

ABSTRACT

Transport Protocol is a very important part in the development of internet recently. Transport layer is designed for terminal communication between applications which is operated on the different hosts. *Transmission Control Protocol* (TCP) is a protocol mostly used on a transport layer. TCP is very reliable so that it is most favorable to use.

Nevertheless, with the growing of internet services such as multimedia TCP is considered as less adequate to fill the need. With the TCP when the network is crowded then automatically the congestion is very high and it causes time out which is in turn would send retransmission since its nature is *connection oriented*.

This will cause high delay and the decreasing of the *throughput*.

Therefore other protocols on the transport layer have been developed such as *Stream Control Transmission Protocol* (SCTP). It is unlike TCP which only has one stream, SCTP has multi stream so that it enable the later protocol to send more data.

With multihoming feature of SCTP, it minimize retransmission packet which in turn will reduce the delay. Nevertheless because SCTP has multi stream then it will need more *bandwidth* than TCP so for the limited resources networks, it will often cause 'error' when they use SCTP.

This assignment analyzes the comparison of the performance of SCTP and TCP as transport protocol for FTP. The analysis is done by creating an FTP server and FTP client using TCP or SCTP.

The analysis of the simulation concludes that within the low traffic the delay of TCP is better than of the SCTP's, but within the high traffic the delay of SCTP is less. There is no significant difference on the *throughput* resulted, but quite significant *jitter* and *packet loss* of SCTP.

Key words : *SCTP, TCP, FTP, multistream, multihoming*