

REPORT FOR ASSIGNMENT 1 : COL724

Submitted By:

Sumaiya Dabeer

2020CSZ8509

Q 1:

Code Explanation

Bufferbloat.py

Plots and Results

Bufferbloat experimet:

Time to download page from webserver:

QS20:

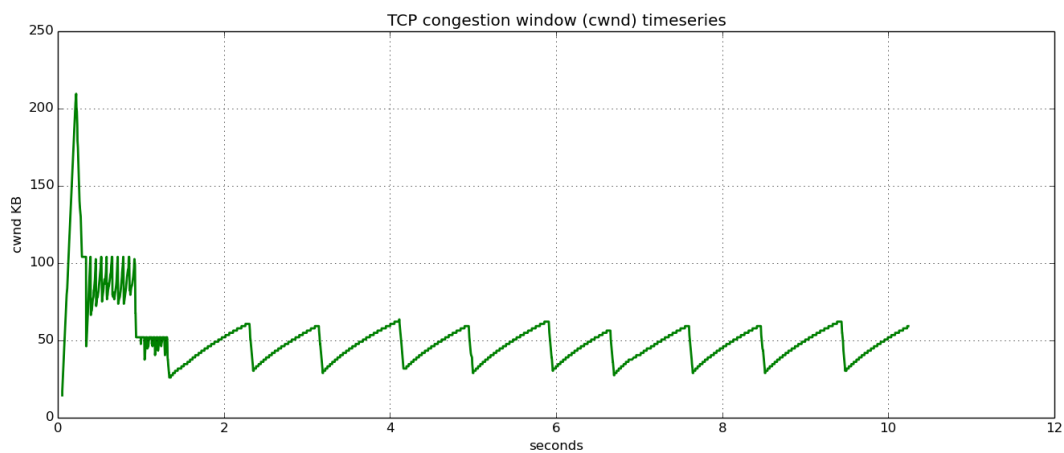
mean:0.2911666

std 0.3663329

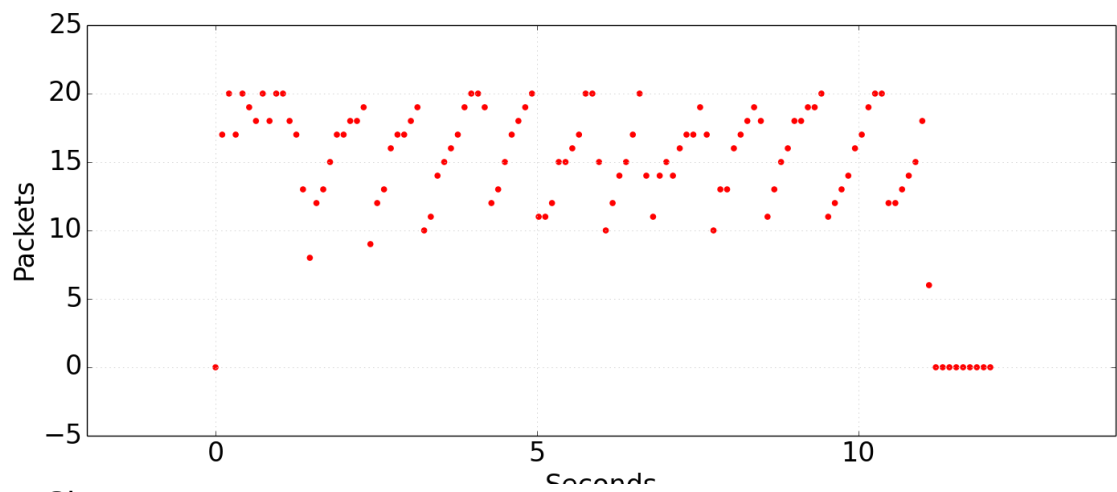
QS100:

