

ABSTRACT

IEEE 802.11s is a new standard that aims to build a Wireless Mesh Network; a network which each node can be interconnected with other nodes without requiring a node controller. The advantage of IEEE 802.11s is a high compatibility with previous IEEE 802.11 technology that had already existed.

Transmission Control Protocol (TCP) is one of the transport-layer protocols currently used for data transmissions that require transmission reliability. TCP has undergone many improvements and development. One aspect that is heavily improved and developed is about congestion control. This research studied and compared two congestion control of TCP, Westwood+ and CUBIC to test their reliability in IEEE 802.11s network. TCP CUBIC is TCP congestion control that is used by default in Linux 2.6.18 until recent release. CUBIC is type of TCP congestion control that has advantages for working at High-Speed Network. While TCP Westwood+ use estimated bandwidth measurement to control the window growth, offers stability in a wireless network that has the RTT changes frequently.

In this research, measurements done of throughput, delay, and retransmission for each congestion control in which all three measurement parameters will be measured in normal network, then the network will be engineered by adjusting the value of RTT to becomes large, and set the value of packet loss. From this research, the value of throughput measurement for both TCP in normal network and packet loss are not significantly different. Meanwhile, in networks with high delay, CUBIC's throughput leads Westwood+ by 17%. For delay parameter, CUBIC gives better results for the whole scenarios. As for the retransmission parameter, Westwood + gives better results when compared to Cubic for all scenarios.

Keywords: IEEE 802.11s, TCP CUBIC, TCP Westwood+