Set buffer size through the command line

eg. sudo python Mylperf.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
   71
        1,00-2,00
                         5.82 MBytes
                                      48.8 Mbits/sec
                                                            1.20 MBytes
                                                        0
                    sec
   7]
                                                            3.17 MBytes
        2.00-3.00
                         13.8 MBytes
                                      115 Mbits/sec
                                                        0
                    sec
   7]
        3,00-4,00
                    sec 11.2 MBytes
                                      94.4 Mbits/sec
                                                            3.74 MBytes
   7]
        4.00-5.00
                        11.2 MBytes
                                      94.4 Mbits/sec
                                                        0
                                                            4.30 MBytes
                    sec
   7]
        5,00-6,00
                    sec 11.2 MBytes 94.4 Mbits/sec
                                                        0
                                                            4.86 MBytes
                                                            5.43 MBytes
   7]
        6.00-7.00
                    sec 11.2 MBytes
                                      94.4 Mbits/sec
                                                        0
   71
                                                            5.99 MBytes
        7.00-8.00
                    sec 11.2 MBytes
                                      94.4 Mbits/sec
                                                        0
                    sec 11.2 MBytes
        8.00-9.00
                                      94.4 Mbits/sec
                                                        0
                                                            6.55 MBytes
   7]
        9,00-10,00
                        11.2 MBytes
                                      94.4 Mbits/sec
                                                        0
                                                            7.11 MBytes
                   sec
 ID] Interval
                         Transfer
                                      Ritrate
                                                      Retn
  71
        0.00-10.00
                         98.7 MBytes
                                      82.8 Mbits/sec
                                                        0
                                                                       senden
                   sec
        0.00-11.45 sec
                         95.2 MBytes 69.8 Mbits/sec
                                                                       receiver
iperf Done.
root@mininet-vm:/home/mininet/shared/hw3# to 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#
                                                                               1
 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
                        80.6 KBytes
                                     660 Kbits/sec
                   sec
   7]
       1.00-2.00
                        1.05 MBytes 8.83 Mbits/sec
                   sec
        2,00-3,00
   7]
                   sec 8.13 MBytes 68.2 Mbits/sec
   7]
       3.00-4.00
                   sec 11.3 MBytes
                                     94.4 Mbits/sec
   7]
                        11.2 MBytes
11.3 MBytes
        4.00-5.00
                                     94.3 Mbits/sec
                   sec
   7]
        5,00-6,00
                                     94.4 Mbits/sec
                   sec
   7Ī
       6.00-7.00
                        11.3 MBytes
                                     95.0 Mbits/sec
                   sec
                        11.3 MBytes
   7]
        7,00-8,00
                                     94.5 Mbits/sec
                   sec
                   sec 11.2 MBytes
   7]
       8.00-9.00
                                     94.2 Mbits/sec
   71
       9.00-10.00
                        11.2 MBytes
                                     94.4 Mbits/sec
                   sec
   71
      10.00-11.00
                        5.36 MBytes
                                     44.8 Mbits/sec
                   sec
  7]
      11.00-11.45
                   sec 1.79 MBytes 33.8 Mbits/sec
 ID] Interval
                        Transfer
                                     Bitrate
       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# to 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#
                                                                              1/2
```

Buffersize: 5Mb

```
000
                                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
                                                           94.7 KBytes
  71
       0.00-1.00
                         417 KBytes 3.41 Mbits/sec
                   sec
  7]
       1,00-2,00
                        6.20 MBytes 52.1 Mbits/sec
                                                           1.30 MBytes
                   sec
                   sec 13.8 MBytes
                                                           3.19 MBytes
  7]
       2,00-3,00
                                     115 Mbits/sec
                                                       0
  7]
       3,00-4,00
                   sec 11.2 MBytes 94.4 Mbits/sec
                                                           3.75 MBytes
                                                       Û
   7]
       4.00-5.00
                   sec 11.2 MBytes 94.4 Mbits/sec
                                                       0
                                                           4.31 MBytes
   7]
                        11.2 MBytes
       5.00-6.00
                                     94.4 Mbits/sec
                                                       0
                                                           4.88 MBytes
                   sec
                        11.2 MBytes
   7]
       6,00-7,00
                                     94.4 Mbits/sec
                                                           5.44 MBytes
                   sec
                                                       Û
                                                           6.00 MBytes
   7]
                        11.2 MBytes
                                     94.4 Mbits/sec
       7,00-8,00
                                                       Û
                   sec
   7]
                        11.2 MBytes 94.4 Mbits/sec
                                                           6.56 MBytes
       8.00-9.00
                                                       0
                   sec
       9.00-10.00
                   sec
                        11.2 MBytes 94.4 Mbits/sec
                                                           7.13 MBytes
 ID] Interval
                                     Bitrate
                        Transfer
                                                     Retr
  7]
       0.00-10.00 sec
                        99.1 MBytes
                                     83.1 Mbits/sec
                                                                     sender
       0.00-11.58 sec
                        95.3 MBytes 69.1 Mbits/sec
                                                                     receiver
iperf Done.
