

SOFTWARE DEFINED NETWORKS

LAB 4

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Estimated Hours of Work: 3

1. Purpose:

- After configuring and setting up DPDK, we are now changing the different parameters that affect the performance of application and thus reception of packets.
- To set up the RX queue and TX queue and change size of parameters like Rx descriptor size and construct size.
- To plot different graphs with results acquired.

2. Set up:

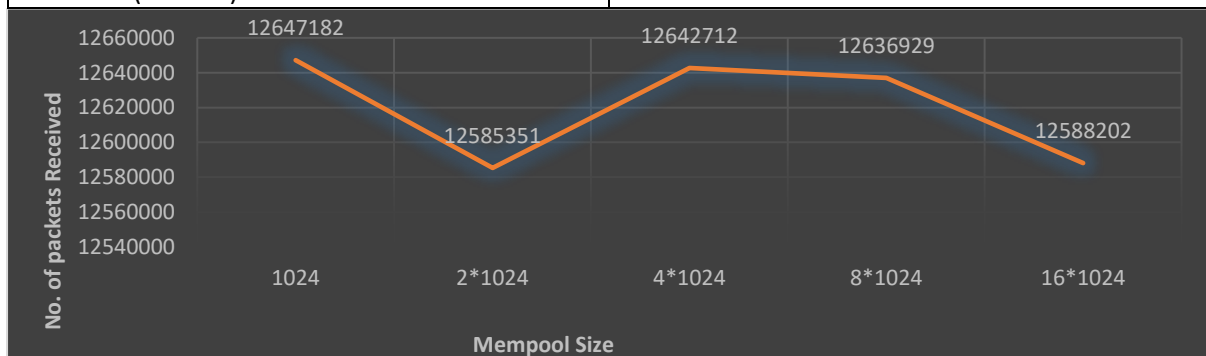
The setup remains the same as lab 3, only parameters will be changed.

- Pthresh → Ring pre fetch threshold.
- Hthresh → Ring host threshold.
- Wthresh → Ring write back threshold.
- Rx_free_thresh → It frees RX descriptors.
- Tx_free_thresh → Start freeing TX buffers if there are less free descriptors than this value.
- Tx_rs_thresh → Drives the setting of RS bit on TxDs.

3. Results:

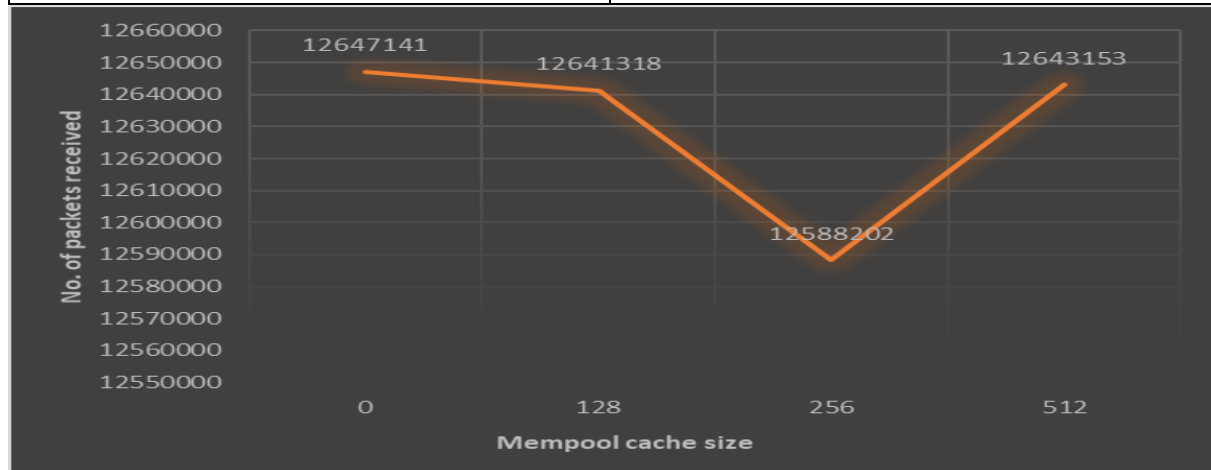
Mempool Size:

1024	12647182
2*1024	12585351
4*1024	12642712
8*1024	12636929
16*1024 (Default)	12588202



