

**SC/ECE 573 Section 001
Spring 2017
Project 2**

**Selective Repeat Automatic Repeat Request
Using UDP Sockets**

Name 1: Harish Pullagurla Student ID1: 200178872

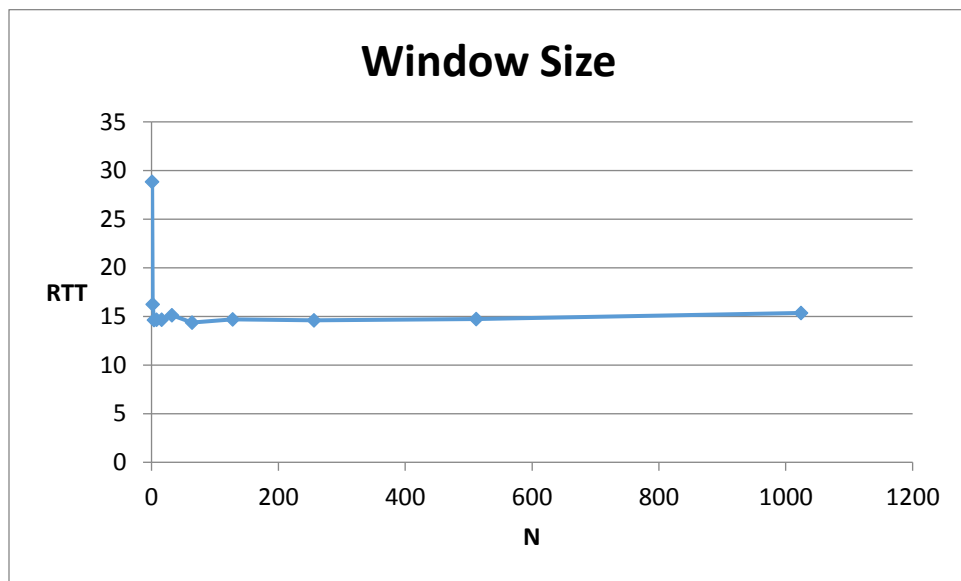
Name 2: Venkata Surya Subrahmanyam Nukala Student ID2: 200158956

Selective Repeat ARQ

Task 1 :

As the window size increases within a constrained set of values, more number of packets will be in the pipeline. This would eventually result in a reduced RTT as more number of packets are pipelined. The following experiments were carried out in this regard :

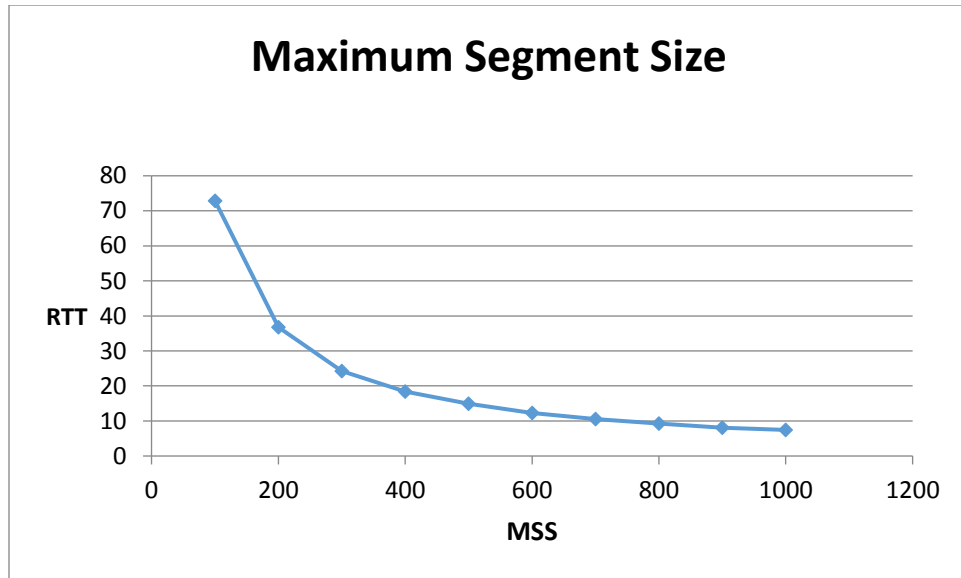
The window size was gradually increased from 1 to 1024 bytes and the time delay corresponding to each of the transition has been observed and documented in the graph below : As it can be observed, as the window size increases, the time delay decreases and gradually reaches a constant.



Task 2:

As the MSS increases, the size of the packet to be transmitted also increases and for a fixed amount of data to be transmitted, it results in a reduced total number of packets to be transmitted. The following experiments were carried out in this regard :

The MSS of the packets was gradually increased from 100 bytes to 1000 bytes and the time delay for each transition has been observed and documented in the graph below : As it can be observed, as the maximum segment size increases, the time delay gradually decreases.



Task 3:

In order to simulate the packet drop scenario in this environment , a random variable has been introduced to determine if a packet is being dropped. A high value of packet loss probability indicates that more number of packets might be dropped and as a result the average time delay increases. The following experiments were carried out in this regard :

The packet loss probability was gradually increased from 0.01 to 0.1 and then to 0.5 and 0.6 and the time delay for each transition has been observed and documented in the graph below : As it can be observed, as the probability increases though resulting in seemingly constant RTT when it is between 0.01 to 0.1 , the time delay gradually increases when the probability is further increased.

