Round Trip Time values constitute one of the significant parameter available to a TCP sender for estimating the network conditions. The RTT has a significant effect on the throughput of a connection and creates the performance bottleneck for traditional AIMD TCP Protocol variants mainly when used for GEO satellite networks and other long fat networks. Many Transport Protocols like Vegas, Proactive TCP, and Westwood uses the RTT measurement for adjusting the congestion window and refining the Loss Detection Algorithms, which eventually determines the performance of the Protocol. RTT also appears in the empirical formulation of TCP throughput and protocols based on these empirical estimates. RTT is generally considered an independent parameter mainly dependent on the access delay, queuing delay, and the propagation delay of the concerned channel. In this paper, we have analyzed the dynamics of RTT behavior and shown how the congestion levels in the network, packet error rates and available buffer capacity affects the RTT measurements. The Mean RTT and the rate of change of RTT Mean values have been analyzed in different network conditions. These analysis have been carried out by simulation using ns2 considering a GEO Satellite network.
References

Simulation based analysis of RTT with PER, Buffer Size and Congestion Levels for Satellite based Networks

326-344.

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