# Test Topology



# Hardware Infos

## TestCenter

model:

SPT-N11U DX2 8-PORT 100GBE QSFP28\DX2-100GO-T8

version 4.86

## NIC

**model:** Mellanox Technologies MT27800 Family [ConnectX-5]

**mlxconfig:**

[root@vpp1 ~]# mlxconfig -d /dev/mst/mt4119\_pciconf0 q

Device #1:

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Device type: ConnectX5

Name: MCX516A-CCA\_Ax

Description: ConnectX-5 EN network interface card; 100GbE dual-port QSFP28; PCIe3.0 x16; tall bracket; ROHS R6

Device: /dev/mst/mt4119\_pciconf0

Configurations: Next Boot

 MEMIC\_BAR\_SIZE 0

 MEMIC\_SIZE\_LIMIT \_256KB(1)

 HOST\_CHAINING\_MODE DISABLED(0)

 HOST\_CHAINING\_CACHE\_DISABLE False(0)

 HOST\_CHAINING\_DESCRIPTORS Array[0..7]

 HOST\_CHAINING\_TOTAL\_BUFFER\_SIZE Array[0..7]

 FLEX\_PARSER\_PROFILE\_ENABLE 0

 FLEX\_IPV4\_OVER\_VXLAN\_PORT 0

 ROCE\_NEXT\_PROTOCOL 254

 ESWITCH\_HAIRPIN\_DESCRIPTORS Array[0..7]

 ESWITCH\_HAIRPIN\_TOT\_BUFFER\_SIZE Array[0..7]

 PF\_BAR2\_SIZE 0

 NON\_PREFETCHABLE\_PF\_BAR False(0)

 VF\_VPD\_ENABLE False(0)

 PER\_PF\_NUM\_SF False(0)

 STRICT\_VF\_MSIX\_NUM False(0)

 VF\_NODNIC\_ENABLE False(0)

 NUM\_PF\_MSIX\_VALID True(1)

 NUM\_OF\_VFS 0

 PF\_BAR2\_ENABLE False(0)

 SRIOV\_EN False(0)

 PF\_LOG\_BAR\_SIZE 5

 VF\_LOG\_BAR\_SIZE 1

 NUM\_PF\_MSIX 63

 NUM\_VF\_MSIX 11

 INT\_LOG\_MAX\_PAYLOAD\_SIZE AUTOMATIC(0)

 PCIE\_CREDIT\_TOKEN\_TIMEOUT 0

 ACCURATE\_TX\_SCHEDULER True(1)

 PARTIAL\_RESET\_EN True(1)

 SW\_RECOVERY\_ON\_ERRORS True(1)

 RESET\_WITH\_HOST\_ON\_ERRORS True(1)

 ADVANCED\_POWER\_SETTINGS False(0)

 CQE\_COMPRESSION AGGRESSIVE(1)

 IP\_OVER\_VXLAN\_EN False(0)

 MKEY\_BY\_NAME False(0)

 ESWITCH\_IPV4\_TTL\_MODIFY\_ENABLE False(0)

 PRIO\_TAG\_REQUIRED\_EN False(0)

 UCTX\_EN True(1)

 PCI\_ATOMIC\_MODE PCI\_ATOMIC\_DISABLED\_EXT\_ATOMIC\_ENABLED(0)

 TUNNEL\_ECN\_COPY\_DISABLE False(0)

 LRO\_LOG\_TIMEOUT0 6

 LRO\_LOG\_TIMEOUT1 7

 LRO\_LOG\_TIMEOUT2 8

 LRO\_LOG\_TIMEOUT3 13

 LOG\_TX\_PSN\_WINDOW 7

 LOG\_MAX\_OUTSTANDING\_WQE 7

 ICM\_CACHE\_MODE DEVICE\_DEFAULT(0)

 TX\_SCHEDULER\_BURST 0

 ZERO\_TOUCH\_TUNING\_ENABLE False(0)

 LOG\_DCR\_HASH\_TABLE\_SIZE 11

 DCR\_LIFO\_SIZE 16384

 ROCE\_CC\_PRIO\_MASK\_P1 8

 ROCE\_CC\_PRIO\_MASK\_P2 8

 CLAMP\_TGT\_RATE\_AFTER\_TIME\_INC\_P1 True(1)

 CLAMP\_TGT\_RATE\_P1 False(0)

 RPG\_TIME\_RESET\_P1 300

 RPG\_BYTE\_RESET\_P1 32767

 RPG\_THRESHOLD\_P1 1

 RPG\_MAX\_RATE\_P1 0

 RPG\_AI\_RATE\_P1 5

 RPG\_HAI\_RATE\_P1 50

 RPG\_GD\_P1 11

 RPG\_MIN\_DEC\_FAC\_P1 50

 RPG\_MIN\_RATE\_P1 1

 RATE\_TO\_SET\_ON\_FIRST\_CNP\_P1 0

 DCE\_TCP\_G\_P1 1019

 DCE\_TCP\_RTT\_P1 1

 RATE\_REDUCE\_MONITOR\_PERIOD\_P1 4

 INITIAL\_ALPHA\_VALUE\_P1 1023

 MIN\_TIME\_BETWEEN\_CNPS\_P1 0

 CNP\_802P\_PRIO\_P1 6

 CNP\_DSCP\_P1 48

 CLAMP\_TGT\_RATE\_AFTER\_TIME\_INC\_P2 True(1)

 CLAMP\_TGT\_RATE\_P2 False(0)

