Set buffer size through the command line
        eg. sudo python MyIperf.py [bs_option]
        bs_option:
                1: 10k
                2: 5Mb
                3: 25Mb
The screenshots below also include the command "tc qdisc show dev [h1-eth0 | h2-eth0]" for showing the configuration setting.

The BDP is 100Mb * 30ms = 3Mb
There is no retransmission according to the output.

Buffersize: 10K


```
 ● ● ●                    X  "Node: h1"
Connecting to host 192.168.20.10, port 5201
[  7] local 192.168.10.10 port 48518 connected to 192.168.20.10 port 5201
[ ID] Interval           Transfer     Bitrate         Retr  Cwnd
[  7]   0.00-1.00   sec   431 KBytes  3.53 Mbits/sec    0   94.7 KBytes
[  7]   1.00-2.00   sec  5.82 MBytes  48.8 Mbits/sec    0   1.20 MBytes
[  7]   2.00-3.00   sec  13.8 MBytes   115 Mbits/sec    0   3.17 MBytes
[  7]   3.00-4.00   sec  11.2 MBytes  94.4 Mbits/sec    0   3.74 MBytes
[  7]   4.00-5.00   sec  11.2 MBytes  94.4 Mbits/sec    0   4.30 MBytes
[  7]   5.00-6.00   sec  11.2 MBytes  94.4 Mbits/sec    0   4.86 MBytes
[  7]   6.00-7.00   sec  11.2 MBytes  94.4 Mbits/sec    0   5.43 MBytes
[  7]   7.00-8.00   sec  11.2 MBytes  94.4 Mbits/sec    0   5.99 MBytes
[  7]   8.00-9.00   sec  11.2 MBytes  94.4 Mbits/sec    0   6.55 MBytes
[  7]   9.00-10.00  sec  11.2 MBytes  94.4 Mbits/sec    0   7.11 MBytes
- - - - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate         Retr
[  7]   0.00-10.00  sec  98.7 MBytes  82.8 Mbits/sec    0            sender
[  7]   0.00-11.45  sec  95.2 MBytes  69.8 Mbits/sec                 receiver

iperf Done.
root@mininet-vm:/home/mininet/shared/hw3# tc qdisc show dev h1-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_qlen
1000
qdisc netem 10: parent 5:1 limit 10000 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3# █
```

```
 ● ● ●                    X  "Node: h2"
Server listening on 5201
-----------------------------------------------------------
Accepted connection from 192.168.10.10, port 48516
[  7] local 192.168.20.10 port 5201 connected to 192.168.10.10 port 48518
[ ID] Interval           Transfer     Bitrate
[  7]   0.00-1.00   sec  80.6 KBytes   660 Kbits/sec
[  7]   1.00-2.00   sec  1.05 MBytes  8.83 Mbits/sec
[  7]   2.00-3.00   sec  8.13 MBytes  68.2 Mbits/sec
[  7]   3.00-4.00   sec  11.3 MBytes  94.4 Mbits/sec
[  7]   4.00-5.00   sec  11.2 MBytes  94.3 Mbits/sec
[  7]   5.00-6.00   sec  11.3 MBytes  94.4 Mbits/sec
[  7]   6.00-7.00   sec  11.3 MBytes  95.0 Mbits/sec
[  7]   7.00-8.00   sec  11.3 MBytes  94.5 Mbits/sec
[  7]   8.00-9.00   sec  11.2 MBytes  94.2 Mbits/sec
[  7]   9.00-10.00  sec  11.2 MBytes  94.4 Mbits/sec
[  7]  10.00-11.00  sec  5.36 MBytes  44.8 Mbits/sec
[  7]  11.00-11.45  sec  1.79 MBytes  33.8 Mbits/sec
- - - - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate
[  7]   0.00-11.45  sec  95.2 MBytes  69.8 Mbits/sec                 receiver
-----------------------------------------------------------
Server listening on 5201
-----------------------------------------------------------
^Ciperf3: interrupt - the server has terminated
