A) Use mahimahi (http://mahimahi.mit.edu/) emulator and write a script to emulate following simple client-server topology:
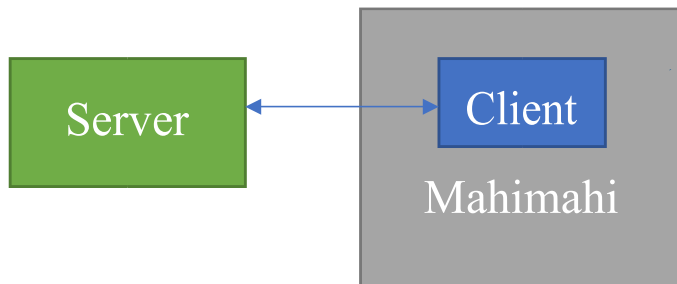

Delay of the Link connecting Client to the server: 10ms

Traces to use:

   Uplink (Client to Server): ATT-2016-uplink,

   Downlink (Server to Client): ATT-2016downlink

Queue size:

   200 packets, Queue Type: FIFO

B) Use Iperf3 to send TCP traffic from server to client (direction is important!) for 1 minute.

C) Draw the queuing delay of the downlink queue (vs. time)

D) Now replace Iperf3 application with YouTube:

   1- Client needs to open a browser and go to https://www.youtube.com/watch?v=LXb3EKWsInQ and get the video for 1 minute.

   2- Draw the queuing delay of the downlink queue (vs. time)

E) Repeat part D, but this time you need to report the time which takes for each segment of the Video to be downloaded. (One way to do that is to record/generate the HAR file (HTTP Archive format) when opening YouTube video. Later, you can analyze HAR file to calculate download time of each segment.)

 Hints:

1- This is a practical test to see how fast you can learn a new tool. It means you can use whatever you want including copying/pasting others' codes that you might find useful on Internet.

2- One important part is to have a "*script*" to create the topology, run the tests, and generate the results.

3- Google is your friend! You might be able to find some sample projects using Mahimahi to emulate a network!

G.L