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Entry number- 2020CS10386

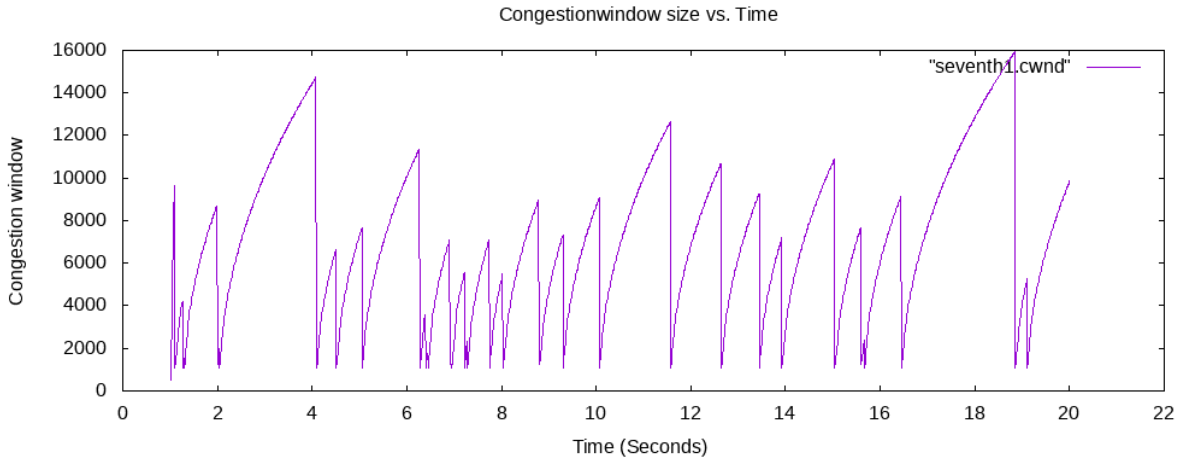
Part A:-

Question 1:-

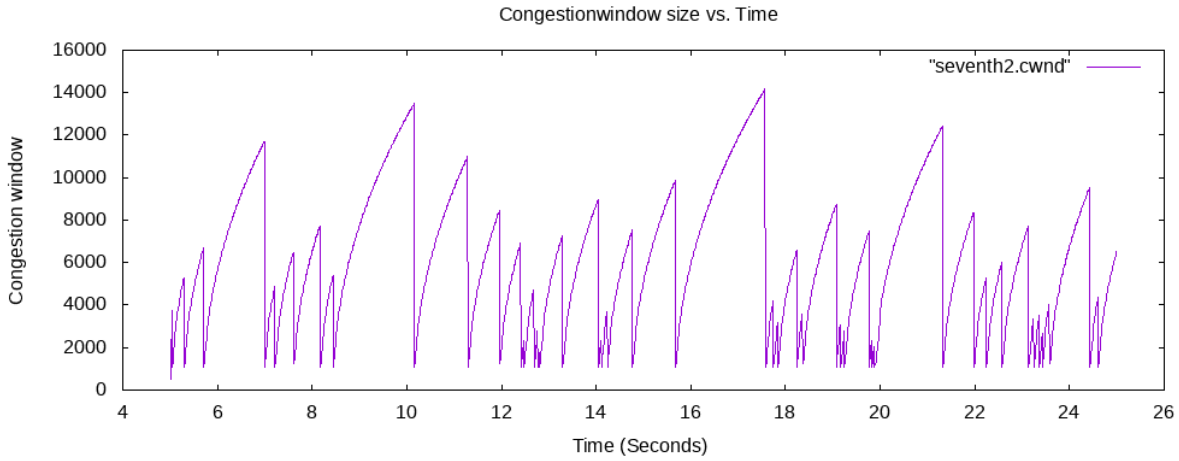
For TCPNewReno:-

For this part I have used code from seventh.cc in examples. I have made modifications like making separate streams for printing to adjust the conditions of the question.

