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The Infiniband Price / Performance Leader

Download :

**Linux IB Tools
Switch Firmware**

**Check existing Switch
Firmware revision using
ibswitches command**

Updating Infiniband Switch Firmware

Required Material before getting started

- Download Mellanox MFT_SW for Linux Tools
<http://www.ibswitches.com/index.php?link=support>
- Download Latest Version of Switch Firmware
<http://www.ibswitches.com/index.php?link=support>

Step 1 (Get information and ID#'s of Switches in the Cluster)

- Log in to node on the cluster that is connected to switch of interest
- Run **ibswitches** command

SCREEN DUMP from **ibswitches**

```
# ibswitches
Switch : 0x000b8cfff002038 ports 24 "MT47396 Infiniscale-III Mellanox Technolo-
gies" base port 0 lid 6 lmc 0
```

This is the ID # of the particular switch that will be used in the following command sequences to query switch for firmware version and update firmware if applicable

- Note : In many fabrics there will be multiple switches identified by the **ibswitches** command. In this case, the steps that follow should be done for every identified switch, each with a unique LID#.
- Note 2 : The following firmware update example is only applicable to the 24 port switch. Updates to the 144 and 288 port switches require different firmware images for the Leaf and Spine switches. These firmware images are available on the website but contact us for specifics on firmware updates for these switches

Check loaded firmware versus latest firmware version to determine if an update is necessary

Load MFT_SW on a node connected to the cluster of interest

Step 2 (Check the switch to see if firmware update needed)

- Use spark command to query switch to get current firmware rev

```
# spark -d lid-6 q
```

SCREEN DUMP

```
#spark -d lid-6 q
```

Query command for spark

ID of Switch we want to Query

Query:

```
FW Version:      1.0.0
```

Firmware Version

```
Node GUID:       0x000b8cfff002038
```

```
System Image GUID: 0x0000000000000000
```

```
Node Description: MT47396 Infiniscale-III Mellanox Technologies
```

```
Board Serial Number: NO_BSN
```

```
PSID:           MT_0240000001
```

Step 3 (Copy tools and firmware to active node on Cluster)

- Log in to a node on the cluster that is connected to switch of interest
- Copy MFT_SW tools and latest firmware image to that machine
- Un-compress the MFT_SW Tools Tarball

```
# tar xzvf mft-2.5.0
```

- Install MFT_SW tools

```
# install.sh
```

Run actual command to initiate firmware update.

Step 4 (Update Firmware)

- Use spark command to update firmware with latest version

```
# spark -d lid-6 -i image_name b
```

SCREEN DUMP

```
#spark -d lid-6 -i M24D0601A_1.0.5.img b
```

```
- Checking primary image - %00
- Checking primary image - OK
```

```
Current FW Version: 1.0.0
New FW Version: 1.0.5
```

```
- Burning secondary image - OK
- Verifying secondary image - OK
- Burning primary image - OK
- Verifying primary image - OK
```

image_name will be the file name of the downloaded firmware image

burn command

Firmware image file name

Make sure Switch now has updated firmware loaded

Step 5 (Verify Firmware Successfully Updated)

- Use spark command to query switch to get current firmware rev

```
# spark -d lid-6 q
```

SCREEN DUMP

```
#spark -d lid-6 q
```

```
Query:
FW Version:      1.0.5
Node GUID:       0x000b8cfff002038
System Image GUID: 0x0000000000000000
Node Description: MT47396 Infiniscale-III Mellanox Technologies
Board Serial Number: NO_BSN
PSID:           MT_024000001
```

New Version 1.0.5

After updating firmware, Switch must be reset for new firmware to be active

After reset, make sure link comes back up as expected, this could take a few seconds for all ports to become active

Step 6 (Rest Switch, this must be done to activate new FW)

Use spark command to rest switch

```
# spark -d lid-6 swreset
```

SCREEN DUMP

```
#spark -d lid-6 swreset
```

```
Resetting device lid-6 ...
```

Step 7 (Check status of link to make sure everything is up)

Use ibstat command to rest switch

```
# ibstat
```

SCREEN DUMP

```

]# ibstat
CA 'mlx4_0'
  CA type: MT25418
  Number of ports: 2
  Firmware version: 2.3.0
  Hardware version: a0
  Node GUID: 0x0002c90300000284
  System image GUID: 0x0002c90300000287
  Port 1:
    State: Active
    Physical state: LinkUp
    Rate: 20
    Base lid: 2
    LMC: 0
    SM lid: 1
    Capability mask: 0x02510868
    Port GUID: 0x0002c90300000285
  Port 2:
    State: Down
    Physical state: Polling
    Rate: 10
    Base lid: 0
    LMC: 0
    SM lid: 0
    Capability mask: 0x02510868
    Port GUID: 0x0002c90300000286

```

This is a command to the HCA to make sure it is connected to the switch and up and running

HCA Firmware Version

Port is up and running
Note : Port may take a few seconds to become after a switch reset

Port 2 is not connected to the switch