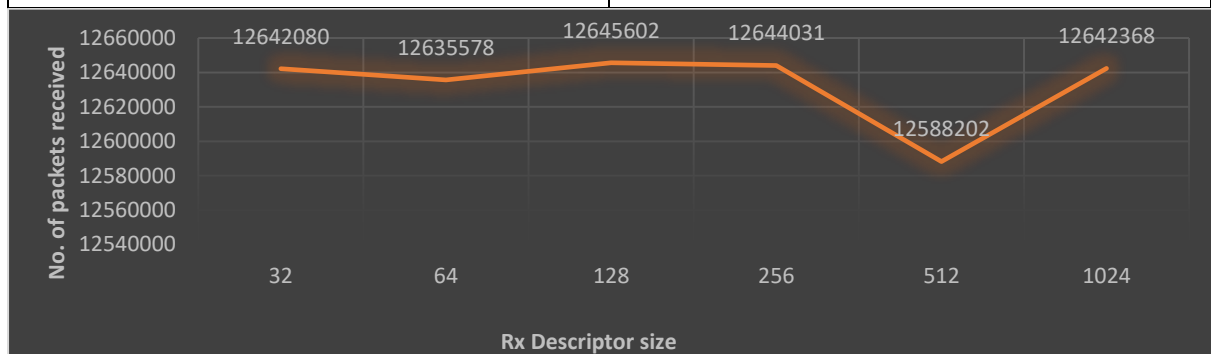
Mempool Cache Size:

0	12647141
128	12641318
256 (Default)	12588202
512	12643153



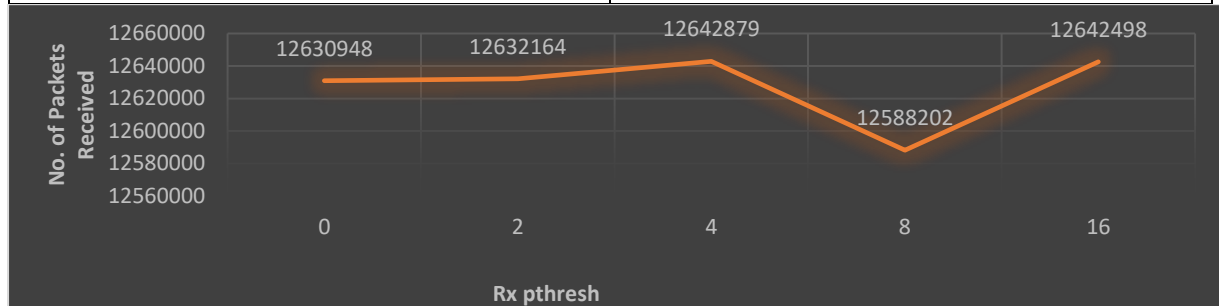
RX descriptor Size:

32	12642080
64	12635578
128	12645602
256	12644031
512(Default)	12588202
1024	12642368



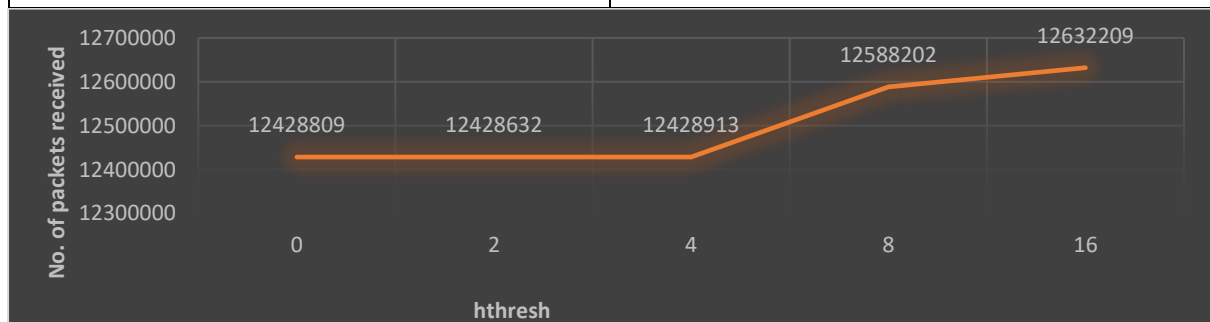
Pthresh:

0	12630948
2	12632164
4	12642879
8(default)	12588202
16	12642498



Hthresh:

0	12428809
2	12428632
4	12428913
8(DEFAULT)	12588202
16	12632209



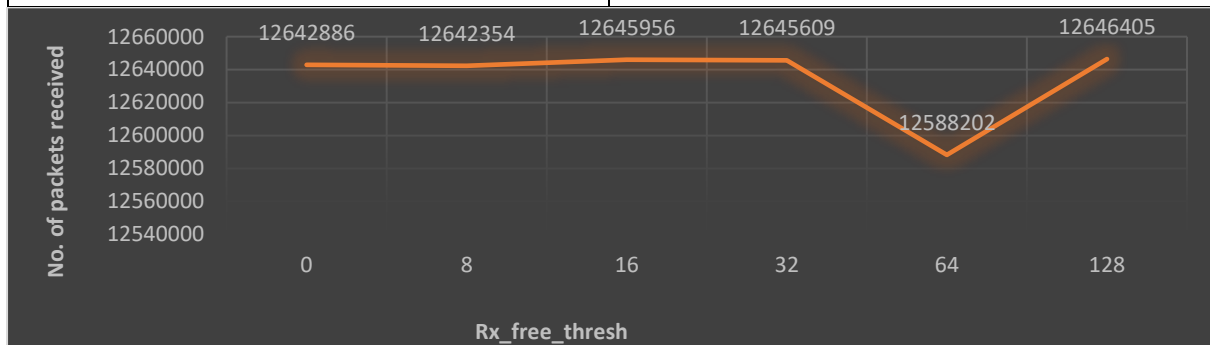
Wthresh:

0	12631901
2	12644876
4 (Default)	12588202
8	12642750
16	12642008



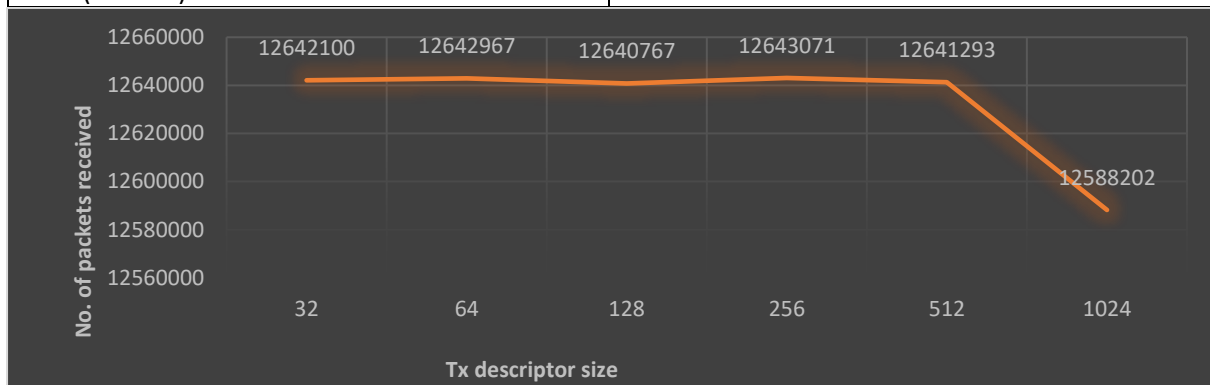
Rx_free_thresh:

0	12642886
8	12642354
16	12645956
32	12645609
64 (Default)	12588202
128	12646405



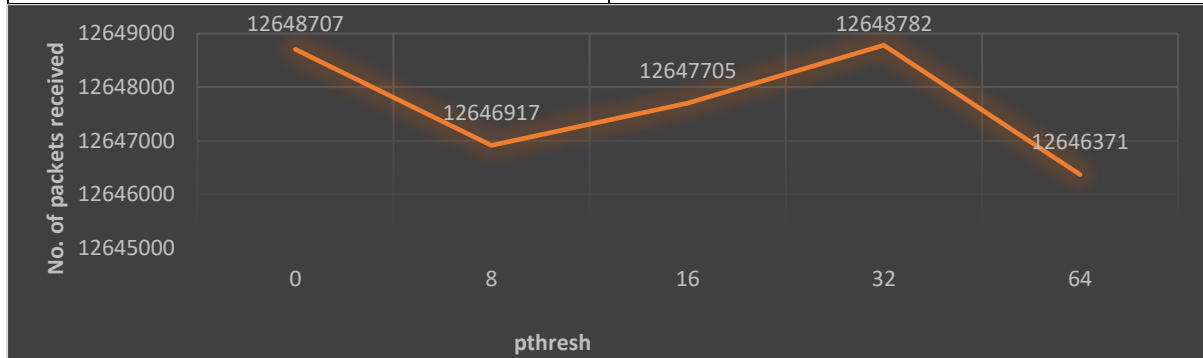
Tx descriptor size:

32	12642100
64	12642967
128	12640767
256	12643071
512	12641293
1024(Default)	12588202