 RPG\_TIME\_RESET\_P2 300

 RPG\_BYTE\_RESET\_P2 32767

 RPG\_THRESHOLD\_P2 1

 RPG\_MAX\_RATE\_P2 0

 RPG\_AI\_RATE\_P2 5

 RPG\_HAI\_RATE\_P2 50

 RPG\_GD\_P2 11

 RPG\_MIN\_DEC\_FAC\_P2 50

 RPG\_MIN\_RATE\_P2 1

 RATE\_TO\_SET\_ON\_FIRST\_CNP\_P2 0

 DCE\_TCP\_G\_P2 1019

 DCE\_TCP\_RTT\_P2 1

 RATE\_REDUCE\_MONITOR\_PERIOD\_P2 4

 INITIAL\_ALPHA\_VALUE\_P2 1023

 MIN\_TIME\_BETWEEN\_CNPS\_P2 0

 CNP\_802P\_PRIO\_P2 6

 CNP\_DSCP\_P2 48

 LLDP\_NB\_DCBX\_P1 False(0)

 LLDP\_NB\_RX\_MODE\_P1 OFF(0)

 LLDP\_NB\_TX\_MODE\_P1 OFF(0)

 LLDP\_NB\_DCBX\_P2 False(0)

 LLDP\_NB\_RX\_MODE\_P2 OFF(0)

 LLDP\_NB\_TX\_MODE\_P2 OFF(0)

 DCBX\_IEEE\_P1 True(1)

 DCBX\_CEE\_P1 True(1)

 DCBX\_WILLING\_P1 True(1)

 DCBX\_IEEE\_P2 True(1)

 DCBX\_CEE\_P2 True(1)

 DCBX\_WILLING\_P2 True(1)

 KEEP\_ETH\_LINK\_UP\_P1 True(1)

 KEEP\_IB\_LINK\_UP\_P1 False(0)

 KEEP\_LINK\_UP\_ON\_BOOT\_P1 False(0)

 KEEP\_LINK\_UP\_ON\_STANDBY\_P1 False(0)

 DO\_NOT\_CLEAR\_PORT\_STATS\_P1 False(0)

 AUTO\_POWER\_SAVE\_LINK\_DOWN\_P1 False(0)

 KEEP\_ETH\_LINK\_UP\_P2 True(1)

 KEEP\_IB\_LINK\_UP\_P2 False(0)

 KEEP\_LINK\_UP\_ON\_BOOT\_P2 False(0)

 KEEP\_LINK\_UP\_ON\_STANDBY\_P2 False(0)

 DO\_NOT\_CLEAR\_PORT\_STATS\_P2 False(0)

 AUTO\_POWER\_SAVE\_LINK\_DOWN\_P2 False(0)

 NUM\_OF\_VL\_P1 \_4\_VLs(3)

 NUM\_OF\_TC\_P1 \_8\_TCs(0)

 NUM\_OF\_PFC\_P1 8

 VL15\_BUFFER\_SIZE\_P1 0

 NUM\_OF\_VL\_P2 \_4\_VLs(3)

 NUM\_OF\_TC\_P2 \_8\_TCs(0)

 NUM\_OF\_PFC\_P2 8

 VL15\_BUFFER\_SIZE\_P2 0

 DUP\_MAC\_ACTION\_P1 LAST\_CFG(0)

 UNKNOWN\_UPLINK\_MAC\_FLOOD\_P1 False(0)

 SRIOV\_IB\_ROUTING\_MODE\_P1 LID(1)

 IB\_ROUTING\_MODE\_P1 LID(1)

 DUP\_MAC\_ACTION\_P2 LAST\_CFG(0)

 UNKNOWN\_UPLINK\_MAC\_FLOOD\_P2 False(0)

 SRIOV\_IB\_ROUTING\_MODE\_P2 LID(1)

 IB\_ROUTING\_MODE\_P2 LID(1)

 PF\_TOTAL\_SF 0

 PF\_SF\_BAR\_SIZE 0

 PCI\_WR\_ORDERING per\_mkey(0)

 MULTI\_PORT\_VHCA\_EN False(0)

 PORT\_OWNER True(1)

 ALLOW\_RD\_COUNTERS True(1)

 RENEG\_ON\_CHANGE True(1)

 TRACER\_ENABLE True(1)

 IP\_VER IPv4(0)

 BOOT\_UNDI\_NETWORK\_WAIT 30

 UEFI\_HII\_EN True(1)

 BOOT\_DBG\_LOG False(0)

 UEFI\_LOGS DISABLED(0)

 BOOT\_VLAN 1

 LEGACY\_BOOT\_PROTOCOL PXE(1)

 BOOT\_RETRY\_CNT NONE(0)

 BOOT\_INTERRUPT\_DIS False(0)

 BOOT\_LACP\_DIS True(1)

 BOOT\_VLAN\_EN False(0)

 BOOT\_PKEY 0

 P2P\_ORDERING\_MODE DEVICE\_DEFAULT(0)

 ATS\_ENABLED False(0)

 DYNAMIC\_VF\_MSIX\_TABLE False(0)

 EXP\_ROM\_UEFI\_x86\_ENABLE False(0)

 EXP\_ROM\_PXE\_ENABLE True(1)

 ADVANCED\_PCI\_SETTINGS False(0)