root@mininet-vm:/home/mininet/shared/hw3# tc qdisc show dev h2-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_qlen
1000
qdisc netem 10: parent 5:1 limit 10000 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3# █
```

Buffersize: 5Mb

```
 ○ ○ ○                        X  "Node: h1"
root@mininet-vm:/home/mininet/shared/hw3# iperf3 -c 192.168.20.10
Connecting to host 192.168.20.10, port 5201
[  7] local 192.168.10.10 port 48594 connected to 192.168.20.10 port 5201
[ ID] Interval           Transfer     Bitrate         Retr  Cwnd
[  7]   0.00-1.00   sec   417 KBytes  3.41 Mbits/sec    0   94.7 KBytes
[  7]   1.00-2.00   sec  6.20 MBytes  52.1 Mbits/sec    0   1.30 MBytes
[  7]   2.00-3.00   sec  13.8 MBytes   115 Mbits/sec    0   3.19 MBytes
[  7]   3.00-4.00   sec  11.2 MBytes  94.4 Mbits/sec    0   3.75 MBytes
[  7]   4.00-5.00   sec  11.2 MBytes  94.4 Mbits/sec    0   4.31 MBytes
[  7]   5.00-6.00   sec  11.2 MBytes  94.4 Mbits/sec    0   4.88 MBytes
[  7]   6.00-7.00   sec  11.2 MBytes  94.4 Mbits/sec    0   5.44 MBytes
[  7]   7.00-8.00   sec  11.2 MBytes  94.4 Mbits/sec    0   6.00 MBytes
[  7]   8.00-9.00   sec  11.2 MBytes  94.4 Mbits/sec    0   6.56 MBytes
[  7]   9.00-10.00  sec  11.2 MBytes  94.4 Mbits/sec    0   7.13 MBytes
- - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate         Retr
[  7]   0.00-10.00  sec  99.1 MBytes  83.1 Mbits/sec    0            sender
[  7]   0.00-11.58  sec  95.3 MBytes  69.1 Mbits/sec                 receiver

iperf Done.
root@mininet-vm:/home/mininet/shared/hw3# tc qdisc show dev h1-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_qlen
1000
qdisc netem 10: parent 5:1 limit 5242880 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3# []                            ⁄⁄
```

```
 ● ● ●                        X  "Node: h2"
----------------------------------------------------------------
Accepted connection from 192.168.10.10, port 48592
[  7] local 192.168.20.10 port 5201 connected to 192.168.10.10 port 48594
[ ID] Interval           Transfer     Bitrate
[  7]   0.00-1.00   sec  80.6 KBytes   660 Kbits/sec
[  7]   1.00-2.00   sec  1.18 MBytes  9.92 Mbits/sec
[  7]   2.00-3.00   sec  8.14 MBytes  68.3 Mbits/sec
[  7]   3.00-4.00   sec  11.3 MBytes  94.7 Mbits/sec
[  7]   4.00-5.00   sec  11.2 MBytes  93.8 Mbits/sec
[  7]   5.00-6.00   sec  11.3 MBytes  94.6 Mbits/sec
[  7]   6.00-7.00   sec  11.3 MBytes  94.5 Mbits/sec
[  7]   7.00-8.00   sec  11.3 MBytes  94.6 Mbits/sec
[  7]   8.00-9.00   sec  11.2 MBytes  94.3 Mbits/sec
[  7]   9.00-10.00  sec  11.2 MBytes  94.4 Mbits/sec
[  7]  10.00-11.00  sec  5.07 MBytes  42.6 Mbits/sec
[  7]  11.00-11.58  sec  2.06 MBytes  29.8 Mbits/sec
- - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate
[  7]   0.00-11.58  sec  95.3 MBytes  69.1 Mbits/sec                 receiver
----------------------------------------------------------------
Server listening on 5201
----------------------------------------------------------------
^Ciperf3: interrupt - the server has terminated
root@mininet-vm:/home/mininet/shared/hw3# tc qdisc show dev h2-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_qlen
