Readme Draft:

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Our ideas to generalize our findings toward the outside world include:

- Varying the start times of the TCP flows (between 1 and 10 seconds apart) to see how TCP flows react to conditions at different stages in their life cycle (for example: behavior during slow-start may react differently than that of an old TCP connection that has “found the sweet spot” in bandwidth usage)
- Varying when to drop packets from the TCP connections, and how many packets to drop from each connection. We can also vary the drop times in between packets (a burst of dropped packets might influence the connections differently than singular packet drops dispersed over time)

Experiment 1:

To conduct this experiment in a generalized manner, we will:

1. Set up the network topology that is specified in the writeup
2. Add in and start the CBR flow and treat it as the independent variable in the experiment
    - We will vary the bandwidth of this CBR flow in multiple runs of the experiment.
    - We are considering running the CBR at 25%, 50%, 75%, 90%, 95%, and 99% of the link’s total capacity
3. Start whichever TCP variant’s flow
    - (we will do this for every specified variant)
4. We will also try initializing the CBR flow after the TCP flow has matured and left slow-start, in order to see if there is any different behavior observed. We will vary these CBR flows as discussed above to generalize. (as specified above)

Experiment 2:

To conduct this experiment in a generalized manner, we will:

1. Set up the network topology that is specified in the writeup
2. Start both TCP variant flows. To generalize here, we will:
    - Vary the starting times of the two flows. (There will be a lot of permutations here, so we will need to see how many variations of start times that we need to do when actually running the experiments)
    - Change which order the flows are started in. For example, we need to compare Reno vs NewReno. We will run experiments that:
        - Start Reno 5 seconds before, 1 second before, 50 RTT before, 25 RTT before, and 10 RTT before, along with starting the same time as the NewReno connection.
        - We will then repeat this with the NewReno connection first.

3. We will also try adding in the CBR flow to see if certain variants behave more or less fairly under congestion rates. When adding in a CBR flow to introduce congestion, we will start the CBR before either of the TCP flows, and also:
    - Vary the CBR bandwidth at 25%, 50%, 75%, 90%, 95%, and 99% of the link's total capacity
4. (Optional) we could also try introducing in CBR congestion after the TCP flows have matured, but this might be time consuming and not helpful.

Experiment 3:

This experiment is more controlled than the other too, but to introduce generalization we will:

1. Set up the network topology that is specified in the writeup
2. Start the TCP flow, as specified to do (first) in the writeup
3. Start the CBR flow, as specified to do (second) the writeup
    - Although the writeup says we don't need to vary the bandwidth of the CBR flow, the directions don't specify which capacity the CBR should be running at, so we are still thinking of running the CBR at 25%, 50%, 75%, 90%, 95%, and 99% of the link's total capacity. (please approve/disapprove of this, if feedback is being given for this assignment)
4. Repeat this process for both queueing disciplines