Abstract

A Retransmission Time Out (RTO) is inevitable, when the retransmission of a packet fails to reach the receiver. An RTO compels TCP to reduce packet flow drastically. However, in case of an RTO resulting from retransmission failure caused by the channel noise, reduction in the flow is inappropriate. The problem is compounded when a TCP sender is forbidden to continue transmission till the occurrence of the timeout. In this paper, we investigate the impact of such RTOs with the help of an empirical mathematical analysis. The analysis presented in the paper calculates the idle period of the sender in terms of number of RTTs, which depends on the value of congestion window before the timeout. The mathematical analysis is supported by the results of simulation based experiments and the evaluation of a scheme that improves TCP performance in case of avoidable timeouts caused by the loss of retransmission on an erroneous wireless link.
Analysis of RTO Caused by Retransmission Loss to Combat Channel Noise

Reference


Index Terms

Computer Science Networks
Key words

SACK_OK

cwnd

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RTO