FINAL PROJECT Demo
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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()
    - Enque()
    - Drop_early()

- Results and comparison