

ENSC 835: HIGH-PERFORMANCE NETWORKS
CMPT 885: SPECIAL TOPICS:
HIGH-PERFORMANCE NETWORKS

FINAL PROJECT Demo
Spring 2006 PROJECT

TCP Fairness Analysis of CUBIC TCP Simulated by NS-2

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Road Map

- Main Works
- Simulation 1 and Analysis
- New Idea for Improving Fairness Performance**
- Implementation**
- Simulation 2 and Result

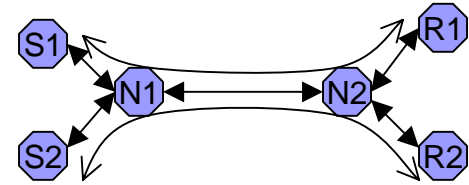


Main Works

- Read papers and understand NS-2 tools
- Designed simulation particularly used for fairness analysis and analyzed the results
- Designed solution for improving fairness performance
- Implement the solutions in NS-2
- Compare the performance of solution

Simulation 1 and Analysis

- Topology
 - Simple topology for fairness analysis
- Variables observed
 - Congestion window (cwnd_, bdepartures_)
 - Throughput, fairness and link utility are calculated and analysis
- Cases
 - 1. Validation
 - 2. RED and Drop tail with different start time and bandwidth
 - 3. Other cases: verifying simulation
- Results and Analysis





New Ideas

- Basic idea: more loss events for fast flow by dropping packets by queue management
- Three variants of new idea

Simplified Implement in NS-2

- Simplify solution
- Implementation in NS-2
 - Red.h
 - include two counters and one variable
 - Red.cc
 - Deque()
 - Enqueue()
 - Drop_early()
- Results and comparison