root@mininet-vm:/home/mininet/shared/hw3# to qdisc show dev h1-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_qlen
qdisc netem 10: parent 5:1 limit 5242880 Helay 30.0ms
root@mininet-vm:/home/mininet/shared/hws# |
                                                                             //
                               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
                        Transfer
                                     Bitrate
 ID] Interval
  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
       2,00-3,00
  7]
                   sec 8.14 MBytes 68.3 Mbits/sec
   71
       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]
                                     94.6 Mbits/sec
       5.00-6.00
                   sec
                        11.3 MBytes
   7]
       6.00-7.00
                        11.3 MBytes
                                     94.5 Mbits/sec
                    sec
   7]
       7,00-8,00
                        11.3 MBytes
                                     94.6 Mbits/sec
                   sec
   71
       8.00-9.00
                        11.2 MBytes
                                     94.3 Mbits/sec
                   sec
   7]
        9.00-10.00
                        11.2 MBytes
                                     94.4 Mbits/sec
                   sec
  7]
                   sec 5.07 MBytes 42.6 Mbits/sec
      10,00-11,00
      11.00-11.58
                   sec 2.06 MBytes 29.8 Mbits/sec
  ID] Interval
                         Transfer
                                     Bitrate
        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# to 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 Helay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3#
                                                                            1/2
```

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
                        417 KBytes 3.41 Mbits/sec
                                                       0
                                                           94.7 KBytes
                  sec
  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
       3,00-4,00
  7]
                   sec 11.2 MBytes 94.4 Mbits/sec
                                                       0
                                                           3.74 MBytes
                   sec 11.2 MBytes 94.3 Mbits/sec
  7]
       4.00-5.00
                                                           4.30 MBytes
                                                       0
   7]
       5.00-6.00
                   sec 11.2 MBytes 94.4 Mbits/sec
                                                           4.86 MBytes
                                                       0
   71
       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
                                                           5.98 MBytes
                                                       0
   71
                   sec 11.2 MBytes
       8.00-9.00
                                     94.4 Mbits/sec
                                                           6.54 MBytes
                                                       0
  7]
       9.00-10.00 sec 11.2 MBytes
                                     94.4 Mbits/sec
                                                           7.11 MBytes
  ID] Interval
                        Transfer
                                     Bitrate
                                                     Retr
       0.00-10.00 sec 97.9 MBytes 82.1 Mbits/sec
  7]
                                                       0
                                                                     sender
  7]
       0.00-11.52 sec 94.9 MBytes 69.1 Mbits/sec
                                                                     receiv
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
qdisc netem 10: parent 5:1 limit 26214400 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3#
                                                                         1
                               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
       0.00-1.00
  7]
                  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
       4.00-5.00
                   sec 11.2 MBytes 94.0 Mbits/sec
  7]
  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
                   sec 11.2 MBytes 94.1 Mbits/sec
  71
       8,00-9,00
  7]
       9.00-10.00 sec 11.3 MBytes
                                    94.5 Mbits/sec
      10.00-11.00 sec
                        5.06 MBytes
                                     42.4 Mbits/sec
      11.00-11.52 sec 2.05 MBytes
                                     33.5 Mbits/sec
  ID] Interval
                                     Bitrate
                        Transfer
       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# to qdisc show dev h2-eth0
qdisc htb 5: root refcnt 2 r2q 10 default 0x1 direct_packets_stat 0 direct_qlen
1000
gdisc netem 10: parent 5:1 limit 26214400 delay 30.0ms
root@mininet-vm:/home/mininet/shared/hw3#
                                                                            1/2
```