Step 1: Enable “Intel Virtualization Technology” in BIOS(I cannot find “SR-IOV” option in BIOS)

Step 2:

#lspci -v

02:00.0 Network controller: Mellanox Technologies MT27500 Family [ConnectX-3]

Subsystem: Mellanox Technologies Device 0017

Flags: bus master, fast devsel, latency 0, IRQ 17

Memory at f7200000 (64-bit, non-prefetchable) [size=1M]

Memory at f2800000 (64-bit, prefetchable) [size=8M]

Expansion ROM at f7100000 [disabled] [size=1M]

Capabilities: [40] Power Management version 3

Capabilities: [48] Vital Product Data

Capabilities: [9c] MSI-X: Enable+ Count=128 Masked-

Capabilities: [60] Express Endpoint, MSI 00

Capabilities: [100] Alternative Routing-ID Interpretation (ARI)

Capabilities: [148] Device Serial Number f4-52-14-03-00-89-b1-b0

**Capabilities: [108] Single Root I/O Virtualization (SR-IOV)**

Capabilities: [154] Advanced Error Reporting

Capabilities: [18c] #19

Kernel driver in use: mlx4\_core

Kernel modules: mlx4\_core

Step 3:update the /boot/grub/grub.conf file

default=0

timeout=5

splashimage=(hd0,0)/grub/splash.xpm.gz

hiddenmenu

title CentOS (2.6.32-431.el6.x86\_64)

root (hd0,0)

kernel /vmlinuz-2.6.32-431.el6.x86\_64 ro root=/dev/mapper/vg\_zhuangdizhu1-lv\_root rd\_LVM\_LV=vg\_zhuangdizhu1/lv\_swap rd\_NO\_MD crashkernel=auto LANG=zh\_CN.UTF-8 rd\_NO\_LUKS KEYBOARDTYPE=pc KEYTABLE=us rd\_NO\_DM rd\_LVM\_LV=vg\_zhuangdizhu1/lv\_root rhgb quiet **intel\_iommu=on**

initrd /initramfs-2.6.32-431.el6.x86\_64.img

Step 4:

#mlxconfig -d /dev/mst/mt4099\_pciconf0 set SRIOV\_EN=1

# flint -d /dev/mst/mt4099\_pciconf0 dc

[HCA]

**num\_pfs = 1**

**total\_vfs = 16**

**sriov\_en = true**

hca\_header\_device\_id = 0x1003

hca\_header\_subsystem\_id = 0x0017

dpdp\_en = true

eth\_xfi\_en = true

mdio\_en\_port1 = 0

pcie\_tx\_polarity = 0x0f

Step 5:

vim /etc/modprobe.d/mlx4\_core.conf

options mlx4\_core port\_type\_array=**1,2** num\_vfs=5 probe\_vf=1

(At firtst I tried port\_type\_array=**2,2 according to** [**https://community.mellanox.com/docs/DOC-1317**](https://community.mellanox.com/docs/DOC-1317)**. But it caused ib0 disappearing and generated eth1 instead**)

Step 6:Reboot the server.

Step 7:

# lspci | grep Mellanox

02:00.0 Network controller: Mellanox Technologies MT27500 Family [ConnectX-3]

Step 8:

#dmesg | grep mlx

mlx4\_core: Mellanox ConnectX core driver v2.4-1.0.0 (Jan 13 2015)

mlx4\_core: Initializing 0000:02:00.0

mlx4\_core 0000:02:00.0: PCI INT A -> GSI 17 (level, low) -> IRQ 17

mlx4\_core 0000:02:00.0: setting latency timer to 64

mlx4\_core 0000:02:00.0: PCIe link speed is 8.0GT/s, device supports 8.0GT/s

mlx4\_core 0000:02:00.0: PCIe link width is x8, device supports x8

mlx4\_core 0000:02:00.0: Enabling SR-IOV with 5 VFs

**mlx4\_core 0000:02:00.0: not enough MMIO resources for SR-IOV**

**mlx4\_core 0000:02:00.0: Failed to enable SR-IOV, continuing without SR-IOV (err = -12)**

mlx4\_core 0000:02:00.0: irq 43 for MSI/MSI-X

information from Mellanox\_OFED\_Linux\_User\_Manual\_v2.4-1.0.0.pdf:

