

Upgrade FW & Check Software Strap SOP

1. Prepare 1PCS HDD (Suggested install Linux OS Example : Ubuntu Version:20.04)
2. CLN4C44 install the system and start-up system
3. To BIOS Menu Setting x8x8 to NIC use PCIE SLOT
4. If using the other OS, please go to Mellanox website download and install **driver and MFT Tool**.

Preparation: (Linux OS suggested, windows will do)

1. Install Mellanox's **driver**, download your corresponding OS driver
(http://www.mellanox.com/page/products_dyn?product_family=27)
(Certified version : MLNX_OFED_LINUX-5.1-2.5.8.0-ubuntu20.04-x86_64.tgz)

MLNX_OFED Download Center

Current Versions		Archive Versions		START OVER	
Version (Current)	OS Distribution	OS Distribution Version	Architecture	Download/ Documentation	
5.1-2.5.8.0	Ubuntu	Ubuntu 20.04	x86_64	tgz: MLNX_OFED_LINUX-5.1-2.5.8.0-ubuntu20.04-x86_64.tgz	
	SLES	Ubuntu 19.04	ppc64le	SHA5256: bc6a5a42c7705411d7c80de39711bf35cbb5cb86f26baf22013edb54f273d52d	
	RHEL/CentOS	Ubuntu 18.04	aarch64	Size: 359M	
	OPENEULER	Ubuntu 16.04		SOURCES: MLNX_OFED_SRC-debian-5.1-2.5.8.0.tgz	
	OL			SHA5256: 6cfbb0e23f8d95e073e40cd1e1d556588c25619b7f8c412238d761a76114cf07	
	Fedora			Size: 60M	
	EulerOS				
	Debian				
	BCLINUX				

2. Install Mellanox's **MFT Tool**, download your corresponding OS tool
(<https://www.mellanox.com/products/adaptersoftware/firmware-tools>)
(Certified version : mft-4.15.1-9-x86_64-deb.tgz)

MFT Download Center

Current Versions		Archive Versions		START OVER	
Version (Current)	OS Distribution	OS Distribution Version	Architecture	Download/ Documentation	
4.15.1	Freebsd	RPM based	x64	Linux: mft-4.15.1-9-x86_64-deb.tgz	
	Linux	DEB based	PPC64le	MD5SUM: ceb4d7483a60bfdee4e4f24aae950937	
	Vmware ESX Server		PPC64	SHA256: dae7f419f8311ee5f4640d3dad2f34b8c45b0386fed7ceb340e9de1829e40ce8	
	Windows		Arm64	Release Date: 78.13 M	
	Windows PE			Documentation: Release Notes User Manual EULA	

5. Into the OS, write down below command line.

Start-up mst service

```
[root@ubuntu:~#] mst start
```

Starting MST (Mellanox Software Tools) driver set

Loading MST PCI module – Success
Loading MST PCI configuration module - Success
Create devices
Unloading MST PCI module (unused) – Success

```
root@ubuntu:~# mst start
Starting MST (Mellanox Software Tools) driver set
Loading MST PCI module - Success
Loading MST PCI configuration module - Success
Create devices
Unloading MST PCI module (unused) - Success
```

Confirm mst Device Status

[root@ubuntu:~#] **mst status -v**

MST modules:

MST PCI module is not loaded

MST PCI configuration module loaded

PCI devices:

DEVICE_TYPE	MST	PCI	RDMA	NET	NUMA
ConnectX4LX(rev:0)	/dev/mst/mt4117_pciconf1.1	02:00.1	mlx5_5	net-enp2s0f1	0
ConnectX4LX(rev:0)	/dev/mst/mt4117_pciconf1	02:00.0	mlx5_4	net-enp2s0f0	0
ConnectX4LX(rev:0)	/dev/mst/mt4117_pciconf0.1	01:00.1	mlx5_3	net-enp1s0f1	0
ConnectX4LX(rev:0)	/dev/mst/mt4117_pciconf0	01:00.0	mlx5_2	net-enp1s0f0	0

```
root@ubuntu:~/CLN4C44/P02# mst status -v
MST modules:
-----
MST PCI module is not loaded
MST PCI configuration module loaded
PCI devices:
-----
DEVICE_TYPE      MST                                PCI    RDMA    NET    NUMA
ConnectX4LX(rev:0) /dev/mst/mt4117_pciconf1.1      02:00.1  mlx5_5  net-enp2s0f1  0
ConnectX4LX(rev:0) /dev/mst/mt4117_pciconf1        02:00.0  mlx5_4  net-enp2s0f0  0
ConnectX4LX(rev:0) /dev/mst/mt4117_pciconf0.1      01:00.1  mlx5_3  net-enp1s0f1  0
ConnectX4LX(rev:0) /dev/mst/mt4117_pciconf0        01:00.0  mlx5_2  net-enp1s0f0  0
```

