ANS Performance Report

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1. Routing Forwarding Performance

1.1. Testing Environment

➢   **CPU**

`Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz`

➢   **NIC**

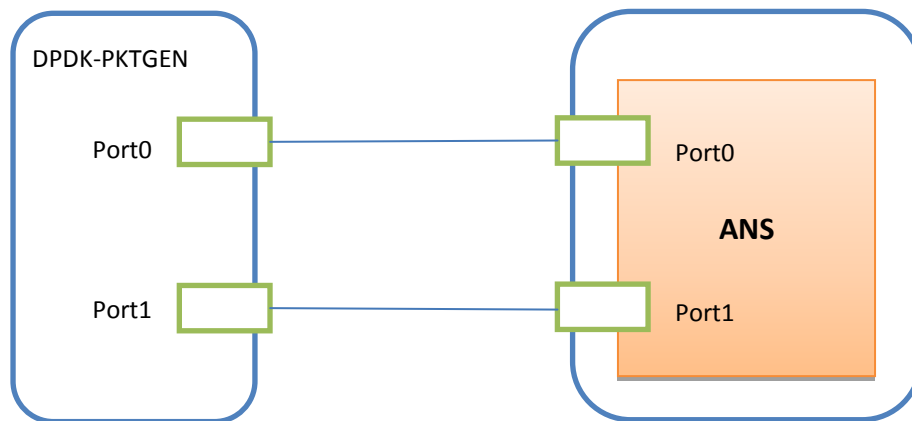`02:00.0 Ethernet controller: Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)`

`02:00.1 Ethernet controller: Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)`

➢   **Version**

`dpdk-17.05.2.tar.xz`

Pktgen Ver: 3.4.2 (DPDK 17.05.2)

➢ Network Topology

1.2. Testing Report

1.2.1. ANS routing forward one way with 1 core

Pktgen port 0 -> ans routing forward (1 lcore)-> pktgen port 1

➢ ANS startup command
./build/ans   -c 0x2 -n 1 --base-virtaddr=0x2aaa2aa0000 -- -p 0x3 --config="(0,0,1), (1,0,1)"

➢ Testing result

Packet Size (Bytes)	Throughput (Mpps)
64	7.78
128	Line Rate

```
\ Ports 0-3 of 5   <Main Page>  Copyright (c) <2010-2017>, Intel Corporation
  Flags:Port      :     P------I---g---:0    P------I---g---:1
Link State        :         <UP-10000-FD>        <UP-10000-FD>      ----TotalRate----
Pkts/s Max/Rx     :                   0/0    7781728/7781472       7781728/7781472
       Max/Tx     :     14880918/14880895              0/0        14880918/14880895
MBits/s Rx/Tx     :                 0/9999             5229/0           5229/9999
Broadcast         :                     0                  0
Multicast         :                     0                  0
  64 Bytes        :                     0           62433983
  65-127          :                     0                  0
  128-255         :                     0                  0
  256-511         :                     0                  0
  512-1023        :                     0                  0
  1024-1518       :                     0                  0
Runts/Jumbos      :                   0/0                0/0
Errors Rx/Tx      :                   0/0                0/0
Total Rx Pkts     :                     0           60488271
      Tx Pkts     :             115407163                  0
      Rx MBs      :                     0              40648
      Tx MBs      :                 77553                  0
ARP/ICMP Pkts     :                   0/0                0/0
                  :
Pattern Type      :               abcd...            abcd...
Tx Count/% Rate   :         Forever /100%       Forever /100%
PktSize/Tx Burst  :             64 /   64           64 /   64
Src/Dest Port     :           1234 / 5678         1234 / 5678
Pkt Type:VLAN ID  :         IPv4 / TCP:0001     IPv4 / TCP:0001
Dst  IP Address   :             10.1.0.10           10.0.0.10
Src  IP Address   :          10.0.0.10/24        10.1.0.10/24
Dst MAC Address   :     90:e2:ba:92:cc:0c   90:e2:ba:92:cc:0e
Src MAC Address   :     00:16:31:fb:00:58   00:16:31:fb:00:59
VendID/PCI Addr   :     8086:10fb/01:00.0   8086:10fb/01:00.1

-- Pktgen Ver: 3.4.2 (DPDK 17.05.2)  Powered by DPDK ------------------------
```

1.2.2. ANS routing forward both way with 1 core

Pktgen port 0 <-> ans routing forward (1 lcore) <-> pktgen port 1

➤ ANS startup command
   # ./build/ans   -c 0x2 –n 1 –base-virtaddr=0x2aaa2aa0000 -- -p 0x3 –config="(0,0,1), (1,0,1)"

