CS 838, Fall 2012 - Project Proposal: Network Latency Bottleneck

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1 Abstract

For this class project, we will look into Network Latency Bottleneck Issues. There are several factors that influence run time performance. Network latency may be one of the prime issues, though it has not been given as much consideration as memory and CPU. Typically, I/O is considered to be a bottleneck but this may soon change with the increasing popularity of flash based disks. In this study, we will: 1. Understand typical network topologies of datacenters 2. Analyze influence of topology on network latency 3. Analyze influence of end-hosts and routing policies on network latency 4. Conduct a basic cost-analysis to look into tradeoff between improvement in latency versus costs We will evaluate HULL's performance on various topologies generic to datacenters.

1.1 Plan

1. Week 1: Analyze topologies to identify areas of increased latency
2. Week 2: Identify an existing benchmark
3. Week 3 - 4: Propose and test our hypothesis
4. Week 5: Analyze results, put together presentation and writeup

1.2 Questions

1. Is there an open source Datacenter simulator that you recommend for conducting experiments?