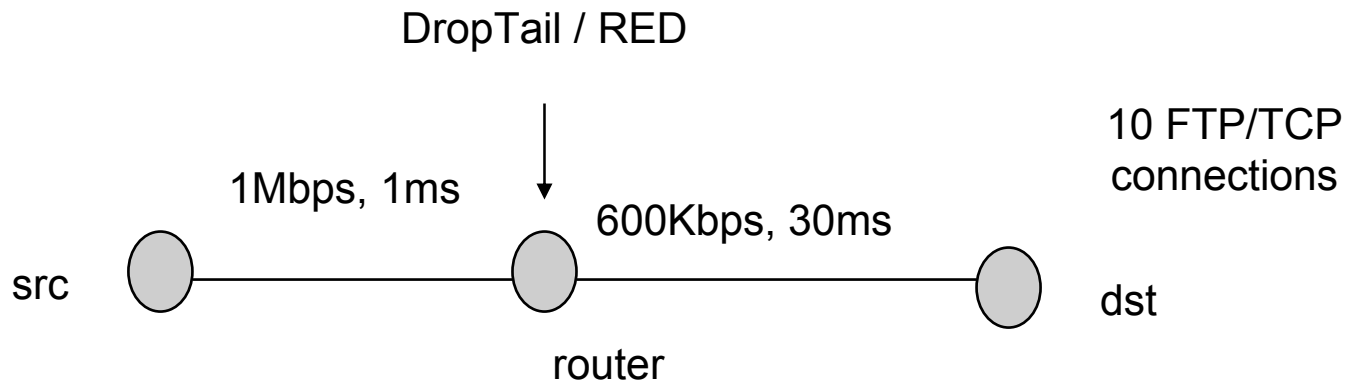


Experiment Design

- Use ExpDesigner to evaluate the influence of several parameters on TCP performance
 - TCP Reno vs. SACK
 - Buffer Size: 50 vs. 500 pkts
 - Segment Size: 100 vs. 1000 bytes
 - Router AQM: DropTail vs. RED
- Suggested performance metrics:
 - goodput, queue length, bottleneck utilization

Assignment #5

- Suppose 10 flows share a single bottleneck
- Generate your own ns script based on the sample code



Code

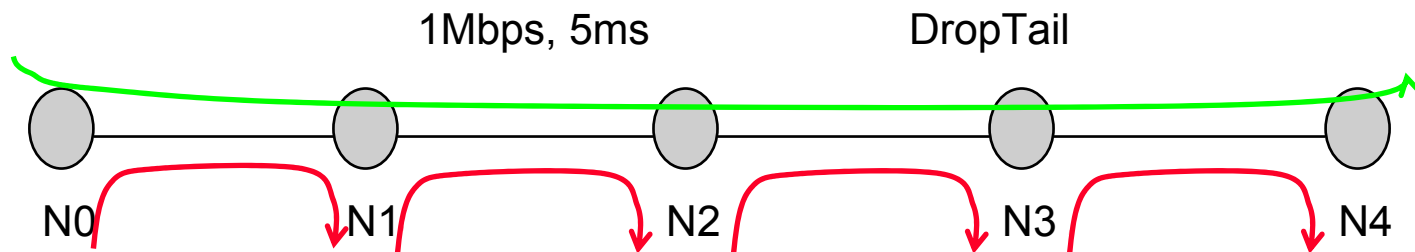
- Download Tao's ExpDesigner from
 - <http://networks.ecse.rpi.edu/~xiay/lab5/ed.tar>
 - Get-effects.pl is updated (already included in ed.tar)!
- How to use?
 - Untar it into your local machine;
 - Start farmer/worker using "start_system.sh" for only once;
 - Complete the ns-2 simulation script file tcp.tcl;
 - Then "./run", you will get results for a performance matrices.

Binomial Congestion Control

- Implement any one binomial congestion control algorithm in ns-2
 - Find the c++ source file in ~/ns/ns-2.1b7/tcp.cc
 - Increase: `void TcpAgent::openwnd()`
 - Decrease: `void TcpAgent::slowdown()`
 - Compile a new version of ns
- Performance metrics:
 - cwnd vs. time, or
 - throughput vs. time.

Assignment #5A

- Using the following multiple bottleneck topology
- Generate your own ns script based on previous code
 - cwnd vs. time for the green flow



Graduate Students Only

- Browse the first 4 chapters of Tao Ye's PhD Thesis (upto page 55):
- <http://www.ecse.rpi.edu/Homepages/shivkuma/research/papers/tao-phd-thesis.pdf>
- Summarize how he applies the ideas of experiment design to network management.
- Summarize key differences between various search algorithms he reviews; and between search/optimization and regression modeling done in traditional experiment design

Submission

- Submissions:
 - Ns2 simulation script;
 - All statistics from exp_designer;
 - Analysis (most important part).
 - Binomial CC: implementation code + graphs
 - Grad Students: reading/summaries from Tao's thesis.
- Due Next Tue Oct 11th: 11:55pm
 - (note: Due day changed upon student requests)
- REMINDER: Exam next class....