



Release Notes

Mellanox Firmware Tools (MFT) Release Notes for Linux

Rev 2.6.1

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Mellanox Firmware Update Tools (MFT) for Linux Release Notes

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1 Overview

These are the release notes for Rev 2.6.1 of the **Mellanox Firmware Tools (MFT)** package for Linux. The release notes include:

- This “Overview” section which includes the subsections:
 - “Package Tools” on page 3
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1.1 Package Tools

The following is a list of the available tools in the package, together with a brief description of what each tool performs. The tools apply to single Switch Systems or adapter cards, but not to clusters.

- mlxburn** This tool provides the following functions:
- Generation of a standard or customized Mellanox firmware image for burning—in .bin (binary) or .img format
 - Burning an image to the Flash/EEPROM attached to a Mellanox HCA or switch device
 - Querying the firmware version loaded on an HCA board
 - Displaying the VPD (Vital Product Data) of an HCA board
- flint** This tool burns a firmware binary image or an expansion ROM image to the Flash device of a Mellanox network adapter/bridge/switch device. It includes query functions to the burnt firmware image and to the binary image file.
- spark** This tool burns a firmware *binary* image to the EEPROM(s) attached to a switch device. It includes query functions to the burnt firmware image and to the binary image file. The tool accesses the EEPROM and/or switch device via an I2C-compatible interface or via vendor-specific MADs over the InfiniBand fabric (In-Band tool).
- Debug utilities** A set of debug utilities (e.g., itrace, mstdump, isw, and i2c)

Detailed installation instructions along with complete descriptions of the various tools in the package can be found in the *Mellanox Firmware Tools User's Manual, Document no. 2329, Rev 1.20* or later.

1.2 Software Dependencies

Table 1 - MFT Software Dependencies on Linux

Software Package	Required Version
Perl	5.6 or later
Expat-devel	1.95 or later
zlib	1.1.4 or later
Kernel sources	Machine's kernel version
OFED ^{1, 2}	1.1 up to 1.5

1. OFED can be downloaded from <http://www.openfabrics.org>. Note that installing OFED is *not* required if you wish to install MFT without In-Band capabilities.
2. For the 'mst ib add' command to run, the OFED *ibutils* package must be installed and 'ibdiagnet' should be in the default path. (For details on OFED installation, visit <http://www.mellanox.com> and under OFED.)

1.3 Supported Operating Systems and Platforms

MFT is supported on the following platforms: x86, x86_64, ppc64, Itanium (ia64).

Table 2 - Linux Operating Systems and Platforms

Operating System	Kernels
RedHat EL4	2.6.9-55.ELsmp (RHEL4 UP5)
	2.6.9-67.ELsmp (RHEL4 UP6)
	2.6.9-78.ELsmp (RHEL4 UP7)
	2.6.9-89.ELsmp (RHEL UP8)
RedHat EL5	2.6.18-8.el5 (RHEL5)
	2.6.18-92.el5 (RHEL5 UP2)
	2.6.18-128.el5 (RHEL5 UP3)
	2.6.18-164.el5 (RHEL5 UP4)
SLES10	2.6.16.21-0.8-smp
	2.6.16.60-0.21-smp (SLES10 SP2)
	2.6.16.60-0.54-smp (SLES10 SP3)
SLES11	2.6.27.19-5-default
OpenSuSE 11.2	2.6.31.5-0.1-default
Oracle Enterprise Linux 4	2.6.9-78.ELsmp (UP 7)
Oracle Enterprise Linux 4	2.6.9-89.ELsmp (UP 8)
CentOS5.3	2.6.18-128.el5
CentOS5.4	2.6.18-164.el5
Fedora Core 12	2.6.31.5-127.fc12
Kernel.org	2.6.29, 2.6.30, 2.6.31 and 2.6.32

2 Changes and New Features

2.1 Changes in Version 2.6.1

This release includes bug fixes only.

2.2 Changes in Version 2.6.0

Table 3 - Changes and New Features

Component / Tool	Description
MFT installation change	Added the options: --without-image-generation, --disable-dc, and --without-kernel which allow for a partial installation in order to avoid problems with SW dependencies.
	Now allows a non-root user to prepare MFT RPMs
All	Added Mellanox ConnectX-2 and BridgeX support.
flint	Added a CRC check for the full image
	Support for query/burn of clp-gpxe ROM
	Prevents burning a ConnectX-2 image onto a ConnectX device and vice versa
	Added a logging option to flint
	For the ConnectX device family only: Added commands for an independent burn/read/remove of an Expansion ROM image. <i>For firmware versions earlier than 2.7.000:</i> It is possible to read the ROM image, or to replace an already existing ROM image (by the burn command). However, burning a new ROM image in case a previous image did not exist is not possible, nor is it possible to remove an existing ROM image.
mlxburn	Added the -fw_dir option which looks for a suitable FW file in the given directory
	Support for generating a non-failsafe image for ConnectX/ConnectX-2, InfiniScale IV, and BridgeX devices
Debug tools	Updated the mlx2c utility
	Added the mget_temp utility which reads the temperature of the ConnectX/ConnectX-2, InfiniScale IV, and BridgeX devices

3 Bug Fixes

Table 4 lists the bugs fixed in this release.

