



FXT 5000 Series NVRAM NV1604 Firmware Update Procedure

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Revision History

Revision	Date	Description of Changes
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1 Overview

1.1 Introduction

The procedure is written for qualified service personnel who are familiar with Avere Systems software and the FXT Series product. Only those people who are familiar with Avere software and the FXT Series products and are trained in the potential hazards involved with servicing this type of equipment should attempt these procedures.

These procedures assume you have the following skills and experience:

- Working knowledge of the Avere Systems Dashboard (user interface) for node and cluster management.
- Working understanding of the FreeBSD and UNIX-like Command Line Interfaces.
- Basic understanding of common networking concepts and practices.
- Working familiarity with computer server hardware theory and operation.

1.2 Scope

This procedure is **ONLY** applicable to the FXT 5000 series servers with **PMC NV1604** NVRAM adapters installed.

1.3 This update can be performed remotely via webex. A reboot of the updated node is required.

1.4 Items required for update

- Firmware File: “pmcnv_firmware_2.6.06.1”
- MD5 File: “pmcnv_firmware_2.6.06.1.md5”
- An internet connected computer for downloading firmware and copying firmware to node to be updated.
- A terminal application in OSX like: Terminal, iTerm, etc. Or Windows: PuTTY, etc.
- Optional - On-site VGA Console A.K.A “Crash Cart” - Equipped with monitor and keyboard.



Note: PMC was acquired by Microsemi in 2015. The utilities created by Avere Systems are based around the PMC company name. For example: “pmcnvutil” is the utility used to perform actions to the Microsemi NV1604 NVRAM card.

2 Obtain Firmware

Only download firmware from the following links as this firmware has been thoroughly tested by Avere Systems Engineering departments.

From an internet connected computer, paste these URL's into a browser to retrieve the files:

https://download.averesystems.com/software/pmcnv_firmware_2.6.06.1

https://download.averesystems.com/software/pmcnv_firmware_2.6.06.1.md5

3 Find node IP address

- 3.1 Open the Avere GUI for the cluster that contains the node to be updated.
- 3.2 Click on the "Settings" tab, then click on "FXT Nodes" on the left column. Find the exact node to be updated.
- 3.3 Click on the associated Hyperlink and find the Primary Cluster IP address for that node.
- 3.4 Note that IP address.

4 Copy firmware to Node

- 4.1 Open a command shell terminal.
- 4.2 In the terminal, change directory to where the files were previously downloaded in step 2:

Example - Type: `cd /to/where/my/files/downloaded/`

- 4.3 In the terminal, secure copy the files to the "/support" directory on the node to be updated:

Example - Type:

```
scp pmcnv_firmware_2.6.06.1 root@xxx.xxx.xxx.xxx:/support/.
```

(Where the x's are the ip address of the node being updated)

Enter the appropriate password and accept the security warning if prompted.

- 4.4 Do the same for the .md5 file.

Example - Type:

```
scp pmcnv_firmware_2.6.06.1.md5 root@xxx.xxx.xxx.xxx:/support/.
```

(Where the x's are the ip address of the node being updated)

Enter the appropriate password and accept the security warning if prompted.

4.5 In the terminal “ssh” as root into the server to be updated:

Type: ssh [root@xxx.xxx.xxx.xxx](#)

(Where the x’s are the ip address of the node being updated)

Enter the appropriate password and accept the security warning if prompted.

4.6 Change directory to where the uploaded file is and check the md5 of the firmware file.

Type: cd /support

4.7 Perform a “more” operation to look at the contents of the .md5 file:

Type: more pmcnv_firmware_2.6.06.1.md5

4.8 Perform a “md5” operation on the firmware file:

Type: md5 pmcnv_firmware_2.6.06.1

For Reference, the md5 must equal: 40e627093f118bb25afbd10b18269316

```
[root@bmw32 /support]# md5 pmcnv_firmware_2.6.06.1
MD5 (pmcnv_firmware_2.6.06.1) = 40e627093f118bb25afbd10b18269316
[root@bmw32 /support]#
```

4.9 Compare the md5 values. They must be exactly the same or the firmware file has been corrupted.



If md5 does not match, the firmware file may have been corrupted during the download/copying process. Go back to step 2 and repeat sections 2 through 4.

5 Update Firmware

All the following is done in the terminal CLI interface logged into the node

5.1 Stop Armada

Type: /etc/rc.d/armadad stop

(This will take a minute or so...)

5.2 Check that the data has been flushed from the NVRAM card

Type: nvramutil --check

```
[root@bmw32 /support]# nvramutil --check
valid=0 ←
[root@bmw32 /support]#
```

Check that the command returns “**valid=0**” as shown above.

5.3 View NVRAM card information: (note the change in command)

```
Type: pmcnvutil --info
```

That will produce something like this output:

```
Type: pmcnvutil --info
```

```
HW Ver          | HW UUID
MTR_MLC_TS_4GB | 040000137A30
Driver          | Module          | API          | Controller
                |                 | 1.5.7.0     | 0006
Firmware 1     | Firmware 2     | Firmware 3
2.6.06.0      | None           | None
Banks | Vend Id | Dev Id | CPLD Version
      2 | 0x11f8 | 0xf117 | 5
```



NOTE: “Firmware 2” is the field that will be modified with this update

5.4 Update firmware of NVRAM card

```
Type: pmcnvutil --update /support/pmcnv_firmware_2.6.06.1
```

5.5 Check that the update was programmed to the card:

```
Type: pmcnvutil --info
```

```
HW Ver          | HW UUID
MTR_MLC_TS_4GB | 040000137A30
Driver          | Module          | API          | Controller
                |                 | 1.5.7.0     | 0006
Firmware 1     | Firmware 2     | Firmware 3
2.6.06.0      | 2.6.06.1      | None
Banks | Vend Id | Dev Id | CPLD Version
      2 | 0x11f8 | 0xf117 | 5
```



NOTE: “Firmware 2” field has changed to “2.6.06.1”

5.6 Reboot the Node so the changes will take effect

Type: reboot

5.7 Reconnect the ssh session to the node being updated

Type: ssh [root@xxx.xxx.xxx.xxx](#)

Enter the password when prompted

5.8 To completely verify that the NVRAM firmware has been updated, type the following and verify that the output states “firmware 2.6.06.1”

Type: hwnmap.py | grep NVRAM

```
[root@bmw32 ~]# hwnmap.py | grep NVRAM
NVRAM 4059 MB installed
NVRAM NVRAM 0: PMC-Sierra NV1600 Flashtec, firmware 2.6.06.1
[root@bmw32 ~]#
```

6 Verify alerts have cleared...

Verify in the Avere GUI Dashboard that all alerts have been cleared and that the node has properly rejoined the cluster.



DO NOT START THIS PROCESS ON ANOTHER NODE UNTIL IT HAS BEEN VERIFIED THAT THE PREVIOUS NODE IS WORKING CORRECTLY.

[End Of Procedure]