# NAT-MCH

# Firmware Update Manual

The NAT-MCH has been designed by:

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# Introduction

This update procedure describes the of the NAT-MCH firmware.

This guide is valid for all existing hardware releases. Together with this update, a set of documents is provided by:

- MCH User's Manual
- Release Notes of MCH Firmware

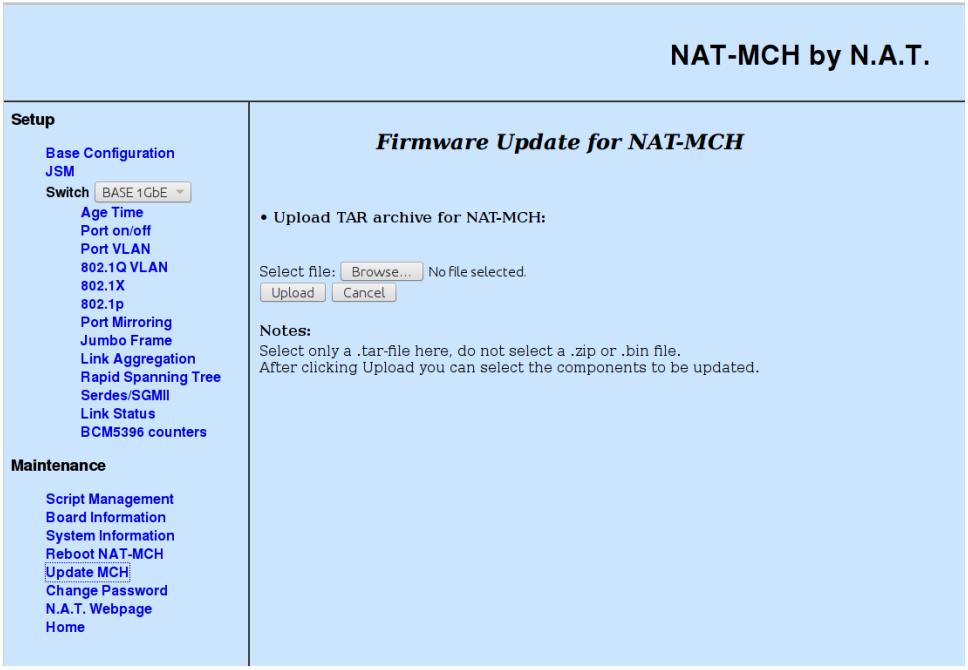
Please read carefully this documentation, especially the chapter "Configuration" of the User's Manual for relevant changes that may affect the operation of the NAT-MCH in your environment.

This guide is divided into several chapters, which describe the steps to be taken to upgrade the NAT-MCH. These steps may differ depending on the hardware release of your NAT-MCH. To perform the upgrade you might need the serial or USB console cable supplied with the NAT-MCH to be connected

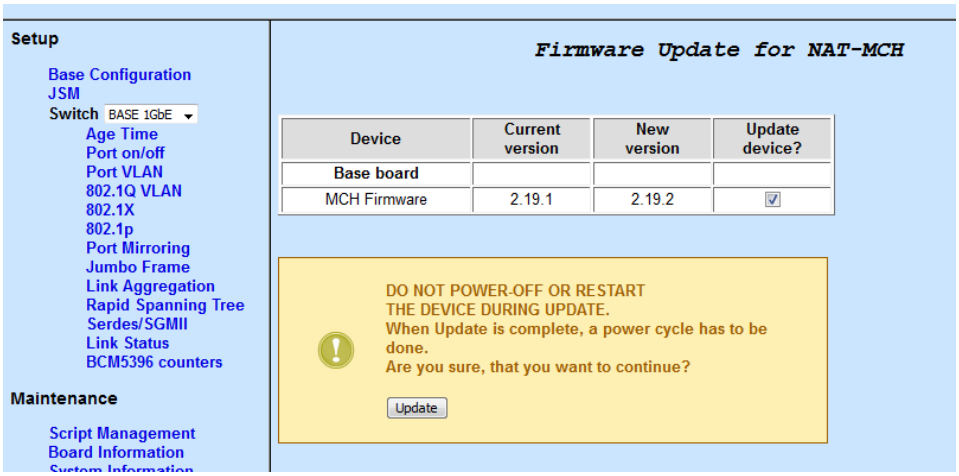
# Upgrading the Base-Module Firmware

There are two options for updating the MCH firmware on the NAT-MCH. The preferred option is to update the NAT-MCH via the **"Update MCH" interface of the Web-Interface** if you are currently running a firmware version V2.7 or newer.