Upgrade Mellanox Device FW

[root@ubuntu:~#] **flint -d /dev/mst/mt4117_pciconf0 -i NCSI.bin b**

[root@ubuntu:~#] **flint -d /dev/mst/mt4117_pciconf1 -i NA.bin b**

The above actions will be asked for confirmation before burning (y/n), if choice “y” , please wait for the update to be 100%.

If select the wrong file, the program will not agree to the update FW due to the different PSID Chipset.

```
root@ubuntu:~/CLN4C44/P02# flint -d /dev/nst/nt4117_pciconf1 -i NCSI.bin b
```

```
Current FW version on flash: 14.25.1020
```

```
New FW version: 14.25.1020
```

```
Note: The new FW version is the same as the current FW version on flash.
```

```
Do you want to continue ? (y/n) [n] : y
```

```
-E- PSID mismatch. The PSID on flash (GIG0010110034) differs from the PSID in the given image (GIG0010110024).
```

```
root@ubuntu:~/CLN4C44/P02# flint -d /dev/nst/nt4117_pciconf0 -i NA.bin b
```

```
Current FW version on flash: 14.25.1020
```

```
New FW version: 14.25.1020
```

```
Note: The new FW version is the same as the current FW version on flash.
```

```
Do you want to continue ? (y/n) [n] : y
```

```
-E- PSID mismatch. The PSID on flash (GIG0010110024) differs from the PSID in the given image (GIG0010110034).
```

※Please follow the steps below when the update is complete

1. Reboot system
2. CHECK Software Version and Strap right or not.

Check LAN CHIP Version

```
[root@ubuntu:~#] flint -d /dev/mst/mt4117_pciconf0 -ocr q
```

```
Image type: FS3
FW Version: 14.25.1020
FW Release Date: 30.4.2019
Product Version: 14.25.1020
Rom Info: type=UEFI version=14.18.19 cpu=AMD64
          type=PXE version=3.5.701 cpu=AMD64
Description: UID GuidNumber
Base GUID: b42e990300534f44 4
Orig Base GUID: N/A 4
Base MAC: b42e99534f44 4
Orig Base MAC: N/A 4
Image VSD: N/A
Device VSD: N/A
PSID: GIG0010110024
Security Attributes: N/A
```

```
root@ubuntu:~# flint -d /dev/mst/mt4117_pciconf0 -ocr q
-U- Firmware flash cache access is enabled. Running in this mode may cause the firmware to hang.
Image type: FS3
FW Version: 14.25.1020
FW Release Date: 30.4.2019
Rom Info: type=UEFI version=14.18.19 cpu=AMD64
          type=PXE version=3.5.701 cpu=AMD64
Description: UID GuidNumber
Base GUID: b42e990300534f44 4
Orig Base GUID: N/A 4
Base MAC: b42e99534f44 4
Orig Base MAC: N/A 4
Image VSD: N/A
Device VSD: N/A
PSID: GIG0010110024
Security Attributes: N/A
```

```
[root@ubuntu:~#] flint -d /dev/mst/mt4117_pciconf1 -ocr q
```

```
Image type: FS3
FW Version: 14.25.1020
FW Release Date: 30.4.2019
Product Version: 14.25.1020
Rom Info: type=UEFI version=14.18.19 cpu=AMD64
          type=PXE version=3.5.701 cpu=AMD64
Description: UID GuidNumber
Base GUID: b42e990300534f46 4
Orig Base GUID: N/A v 4
Base MAC: b42e99534f46 4
Orig Base MAC: N/A 4
Image VSD: N/A
Device VSD: N/A
PSID: GIG0010110034
Security Attributes: N/A
```

```
root@ubuntu:~# flint -d /dev/mst/mt4117_pciconf1 -ocr q
-U- Firmware flash cache access is enabled. Running in this mode may cause the firmware to hang.
Image type: FS3
FW Version: 14.25.1020
FW Release Date: 30.4.2019
Rom Info: type=UEFI version=14.18.19 cpu=AMD64
          type=PXE version=3.5.701 cpu=AMD64
Description: UID GuidNumber
Base GUID: b42e990300534f46 4
Orig Base GUID: N/A 4
Base MAC: b42e99534f46 4
Orig Base MAC: N/A 4
Image VSD: N/A
Device VSD: N/A
PSID: GIG0010110034
Security Attributes: N/A
```


