

An enhanced congestion control algorithm for LEO satellite networks

ABSTRACT

Since TCP WestwoodNew is designed to be implemented in wired and wireless network environment, there are few drawbacks found when TCP WestwoodNew is implemented in the satellite network environment. For examples, the sender cannot fully utilize the available bandwidth because the rate of the congestion window increment in Slow Start phase of TCP WestwoodNew is rather slow. The other problem is, since packets losses often occur due to link errors in satellite environment, TCP WestwoodNew tends to decrease its throughput drastically without committing proper available bandwidth estimation. In this research, there is a potential for TCP WestwoodNew to be improved by increasing its throughput and implemented in satellite networks. In this research, we suggest that the congestion avoidance algorithm of TCP WestwoodNew to be modified. This modification aims to improve the performance of TCP flows by increasing its throughput while attempting to maintain packet delay and the percentage rate of packet drops from getting worse.

Keyword: Bandwidth throughput; Congestion control algorithm; LEO satellite network; TCP WestwoodNew; TCP Westwood