National Institute of Technology, Tiruchirappalli - 15

Department of Computer Science and Engineering

Assignment-2

CSLR52 – Networks Laboratory

I. Begin by examining the dynamics of a simple TCP connection between two endpoints on a wired network.First, download this simple ns script in Assignment Folder and examine it

(a) Draw a very simple diagram of the network that the script simulates, including the one-way latency and bandwidth of the links.

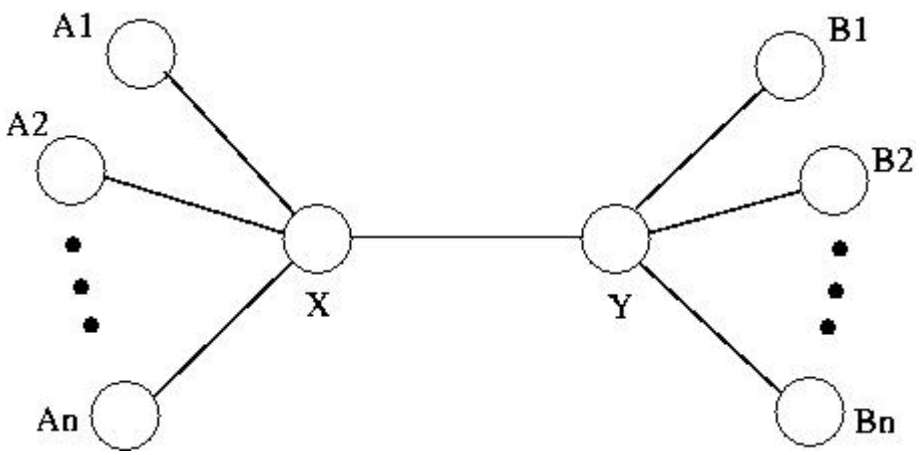
(b) What kind of queueing discipline does the simulation's router use?

(c) Run the script and plot the evolution of the sender's TCP window over time. Identify where TCPslow-start ends and where congestion avoidance begins.

(d) What is the average throughput of the transfer?

II. Consider a topology with "n" being 3, and thus three TCP connections.

1. For each of the TCP connections, calculate the *average* and *standard deviation* of the packet inter-arrival times.
2. Plot a *single* graph, but with three plots within it -- each plot corresponds to the inter-arrival time versus sequence number plot for a TCP connection (just as in the first question). Plot this just for the first 100 sequence numbers, as earlier. Submit this graph.
3. Explain the above average and standard deviation, as well as the graph above. Explain with respect to the "n=1" and "n=2" cases. (6-7 sentences max).



Submission Assignment

1) Every Problem should be implemented in separate code files.
2) You should make a report which consists of discussion regarding each problem about your findings and observations after the experiments/coding.
3) All the materials should be zipped in a single folder and uploaded.

Name of the folder should be your roll number and assignment number, for example – “11100898_Assignment1.zip”

4) Submission link will be provided on 2 November 2021. Last date of submission will be on 4t November 2021.