Mellanox ConnectX-3/ConnectX-3 Pro Firmware Release Notes

Rev 2.40.5048

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Release Update History

Table 1 - Release Update History

Release	Date	Description
Rev 2.40.5048	December 21, 2017	Updated Section 1.1, “Supported Devices”, on page 6
	March 13, 2017	Initial version of this firmware release

1 Overview

These are the release notes for the ConnectX®-3/ConnectX-3 Pro adapters firmware Rev 2.40.5048. This firmware supports the following protocols:

- InfiniBand – SDR, DDR, QDR, FDR10, FDR
- Ethernet - 1GigE, 10GigE, 40GigE and 56GigE[1]
- PCI Express 3.0, supporting backwards compatibility for v2.0 and v1.1

1.1 Supported Devices

This firmware supports the devices and protocols listed in Table 2.

Table 2 - Supported PSIDs (Sheet 1 of 2)

Device Part Number	PSID	Device Name	Compiled with FlexBoot	Compiled with UEFI
0Y5WKX	DEL1110001019	ConnectX®-3 VPI, dual port QSFP, FDR IB (56Gb/s) Mezz card for Dell PowerEdge	Yes	No
0XK4C4	DEL0A30002019	ConnectX®-3 VPI single port QSFP, FDR IB (56Gb/s) and 40GbE I/O card for Dell PowerEdge	Yes	No
0T483W	DEL0A30000019	ConnectX®-3 VPI single port QSFP, FDR IB (56Gb/s) and 40GbE I/O card for Dell DCS	Yes	No
0P90JM	DEL0A40000028	ConnectX®-3 Dual-port FDR10 Mezzanine I/O Card	Yes	No
0K6V3V	DEL0A20210018	ConnectX®-3 Dual-port FDR Mezzanine I/O Card Bulk pack	Yes	No
0J05YT	DEL0A10210018	ConnectX®-3 Dual-port QDR Mezzanine I/O Card Bulk pack	Yes	No
0CDMG5	DEL0A40001028	ConnectX®-3 Dual-port FDR10 Mezzanine I/O Card	Yes	No
079DJ3	DEL1100001019	ConnectX®-3 VPI adapter card, single-port QSFP, FDR IB (56Gb/s) and 40GbE, PCIe3.0 x8 8GT/s, short vented bracket, RoHS R6 for Dell PowerEdge	Yes	No
08PTD1	DEL0A20000018	ConnectX®-3 Dual-port FDR Mezzanine I/O Card Bulk pack	Yes	No

1. 56 GbE is a Mellanox propriety link speed and can be achieved while connecting a Mellanox adapter cards to Mellanox SX10XX switch series or connecting a Mellanox adapter card to another Mellanox adapter card.

Table 2 - Supported PSIDs (Sheet 2 of 2)

Device Part Number	PSID	Device Name	Compiled with FlexBoot	Compiled with UEFI
01T7NW	DEL1090001019	ConnectX-3 VPI adapter; dual-port QSFP; FDR IB (56Gb/s) and 40GbE;PCIe3.0 x8 8GT/s; Dell PowerEdge	Yes	No

1.2 Supported Cables and Modules

Please refer to the LinkX™ Cables and Transceivers web page (http://www.mellanox.com/products/interconnect/cables-configurator.php) for the list of supported cables.

1.2.1 Validated and Supported 1GbE/10GbE Cables

This firmware was tested with the 10GbE/1GbE cables and modules listed in the table below.

Table 3 - Validated and Supported 1GbE/10GbE Cables

Speed	OPN #	Description
10GbE	0V250M	SFP+ to SFP+ copper cable 1M
10GbE	0NMMT9	SFP+ to SFP+ copper cable 1M
10GbE	00F1VT9	SFP+ to SFP+ copper cable 3M
10GbE	00358VV	SFP+ to SFP+ copper cable 5M
10GbE	0W25W9	SFP+ to SFP+ copper cable 5M
10GbE	0J90VN	40GbE QSFP+ to QSFP+ copper cable 5M
10GbE	53HVN	Force 10passive copper cable, SFP+, 10 Gb/s, 3m
10GbE	MC3309130-001	Mellanox Passive Copper Cable ETH 10GBE 10GbE SFP+ 1M
10GbE	MC3309130-002	Mellanox Passive Copper Cable ETH 10GBE 10GbE SFP+ 2M
10GbE	MC3309130-003	Mellanox Passive Copper Cable ETH 10GBE 10GbE SFP+ 3M

1.2.2 Validated and Supported 25GB/s Cables

This firmware was tested with the 25GB/s cables and modules listed in the table below.

Table 4 - Validated and Supported 25GB/s Cables

Speed	OPN #	Description
25GbE	TWSTR-A00A	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, 30AWG
25GbE	TWSTR-A001	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1m, 30AWG

1.2.3 Validated and Supported 40GbE Cables

This firmware was tested with the 40GbE cables and modules listed in the table below.

Table 5 - Validated and Supported 40GbE Cables

Speed	OPN #	Description
40GbE	05NP8R	40GbE QSFP+ to QSFP+ copper cable 1M
40GbE	00FC6KV	40GbE QSFP+ to QSFP+ copper cable 3M
40GbE	MC2210130-001	Mellanox Passive Copper Cable ETH 40GBE 40GbE QSFP 1M
40GbE	MC2210130-002	Mellanox Passive Copper Cable ETH 40GBE 40GbE QSFP 2M
40GbE	MC2210130-003	Mellanox Passive Copper Cable ETH 40GBE 40GbE QSFP 3M

1.2.4 Validated and Supported FDR Cables

This firmware was tested with the FDR cables and modules listed in the table below.