1000
qdisc netem 10: parent 5:1 limit 5242880 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3# █                            ⁄⁄
```

Buffersize: 25Mb

```
●●●                          X "Node: h1"
root@mininet-vm:/home/mininet/shared/hw3# iperf3 -c 192.168.20.10
Connecting to host 192.168.20.10, port 5201
[  7] local 192.168.10.10 port 48620 connected to 192.168.20.10 port 5201
[ ID] Interval           Transfer     Bitrate         Retr  Cwnd
[  7]   0.00-1.00   sec   417 KBytes  3.41 Mbits/sec    0   94.7 KBytes
[  7]   1.00-2.00   sec  6.20 MBytes  52.1 Mbits/sec    0   1.18 MBytes
[  7]   2.00-3.00   sec  13.8 MBytes   115 Mbits/sec    0   3.18 MBytes
[  7]   3.00-4.00   sec  11.2 MBytes  94.4 Mbits/sec    0   3.74 MBytes
[  7]   4.00-5.00   sec  11.2 MBytes  94.3 Mbits/sec    0   4.30 MBytes
[  7]   5.00-6.00   sec  11.2 MBytes  94.4 Mbits/sec    0   4.86 MBytes
[  7]   6.00-7.00   sec  10.0 MBytes  83.9 Mbits/sec    0   5.42 MBytes
[  7]   7.00-8.00   sec  11.2 MBytes  94.4 Mbits/sec    0   5.98 MBytes
[  7]   8.00-9.00   sec  11.2 MBytes  94.4 Mbits/sec    0   6.54 MBytes
[  7]   9.00-10.00  sec  11.2 MBytes  94.4 Mbits/sec    0   7.11 MBytes
- - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate         Retr
[  7]   0.00-10.00  sec  97.9 MBytes  82.1 Mbits/sec    0            sender
[  7]   0.00-11.52  sec  94.9 MBytes  69.1 Mbits/sec                 receiv

iperf Done.
root@mininet-vm:/home/mininet/shared/hw3# tc qdisc show dev h1-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_q
1000
qdisc netem 10: parent 5:1 limit 26214400 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3#
```

```
●●●                          X "Node: h2"
-------------------------------------------------------------
Accepted connection from 192.168.10.10, port 48618
[  7] local 192.168.20.10 port 5201 connected to 192.168.10.10 port 48620
[ ID] Interval           Transfer     Bitrate
[  7]   0.00-1.00   sec  80.6 KBytes   660 Kbits/sec
[  7]   1.00-2.00   sec  1.08 MBytes  9.05 Mbits/sec
[  7]   2.00-3.00   sec  8.10 MBytes  68.0 Mbits/sec
[  7]   3.00-4.00   sec  11.1 MBytes  93.5 Mbits/sec
[  7]   4.00-5.00   sec  11.2 MBytes  94.0 Mbits/sec
[  7]   5.00-6.00   sec  11.2 MBytes  94.3 Mbits/sec
[  7]   6.00-7.00   sec  11.2 MBytes  94.0 Mbits/sec
[  7]   7.00-8.00   sec  11.2 MBytes  94.1 Mbits/sec
[  7]   8.00-9.00   sec  11.2 MBytes  94.1 Mbits/sec
[  7]   9.00-10.00  sec  11.3 MBytes  94.5 Mbits/sec
[  7]  10.00-11.00  sec  5.06 MBytes  42.4 Mbits/sec
[  7]  11.00-11.52  sec  2.05 MBytes  33.5 Mbits/sec
- - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate
[  7]   0.00-11.52  sec  94.9 MBytes  69.1 Mbits/sec                 receiver
-------------------------------------------------------------
Server listening on 5201
-------------------------------------------------------------
^Ciperf3: interrupt - the server has terminated
root@mininet-vm:/home/mininet/shared/hw3# tc qdisc show dev h2-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_qlen
1000
qdisc netem 10: parent 5:1 limit 26214400 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3#
```