Check LAN Software Strap

Example "mt4117_pciconf0" :

```
root@ubuntu:~/CLN4C44/P02# mlxconfig -d /dev/mst/mt4117_pciconf0 q | grep EXP_ROM
EXP_ROM_UEFI_x86_ENABLE          True(1)
EXP_ROM_PXE_ENABLE               True(1)
root@ubuntu:~/CLN4C44/P02# mlxconfig -d /dev/mst/mt4117_pciconf0 q | grep LEGACY_BOOT
LEGACY_BOOT_PROTOCOL             PXE(1)
```

```
[root@ubuntu:~#] mlxconfig -d /dev/mst/mt4117_pciconf0 q | grep EXP_ROM
```

```
[root@ubuntu:~#] mlxconfig -d /dev/mst/mt4117_pciconf0 q | grep LEGACY_BOOT
```

If check software strap setting is wrong, please run below command to change.

※Please check all mt4117_pciconf0 & mt4117_pciconf1

Change LAN Software Strap

※Please modify mt4117_pciconf0 & mt4117_pciconf1

```
[root@ubuntu:~#] mlxconfig -d /dev/mst/mt4117_pciconf0 s EXP_ROM_UEFI_x86_ENABLE=1
```

```
[root@ubuntu:~#] mlxconfig -d /dev/mst/mt4117_pciconf0 s EXP_ROM_PXE_ENABLE=1
```

```
[root@ubuntu:~#] mlxconfig -d /dev/mst/mt4117_pciconf0 s LEGACY_BOOT_PROTOCOL=1
```

※When all strap modify down, please shutdown system to save new setting.

```
root@ubuntu:~/CLN4C44/P02# mlxconfig -d /dev/mst/mt4117_pciconf0 s EXP_ROM_UEFI_x86_ENABLE=1

Device #1:
-----
Device type:  ConnectX4LX
Name:         N/A
Description:  N/A
Device:       /dev/mst/mt4117_pciconf0

Configurations:
EXP_ROM_UEFI_x86_ENABLE          Next Boot  New
                                False(0)      True(1)

Apply new Configuration? (y/n) [n] : y
Applying... Done!
-I- Please reboot machine to load new configurations.
root@ubuntu:~/CLN4C44/P02# mlxconfig -d /dev/mst/mt4117_pciconf0 s EXP_ROM_PXE_ENABLE=1

Device #1:
-----
Device type:  ConnectX4LX
Name:         N/A
Description:  N/A
Device:       /dev/mst/mt4117_pciconf0

Configurations:
EXP_ROM_PXE_ENABLE              Next Boot  New
                                False(0)      True(1)

Apply new Configuration? (y/n) [n] : y
Applying... Done!
-I- Please reboot machine to load new configurations.
root@ubuntu:~/CLN4C44/P02# mlxconfig -d /dev/mst/mt4117_pciconf0 s LEGACY_BOOT_PROTOCOL=1

Device #1:
-----
Device type:  ConnectX4LX
Name:         N/A
Description:  N/A
Device:       /dev/mst/mt4117_pciconf0

Configurations:
LEGACY_BOOT_PROTOCOL            Next Boot  New
                                NONE(0)       PXE(1)

Apply new Configuration? (y/n) [n] : y
Applying... Done!
-I- Please reboot machine to load new configurations.
```