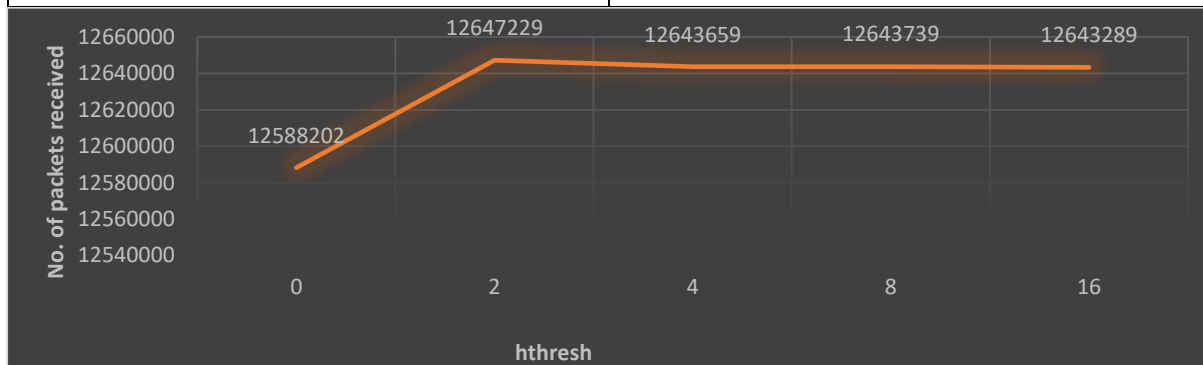
Pthresh: 36 default

0	12648707
8	12646917
16	12647705
32	12648782
64	12646371



Hthresh:

0 (Default)	12588202
2	12647229
4	12643659
8	12643739
16	12643289



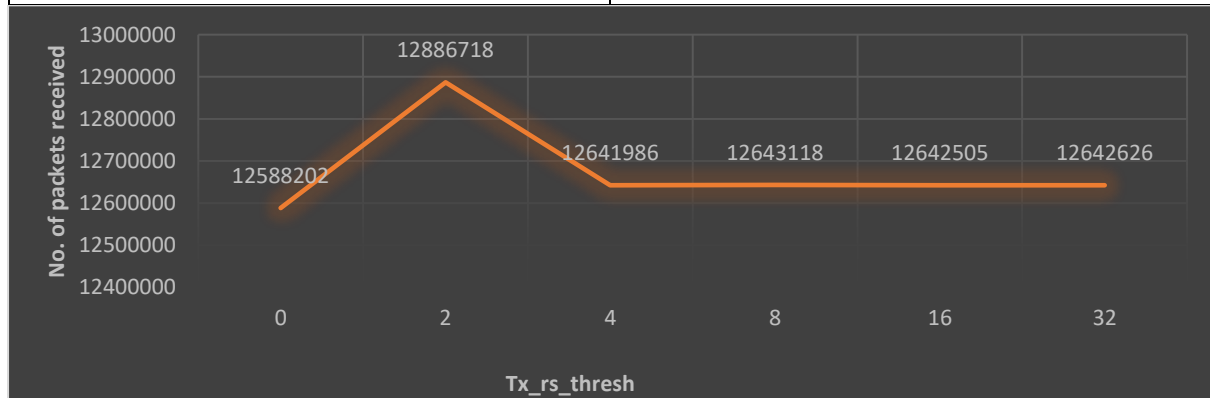
W thresh:

0 (Default)	12588202
2	12886597
4	12886558
8	12888192
16	12886223



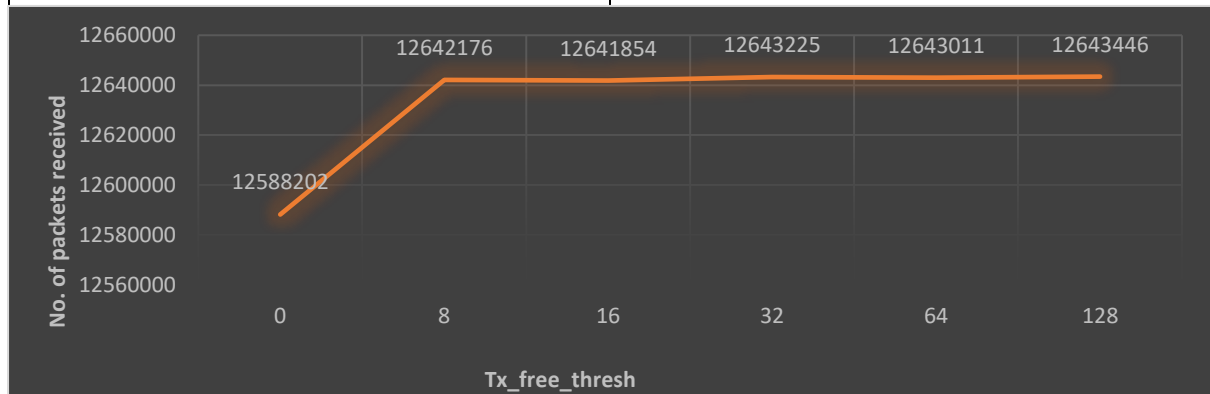
Tx_rs_thresh:

0 (Default)	12588202
2	12886718
4	12641986
8	12643118
16	12642505
32	12642626



Tx_free_thresh:

0 (Default)	12588202
8	12642176
16	12641854
32	12643225
64	12643011
128	12643446



4. Conclusion:

Hence different parameters were checked and results are noted down.