

CN-3530/CS 301 Assignment 2

1. Stop and Wait Protocol

Question 1 – Number of retransmissions and throughput with different retransmission timeout values with stop-and-wait protocol. For each value of retransmission timeout, run the experiments for **5 times** and write down the average **number of retransmissions** and **average throughput**.

Retransmission timeout (ms)	Average number of re-transmissions	Average throughput (Kilobytes per second)
5	102.4	237.94
10	14.2	208.81
15	2.2	259.22
20	1.4	214.91
25	0.4	234.132
30	0	271.49
40	0.2	246.79
50	0	276.48
75	0	293.90
100	0	298.93

Question 2 – Discuss the impact of retransmission timeout value on number of retransmissions and throughput. Indicate the optimal timeout value from communication efficiency viewpoint (i.e., the timeout that minimizes the number of retransmissions and keeps the throughput as high as possible).

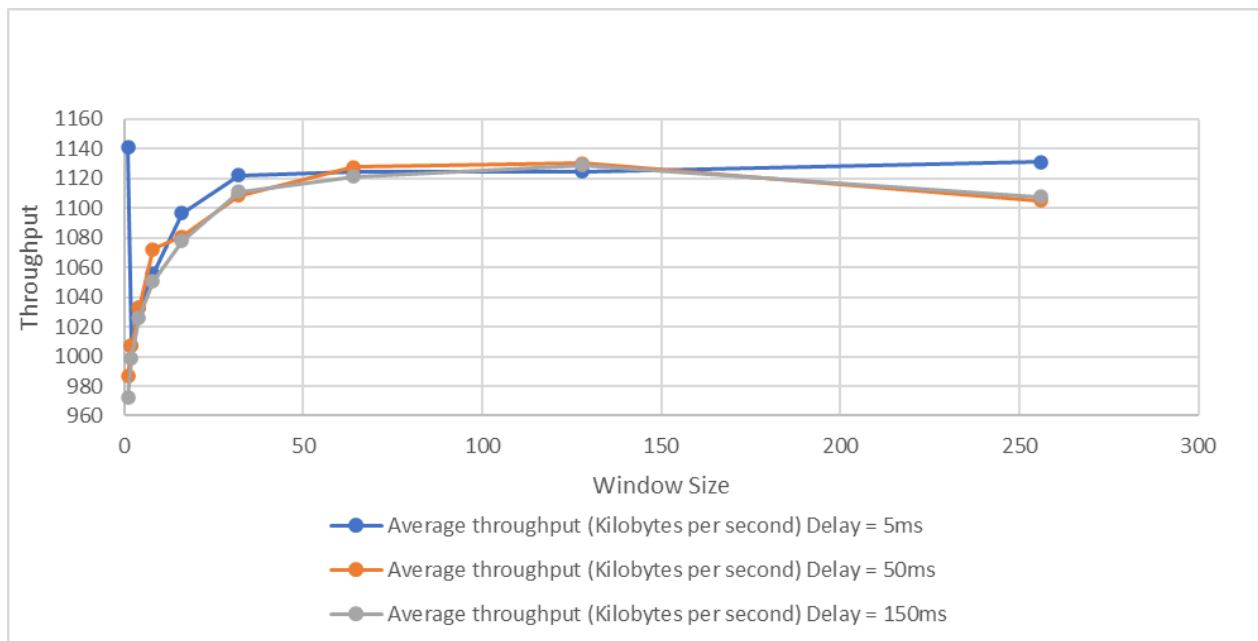
The retransmission rate decreases as we increase the timeout. Also the average throughput initially decreases then increases.

2. Go back N Protocol

Question 1 – Experimentation with Go-Back-N. For each value of window size, run the experiments **5 times** and write down the **average throughput**.

Window Size	Average throughput (Kilobytes per second)		
	Delay = 5ms	Delay = 50ms	Delay = 150ms
1	1140.78	986.77	972.62
2	1007.65	1007.42	998.97
4	1033.01	1032.70	1026.13
8	1055.54	1072.37	1050.622
16	1096.30	1080.77	1077.67
32	1122.09	1108.44	1110.97
64	1124.08	1127.62	1121.16
128	1124.84	1130.009	1128.96
256	1130.86	1105.116	1107.69

Create a graph similar to the one shown below using the results from the above table: (Edit: change delays to 5ms, 50ms and 150 ms as mentioned in the assignment statement)



Question 2 – Discuss your results from Question 1.

Increasing the window size increases throughput.
Increasing the delay the throughput decreases.

PLAGIARISM STATEMENT <Include it in your report>

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