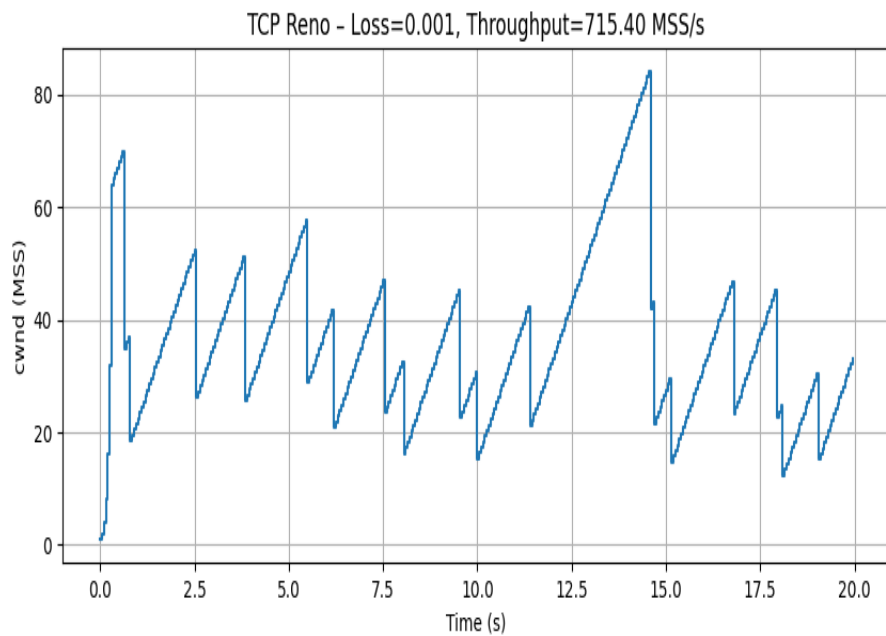# TCP Reno Congestion Control Simulation Report

This report presents a simulation of TCP Reno under three packet loss conditions: 0.1%, 1%, and 2%. Each case includes a congestion window (cwnd) graph and measured average throughput over a 20-second interval.
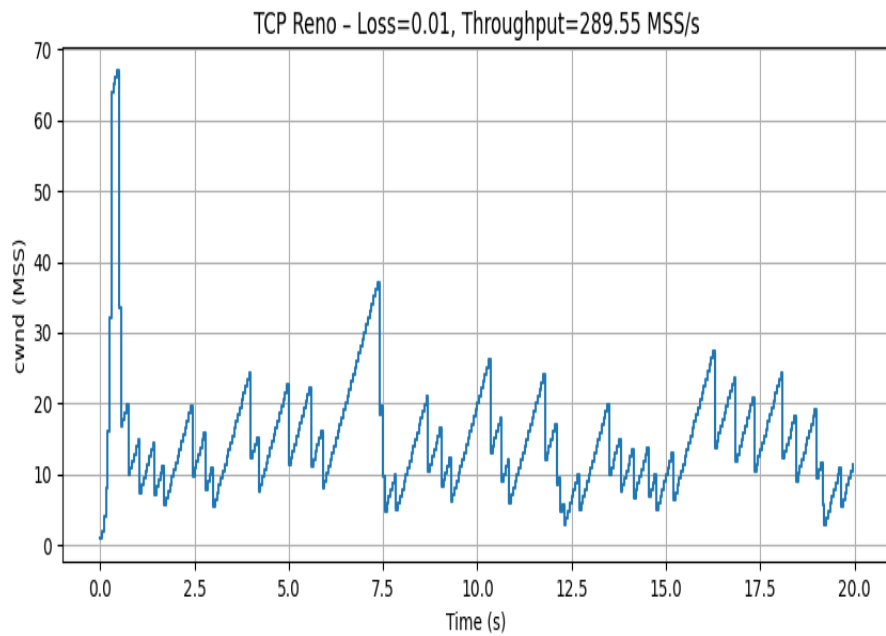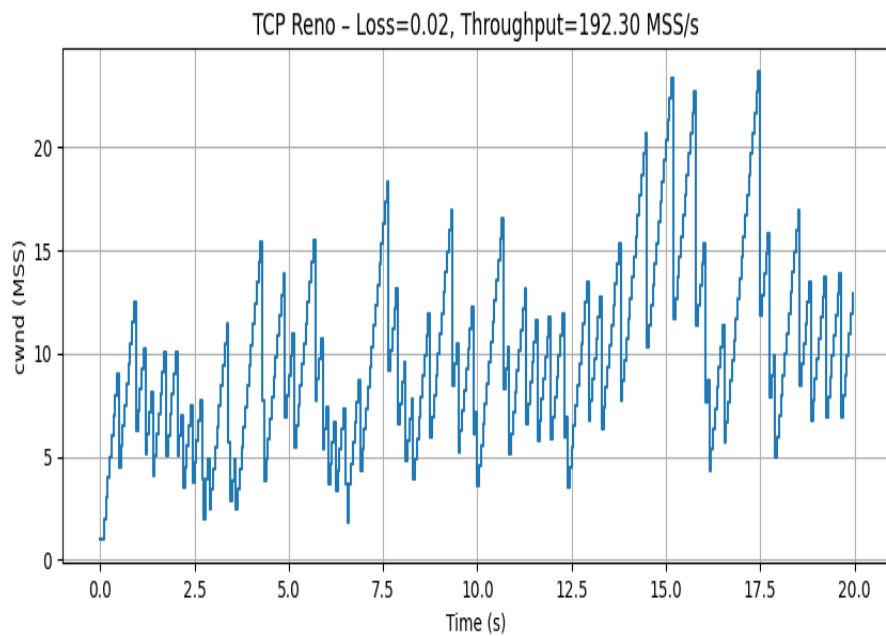
Loss Rate: 0.1%

Average Throughput: 715.40 MSS/s

TCP Reno – Loss=0.001, Throughput=715.40 MSS/s

Loss Rate: 1.0%

Average Throughput: 289.55 MSS/s

TCP Reno – Loss=0.01, Throughput=289.55 MSS/s

Loss Rate: 2.0%

Average Throughput: 192.30 MSS/s

TCP Reno – Loss=0.02, Throughput=192.30 MSS/s

Conclusion

As the packet loss rate increases, TCP Reno experiences more frequent multiplicative decreases in the congestion window (cwnd). At low loss (0.1%), cwnd grows smoothly and achieves high throughput. At

1% loss, the cwnd oscillations increase and throughput drops. At 2% loss, cwnd remains small and unstable, producing very low throughput. Therefore, TCP Reno performs efficiently only in low-loss networks, and increasing packet loss significantly reduces throughput due to its congestion control behavior.