 SAFE\_MODE\_THRESHOLD 10

 SAFE\_MODE\_ENABLE True(1)

ibv\_devinfo:

hca\_id: mlx5\_0

 transport: InfiniBand (0)

 fw\_ver: 16.30.1004

 node\_guid: b859:9f03:00c1:f1aa

 sys\_image\_guid: b859:9f03:00c1:f1aa

 vendor\_id: 0x02c9

 vendor\_part\_id: 4119

 hw\_ver: 0x0

 board\_id: MT\_0000000012

 phys\_port\_cnt: 1

 port: 1

 state: PORT\_ACTIVE (4)

 max\_mtu: 4096 (5)

 active\_mtu: 1024 (3)

 sm\_lid: 0

 port\_lid: 0

 port\_lmc: 0x00

 link\_layer: Ethernet

pcie info:

lspci -s 3b:00.0 -vvv | grep DevCtl: -C 2

[root@vpp1 ~]# lspci -s 3b:00.0 -vvv | grep DevCtl: -C 2

 DevCap: MaxPayload 512 bytes, PhantFunc 0, Latency L0s unlimited, L1 unlimited

 ExtTag+ AttnBtn- AttnInd- PwrInd- RBE+ FLReset+ SlotPowerLimit 75.000W

 DevCtl: CorrErr- NonFatalErr+ FatalErr+ UnsupReq+

 RlxdOrd+ ExtTag+ PhantFunc- AuxPwr- NoSnoop+ FLReset-

 MaxPayload 256 bytes, MaxReadReq 512 bytes

[root@vpp1 ~]# lspci -s 3b:00.1 -vvv | grep DevCtl: -C 2

 DevCap: MaxPayload 512 bytes, PhantFunc 0, Latency L0s unlimited, L1 unlimited

 ExtTag+ AttnBtn- AttnInd- PwrInd- RBE+ FLReset+ SlotPowerLimit 75.000W

 DevCtl: CorrErr- NonFatalErr+ FatalErr+ UnsupReq+

 RlxdOrd+ ExtTag+ PhantFunc- AuxPwr- NoSnoop+ FLReset-

 MaxPayload 256 bytes, MaxReadReq 512 bytes

[root@vpp1 ~]# lspci -s af:00.1 -vvv | grep DevCtl: -C 2

 DevCap: MaxPayload 512 bytes, PhantFunc 0, Latency L0s unlimited, L1 unlimited

 ExtTag+ AttnBtn- AttnInd- PwrInd- RBE+ FLReset+ SlotPowerLimit 75.000W

 DevCtl: CorrErr- NonFatalErr+ FatalErr+ UnsupReq+

 RlxdOrd+ ExtTag+ PhantFunc- AuxPwr- NoSnoop+ FLReset-

 MaxPayload 256 bytes, MaxReadReq 512 bytes

[root@vpp1 ~]# lspci -s af:00.0 -vvv | grep DevCtl: -C 2

 DevCap: MaxPayload 512 bytes, PhantFunc 0, Latency L0s unlimited, L1 unlimited

 ExtTag+ AttnBtn- AttnInd- PwrInd- RBE+ FLReset+ SlotPowerLimit 75.000W

 DevCtl: CorrErr- NonFatalErr+ FatalErr+ UnsupReq+

 RlxdOrd+ ExtTag+ PhantFunc- AuxPwr- NoSnoop+ FLReset-

 MaxPayload 256 bytes, MaxReadReq 512 bytes

## Server

model:



## cpu infos

[root@vpp1 ~]# lscpu

Architecture: x86\_64

CPU op-mode(s): 32-bit, 64-bit

Byte Order: Little Endian

CPU(s): 40

On-line CPU(s) list: 0-39

Thread(s) per core: 1

Core(s) per socket: 20

Socket(s): 2

NUMA node(s): 2

Vendor ID: GenuineIntel

CPU family: 6

Model: 85

Model name: Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz

Stepping: 7

CPU MHz: 3200.147

BogoMIPS: 5000.00

Virtualization: VT-x

L1d cache: 32K

L1i cache: 32K

L2 cache: 1024K

L3 cache: 28160K

NUMA node0 CPU(s): 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38

NUMA node1 CPU(s): 1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39

Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant\_tsc art arch\_perfmon pebs bts rep\_good nopl xtopology nonstop\_tsc cpuid aperfmperf pni pclmulqdq dtes64 ds\_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4\_1 sse4\_2 x2apic movbe popcnt tsc\_deadline\_timer aes xsave avx f16c rdrand lahf\_lm abm 3dnowprefetch cpuid\_fault epb cat\_l3 cdp\_l3 invpcid\_single intel\_ppin ssbd mba ibrs ibpb stibp ibrs\_enhanced tpr\_shadow vnmi flexpriority ept vpid ept\_ad fsgsbase tsc\_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt\_a avx512f avx512dq rdseed adx smap clflushopt clwb intel\_pt avx512cd avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm\_llc cqm\_occup\_llc cqm\_mbm\_total cqm\_mbm\_local dtherm ida arat pln pts pku ospke avx512\_vnni md\_clear flush\_l1d arch\_capabilities

**memory infos:**

[root@vpp1 ~]# dmidecode -t memory

# dmidecode 3.2

Getting SMBIOS data from sysfs.

SMBIOS 3.2 present.

