A Fuzzy Controller for TCP Improvement over Mobile Networks

Authors:
Sara Raad Qasim
Zainab T. Alisa

Abstract

The Transmission Control Protocol (TCP) is used for reliable delivery of data over unreliable networks. Practically, most TCP mechanisms have been carefully designed for wired networks. Neglecting the characteristics of wireless environments can lead to TCP implementations with poor performance. In order to use TCP in mobile networks, improvements have been proposed in this paper to enhance TCP algorithm to distinguish between the different types of loss events.

In mobile or static wireless environments, losses are not always due to network congestion, as in the case of wired networks. In this paper, a modified algorithm is presented using fuzzy controller to differentiate the loss events (error loss from congestion loss) that intend at adapting TCP to mobile and static wireless environments with better performance. Simulation results were performed using OMNET simulator and have showed that the new proposal has better throughput than other TCP schemes.

References

- Xu, S. and Saadawi, T. 2002. Performance evaluation of TCP algorithms in multi-hop...


Index Terms

Computer Science  
Fuzzy Systems
Keywords

ssthresh  cwnd  westwood  FLC  RTT  fwestwood