ABSTRACT

Transmission Control Protocol (TCP) is a protocol at the transport layer that has reliable properties in sending data. However, this reliable delivery can be caused by congestion which causes an increase in traffic data in accessing web searches on the network. The web server connection is required to be always stable so that it does not perform user activity. This research will conduct a simulation by comparing TCP Proportional Rate Reduction (PRR) and TCP Selective Acknowledgments (SACK). This research proves that TCP has the best solution in overcoming high latency and congestion. The test results show TCP PRR performance is better than TCP SACK by testing the bandwidth, the number of clients, and also the optimal initial congestion window value. Bandwidth test results, TCP PRR has the best performance with an average latency of 3.062 sec compared to 3.925 sec for TCP SACK, and throughput values of 279.6429 kbps compared to 271.5097 kbps for TCP SACK. The results of testing the number of clients, TCP PRR has a performance with an average latency of 2.727 sec compared to 3.107 sec TCP SACK and throughput values of 322.1349 kbps and 319.6754 kbps for TCP SACK. The results of determining the optimal initial congestion window value, TCP PRR has the best performance with an average latency of 163.548 sec compared to 167.563 sec for TCP SACK, so that from the analysis results of testing the initial congestion window value, it 10 Kb.

Keywords: analysis latency, congestion, TCP SACK, TCP PRR, TCP