➤ Testing result

Packet Size (Bytes)	Throughput (Mpps)
64	7.52
128	Line Rate

```
| Ports 0-3 of 5    <Main Page>  Copyright (c) <2010-2017>, Intel Corporation
  Flags:Port       :     P------I---g---:0    P------I---g---:1
Link State         :        <UP-10000-FD>        <UP-10000-FD>      ----TotalRate----
Pkts/s Max/Rx      :      3764727/3763617      7719424/3763616      7719424/7527233
       Max/Tx      :    14880936/14880892    14880959/14880877    29761895/29761769
MBits/s Rx/Tx      :            2529/9999            2529/9999            5058/19999
Broadcast          :                    0                    0
Multicast          :                    0                    0
   64 Bytes        :            112918726            762843431
   65-127          :                    0                    0
   128-255         :                    0                    0
   256-511         :                    0                    0
   512-1023        :                    0                    0
   1024-1518       :                    0                    0
Runts/Jumbos       :                  0/0                  0/0
Errors Rx/Tx       :                  0/0                  0/0
Total Rx Pkts      :            109625639            759550247
      Tx Pkts      :           1684773686            433144133
      Rx MBs       :                73668               510417
      Tx MBs       :              1132167               291072
ARP/ICMP Pkts      :                  5/0                  5/0
                   :
Pattern Type       :              abcd...              abcd...
Tx Count/% Rate    :         Forever /100%        Forever /100%
PktSize/Tx Burst   :             64 /   64            64 /   64
Src/Dest Port      :          1234 / 5678          1234 / 5678
Pkt Type:VLAN ID   :        IPv4 / TCP:0001      IPv4 / TCP:0001
Dst  IP Address    :            10.1.0.10            10.0.0.10
Src  IP Address    :         10.0.0.10/24         10.1.0.10/24
Dst MAC Address    :    90:e2:ba:92:cc:0c    90:e2:ba:92:cc:0e
Src MAC Address    :    00:16:31:fb:00:58    00:16:31:fb:00:59
VendID/PCI Addr    :    8086:10fb/01:00.0    8086:10fb/01:00.1

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```

1.2.3. ANS routing forward both way with 2 core

Pktgen port 0 <-> ans routing forward (2 core) <-> pktgen port 1

➢ ANS startup command

#./build/ans   -c 0x6 –n 1 –base-virtaddr=0x2aaa2aa0000 -- -p 0x3 –config="(0,0,1), (1,0,2)"

➢ Testing result

Packet Size (Bytes)	Throughput (Mpps)
64	15.49
128	Line Rate

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```
| Ports 0-3 of 5   <Main Page>  Copyright (c) <2010-2017>, Intel Corporation
  Flags:Port       :   P------I---g---:0    P------I---g---:1
Link State         :      <UP-10000-FD>       <UP-10000-FD>        ----TotalRate----
Pkts/s Max/Rx      :      7731200/7730865     7787505/7763359      15494224/15494224
       Max/Tx      :    14880955/14880901   14881305/14880882      29761944/29761783
MBits/s Rx/Tx      :            5195/9999           5216/9999            10412/19999
Broadcast          :                    0                   0
Multicast          :                    0                   0
   64 Bytes        :            201196164           226792310
   65-127          :                    0                   0
   128-255         :                    0                   0
   256-511         :                    0                   0
   512-1023        :                    0                   0
   1024-1518       :                    0                   0
Runts/Jumbos       :                  0/0                 0/0
Errors Rx/Tx       :                  0/0                 0/0
Total Rx Pkts      :            199263675           224851510
      Tx Pkts      :            427317820           397189833
      Rx MBs       :               133905              151100
      Tx MBs       :               287157              266911
ARP/ICMP Pkts      :                 10/0                 9/0
                   :
Pattern Type       :              abcd...             abcd...
Tx Count/% Rate    :        Forever /100%       Forever /100%
PktSize/Tx Burst   :             64 /   64           64 /   64
Src/Dest Port      :          1234 / 5678         1234 / 5678
Pkt Type:VLAN ID   :      IPv4 / TCP:0001     IPv4 / TCP:0001
Dst  IP Address    :            10.1.0.10           10.0.0.10
Src  IP Address    :         10.0.0.10/24        10.1.0.10/24
Dst MAC Address    :    90:e2:ba:92:cc:0c   90:e2:ba:92:cc:0e
Src MAC Address    :    00:16:31:fb:00:58   00:16:31:fb:00:59
VendID/PCI Addr    :    8086:10fb/01:00.0   8086:10fb/01:00.1

-- Pktgen Ver: 3.4.2 (DPDK 17.05.2)  Powered by DPDK --------------------------
```