Handle 0x1000, DMI type 16, 23 bytes

Physical Memory Array

 Location: System Board Or Motherboard

 Use: System Memory

 Error Correction Type: Multi-bit ECC

 Maximum Capacity: 7680 GB

 Error Information Handle: Not Provided

 Number Of Devices: 24

Handle 0x1100, DMI type 17, 84 bytes

Memory Device

 Array Handle: 0x1000

 Error Information Handle: Not Provided

 Total Width: 72 bits

 Data Width: 64 bits

 Size: 32 GB

 Form Factor: DIMM

 Set: 1

 Locator: A1

 Bank Locator: Not Specified

 Type: DDR4

 Type Detail: Synchronous Registered (Buffered)

 Speed: 3200 MT/s

 Manufacturer: 00AD063200AD

 Serial Number: 224A75D0

 Asset Tag: 022042D1

 Part Number: HMA84GR7DJR4N-XN

 Rank: 2

 Configured Memory Speed: 2933 MT/s

 Minimum Voltage: 1.2 V

 Maximum Voltage: 1.2 V

 Configured Voltage: 1.2 V

 Memory Technology: DRAM

 Memory Operating Mode Capability: Volatile memory

 Firmware Version: Not Specified

 Module Manufacturer ID: Unknown

 Module Product ID: Unknown

 Memory Subsystem Controller Manufacturer ID: Unknown

 Memory Subsystem Controller Product ID: Unknown

 Non-Volatile Size: None

 Volatile Size: 32 GB

 Cache Size: None

 Logical Size: None

# BIOS Setting









# Operating System

[root@vpp1 etc]# uname -a

Linux vpp1 4.19.0-193.1.4.el8\_1.bclinux.x86\_64 #1 SMP Fri Dec 11 11:33:12 CST 2020 x86\_64 x86\_64 x86\_64 GNU/Linux

[root@vpp1 etc]# cat /etc/os-release

NAME="BigCloud Enterprise Linux"

VERSION="8.1 (Core)"

ID="bclinux"

ID\_LIKE="rhel fedora"

VERSION\_ID="8.1"

PLATFORM\_ID="platform:el8"

PRETTY\_NAME="BigCloud Enterprise Linux 8.1 (Core)"

ANSI\_COLOR="0;31"

CPE\_NAME="cpe:/o:bclinux:bclinux:8"

HOME\_URL="https://mirrors.bclinux.org/"

BUG\_REPORT\_URL="https://bugs.bclinux.org/"

BCLINUX\_BUGZILLA\_PRODUCT="BigCloud Enterprise Linux 8 (Core)"

BCLINUX\_BUGZILLA\_PRODUCT\_VERSION=8.1

BCLINUX\_SUPPORT\_PRODUCT="BigCloud Enterprise Linux 8 (Core)"

BCLINUX\_SUPPORT\_PRODUCT\_VERSION=8.1

[root@vpp1 ~]# gcc -v

Using built-in specs.

COLLECT\_GCC=gcc

COLLECT\_LTO\_WRAPPER=/usr/libexec/gcc/x86\_64-redhat-linux/8/lto-wrapper

OFFLOAD\_TARGET\_NAMES=nvptx-none

OFFLOAD\_TARGET\_DEFAULT=1

Target: x86\_64-redhat-linux

Configured with: ../configure --enable-bootstrap --enable-languages=c,c++,fortran,lto --prefix=/usr --mandir=/usr/share/man --infodir=/usr/share/info --with-bugurl=http://bugzilla.redhat.com/bugzilla --enable-shared --enable-threads=posix --enable-checking=release --enable-multilib --with-system-zlib --enable-\_\_cxa\_atexit --disable-libunwind-exceptions --enable-gnu-unique-object --enable-linker-build-id --with-gcc-major-version-only --with-linker-hash-style=gnu --enable-plugin --enable-initfini-array --with-isl --disable-libmpx --enable-offload-targets=nvptx-none --without-cuda-driver --enable-gnu-indirect-function --enable-cet --with-tune=generic --with-arch\_32=x86-64 --build=x86\_64-redhat-linux

Thread model: posix

gcc version 8.4.1 20200928 (Red Hat 8.4.1-1) (GCC)

# BOOT Settings

[root@vpp1 ~]# cat /proc/cmdline

BOOT\_IMAGE=(hd0,msdos1)/vmlinuz-4.19.0-193.1.4.el8\_1.bclinux.x86\_64 root=/dev/mapper/bel-root ro crashkernel=auto resume=/dev/mapper/bel-swap rd.lvm.lv=bel/root rd.lvm.lv=bel/swap rhgb quiet iommu=pt intel\_iommu=on default\_hugepagesz=1G hugepagesz=1G hugepages=300 isolcpus=2-39 intel\_idle.max\_cstate=0 processor.max\_cstate=0 intel\_pstate=disable nohz\_full=2-39 rcu\_nocbs=2-39 rcu\_nocb\_poll audit=0 nosoflockup

# Other optimizations

ethtool -A ens1f0 rx off tx off

ethtool -A ens1f1 rx off tx off

ethtool -A ens4f0 rx off tx off

ethtool -A ens4f1 rx off tx off

sysctl -w vm.zone\_reclaim\_mode=0

sysctl -w vm.swappiness=0

IRQBALANCE\_BANNED\_CPUS=2-39 irqbalance --oneshot

systemctl stop irqbalance

[root@vpp1 ~]# lspci | grep Eth

18:00.0 Ethernet controller: Broadcom Inc. and subsidiaries NetXtreme BCM5720 2-port Gigabit Ethernet PCIe

18:00.1 Ethernet controller: Broadcom Inc. and subsidiaries NetXtreme BCM5720 2-port Gigabit Ethernet PCIe

19:00.0 Ethernet controller: Broadcom Inc. and subsidiaries NetXtreme BCM5720 2-port Gigabit Ethernet PCIe

19:00.1 Ethernet controller: Broadcom Inc. and subsidiaries NetXtreme BCM5720 2-port Gigabit Ethernet PCIe

3b:00.0 Ethernet controller: Mellanox Technologies MT27800 Family [ConnectX-5]

3b:00.1 Ethernet controller: Mellanox Technologies MT27800 Family [ConnectX-5]