mean: 0.5433333

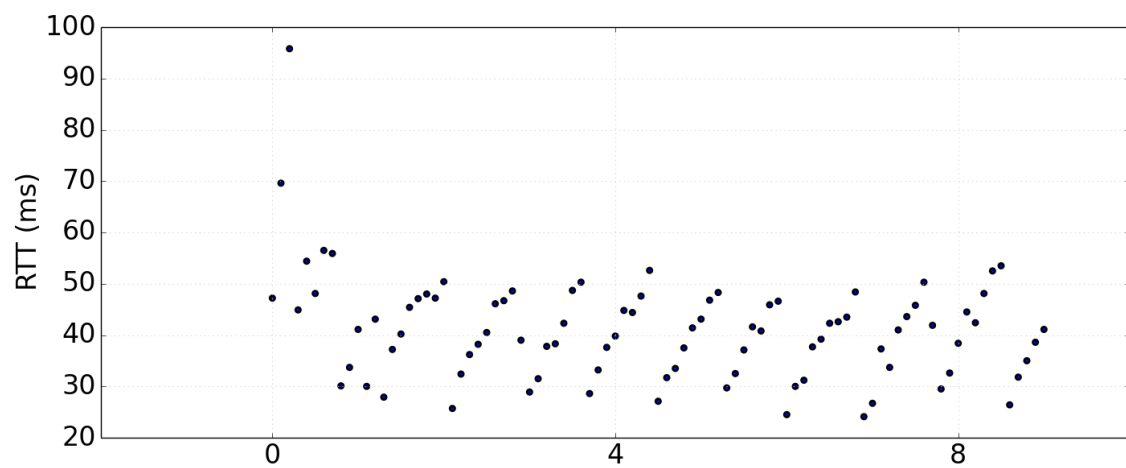
std: 0.3237811



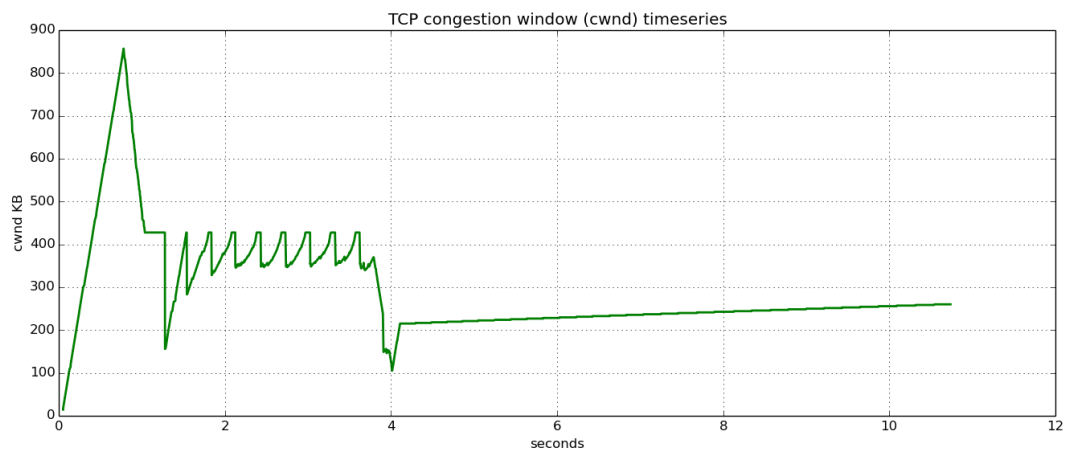
CWND: QS-20



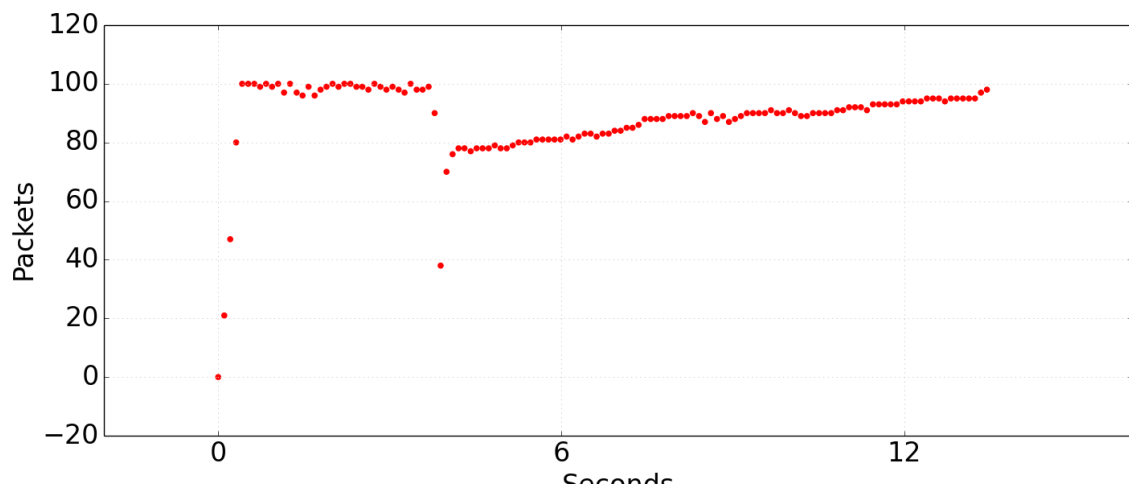
QS20:QueueSize



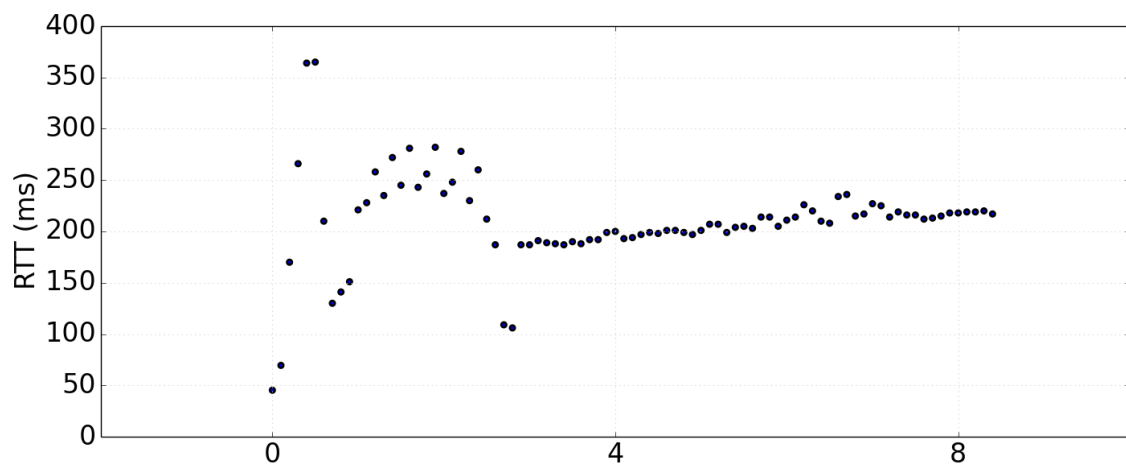
