Running OVS-DPDK PVP

Monday, February 5, 2018

2:21 PM

* 1. A directory for ovs-dpdk is created in /root/ovs-dpdk
  2. Go to the directory, and run the following scripts to unload the modules and disable services:
     1. /root/ovs-dpdk/disable\_services.sh
     2. /root/ovs-dpdk/stop\_services.sh
  3. Check the memory to ensure hugepages are allocated to socket 0: cat /proc/meminfo
  4. Go to /root/ovs-dpdk/ovs-scripts
     1. Check lspci to find out the PCI ID of the devices you would be binding to DPDK: lspci|grep Ethernet

05:00.0 Ethernet controller: Intel Corporation Ethernet Controller XXV710 for 25GbE SFP28 (rev 02)

06:00.0 Ethernet controller: Intel Corporation Ethernet Controller XXV710 for 25GbE SFP28 (rev 02)

* 1. Edit start-ovs-dpdk.sh script to input the correct PCI ID that would be bound to DPDK driver and save:

python $DPDK\_DIR/usertools/dpdk-devbind.py --bind=igb\_uio 05:00.0

python $DPDK\_DIR/usertools/dpdk-devbind.py --bind=igb\_uio 06:00.0

* 1. Execute start-ovs-dpdk.sh to start OVS
  2. Edit set\_pmd\_thread.sh to set the core assignment for 2C4T and 4C4T and save:

$OVS\_DIR/utilities/ovs-vsctl set Open\_vSwitch . other\_config:pmd-cpu-mask=30000C #2C4T

$OVS\_DIR/utilities/ovs-vsctl set Open\_vSwitch . other\_config:pmd-cpu-mask=3c #4C4T

* 1. Run set\_pmd\_thread.sh: ./set\_pmd\_thread.sh
  2. Edit createports\_pvp-2p.sh to input the correct PCI ID for port creation:

./utilities/ovs-vsctl add-port br0 dpdk0 -- set Interface dpdk0 type=dpdk options:dpdk-devargs=0000:05:00.0

sleep 8

./utilities/ovs-vsctl add-port br0 dpdk1 -- set Interface dpdk1 type=dpdk options:dpdk-devargs=0000:06:00.0

sleep 8

* 1. Run createports\_pvp-2p.sh
  2. Assign ports to specific cores by running the following steps:
     1. ./check\_pmd\_cores.sh to show the current core assignment
     2. Run the following to set the cores for 2C4T:

./set\_rxq.sh dpdk0 2 ## to set for 2C4T

./set\_rxq.sh dpdk1 3

./set\_rxq.sh vhost-user0 20

./set\_rxq.sh vhost-user1 21

* 1. Run the following to set the cores for 4C4T:

./set\_rxq.sh dpdk0 2 ## to set for 4C4T

./set\_rxq.sh dpdk1 3

./set\_rxq.sh vhost-user0 4

./set\_rxq.sh vhost-user1 5

* 1. Power on VM by running the following script: ./power\_on\_vm-vhost-user1-2p.sh
  2. On your local system, you can vnc to the VM by running: vncviewer <system host IP>:1 &
  3. The vncviewer will show the VM. Login to the vm with the following credential: root/passme123
  4. In the VM /root directory, pls run the following:
     1. ./disable\_service.sh
     2. ./stop\_services.s
     3. ./run\_testpmd.sh
  5. Once the testpmd is loaded into its interactive screen, type the following:

> set mac fwd

> start

* 1. Back on the host, pls run the following script in /root/ovs-dpdk/ovs-scripts: ./addroutes\_pvp-2p.sh
  2. Set the core affinity of the VM by doing the following:

ps -e |grep qemu

top -p <qemu PID> -d1 -H

Record the Thread PID which is utilizing ~99% of the core (.e.g thread PID)

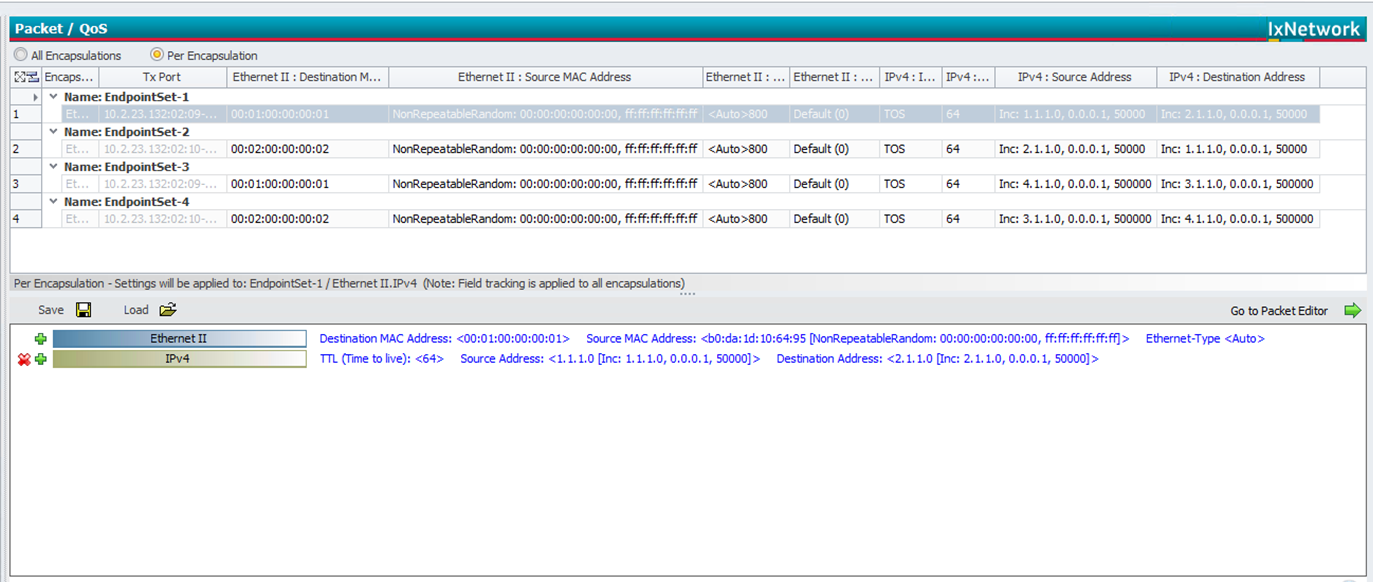
taskset -pc -a 8 <qemu PID>

taskset -pc 9 <qemu thread PID which show ~99% util>

taskset -pc 10 <qemu thread PID which shows TIME+ more than 0.58.xx>

* 1. Run RFC2544 with 0% packet loss or 0 frame loss.
  2. Traffic Profile for PVP for 4 DPDK Ports Configuration:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tx Port | Rx Port | Ethernet Type | SRC MAC | DEST MAC | SRC IP | DEST IP |
| Port 1 | Port 2 | 0x800 | NonRepeatableRandom: 00:00:00:00:00:00, ff:ff:ff:ff:ff:ff | 00:01:00:00:00:01 | Inc: 1.1.1.0, 0.0.0.1, 500000 | Inc: 2.1.1.0, 0.0.0.1, 500000 |
| Port 2 | Port 1 | 0x800 | NonRepeatableRandom: 00:00:00:00:00:00, ff:ff:ff:ff:ff:ff | 00:02:00:00:00:02 | Inc: 2.1.1.0, 0.0.0.1, 500000 | Inc: 1.1.1.0, 0.0.0.1, 500000 |
| Port 3 | Port 4 | 0x800 | NonRepeatableRandom: 00:00:00:00:00:00, ff:ff:ff:ff:ff:ff | 00:03:00:00:00:03 | Inc: 4.1.1.0, 0.0.0.1, 500000 | Inc: 3.1.1.0, 0.0.0.1, 500000 |
| Port 4 | Port 5 | 0x800 | NonRepeatableRandom: 00:00:00:00:00:00, ff:ff:ff:ff:ff:ff | 00:04:00:00:00:04 | Inc: 3.1.1.0, 0.0.0.1, 500000 | Inc: 4.1.1.0, 0.0.0.1, 500000 |



Traffic Profile for PVVP for 2 DPDK ports configuration:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tx Port | Rx Port | Ethernet Type | SRC MAC | DEST MAC | SRC IP | DEST IP |
| Port 1 | Port 2 | 0x800 | NonRepeatableRandom: 00:00:00:00:00:00, ff:ff:ff:ff:ff:ff | 00:01:00:00:00:01 | Inc: 1.1.1.0, 0.0.0.1, 500000 | Inc: 2.1.1.0, 0.0.0.1, 500000 |
| Port 4 | Port 5 | 0x800 | NonRepeatableRandom: 00:00:00:00:00:00, ff:ff:ff:ff:ff:ff | 00:04:00:00:00:04 | Inc: 3.1.1.0, 0.0.0.1, 500000 | Inc: 4.1.1.0, 0.0.0.1, 500000 |