Network Simulation

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1 Preface

This report details the experiment I ran and the results obtained as specified by the Network Simulation Lab in the BYU CS 460 class taught by Dr. Zappala. The project specifications can be found here.

The experiment requires heavy use of a network simulator to test different network scenarios. The network simulator I used is Dr. Zappala's Bene, written in Python. All my simulation examples shown will be tailored towards this simulator.

2 Summary

The goal of the experiment was to test various network scenarios by sending packets across networks of diverse bandwidth and distances, then observing the delays incurred by the transmission, propogation, and queueing of those packets in the network. The first section describes the experiment I ran with a simple two-node network and one bi-directional link set to various bandwidths and lengths. The second section reports the experiment I ran with a three-node network and two bi-directional links. The third section describes the portion of the experiment that was used to validate queueing theory with regards to an M/D/1 queue on a network.