Please extract the file mch_fw_v2_xx_xx_webupdate.tar from the package and upload this file on the "Firmware Update for NAT-MCH" page.



After that, you will see the following webpage:




Please, check the update option and press button “Update”. When the update process is completed, power cycle the NAT-MCH. This can be done via the CLI command “shutdown system”.

The second option is to update the firmware via the **MCH serial or USB console.** Please extract the firmware file mch_fw.bin from the package and place it on a TFTP server from which it has be downloaded by the NAT-MCH.

To initiate the update, type at the console prompt:

```
nat>update_firmware
```

Then you have to enter the path of the firmware binary image in the form:

```
<IP_addr_of_tftp_server>:/path_to_file/filename
```

e.g.:

```
192.168.1.70:/tftp_path/mch_fw.bin
```

Please, enter the IP address in the “Dot” notation. Notice, that the IP address of the path must match configuration of the MCH, means the TFTP server has to be located in the same subnet as the MCH.

After a power cycle, the new firmware version should be loaded. This can be verified via the CLI command “version” or the menu item “Board Information” in the MCH web interface.

# Upgrading the Base-Module FPGA

In order to get all features of the latest MCH firmware available the FPGA of the MCH base board should be up to date. You find the latest base board FPGA version in the "bin" directory of the "MCH_firmware_2_xx_x.zip" file.

As with the MCH firmware the preferred way to update the base board FPGA is via **"Update MCH" interface of the Web-Interface** as it is described in the chapter before.

For a MTCA.4 MCH (double width) please use this .tar archive:

➔ MCH M4 Base FPGA_V1_xx.tar

For a MTCA.0 MCH (double width) please use this .tar archive:

➔ MCH Base FPGA_V1_xx.tar

The second option is to update the FPGA firmware is via the **MCH serial or USB console.** This update route should be used by advanced users.

Please extract the firmware file mch_fpga_pcbx_x_v1_xx.rpd from the package and place it on a TFTP server the MCH can access to.

To initiate the update, type at the console prompt:

```
nat>update_fpga
```

Then you have to enter the path of the firmware binary image in the form:

```
<IP_addr_of_tftp_server>:/path_to_file/filename
```

e.g.:

```
192.168.1.70:/tftp_path/mch_fpga_pcb2_2_v1_15.rpd
```

Please, enter the IP address in the "Dot" notation. Notice, that the IP address of the path must match configuration of the MCH, means the TFTP server has to be located in the same subnet as the MCH.

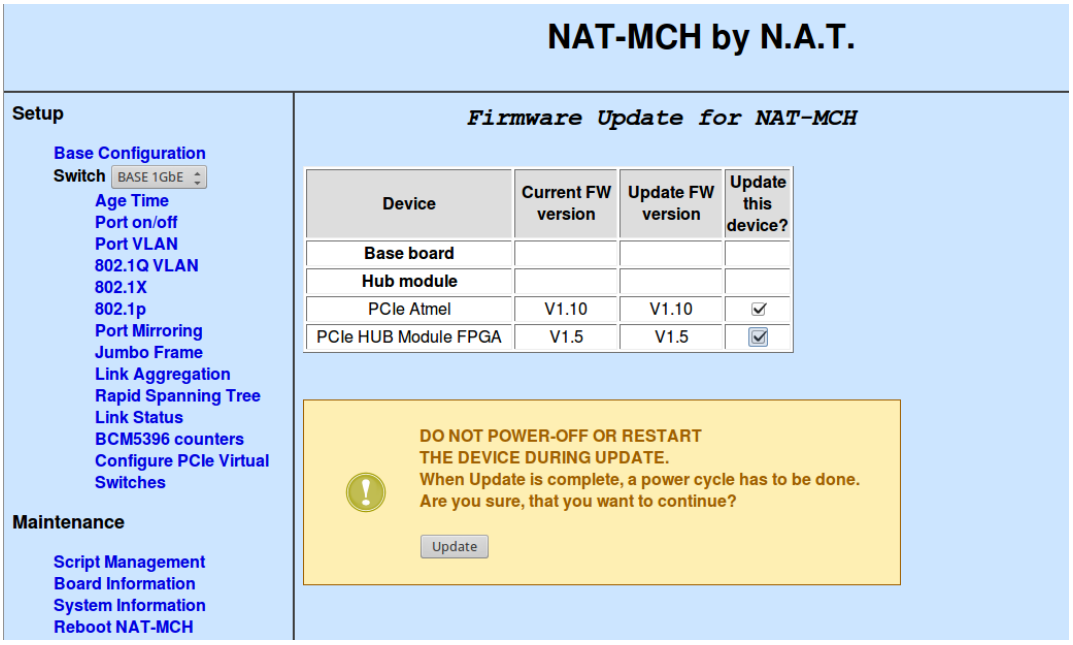
After a power cycle, the new firmware version should be loaded. This can be verified via the CLI command "version" or the menu item "Board Information" in the MCH web interface.

