & COMPUTING

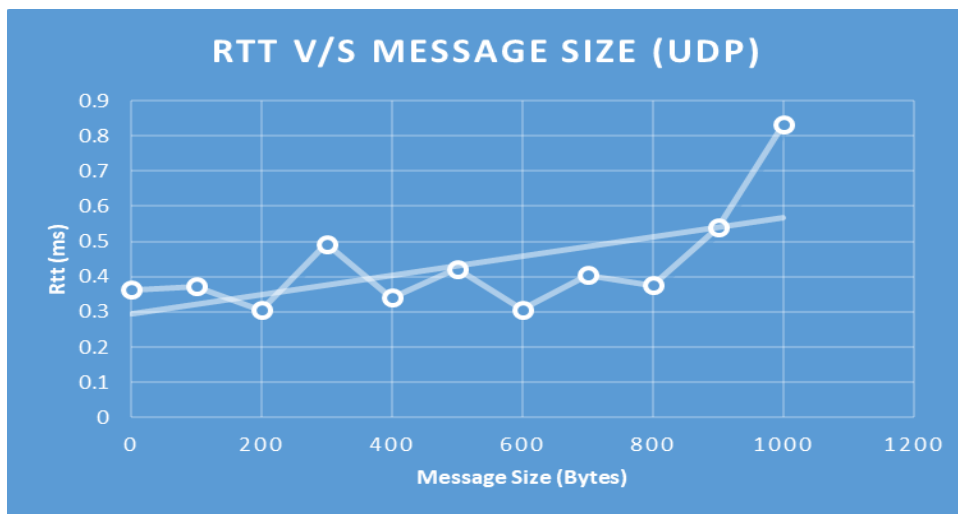
A)

Measure the round-trip latency of TCP and UDP for different message sizes (e.g., 1 byte, 100 bytes, 200 bytes, . . . ,1000 bytes).

The plot for the round trip latency vs various message sizes for tcp is :



Similarly, the plot for the round trip latency vs various message sizes for udp is:



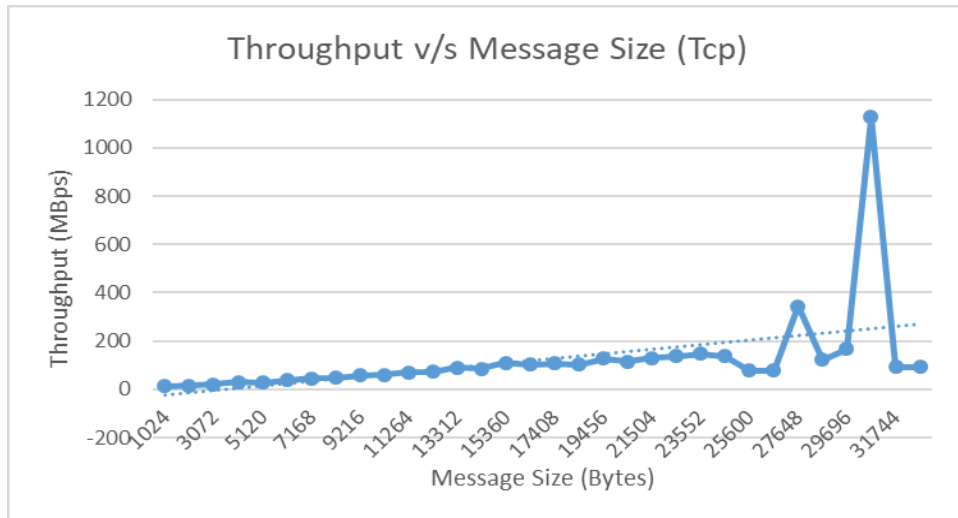
The plots show that the round trip time for tcp is mostly consistent with the trendline and is more than that of udp on an average. The round trip time for udp has more high lows than that of tcp but takes lesser time than tcp as it does not rely on many connection headers.

Data for the charts and screenshots for the running code are also attached in the folder.

