
ABSTRACT

TCP (Transmission Control Protocol) is one of reliable transport protocols that has been proven can gives a high performance in wireline networks. It uses flow, congestion and error control mechanisms to perform reliably in such networks. Because of that, TCP was improved for a wide area, e.g. wireless networks. Unfortunately reseach and simulation showed that in this wireless network TCP's performance decreased. It is happen because most of loss in the wireline network are caused by congestion but in the wireless network, most of loss are due to uncorellated congestion-loss and it is caused by wireless-links-characteristics for instance high bit error, fading, interference and mobility.

There was a lot of proposed solution for improving TCP's performance over wireless links, which was clasiffied -based on their pundamental philosophy- into three basic groups:

1. End to end protocols : Loss recovery are performed by the sender
2. Link layer protocols : Provide local reliability
3. Split connections protocols : Break the end-to-end connections into two parts at the base station.

In this final assignment, I analyze the improvement of wireless link layer mechanism for increasing TCP's performance (throughput, goodput and delay), by inserting Snoop Protocol at the Base station, an interface between wired and wireless link. Besides that I also analyze the effect of packet size, Bit Error Rate (BER) and data transfer direction to the TCP's Performance.

As a result I conclude that for data transfer from Fixed host (FH) to Mobile host (MH), snoop protocol can increase throughput and goodput on the different BER and packet size, but this snoop protocol also increase the end-to-end TCP delay which is caused by processing and local retransmission time at the snoop protocol. For data transfer from MH To the FH, protocol snoop (lie on the MH) can not working well, because it can not distinguish between wireless link error and congestion loss at the wired link.