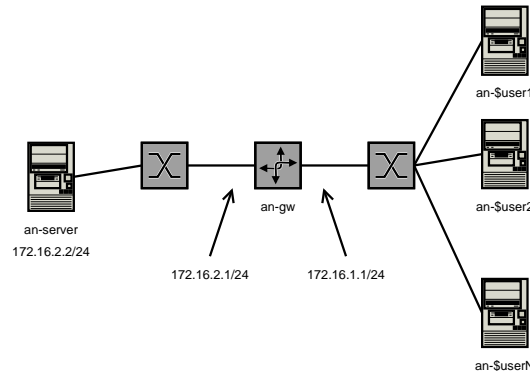


Assignment Sheet #6

Problem 6.1: *nasty congestion control simulation using ns-2*

(10 points)

The last assignment required you to implement a “nast” congestion control scheme by using the Linux congestion control kernel module interface. In this assignment, you have to do the same but this time using the ns-2 network simulator.



The figure above shows the topology that was used. The gateway used the following configuration during the competition:

```
tc qdisc add dev eth1 root handle 1:0 netem delay 40ms 5ms
tc qdisc add dev eth2 root handle 1:0 netem delay 40ms 5ms
tc qdisc add dev eth1 parent 1:1 tbf rate 5mbit burst 200kbit latency 10ms
tc qdisc add dev eth2 parent 1:1 tbf rate 5mbit burst 200kbit latency 10ms
```

We used `iperf` with the default parameters to generate the TCP streams.

- Write an ns-2 script which simulates the above scenario with 3 TCP/RENO streams competing at each other. Instrument the simulator such that it generates per second reports of the achieved throughput (much like what iperf reports if you enable periodic reporting).
- Implement your “nasty” congestion control scheme in ns-2. It is up to you how you do that. You can change/extend the simulator directly or you can try the patches someone wrote which emulate the Linux kernel API and then use your module from the last assignment.