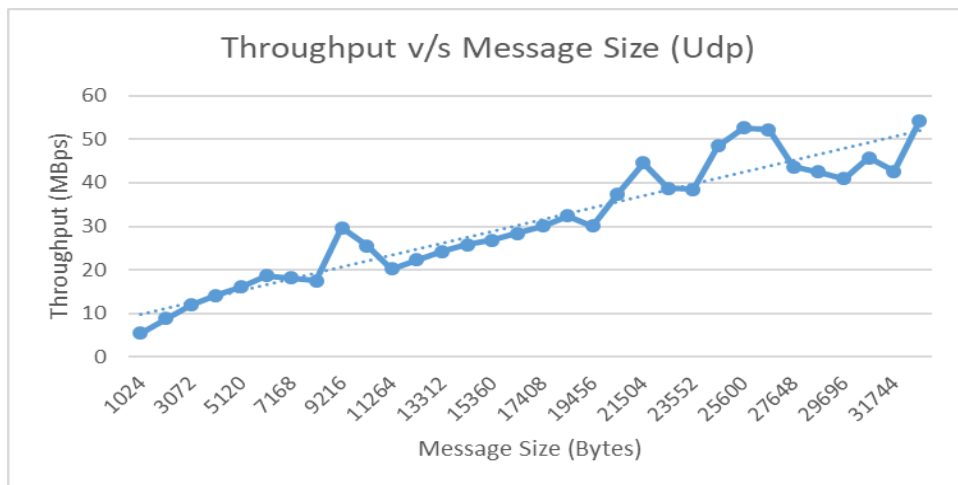
B)

Measure the throughput of TCP and UDP for 1-KB, 2-KB, 3-KB, . . . , 32-KB messages. Plot the measured throughput as a function of message size.

The plot for throughput of tcp v/s various message size is as follows:



Similarly, plot for throughput of udp v/s various message size is as follows:



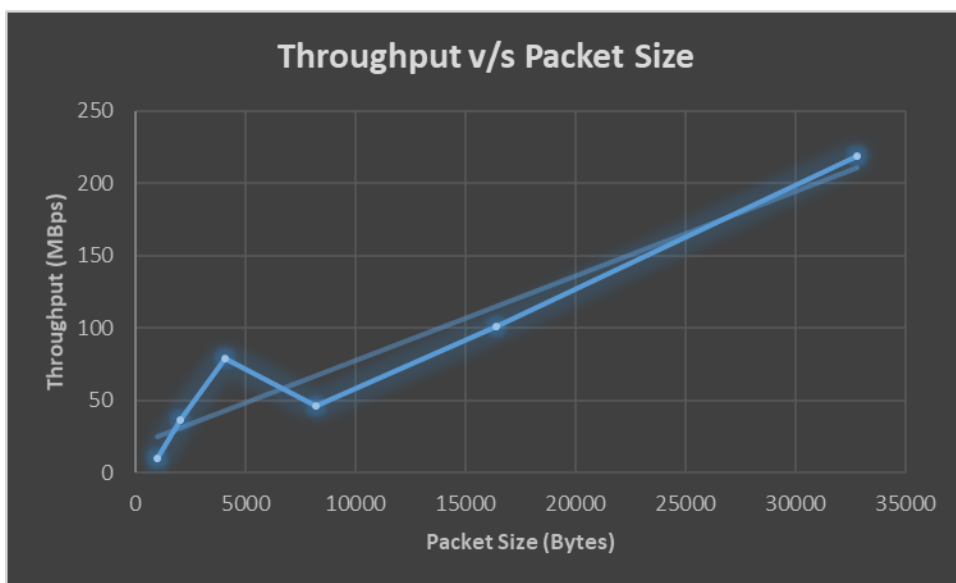
The throughput for tcp is very high with increasing messages sizes because the connection is always there and the header have the ability to utilize the complete bandwidth of the network whereas in udp the throughput is consistent with the trend but suffers with lower values as the connection is not already there.

Data for the charts and screenshots for the running code are also attached in the folder.

c)

Measure the throughput of TCP by sending 1 MB of data from one host to another. Do this in a loop that sends a message of some size—for example, 1024 iterations of a loop that sends 1-KB messages. Repeat the experiment with different message sizes and plot the results.

The throughput for sending 1 MB of data over various packet sizes is depicted in the following plot:



The throughput increases with the increase in the packet size as for sending the same amount of data we need lesser iterations of packet transfer. Hence the data is mostly consistent with the trendline with the maximum value at 32KB packets.

Data for the charts and screenshots for the running code are also attached in the folder.