SR-IOV Configuration

To set up SR-IOV, do the following:

1. Install the mstflint tools.

   ```
   # yum install mstflint
   ```

2. Check the device's PCI.

   ```
   # lspci | grep Mellanox
   ```

   Example:

   ```
   00:06.0 Infiniband controller: Mellanox Technologies MT27520 Family
   [ConnectX-3 Pro]
   ```

3. Check if SR-IOV is enabled in the firmware.

   ```
   mstconfig -d <device pci> q
   ```

   Example:

   ```
   # mstconfig -d 00:06.0 q

   Device #1:

   Device type: ConnectX3Pro
   PCI device: 00:06.0
   Configurations: Current
   SRIOV_EN True(1)
   NUM_OF_VFS 8
   LINK_TYPE_P1 ETH(2)
   LINK_TYPE_P2 IB(1)
   LOG_BAR_SIZE 3
   BOOT_PKEY_P1 0
   ```

```
BOOT_PKEY_P2 0
BOOT_OPTION_ROM_EN_P1 True(1)
BOOT_VLAN_EN_P1 False(0)
BOOT_RETRY_CNT_P1 0
LEGACY_BOOT_PROTOCOL_P1 PXE(1)
BOOT_VLAN_P1 1
BOOT_OPTION_ROM_EN_P2 True(1)
BOOT_VLAN_EN_P2 False(0)
BOOT_RETRY_CNT_P2 0
LEGACY_BOOT_PROTOCOL_P2 PXE(1)
BOOT_VLAN_P2 1
IP_VER_P1 IPv4(0)
IP_VER_P2 IPv4(0)
```

4. Enable SR-IOV:

```
mstconfig –d <device pci> s SRIOV_EN=<False|True>
```

5. Configure the needed number of VFs

```
mstconfig –d <device pci> s NUM_OF_VFS=<NUM>
```

> ⓘ **Note**
>
> This file will be generated only if IOMMU is set in the grub.conf file (by adding "intel_iommu=on" to /boot/grub/grub.conf file).

6. **[mlx4 devices only]** Create/Edit the file /etc/modprobe.d/mlx4.conf:

```
options mlx4_core num_vfs=[needed num of VFs] port_type_array=[1/2 for IB/ETH],[ 1/2 for IB/ETH]
```

Example:

```
options mlx4_core num_vfs=8 port_type_array=1,1
```

7. **[mlx5 devices only]** Write to the sysfs file the number of needed

```
echo [num_vfs] > sys/class/net/ib2/device/sriov_numvfs
```

Example:

```
# echo 8 > /sys/class/net/ib2/device/sriov_numvfs
```

8. Reboot the driver.

9. Load the driver and verify that the VFs were created.

```
# lspci | grep mellanox
```

Example:

```
00:06.0 Network controller: Mellanox Technologies MT27520 Family [ConnectX-3 Pro]
00:06.1 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
00:06.2 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
00:06.3 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
00:06.4 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
00:06.5 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
00:06.6 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
```

> 00:06.7 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
> 00:06.0 Network controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]

For further information, refer to section "Setting Up SR-IOV" in the MLNX_OFED User Manual.