Quality of Service
Lab 02

In this exercise, you will simulate a network with any preferable language or a tool. Consider a network of 5 routers connected in series. Assume at least one LAN is connected to any of those routers. The LANs will produce traffic belong to different traffic classes.

You may use a pseudorandom generator to create random flows. The routers may enqueue the packets and apply scheduling algorithms such as FIFO/Fair Queuing (FQ) /WFQ etc.

Assume three forwarding classes i.e. default forwarding, DSCP-22 and DSCP-46. In this network 50% of the traffic will be delivered best effort, 25% will be tagged DSCP-22 and the rest will be tagged DSCP-46. You may incrementally increase the traffic load in the network and observer the following.

Task:

i. Select one of the routers. Apply FIFO for packet scheduling. Produce graphs for the drop probability for different traffic classes in the same figure.
ii. Now change the scheduling algorithm to Fair Queuing and obtain the same graph.
iii. Finally, change the scheduling algorithm to WFQ and observe the drop probability against packet-in rate.