QS20:Round Trip Time



QS100:cwnd



QS100:QueueSize

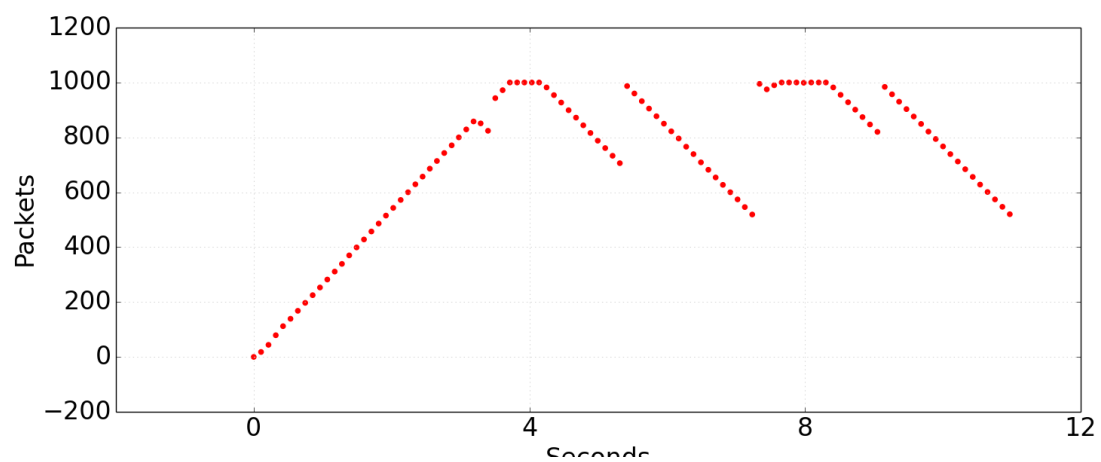


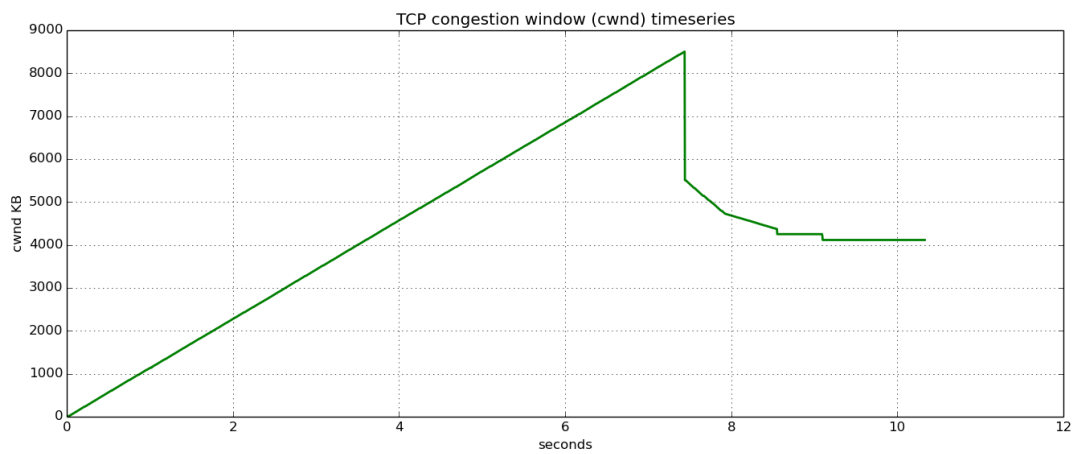
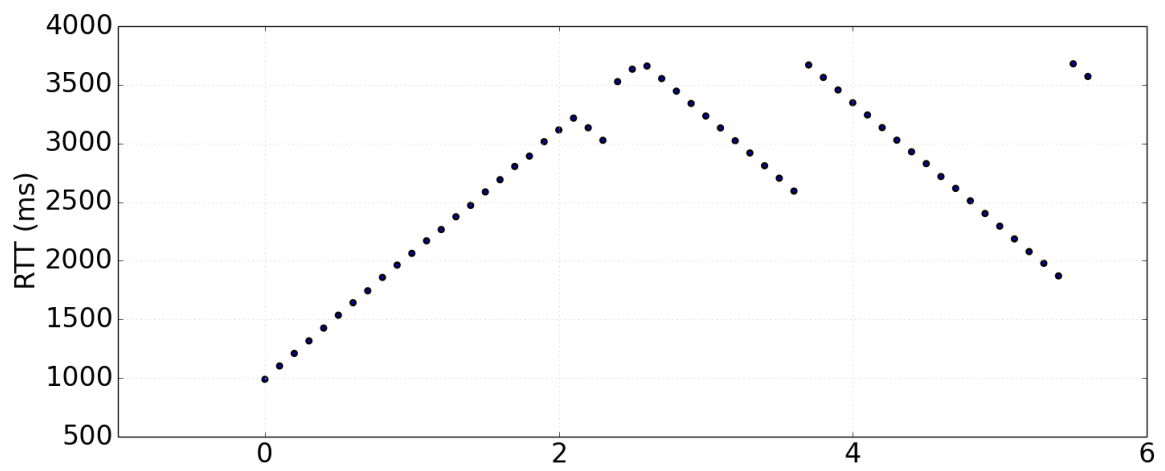
QS100:RTT

Bufferbloat experimet+PIE-AQM :

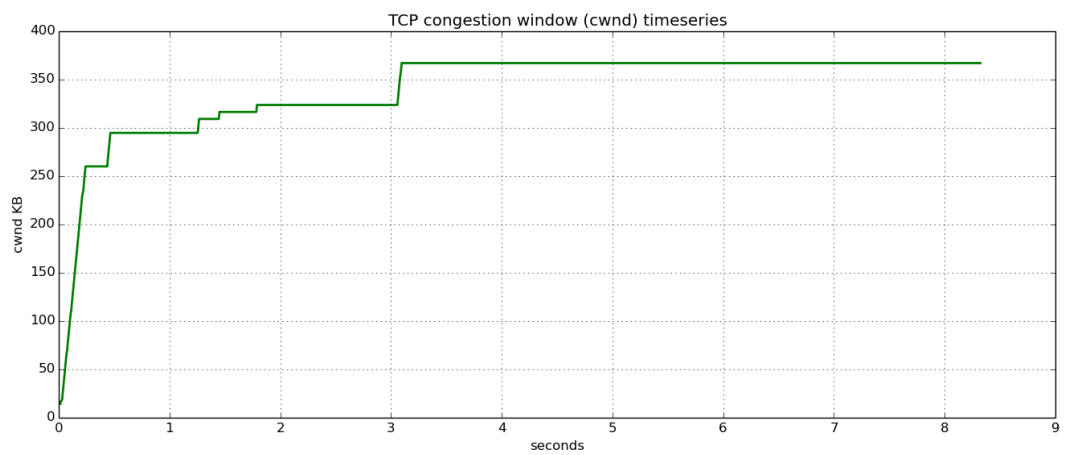
file: bufferbloatPie.py

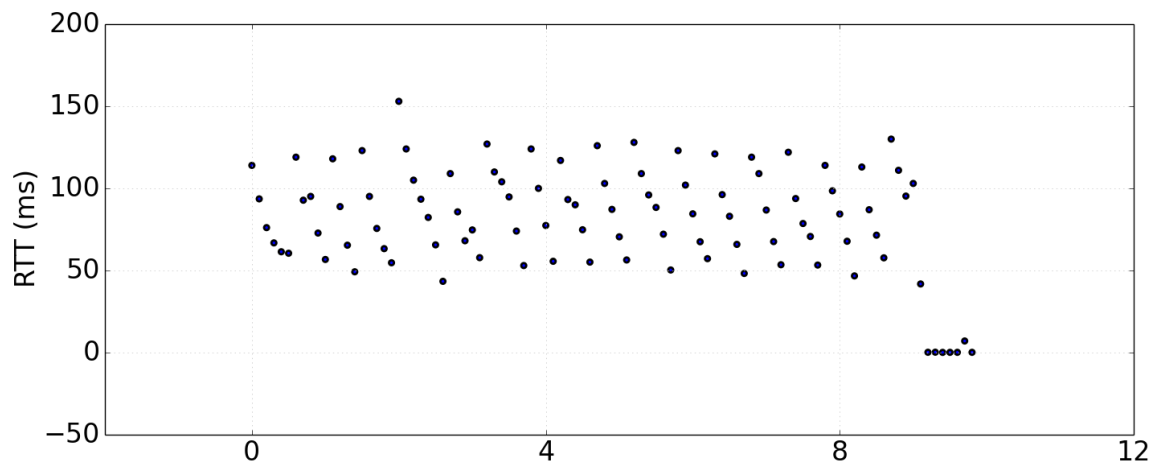
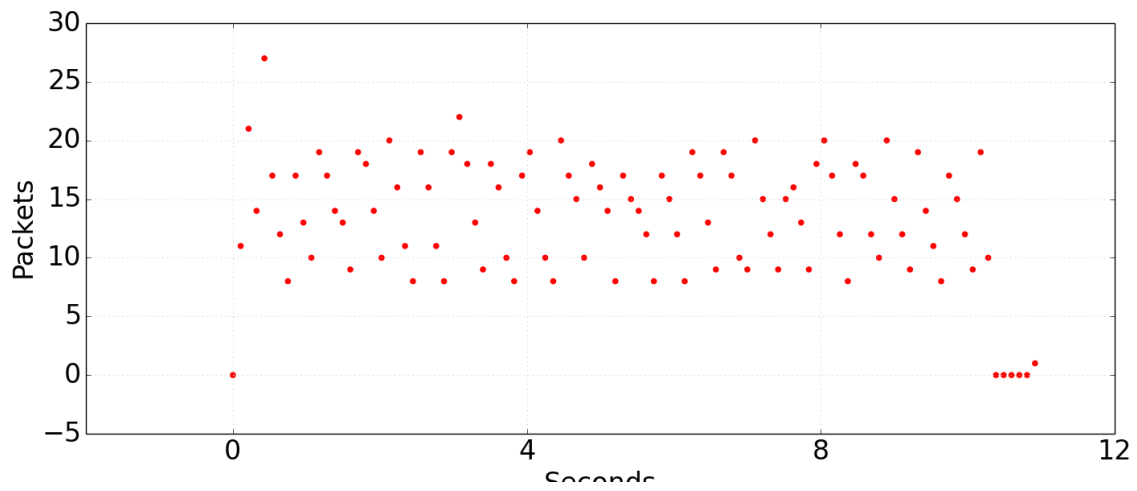
For QS20





for QS100





Bufferbloat experimet+10 TCP connection :

multiple TCP connections are put in iperf client with -P 10

Time to fetch page

QS20:

mean:0.2073333

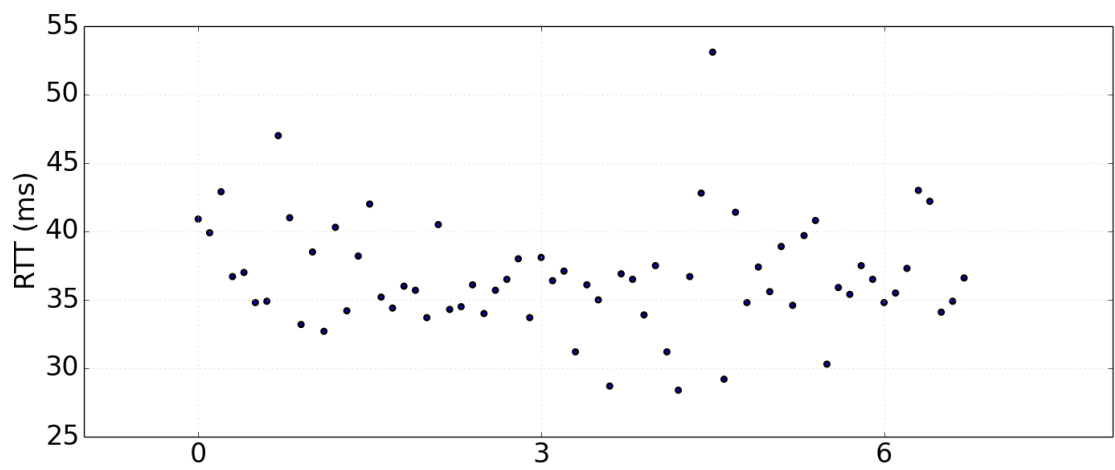
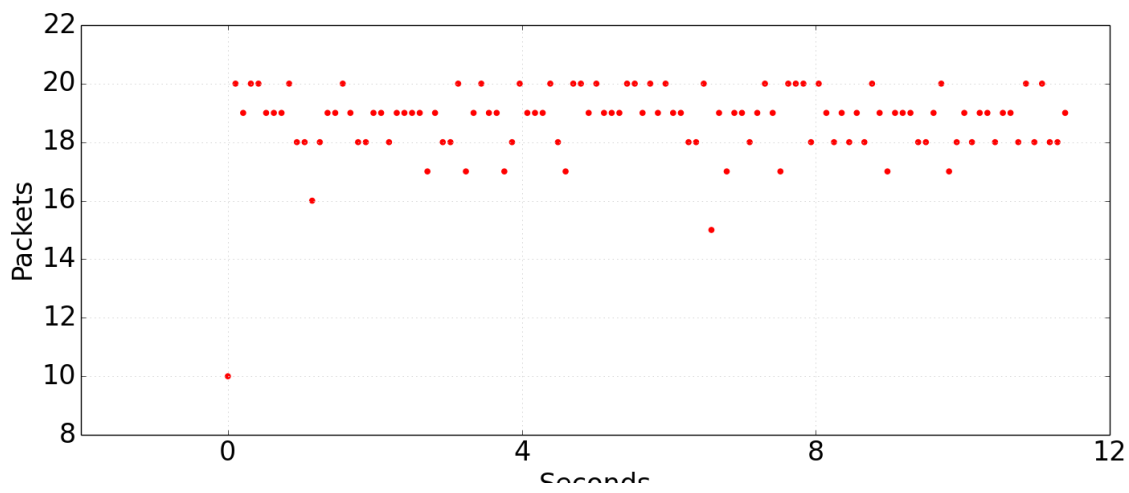
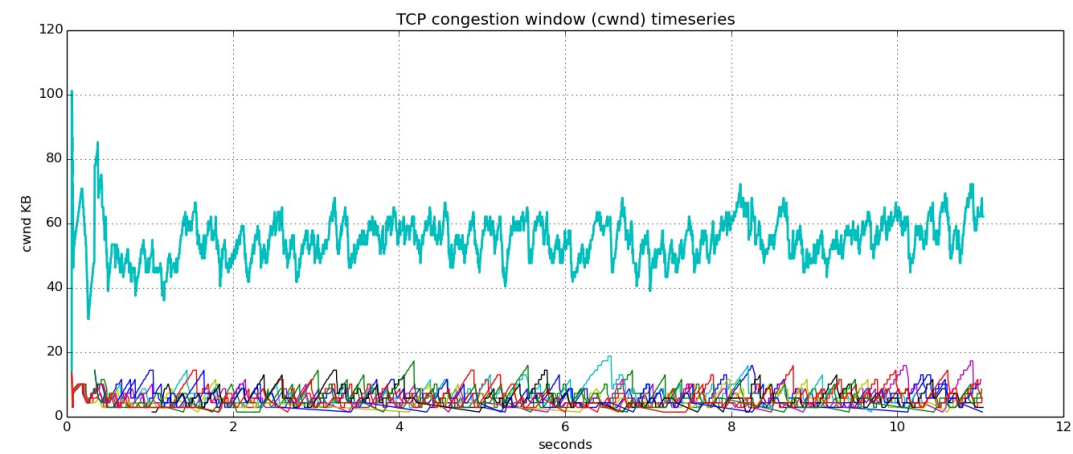
std:0.1843074

