

Abstract

In high bandwidth environment, which is useful for sending large volumes of data within short period of time, foreseen problems introduced are inefficiency due to convergence time and high amount of packet losses due to dramatic reductions of the available bandwidth. As there is a growing demand for high bandwidth networks, data transfer must take place without any congestion. Many researchers have been finding a suitable window adjustment procedure for congestion control.

In this paper a study is made on window adjustment procedure for high bandwidth-delay networks, i.e. the upcoming wireless LAN, using TCP and XCP protocol.

Simulation results show that in TCP, since window size is usually increased by 1 MSS/RTT and halved upon packet losses in any network, it become slowly recover and waste the network resources, achieves unstable throughput, large queue, many drops, and limited fairness. While XCP, with new concept of decoupling utilization control from fairness control, achieves stable and efficient regardless the varying link capacity, the round trip delay, and the number of sources.

Keywords: congestion control, high bandwidth-delay network, Wireless LAN, TCP, XCP