5e:00.0 Ethernet controller: Intel Corporation Ethernet Controller XXV710 for 25GbE SFP28 (rev 02)

5e:00.1 Ethernet controller: Intel Corporation Ethernet Controller XXV710 for 25GbE SFP28 (rev 02)

af:00.0 Ethernet controller: Mellanox Technologies MT27800 Family [ConnectX-5]

af:00.1 Ethernet controller: Mellanox Technologies MT27800 Family [ConnectX-5]

[root@vpp1 ~]#

[root@vpp1 ~]# setpci -s 3b:00.0 68.w

293e

[root@vpp1 ~]# setpci -s 3b:00.0 68.w=293e

[root@vpp1 ~]# setpci -s 3b:00.1 68.w=293e

[root@vpp1 ~]# setpci -s af:00.0 68.w=293e

[root@vpp1 ~]# setpci -s af:00.1 68.w=293e

[root@vpp1 ~]# free -h

 total used free shared buff/cache available

Mem: 376Gi 302Gi 73Gi 13Mi 550Mi 72Gi

Swap: 4.0Gi 0B 4.0Gi

# Test Results

## Result 1

### Testpmd Command Line

./dpdk-testpmd -l 2-34 -n 8 -a 0000:3b:00.0,mprq\_en=1,rxqs\_min\_mprq=1 --file-prefix yyz -- -i --txq=32 --txd=4096 --rxq=32 --rxd=4096 --burst=64 --nb-cores=8

testpmd> set fwd io

testpmd> start

### Testpmd Stats

**show port stats all:**

testpmd> show port stats all

 ######################## NIC statistics for port 0 ########################

 RX-packets: 1266006369 RX-missed: 0 RX-bytes: 374737885224

 RX-errors: 0

 RX-nombuf: 0

 TX-packets: 1090776827 TX-errors: 0 TX-bytes: 322869945232

 Throughput (since last show)

