

CmpE 475 Computer Networks, Fall 2003, Project

Assigned: 18.12.2003

Due: The Final Exam Date

The simulator by Tannenbaum provides a playground for experimenting with data link protocols. The simulator and all its associated files could be obtained by from

<http://www.cmpe.boun.edu.tr/courses/cmpe475/fall2003/>
file linux-version.tar.gz

Read all parts of the brief documentation to understand the protocol implementations and the simulator.

The purpose of this project is to understand the implementation of data link layer protocols and to make a study of protocol performance, measured in payloads (frames) delivered per second, as a function of the checksum error rate (depending on BER of the physical line, a parameter), lost packet rate (a low value probability as a parameter), and timeout interval (also a parameter). For example, you can provide graphs showing payloads/sec (frames/sec) as a function of timeout interval, for various error rates, etc.

The specific goal is to find an optimal timeout interval for protocols 4, 5, and 6 for a 20% frame loss rate and 15% checksum error rate. Which protocol has the shortest optimal timeout interval? WHY? Which protocol has the longest optimal timeout interval? WHY? Which protocol gives the best performance (according to payload/sec) for these error rates? WHY? Write a detailed report showing your all work and results.

The text of this manuscript is in <http://www.cmpe.boun.edu.tr/courses/cmpe475/fall2003/>

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