ABSTRACT

Transmission Control Protocol (TCP) provides reliable data delivery for IP packets. TCP congestion control is a mechanism in TCP which handle congestion. As the internet develops, the eficiency of TCP congestion control is getting more important. TCP congestion control consists of four phases: Slow Start, Congestion Avoidance, Fast Retransmission, Fast Recovery. This moment there are many improvement suggestions of TCP congestion control. Among them are TCP Vegas, TCP SACK, TCP FACK, TCP Reno, TCP Newreno. They all modified the last parts of TCP congestion control (Fast Retransmission and Fast Recovery). Smooth Start algorithm modified the initial part of TCP congestion control

In this final project the performance of Smooth Start algorithm has been evaluated by way of simulating it on Network Simulator. Smooth Start algorithm has been implemented in TCP Reno, replacing Slow Start algorithm.

Smooth Start algorithm only has significant effect in short connection. This is caused by Smooth Start algorithm only modified the initial phase of TCP congestion control. On high traffic network, Smooth Start algorithm produced less packet loss and higher throughput then Slow Start algorithm. On low traffic network, Smooth Start algorithm produced less packet loss but also lower throughput than Slow Start algorithm.

Keywords: congestion, congestion control, Smooth Start.