 Rx-pps: 0 Rx-bps: 0

 Tx-pps: 0 Tx-bps: 0

 ############################################################################

**show port xstats all:**

testpmd> show port xstats all

###### NIC extended statistics for port 0

rx\_good\_packets: 2191003466

tx\_good\_packets: 1887745316

rx\_good\_bytes: 648537025936

tx\_good\_bytes: 558772613536

rx\_missed\_errors: 0

rx\_errors: 0

tx\_errors: 0

rx\_mbuf\_allocation\_errors: 0

rx\_q0\_packets: 68014275

rx\_q0\_bytes: 20132225400

rx\_q0\_errors: 0

rx\_q1\_packets: 67883203

rx\_q1\_bytes: 20093428088

rx\_q1\_errors: 0

rx\_q2\_packets: 69010691

rx\_q2\_bytes: 20427164536

rx\_q2\_errors: 0

rx\_q3\_packets: 69587203

rx\_q3\_bytes: 20597812088

rx\_q3\_errors: 0

rx\_q4\_packets: 67640043

rx\_q4\_bytes: 20021452728

rx\_q4\_errors: 0

rx\_q5\_packets: 67835392

rx\_q5\_bytes: 20079276032

rx\_q5\_errors: 0

rx\_q6\_packets: 68109251

rx\_q6\_bytes: 20160338296

rx\_q6\_errors: 0

rx\_q7\_packets: 69249219

rx\_q7\_bytes: 20497768824

rx\_q7\_errors: 0

rx\_q8\_packets: 68864623

rx\_q8\_bytes: 20383928408

rx\_q8\_errors: 0

rx\_q9\_packets: 69539715

rx\_q9\_bytes: 20583755640

rx\_q9\_errors: 0

rx\_q10\_packets: 67736131

rx\_q10\_bytes: 20049894776

rx\_q10\_errors: 0

rx\_q11\_packets: 67510531

rx\_q11\_bytes: 19983117176

rx\_q11\_errors: 0

rx\_q12\_packets: 68713386

rx\_q12\_bytes: 20339162256

rx\_q12\_errors: 0

rx\_q13\_packets: 69049091

rx\_q13\_bytes: 20438530936

rx\_q13\_errors: 0

rx\_q14\_packets: 68124995

rx\_q14\_bytes: 20164998520

rx\_q14\_errors: 0

rx\_q15\_packets: 68634179

rx\_q15\_bytes: 20315716984

rx\_q15\_errors: 0

tx\_q0\_packets: 58990224

tx\_q0\_bytes: 17461106304

tx\_q1\_packets: 58990978

tx\_q1\_bytes: 17461329488

tx\_q2\_packets: 58991257

tx\_q2\_bytes: 17461412072

tx\_q3\_packets: 58993932

tx\_q3\_bytes: 17462203872

tx\_q4\_packets: 58990195

tx\_q4\_bytes: 17461097720

tx\_q5\_packets: 58992641

tx\_q5\_bytes: 17461821736

tx\_q6\_packets: 58989476

tx\_q6\_bytes: 17460884896

tx\_q7\_packets: 58992401

tx\_q7\_bytes: 17461750696

tx\_q8\_packets: 58992554

tx\_q8\_bytes: 17461795984

tx\_q9\_packets: 58994154

tx\_q9\_bytes: 17462269584

tx\_q10\_packets: 58992551

tx\_q10\_bytes: 17461795096

tx\_q11\_packets: 58989724

tx\_q11\_bytes: 17460958304

tx\_q12\_packets: 58994348

tx\_q12\_bytes: 17462327008

tx\_q13\_packets: 58991225

tx\_q13\_bytes: 17461402600

tx\_q14\_packets: 58990244

tx\_q14\_bytes: 17461112224

tx\_q15\_packets: 58993668

tx\_q15\_bytes: 17462125728

rx\_wqe\_errors: 0

rx\_unicast\_packets: 2190969414

rx\_unicast\_bytes: 648526958088

tx\_unicast\_packets: 1887586527

tx\_unicast\_bytes: 558725621168

rx\_multicast\_packets: 0

rx\_multicast\_bytes: 0

tx\_multicast\_packets: 0

tx\_multicast\_bytes: 0

rx\_broadcast\_packets: 0

rx\_broadcast\_bytes: 0

tx\_broadcast\_packets: 0

tx\_broadcast\_bytes: 0

tx\_phy\_packets: 1888006661

rx\_phy\_packets: 2232745938

rx\_phy\_crc\_errors: 0

tx\_phy\_bytes: 566301405940

rx\_phy\_bytes: 669823800300

rx\_phy\_in\_range\_len\_errors: 0

rx\_phy\_symbol\_errors: 0

rx\_phy\_discard\_packets: 41782554

tx\_phy\_discard\_packets: 0

tx\_phy\_errors: 0

rx\_out\_of\_buffer: 0

tx\_pp\_missed\_interrupt\_errors: 0

tx\_pp\_rearm\_queue\_errors: 0

tx\_pp\_clock\_queue\_errors: 0

tx\_pp\_timestamp\_past\_errors: 0

tx\_pp\_timestamp\_future\_errors: 0

tx\_pp\_jitter: 0

tx\_pp\_wander: 0

tx\_pp\_sync\_lost: 0

**show fwd stats all:**

testpmd> show fwd stats all

 ------- Forward Stats for RX Port= 0/Queue= 0 -> TX Port= 0/Queue= 0 -------

 RX-packets: 112087107 TX-packets: 97218318 TX-dropped: 14868789

 ------- Forward Stats for RX Port= 0/Queue= 1 -> TX Port= 0/Queue= 1 -------

 RX-packets: 111871552 TX-packets: 97219566 TX-dropped: 14651986

 ------- Forward Stats for RX Port= 0/Queue= 2 -> TX Port= 0/Queue= 2 -------

 RX-packets: 113731907 TX-packets: 97219332 TX-dropped: 16512575

 ------- Forward Stats for RX Port= 0/Queue= 3 -> TX Port= 0/Queue= 3 -------

 RX-packets: 114679299 TX-packets: 97224016 TX-dropped: 17455283

 ------- Forward Stats for RX Port= 0/Queue= 4 -> TX Port= 0/Queue= 4 -------

 RX-packets: 111470723 TX-packets: 97218162 TX-dropped: 14252561

 ------- Forward Stats for RX Port= 0/Queue= 5 -> TX Port= 0/Queue= 5 -------

 RX-packets: 111791608 TX-packets: 97221777 TX-dropped: 14569778

 ------- Forward Stats for RX Port= 0/Queue= 6 -> TX Port= 0/Queue= 6 -------

 RX-packets: 112245699 TX-packets: 97216859 TX-dropped: 15028840

 ------- Forward Stats for RX Port= 0/Queue= 7 -> TX Port= 0/Queue= 7 -------

 RX-packets: 114127747 TX-packets: 97221765 TX-dropped: 16905982