QS100:

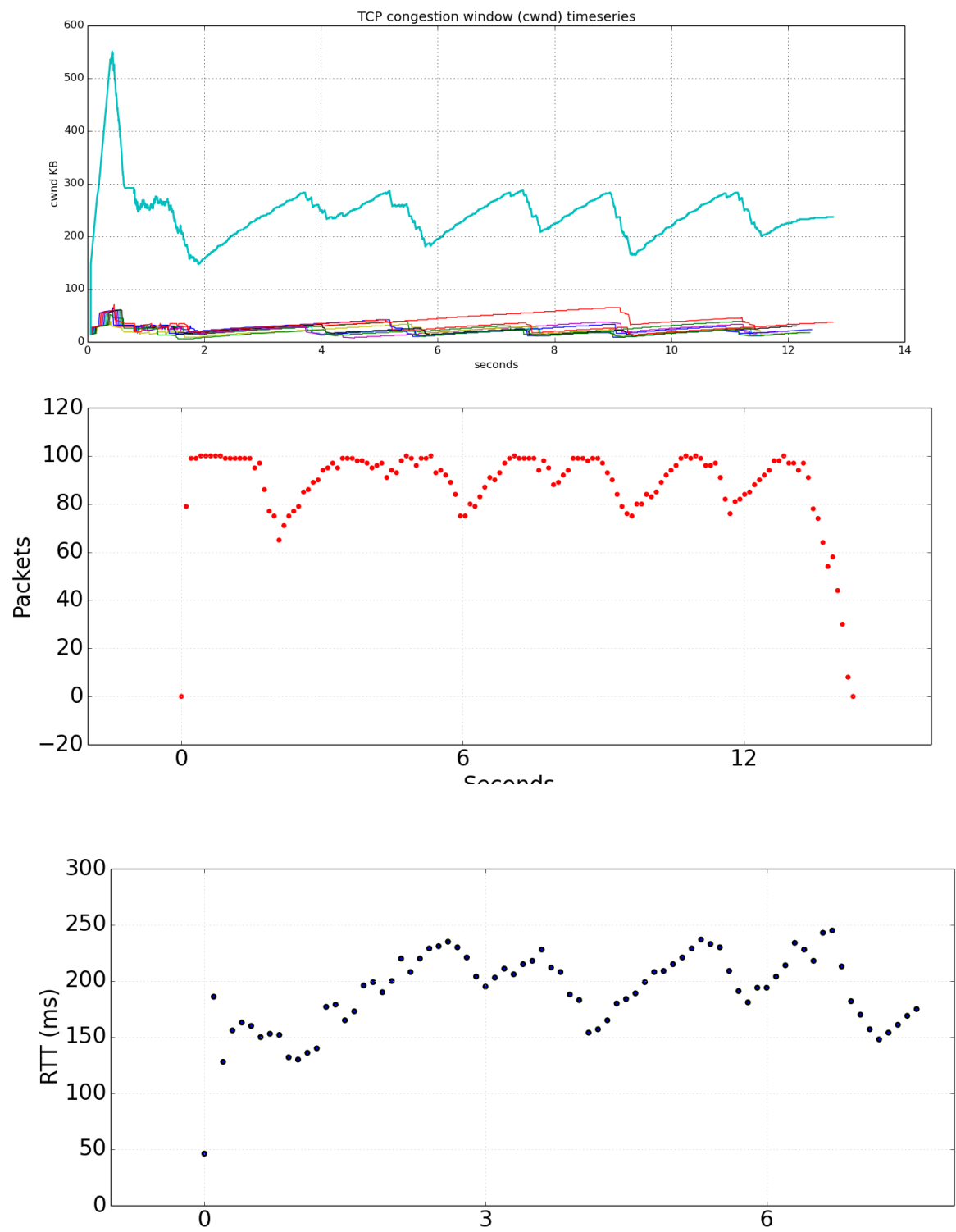
mean:0.7146666

std:444484220

QS20:



QS100:



Question 2 :

