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Cpre 489 – Lab 6

11/1/2021

<center>Lab 6 Report</center>

Summary:

This lab taught me how to use Geni to create a topology. I also learned about the TCP congestion avoidance algorithm and how it's used to handle TCP traffic. From this I also learned about the slow start threshold, the congestion avoidance window, fast recovery, and fast response. Lastly, I got some much-needed practice in with Excel and had to refresh myself on how to do data handling and graph plotting using it's very powerful, built-in functions.

Exercise:

Annotated graph is on page 2.

From the graph I was able to figure out that the difference between slow start mode and congestion avoidance is that slow start mode increases the number of transmissions exponentially, whereas congestion avoidance increases them linearly. So slow start sends the packets slowly, building up speed over time, and congestion avoidance sends the packets slowly to ensure that they don't go past the set threshold.

When 3 duplicate ACKs are received the slow start threshold is set to the current congestion avoidance window, and the current congestion avoidance window is reduced by half. Slow start and congestion avoidance then start again until the threshold is reached.

Time vs. CWND