 ------- Forward Stats for RX Port= 0/Queue= 8 -> TX Port= 0/Queue= 8 -------

 RX-packets: 113490371 TX-packets: 97222271 TX-dropped: 16268100

 ------- Forward Stats for RX Port= 0/Queue= 9 -> TX Port= 0/Queue= 9 -------

 RX-packets: 114601091 TX-packets: 97224515 TX-dropped: 17376576

 ------- Forward Stats for RX Port= 0/Queue=10 -> TX Port= 0/Queue=10 -------

 RX-packets: 111631555 TX-packets: 97222174 TX-dropped: 14409381

 ------- Forward Stats for RX Port= 0/Queue=11 -> TX Port= 0/Queue=11 -------

 RX-packets: 111258883 TX-packets: 97216981 TX-dropped: 14041902

 ------- Forward Stats for RX Port= 0/Queue=12 -> TX Port= 0/Queue=12 -------

 RX-packets: 113241411 TX-packets: 97224499 TX-dropped: 16016912

 ------- Forward Stats for RX Port= 0/Queue=13 -> TX Port= 0/Queue=13 -------

 RX-packets: 113796711 TX-packets: 97219771 TX-dropped: 16576940

 ------- Forward Stats for RX Port= 0/Queue=14 -> TX Port= 0/Queue=14 -------

 RX-packets: 112269635 TX-packets: 97218690 TX-dropped: 15050945

 ------- Forward Stats for RX Port= 0/Queue=15 -> TX Port= 0/Queue=15 -------

 RX-packets: 113107968 TX-packets: 97223421 TX-dropped: 15884547

 ------- Forward Stats for RX Port= 0/Queue=16 -> TX Port= 0/Queue=16 -------

 RX-packets: 114157699 TX-packets: 97222840 TX-dropped: 16934859

 ------- Forward Stats for RX Port= 0/Queue=17 -> TX Port= 0/Queue=17 -------

 RX-packets: 112853571 TX-packets: 97220557 TX-dropped: 15633014

 ------- Forward Stats for RX Port= 0/Queue=18 -> TX Port= 0/Queue=18 -------

 RX-packets: 112142595 TX-packets: 97220321 TX-dropped: 14922274

 ------- Forward Stats for RX Port= 0/Queue=19 -> TX Port= 0/Queue=19 -------

 RX-packets: 111469123 TX-packets: 97219939 TX-dropped: 14249184

 ------- Forward Stats for RX Port= 0/Queue=20 -> TX Port= 0/Queue=20 -------

 RX-packets: 114719043 TX-packets: 97226674 TX-dropped: 17492369

 ------- Forward Stats for RX Port= 0/Queue=21 -> TX Port= 0/Queue=21 -------

 RX-packets: 114078892 TX-packets: 97221748 TX-dropped: 16857144

 ------- Forward Stats for RX Port= 0/Queue=22 -> TX Port= 0/Queue=22 -------

 RX-packets: 112534083 TX-packets: 97219942 TX-dropped: 15314141

 ------- Forward Stats for RX Port= 0/Queue=23 -> TX Port= 0/Queue=23 -------

 RX-packets: 111311043 TX-packets: 97218265 TX-dropped: 14092778

 ------- Forward Stats for RX Port= 0/Queue=24 -> TX Port= 0/Queue=24 -------

 RX-packets: 113430467 TX-packets: 97224391 TX-dropped: 16206076

 ------- Forward Stats for RX Port= 0/Queue=25 -> TX Port= 0/Queue=25 -------

 RX-packets: 111940523 TX-packets: 97221756 TX-dropped: 14718727

 ------- Forward Stats for RX Port= 0/Queue=26 -> TX Port= 0/Queue=26 -------

 RX-packets: 113129027 TX-packets: 97224499 TX-dropped: 15904528

 ------- Forward Stats for RX Port= 0/Queue=27 -> TX Port= 0/Queue=27 -------

 RX-packets: 113616963 TX-packets: 97223218 TX-dropped: 16393745

 ------- Forward Stats for RX Port= 0/Queue=28 -> TX Port= 0/Queue=28 -------

 RX-packets: 110866944 TX-packets: 97216747 TX-dropped: 13650197

 ------- Forward Stats for RX Port= 0/Queue=29 -> TX Port= 0/Queue=29 -------

 RX-packets: 111386473 TX-packets: 97218324 TX-dropped: 14168149

 ------- Forward Stats for RX Port= 0/Queue=30 -> TX Port= 0/Queue=30 -------

 RX-packets: 113924099 TX-packets: 97222176 TX-dropped: 16701923

 ------- Forward Stats for RX Port= 0/Queue=31 -> TX Port= 0/Queue=31 -------

 RX-packets: 113847811 TX-packets: 97221499 TX-dropped: 16626312

 ---------------------- Forward statistics for port 0 ----------------------

 RX-packets: 3610815186 RX-dropped: 0 RX-total: 3610815186

 TX-packets: 3111078199 TX-dropped: 499736520 TX-total: 3610814719

 ----------------------------------------------------------------------------

 +++++++++++++++ Accumulated forward statistics for all ports+++++++++++++++

 RX-packets: 3610815186 RX-dropped: 0 RX-total: 3610815186

 TX-packets: 3111078199 TX-dropped: 499736520 TX-total: 3610814719

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

testpmd>

### TestCenter Result



## Result 2

### Testpmd Command Line

./dpdk-testpmd -l 2,4,6,8,10,12,14,16,18,20,22,24 -n 12 -a 0000:3b:00.0,mprq\_en=1,rxqs\_min\_mprq=1 --file-prefix yyz -- -i --txq=12 --txd=4096 --rxq=12 --rxd=4096 --burst=64 --nb-cores=10

### Testpmd Stats

**show port stats all:**

testpmd> show port stats all

 ######################## NIC statistics for port 0 ########################

 RX-packets: 2474149342 RX-missed: 0 RX-bytes: 658398044664

 RX-errors: 0

 RX-nombuf: 0

 TX-packets: 2222570344 TX-errors: 0 TX-bytes: 583930670728

 Throughput (since last show)

 Rx-pps: 0 Rx-bps: 0

 Tx-pps: 0 Tx-bps: 0

 ############################################################################

**show port xstats all:**

testpmd> show port xstats all

###### NIC extended statistics for port 0

rx\_good\_packets: 3223249572

tx\_good\_packets: 2881142315

rx\_good\_bytes: 880131712744

tx\_good\_bytes: 778867964672

rx\_missed\_errors: 0

rx\_errors: 0

tx\_errors: 0

rx\_mbuf\_allocation\_errors: 0

rx\_q0\_packets: 272658755

rx\_q0\_bytes: 74450809660

rx\_q0\_errors: 0

rx\_q1\_packets: 272647555

rx\_q1\_bytes: 74447493988

rx\_q1\_errors: 0

rx\_q2\_packets: 265858371

rx\_q2\_bytes: 72593188244

rx\_q2\_errors: 0

rx\_q3\_packets: 267179843

rx\_q3\_bytes: 72954763716

rx\_q3\_errors: 0

rx\_q4\_packets: 271212803

rx\_q4\_bytes: 74059782460

rx\_q4\_errors: 0

rx\_q5\_packets: 272456835

rx\_q5\_bytes: 74398435456

rx\_q5\_errors: 0

rx\_q6\_packets: 271346051

rx\_q6\_bytes: 74091826920

rx\_q6\_errors: 0

rx\_q7\_packets: 272733763

rx\_q7\_bytes: 74473010376

rx\_q7\_errors: 0

rx\_q8\_packets: 262608579

rx\_q8\_bytes: 71705198760

rx\_q8\_errors: 0

rx\_q9\_packets: 259774019

rx\_q9\_bytes: 70932723596

rx\_q9\_errors: 0

rx\_q10\_packets: 268213059

rx\_q10\_bytes: 73238414484

rx\_q10\_errors: 0

rx\_q11\_packets: 266559939

rx\_q11\_bytes: 72786065084

rx\_q11\_errors: 0

tx\_q0\_packets: 240486375

tx\_q0\_bytes: 64927785180

tx\_q1\_packets: 240490849

tx\_q1\_bytes: 64929109012

tx\_q2\_packets: 239770309

tx\_q2\_bytes: 64871121892

tx\_q3\_packets: 239894136

tx\_q3\_bytes: 64878194444

tx\_q4\_packets: 240296885

tx\_q4\_bytes: 64908670732

tx\_q5\_packets: 240449751

tx\_q5\_bytes: 64924338592

tx\_q6\_packets: 240330842

tx\_q6\_bytes: 64911325056

tx\_q7\_packets: 240479176

tx\_q7\_bytes: 64925652624

tx\_q8\_packets: 239573618

tx\_q8\_bytes: 64886850304

tx\_q9\_packets: 239246415

tx\_q9\_bytes: 64856552812

tx\_q10\_packets: 240157201

tx\_q10\_bytes: 64933880516

tx\_q11\_packets: 239966758

tx\_q11\_bytes: 64914483508

rx\_wqe\_errors: 0

rx\_unicast\_packets: 3223214746

rx\_unicast\_bytes: 880121415200

tx\_unicast\_packets: 2881062975

tx\_unicast\_bytes: 778844488912

rx\_multicast\_packets: 0

rx\_multicast\_bytes: 0

tx\_multicast\_packets: 0

tx\_multicast\_bytes: 0

rx\_broadcast\_packets: 0

rx\_broadcast\_bytes: 0

tx\_broadcast\_packets: 0

tx\_broadcast\_bytes: 0

tx\_phy\_packets: 2881533776

rx\_phy\_packets: 3262951084

rx\_phy\_crc\_errors: 0

tx\_phy\_bytes: 790397408200

rx\_phy\_bytes: 904935183832

rx\_phy\_in\_range\_len\_errors: 0

rx\_phy\_symbol\_errors: 0

rx\_phy\_discard\_packets: 39742303

tx\_phy\_discard\_packets: 0

tx\_phy\_errors: 0

rx\_out\_of\_buffer: 0

tx\_pp\_missed\_interrupt\_errors: 0

tx\_pp\_rearm\_queue\_errors: 0

tx\_pp\_clock\_queue\_errors: 0

tx\_pp\_timestamp\_past\_errors: 0

tx\_pp\_timestamp\_future\_errors: 0

tx\_pp\_jitter: 0

tx\_pp\_wander: 0

tx\_pp\_sync\_lost: 0

**show fwd stats all:**

testpmd> show fwd stats all

 ------- Forward Stats for RX Port= 0/Queue= 0 -> TX Port= 0/Queue= 0 -------

 RX-packets: 377856131 TX-packets: 331598198 TX-dropped: 46257933

 ------- Forward Stats for RX Port= 0/Queue= 1 -> TX Port= 0/Queue= 1 -------

 RX-packets: 377838595 TX-packets: 331603946 TX-dropped: 46234649

 ------- Forward Stats for RX Port= 0/Queue= 2 -> TX Port= 0/Queue= 2 -------

 RX-packets: 368429507 TX-packets: 330853332 TX-dropped: 37576175

 ------- Forward Stats for RX Port= 0/Queue= 3 -> TX Port= 0/Queue= 3 -------

 RX-packets: 370262275 TX-packets: 330977730 TX-dropped: 39284545

 ------- Forward Stats for RX Port= 0/Queue= 4 -> TX Port= 0/Queue= 4 -------

 RX-packets: 375872067 TX-packets: 331390882 TX-dropped: 44481185

 ------- Forward Stats for RX Port= 0/Queue= 5 -> TX Port= 0/Queue= 5 -------

 RX-packets: 377593411 TX-packets: 331558968 TX-dropped: 46034443

 ------- Forward Stats for RX Port= 0/Queue= 6 -> TX Port= 0/Queue= 6 -------

 RX-packets: 376032195 TX-packets: 331424449 TX-dropped: 44607746

 ------- Forward Stats for RX Port= 0/Queue= 7 -> TX Port= 0/Queue= 7 -------

 RX-packets: 377969088 TX-packets: 331587747 TX-dropped: 46381280

 ------- Forward Stats for RX Port= 0/Queue= 8 -> TX Port= 0/Queue= 8 -------

 RX-packets: 363921795 TX-packets: 330711510 TX-dropped: 33210285

 ------- Forward Stats for RX Port= 0/Queue= 9 -> TX Port= 0/Queue= 9 -------

 RX-packets: 360000643 TX-packets: 330363869 TX-dropped: 29636774

 ------- Forward Stats for RX Port= 0/Queue=10 -> TX Port= 0/Queue=10 -------

 RX-packets: 371703171 TX-packets: 331312309 TX-dropped: 40390862

 ------- Forward Stats for RX Port= 0/Queue=11 -> TX Port= 0/Queue=11 -------

 RX-packets: 369406147 TX-packets: 331111184 TX-dropped: 38294963

 ---------------------- Forward statistics for port 0 ----------------------

 RX-packets: 4466886113 RX-dropped: 0 RX-total: 4466886113

 TX-packets: 3974495145 TX-dropped: 492390840 TX-total: 4466885985

 ----------------------------------------------------------------------------

 +++++++++++++++ Accumulated forward statistics for all ports+++++++++++++++

 RX-packets: 4466886113 RX-dropped: 0 RX-total: 4466886113

 TX-packets: 3974495145 TX-dropped: 492390840 TX-total: 4466885985

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testpmd>

### TestCenter Result