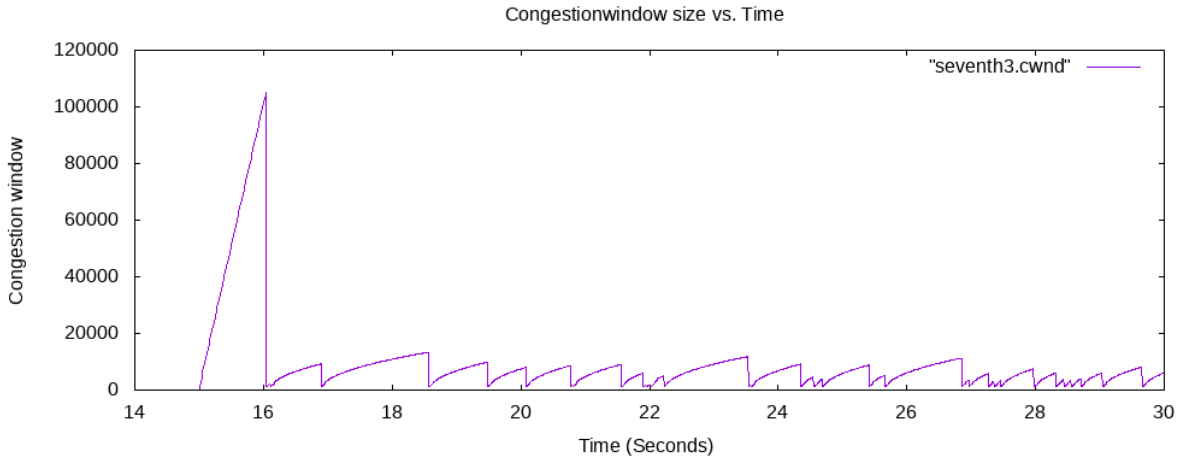
Connection 1



Connection 2

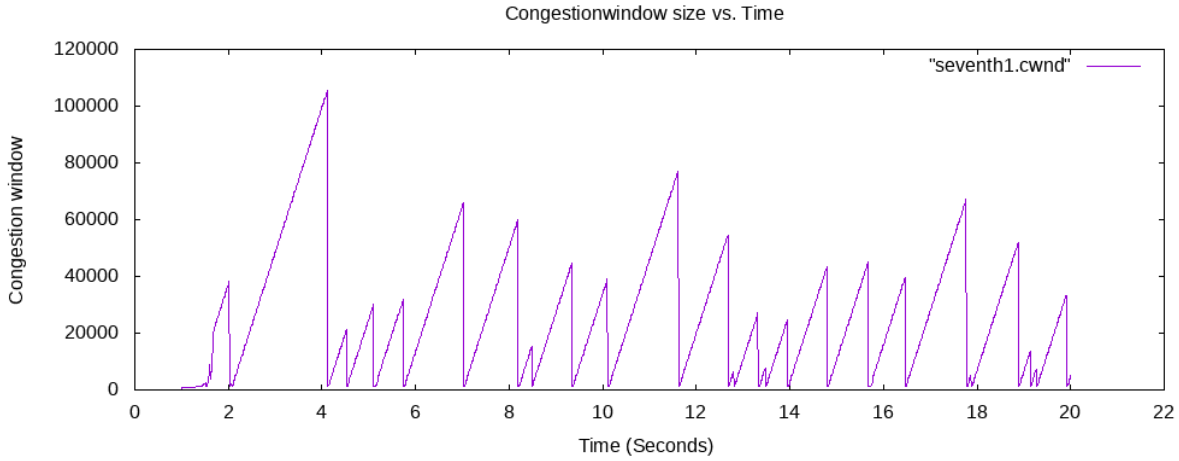


Connection 3

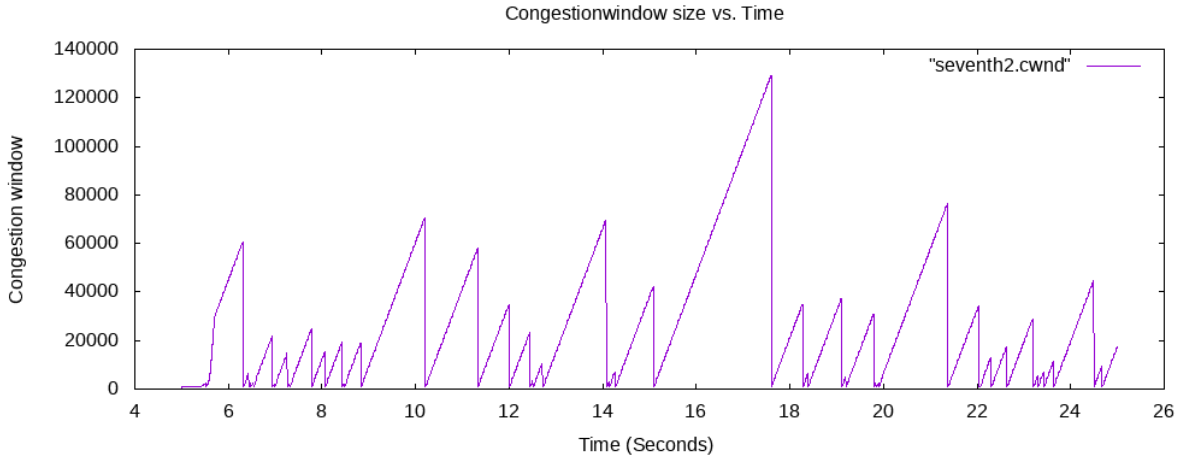


For TCPNewRenoPlus:-

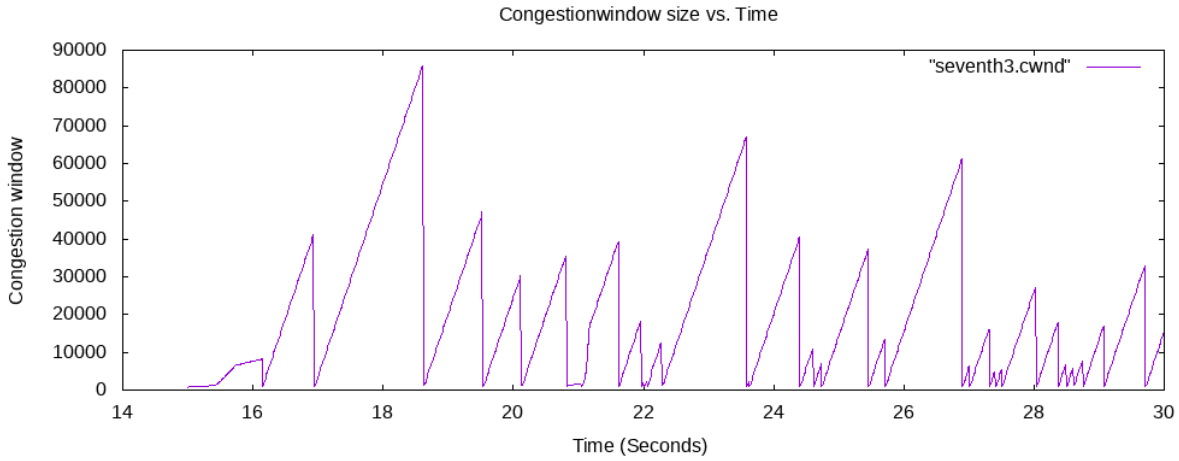
Connection 1



Connection 2



Connection 3



Question 2

For the same sender in the congestion avoidance phase the following trends are observed:-

i)On an overall basis TCPNewRenoPlus has a higher value of average congetion window size than TCP NewReno. This is because the congestion window increases by $0.51 * Segment\ Size$ for TCPNewRenoPlus whereas it increases by $(Segment\ Size)^2$/(Congestion window size) for TCPNewReno. Thus in general the increase is more for TCPNewRenoPlus

ii)The increase in congestion window size in the congestion avoidance phase is linear for TCPNewRenoPlus whereas the nature is parabolic due to the congestion window phase term in TCPNewReno.

On the whole we will be able to send more data in case of TCPNewRenoPlus in case the network is not congested due to the higher values of congestion window but if the network is congested we might face more number of packet drops hence an unnecessary delay and hence the network would get filled up.

Files submitted

1)TcpNewRenoPlus.cc

2)TcpNewRenoPlus.cc

3)First.cc- Topology File

4)plotns3.sh- bash script to run plotns3.plt file

5)plotValue.plt – gnuplot script to plot the graphs