Code Explanation

Bufferbloat2.py with different values of loss

bufferbloatPie2.py with different values of loss

multiple TCP connections are put in iperf client with -P 10

Plots and Results

Bufferbloat with loss=0.5

Time to download webpage

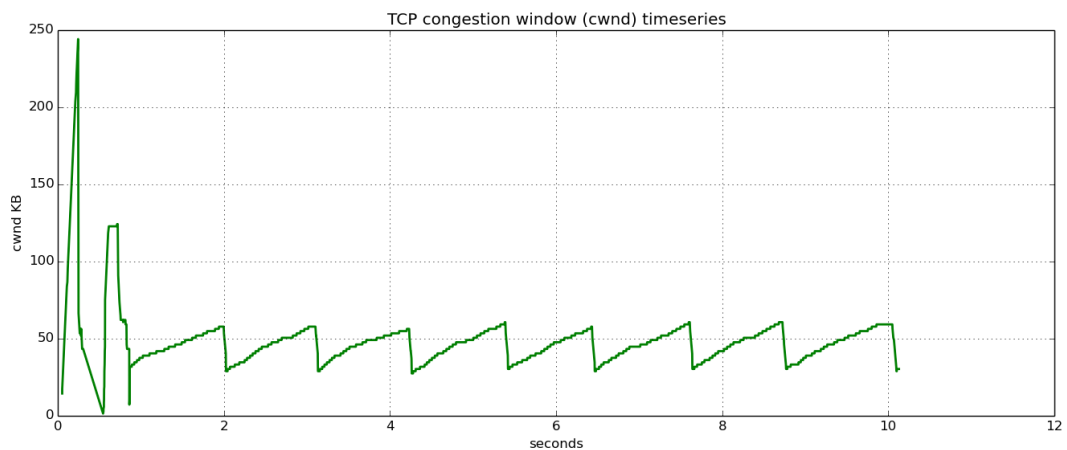
QS20:

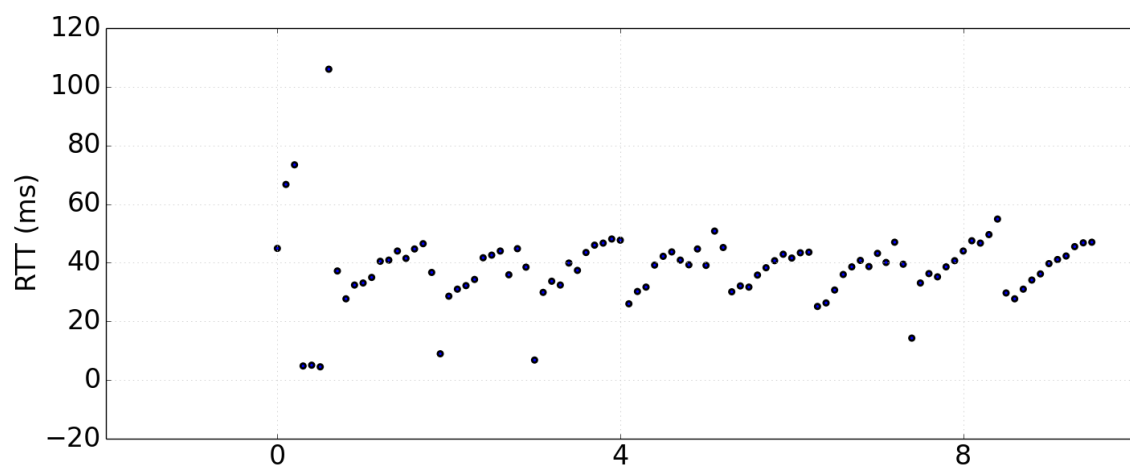
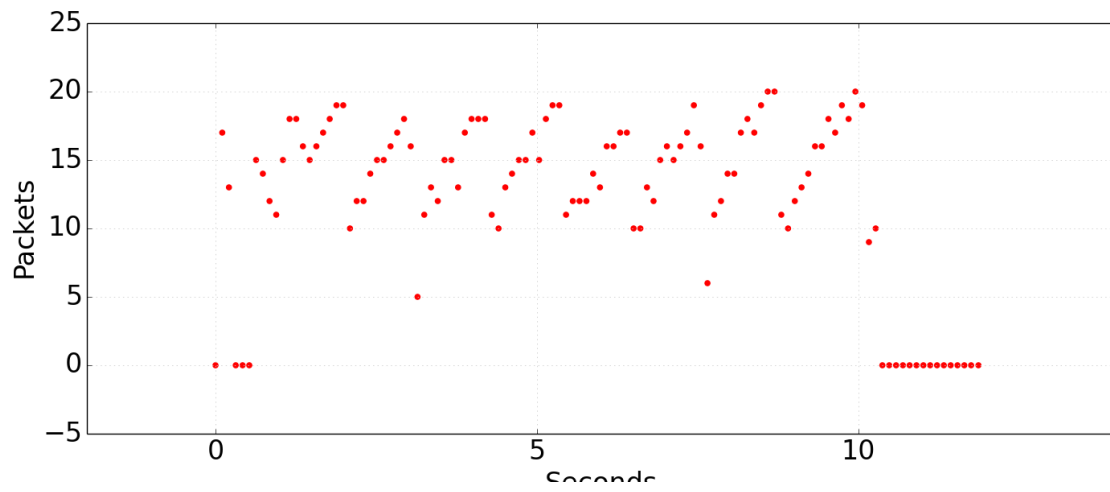
mean :0.08166666 sdev:0.012892719

QS100:

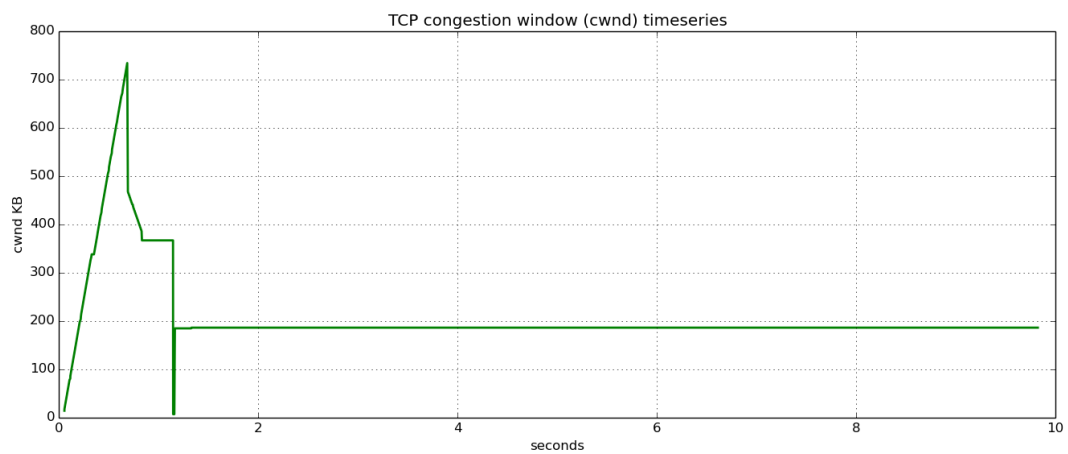
mean :0.19383333 sdev: 0.04186652

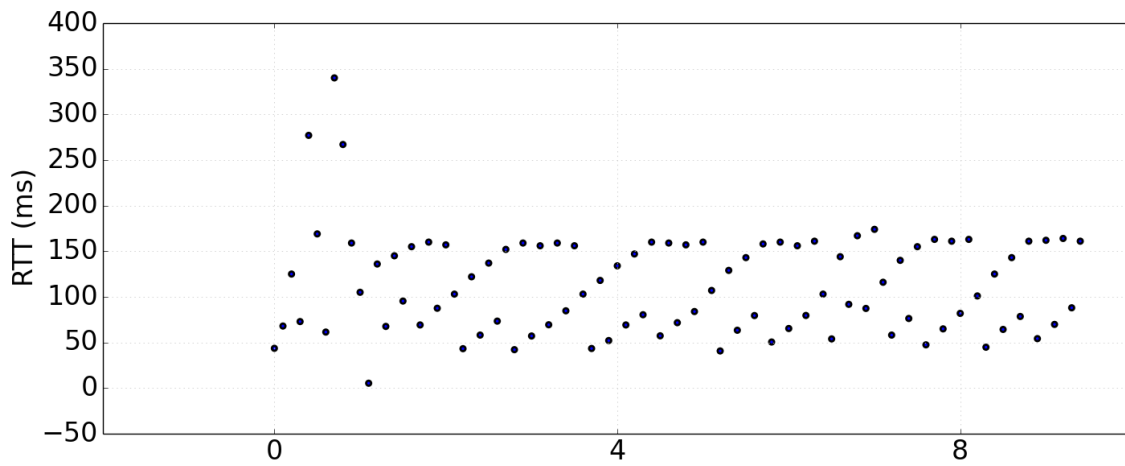
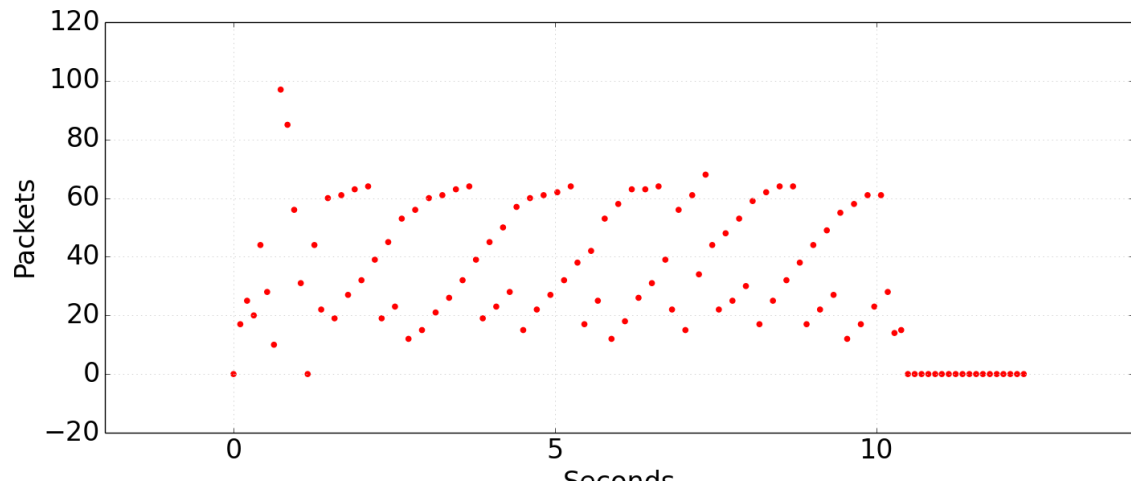
QS20





QS100:





Bufferbloat+10 tcp with loss=0.5

Given in zip file named result

Bufferbloat+10 tcp+piqmqm with loss=0.5

Given in zip file named result

Bufferbloat with loss=01

Given in zip file named result

Bufferbloat+10 tcp with loss=01

Given in zip file named result

Bufferbloat+10 tcp+piaqm with loss=01

Given in zip file named result

Bufferbloat with loss=02

Given in zip file named result

Bufferbloat+10 tcp with loss=02

Given in zip file named result

Bufferbloat+10 tcp+piaqm with loss=02

Given in zip file named result

Bufferbloat with loss=04

Given in zip file named result

Bufferbloat+10 tcp with loss=04

Given in zip file named result

Bufferbloat+10 tcp+piaqm with loss=04

Given in zip file named result

Q 3:

Code Explanation

File bufferbloat3.py

Plots and Results

Time to download file from webserver

QS20:

mean:3.222

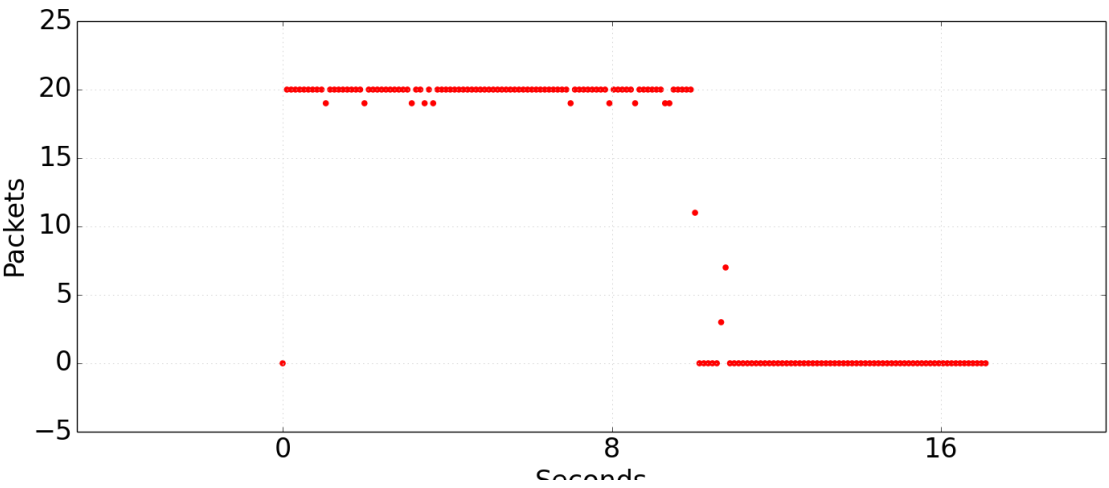
stdev:3.233931

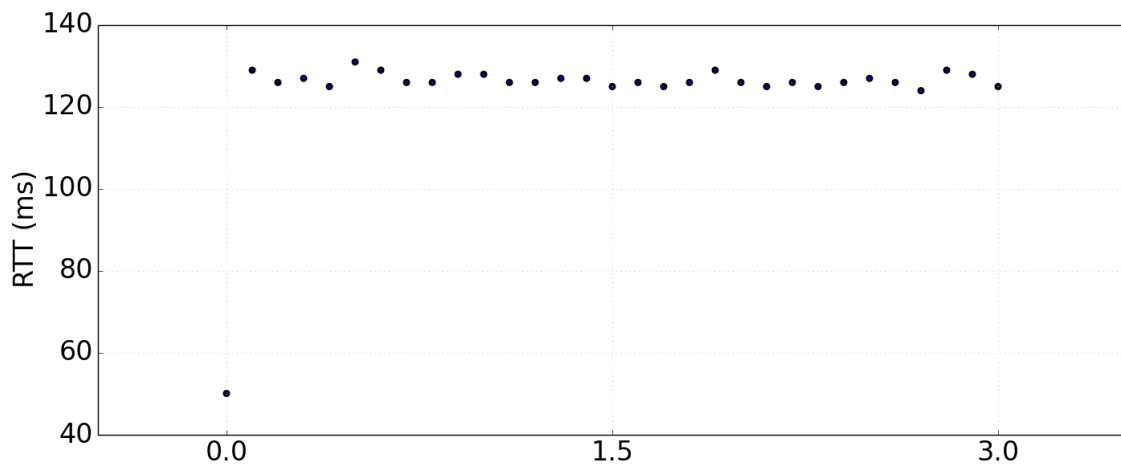
QS100:

mean:3.227

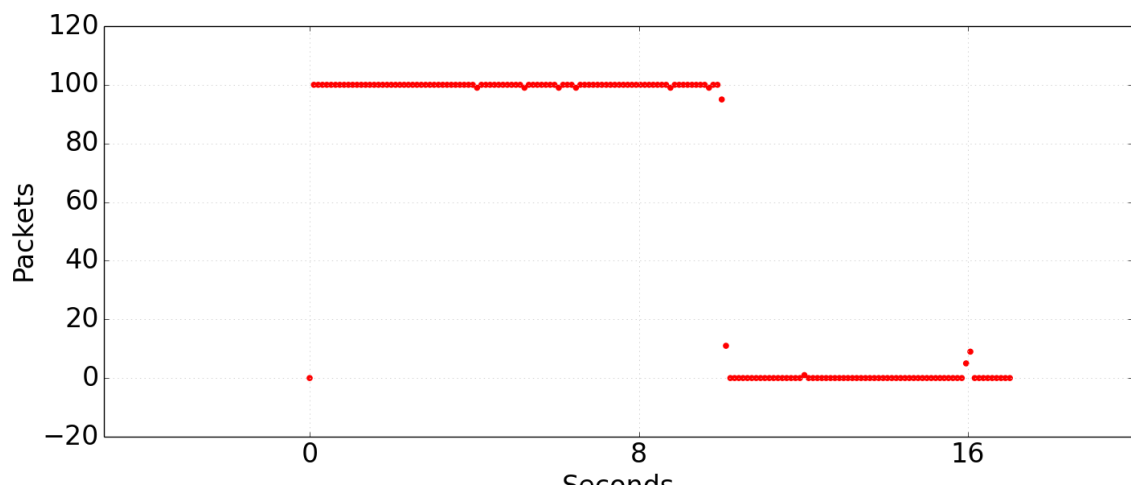
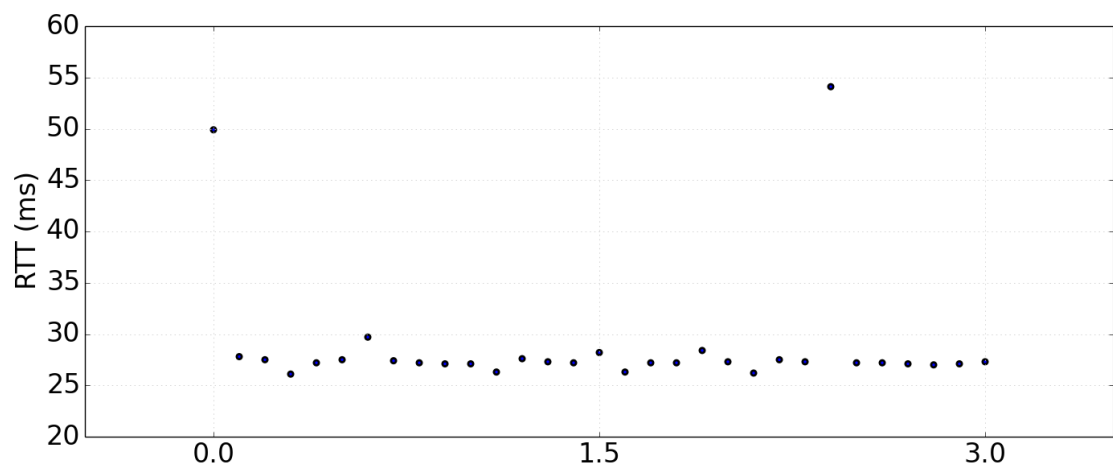
stdev: 3.30543350ls

graphs for QS20





graphs for QS100



Average jitter value from xterm is: 9.67

multiple udp connections are taken with bw=10 mbps

packet loss depend upon the bandwidth of stream and it is 74/77 for bw 100MB