Table 4 - Fixed Bugs List

	Component / Tool	Issue	Description
1.	flint	Typo in flint help description of Expansion ROM read	The flint help display lists the Expansion ROM read command as “rrrom” instead of “rrom”
2.	mst	In-band access does not work with OFED 1.5	Fixed

4 Known Issues

Table provides a list of known bugs and limitations in regards to this release of the Mellanox Firmware Tools.

Table 5 - Known Bugs and Limitations

	Tool	Issue	Description	Workaround	To be Fixed on
1.	flint / mlxburn	Burning / querying via an MTUSB-1 takes a long time	When running mlxburn/flint via an MTUSB-1 device, a burn/query command may take up to five minutes to complete without any messages displayed. This is mainly due to an extensive firmware image query that runs by default.	Use the -qq flag to perform a quick query	N/A
2.		Burning an image to a ConnectX adapter in Flash recovery mode may fail	On some host machines (that use PCIe spread spectrum), the tool may not be able to recognize the ConnectX device’s PCI CONF0 or the image burn may not complete successfully. Note: This is not an issue for ConnectX-2 devices.	Use the MTUSB-1 connection to burn the image	
3.	flint	Burning duration via MTUSB-1	Burning an image via MTUSB-1 may take several minutes (up to 23 minutes for the ConnectX device). A significant portion of this duration is due to the pre-image-burn and Flash-write verify functions	Burn the image with the -no_flash_verify and the -qq flags. (For the ConnectX device, this brings down the burn time by 50%)	N/A
4.	spark	Parallel tool runs with an HCA or with a non-existing LID(s) may hang the driver and the tool	Parallel tool runs which target multiple devices and mistakenly include non- <i>InfiniScale III</i> LIDs may hang spark and the driver	Reboot the machine and rerun with correct LIDs	
5.	itrace	No support for host memory access on MemFree adapter cards with Red Hat OS	For Mellanox HCA cards without on-board memory (MemFree) with a Red Hat OS running, attempts to access the trace messages area in host memory may fail. Consequently, the application may crash or no trace messages will be printed without any error message	Use the --nomap flag for MemFree cards with Red Hat OS	

Table 5 - Known Bugs and Limitations

	Tool	Issue	Description	Workaround	To be Fixed on
6.	mget_temp	Prints "NA" or excessive temperature values	On some systems, the thermal sensors are not activated by default.	1. Run "mget_temp -i" 2. Allow the thermal sensors about 0.5 sec to calibrate. 3. Run "mget_temp" to get the current device temperature.	Next release
7.	install	--skip_mst install option should not be used when installing over previous MFT versions	The mst driver interface has changed and is not compatible with older versions of MFT. Therefore, the mst driver installation cannot be skipped.	Do not use the --skip_mst option	N/A
8.	wqdump	Flag '-dump ICM' may produce a large file	Running wqdump with '-dump ICM' option may produce a large file	N/A	Next release
9.		CTRL-C does not clear semaphores	CTRL-C stops wqdump but does not clear (release) semaphores	If you clicked CTRL-C, restart the driver to clean the semaphores	Next release
10.		Support for '-ignore' is not complete	Running wqdump with '-ignore' ignores only the QPC gateway lock only and does not ignore the OB gateway	N/A	Next release

5 History of Bug Fixes

5.1 Fixed Bugs in Version 2.6.0

Table 6 - Fixed Bugs in Version 2.6.0

	Component / Tool	Issue	Description
1.	mlxburn	Bad exit status upon a successful query operation	When running mlxburn with a -query flag, it may return an exit value of 1 for a successful operation.
2.		-nofs_img flag does not take effect for ConnectX image generation	Fixed
3.	flint	Image with blank GUIDs is treated as a valid image by the flint -v run (verify)	Mellanox devices cannot boot from an image including blank GUIDs. In this new release, flint -v will indicate an error.
4.		Locked HCA Flash semaphore when IB driver is down	Fixed by OFED 1.4
5.	mst	mst status sometimes displays the same device twice on hosts with multiple HCAs	Fixed
6.		mst ib add allows specifying a non-existing ib device	Fixed