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Mellanox ConnectX®-3 Firmware Release Notes

Rev 2.31.1598

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Mellanox Technologies
 350 Oakmead Parkway Suite 100
 Sunnyvale, CA 94085
 U.S.A.
www.mellanox.com
 Tel: (408) 970-3400
 Fax: (408) 970-3403

Mellanox Technologies, Ltd.
 Beit Mellanox
 PO Box 586 Yokneam 20692
 Israel
www.mellanox.com
 Tel: +972 (0)74 723 7200
 Fax: +972 (0)4 959 3245

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1 Overview

These are the release notes for firmware Rev 2.31.1598 and UEFI driver Rev 0x0a.02.36. Firmware revision Rev 2.31.1598 supports the following features:

- Ethernet - 10GbE
- PCIe 3.0 and PCIe 2.0
- Legacy option ROM
- UEFI

1.1 Supported Cables and Modules

Please refer to the LinkX™ Cables and Transceivers web page (www.mellanox.com -> Products -> Cables and Transceivers) for the list of supported cables.

1.2 Tools, Switch Firmware and Driver Software

The following are the tools, SwitchX® firmware, and driver software which work in conjunction with this firmware release:

- Linux Ethernet Driver: MLNX_EN 2.1-1.0.0 and above
- Flexboot version 3.4.151 is included with the card firmware
- MFT version: 3.5.0 and later
- UEFI version: 10.3.30 is included with the card firmware

1.3 Supported Devices

This firmware supports the devices listed in Table 1.

Table 1 - Supported PSIDs (Sheet 1 of 2)

Device Part Number	PSID	Device Name
MCX341A-XCAN	MT_1130131023	ConnectX®-3 EN network interface card for OCP, 10GbE, single-port SFP+, PCIe3.0 x8, no bracket, RoHS R6
MCX341A-XCBN	MT_1130131023	ConnectX®-3 EN network interface card for OCP, 10GbE, single-port SFP+, PCIe3.0 x8, no bracket, with Combined UEFI/Legacy ROM, RoHS R6
MCX341A-XCCN	MT_1270110023	ConnectX®-3 EN network interface card for OCP, 10GbE, single-port SFP+, PCIe3.0 x8, no bracket, with Combined UEFI/Legacy ROM, RoHS R6
MCX341A-XCDN	MT_1270111023	ConnectX®-3 EN network interface card for OCP, 10GbE, single-port SFP+, PCIe3.0 x8, IPMI enabled, no bracket, RoHS R6
MCX341A-XCEN	MT_1270112023	ConnectX®-3 EN network interface card for OCP, 10GbE, single-port SFP+, PCIe3.0 x8, IPMI enabled, no bracket, RoHS R6

Table 1 - Supported PSIDs (Sheet 2 of 2)

Device Part Number	PSID	Device Name
MCX342A-XCAN	MT_1140110023	ConnectX-3 EN network interface card for OCP; 10GigE; dual-port SFP+; PCIe3.0 x8; RoHS R6
MCX342A-XCCN	MT_1680110023	ConnectX-3 EN NIC for OCP; 10GbE; dual-port SFP+; PCIe3.0 x8; IPMI disabled; R6
MCX342A-XCDN	MT_1680111023	ConnectX-3 EN NIC for OCP; 10GbE; dual-port SFP+; PCIe3.0 x8; IPMI enabled; R6

1.4 Tested Cables and Modules

Table 2 - Tested Cables and Modules

Speed	OPN #	Description	Vendor
10GbE	SFP-H10GB-CU1M	10GBASE-CU SFP+ Cable 1 Meter, passive	Cisco
10GbE	SFP-H10GB-CU3M	10GBASE-CU SFP+ Cable 3 Meter, passive	Cisco
10GbE	SFP-H10GB-CU5M	10GBASE-CU SFP+ Cable 5 Meter, passive	Cisco
10GbE	CAB-SFP-SFP-1M	10GBase-CR SFP+ 1-Meter Copper Twinax Cable	Arista
10GbE	CAB-SFP-SFP-3M	10GBase-CR SFP+ 3-Meter Copper Twinax Cable	Arista
10GbE	CAB-SFP-SFP-5M	10GBase-CR SFP+ 5-Meter Copper Twinax Cable	Arista

1.5 Revision Compatibility

Firmware fw-ConnectX3 Rev 2.31.1598 complies with the following programmer's reference manual:

- *ConnectX Programmer's Reference Manual (PRM), Rev 1.3 or later*, which has Command Interface Revision 0x3. The command interface revision can be retrieved by means of the `QUERY_FW` command and is indicated by the field `cmd_interface_rev`.

2 Firmware Changes and Major New Features

2.1 Firmware Rev 2.31.1598 Changes and New Feature

Table 3 - Firmware Rev 2.31.1598 Changes and New Feature

Category	Description
All	Initial release

3 Known Issues

The following table describes known issues in this firmware release and possible workarounds.

Table 4 - Known Issues

Index	Issue	Description	Current Implemented Workaround in FW	Scheduled Release (fix)
1.	Exhaustive testing limitations	For the list of exhaustive testing environment limitations, please refer to the application note <i>"Limitations of Host Management to Network Link State Through Reset/Power Cycles Application Note Rev 1.0"</i> Document Number: MLNX-15-521.	N/A	N/A
2.	GUID ConnectX®-3 Ethernet adapter cards	On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/driver utilities that read the GUID via device firmware (e.g., using <code>ibstat</code>). <code>Mlxburn/flint</code> return <code>0xffff</code> as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the latter value should be used.	N/A. Please use the GUID value returned by the fabric/driver utilities (not <code>0xffff</code>).	N/A
3.	Large MTU (9K) configuration	Trying to configure large MTU (9K) may cause the server to stop responding (hang).	N/A	Future Releases
4.	IPMI tool	Firmware version 2.14.130 and above requires IPMI tool version 1.8.10 and above.	N/A	Future Release
5.	Serial over LAN session	Serial over LAN session may hang upon server reset/driver restart.	Configure the peer switch port, which participates in STP, to immediately transition into the forwarding state (without moving through blocking/learning). This can be done using port fast / edge port functionality, depending on the switch vendor.	N/A
6.	Downgrade to previous GA requires server reboot.	Downgrading from 2.30.8000 to any previous version requires server reboot.	Reboot the server.	Future Release

Table 4 - Known Issues (Continued)

Index	Issue	Description	Current Implemented Workaround in FW	Scheduled Release (fix)
7.	SR-IOV disabled in the BIOS	When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.	Enable SR-IOV in the BIOS	Future Release