ABSTRACT

Transmission Control Protocol (TCP) depend on pacet loss when indicate there is a congestion on the network and then run a congestion control algorithm when it happen. The problem appear when this protocol implemented in Mobile Ad Hoc Network (MANET). Due to mobility owned by manet, end-to-end connectivity is hard to be established. Moreover, the performance of routing protocol is very important to keep the path between the communicating hosts.

TCP has an algorithm to achieve the conditions that maximize the utilization of network resources, such as: *slow start*, congestion avoidance, fast retransmit, and fast recovery algorithm. Adaptation of the TCP algorithm needs to be done to improve the performance of TCP in wireless networks, especially Manet which has high mobility. One kind of information that can determine a quality in wireless network is Signal to Noise Ratio (SNR). SNR can be used to indicate how good a communication channel is.

From the result of this research, we obtain that TCP Newreno modified using SNR outperformed original TCP Newreno in both scenario static and non-static mobility. In a static scenario with a change of channel errors and 25 meters distance, TCP Newreno modified has an overall Throughput rate of 567,842 Kbps where original TCP Newreno has a Throughput of 564,170 Kbps. In a moving scenario, it show a better result that tested for channel error chanes with the number of nodes 30, TCP Newreno modified has a better result of 13,355% than the average Throughput obtained by original TCP Newreno. In another scenario with a change of channel error and a speed of 6 meters/second, it was found that TCP Newreno modified outperformed original TCP Newreno by 27,765%.

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