Optimization of an Implementation of Loss Tolerant Transmission Control Protocol (LT-TCP) and Its Evaluation

by

Kevin P. Battle Jr.

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Approved by the
Examining Committee:

_____

Boleslaw Szymanski, Thesis Advisor

_____

Koushik Kar, Committee Member

_____

Bishwaroop Ganguly, Committee Member

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ABSTRACT

Loss Tolerant Transmission Control Protocol (LT-TCP) has been proposed as a potential replacement for Transmission Control Protocol (TCP) for use on lossy channels, such as wireless networks. This thesis has contributed an optimized implementation of LT-TCP and its extensive testing to determine if LT-TCP operates efficiently in comparison with TCP. Some of the problems, present in the original implementation, that were fixed include: the replacement of the Reed-Solomon coder used by LT-TCP with one that utilized a more efficient algorithm, debugging of the LT-TCP closing process, and a modification to the LT-TCP receive window, amongst other things. Performance testing was performed in parallel to confirm that the changes made resulted in improved performance on the part of LT-TCP. Lastly, LT-TCP was compared to TCP, the protocol it was proposed to replace. Upon completion of the optimization, it was found that LT-TCP performs better in the majority of experiments.