**PLEASE NOTE: There is no compatibility check during the FPGA update via the MCH console. If an incompatible FPGA firmware is flashed the MCH hardware will be damaged.**

# Upgrading the Hub-Module Firmware

## HUB-PCIe Firmware Upgrading

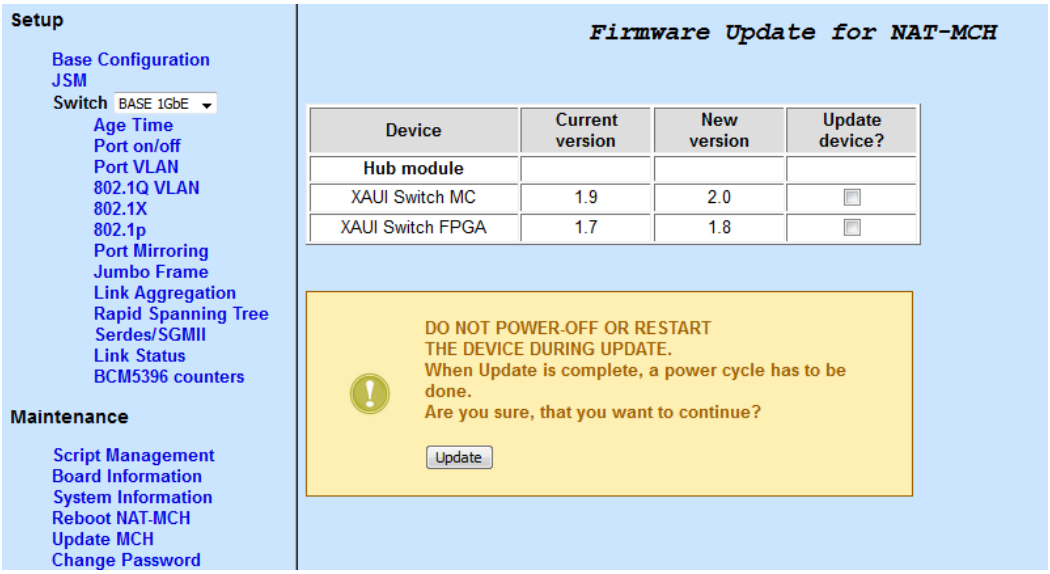
The update package "PCIe_Hub_2.x_AVR_FPGA_webupdate.tar" includes the software components for the PCIe Hub-Module. It can be uploaded and updated like the MCH firmware. The update package will offer you the following options:




It is important to update the MCH firmware before the PCIe Hub-Module. Please do a power cycle between the updates.

## HUB-XAUI Firmware Upgrading

The update package "XAUI_Hub_AVR_FPGA_webupdate.tar" includes the software components for the XAUI hub module. It has be uploaded and updated like the MCH firmware via "Update MCH" menu. The update package will offer you the following options:




With the checkboxes on the right you can choose the component to update. It is important to update the MCH firmware before the XAUI Hub-Module. Please do a power cycle between the updates.

After both updates is completed, you have to do a power cycle of the NAT-MCH.

For detailed instructions please refer to the User's Manual chapter "Firmware Update from Web-Interface".