Mellanox Firmware Tools (MFT) for Windows

Rev 2.6.0

Mellanox Firmware Update Tools (MFT) for Linux Release Notes

1 Overview

These are the release notes for Rev 2.6.0 of the **Mellanox Firmware Tools** package for Windows. The release notes include:

- This "Overview" section which includes the subsections:
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    - "Supported Platforms and Operating Systems" on page 4
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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 1.10* or later.

Additional MST tools are available via the MFT Windows installation. These are:

mst   Starts or stops the mst service (which provides access to device configuration space), and lists available mst device names (used by the tools).

i2c   Provides I2C-compatible bus access via the mst devices.

mstdump For Debug Only. This application dumps adapter internal configuration registers to the screen.

Run "mstdump" to get detailed help.

1.2 Software Dependencies

Table 1 - MFT Software Dependencies on Windows

Software Package	Required Version
I2CBridge[1] (Dimax's Driver for USB to I2C Adapter)	0.1.4 or later
WinOF [2] (optional)	2.0.0 or later NOTE: The tools package must also be installed as part of the WinOF installation.

1. Visit http://www.diolan.com to download this driver. This driver is required for the first use of the MTUSB-1 device. It is not required for MFT software installation.
2. WinOF is required only for In-Band access. The package can be downloaded from www.mellanox.com > Products > InfiniBand SW/Drivers.

1.3 Supported Platforms and Operating Systems

- Supported Operating Systems and Service Packs:
  - Windows XP SP2 (x86, x64)
  - Windows XP SP3 x86
  - Windows Server 2003 SP1 and SP2 (x86, x64)
  - Windows Server 2003 CCS (x64)
  - Windows Server 2008 (x86, x64)
  - Windows HPC Server 2008 (x64)

- Supported CPU architectures:
  - x86
  - x64 (EM64T and AMD64)

2 Changes and New Features

Table 2 - Changes and New Features

Component / Tool	Description
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. *For firmware versions earlier than 2.7.000*: 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
mst	Added the command "mst remote add <server>" which provides access to devices on a remote server. To use this feature and be able to access the remote server, the server TCP port must be enabled (i.e., not blocked by the firewall). The default server TCP port is 23108.
Debug tools	Added the mlxi2c utility

2.1 Deprecated Features

N/A

3 Bug Fixes

Table 3 lists the bugs fixed in this release.

Table 3 - Fixed Bugs List

	Component / Tool	Issue	Description
1.	mlxburn	-nofs_img flag does not take effect for ConnectX image generation	Fixed
2.	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.
3.	flint / mlxburn	An active flint operation does not respond to user interrupts (CTRL-C)	Fixed
4.	mst	WinMFT Cleanup script that runs upon computer start-up may hang on Windows 2008	Fixed

4 Known Issues

The following table provides a list of known issues and limitations in regards to this release of the Mellanox Firmware Tools.

Table 4 - Known Issues and Limitations

	Tool	Issue	Details	Workaround	To be Fixed in
1.	All	On *Windows Server 2008* ONLY: Installing and running MFT tools require elevated administrator privileges when User Account Control (UAC) is activated	On Windows Server 2008, you need to install the MFT MSI with elevated administrator privileges if UAC is activated. To install with elevated administrator privileges, right click over the MSI and select "Run as administrator". On Windows Server 2008, you need to run with elevated administrator privileges if UAC is activated. To open a command shell with elevated administrator privileges: Click start > Programs > Accessories, then right-click over "Command Prompt" and select "Run as administrator".		N/A
2.		No MTUSB-1 support for 64-bit architectures	MTUSB-1, the USB to I2C-compatible Bus Adapter driver is provided for 32-bit architectures only	N/A	N/A
3.		Support for multiple MTUSB-1 devices	MFT supports only one connected MTUSB-1 device at a time	N/A	Next release
4.	flint / mlxburn	Burning / querying via an MTUSB-1 takes a long time	When running mlxburn 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
5.		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
6.		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	N/A
7.	mlxburn	Unsupported flags on Windows	The flag -vpd is not supported on Windows OS	N/A	N/A

Table 4 - Known Issues and Limitations (Continued)

	Tool	Issue	Details	Workaround	To be Fixed in
8.	mst	In-band access is not supported in this release	The following actions are not supported: - Commands: mst ib add / mst ib del - Device access via lid-<number>	N/A	Next release
9.		MFT uninstall may not remove all remote devices	mst remote devices added by the 'mst remote add' command may still be present after uninstalling MFT	If you still see old remote devices after installing a new MFT, you can either run 'mst restart' or remove the *devs* directory manually (resides under the MFT install directory)	Next release
10.	wqdump	Flag '-dump ICM' may produce a large file	Running wqdump with '-dump ICM' option may produce a large file	N/A	Next release
11.		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
12.		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
13.	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