Table 6 - Validated and Supported FDR Cables

Speed	OPN #	Description
FDR	MC2207130-001	Mellanox Passive Copper Cable VPI UP TO 56GB/S QSFP 1M
FDR	MC2207130-002	Mellanox Passive Copper Cable VPI UP TO 56GB/S QSFP 2M
FDR	MC2207310-015	Mellanox Active Fiber Cable VPI UP TO 56GB/S QSFP from 15M

1.2.5 Validated and Supported 100Gb/s/EDR Cables

This firmware was tested with the 100Gb/s/EDR cables and modules listed in the table below.

Table 7 - Validated and Supported 100Gb/s/EDR Cables

Speed	OPN #	Description
100Gb/s/ EDR	MCP1600-E003	Mellanox® Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m 26AWG

1.3 Tested Switches

Table 8 - Tested Switches (Sheet 1 of 2)

Speed	OPN # /Name	Description
10/40GbE	S5000	10GbE switch
100GbE	MSN2700-CS2F	Mellanox 32 Ports QSFP 100GE MNG Switch Eth W/ 2 Ps Standard Depth C2P Airflow
10GbE	Nexus B22	Cisco Nexus B22 FEX Blade switch

Table 8 - Tested Switches (Sheet 2 of 2)

Speed	OPN # /Name	Description
10GbE	5548	Cisco 10GB ETH switch
10GbE	8164F	10GbE switch
40GbE	MSX1036B-1BFR	SwitchX™ based 36-port QSFP 40GigE 1U Ethernet
40GbE	S6000	32-port 40Gb Switch
EDR	SB7700	Switch-IB(TM) based EDR InfiniBand Switch 36-port EDR 100Gb/s InfiniBand Switch
FDR	MSX6036F-1SFR	SwitchX based FDR InfiniBand Switch; 36 QSFP; Managed
FDR	MSX6036F-1BFR	SwitchX™ based FDR InfiniBand Switch, 36 QSFP ports, 1 Power Supply, Short depth, Managed, PSU side to Connector side airflow, Rail Kit and RoHS6
256GbE	SN2410-CB2	48-port 25GbE + 8-port 100GbE Open Ethernet ToR Switch System
56Gbs/FDR	670769-B21	Mellanox® IB FDR 36P Managed Switch

1.4 Tools, Switch Firmware and Driver Software

Firmware Rev 2.40.5048 is tested with the following tools, SwitchX® firmware, and driver software:

Table 9 - Tools, Switch Firmware and Driver Software

	Supported Version
MLNX_OFED	3.4-1.0.0.0/3.3-1.0.4.0
MLNX_EN (MLNX_OFED based code)	3.4-1.0.0.0/3.3-1.0.4.0
WinOF	5.22/5.10
Linux Inbox Drivers	• RH6.6 • RH6.7 • RH6.8 • RH7.2 • RH7.3 • Ubuntu 16.10
Windows Inbox Driver	• Windows Server 2008 R2 • Windows Server 2012 • Windows Server 2012 R2 • Windows Server 2016

1.5 Supported FlexBoot, UEFI

Firmware Rev 2.40.5048 supports the following FlexBoot, UEFI version:

Table 10 - Supported FlexBoot, UEFI

	Supported Version
FlexBoot	3.4.746
UEFI	15.11.40

1.6 Revision Compatibility

Firmware Rev 2.40.5048 complies with the following programmer's reference manual:

- *Mellanox Adapters Programmer's Reference Manual (PRM), Rev 2.1 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*.

1.7 Firmware Burning Notes

- Firmware Family Version (FFV)

  As of firmware v2.30.8000, all firmware images have the FFV field populated. The FFV value is identical to the firmware version but in a different format.

  FFV format example:

```
FW version:          2.30.8000
FFV:                 02.30.80.00
```

- Updating EXP_ROM

  Updating only the EXP_ROM (FlexBoot/UEFI) for firmware images which contain FFV requires an additional MFT flag: `"-allow_rom_change"`

  The following is an example for removing the EXP_ROM from the binary image using Flint (a Mellanox device located at PCI bus function 05:00.0):

```
$ flint -d 05:00.0 -allow_rom_change drom
```

2 Firmware Rev 2.40.5048 Changes and New Features

Table 11 - Firmware Rev 2.40.5048 Changes and New Features

Category	Description
UEFI	See Section 7, "UEFI Changes and Major New Features", on page 47

3 Known Issues

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

Table 12 - Known Issues

Index	Issue	Description	Workaround
1.	Downgrade to previous GA requires server reboot.	Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot.	Reboot the server.
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 ibstat). Mlxburn/flint return 0xffff 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 0xffffff).
3.	SBR assertion	SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters	N/A
4.	PCIe	On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed	Production SL230 should be used for PCIe Gen3 operation
5.	Kernel panic in SR-IOV with RH6.3 Inbox driver and VPI cards	RH6.3 Inbox driver causes kernel panic when SR-IOV is enabled on VPI cards due to driver compatibility issue.	Set the "`do_sense=false`" parameter in the [IB_TAB] in the INI of the VPI card
6.	Side band Management compatibility with SR-IOV	In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.	N/A
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
8.	MFT locking of flash semaphore	MFT tools might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.	Clear the semaphore using MFT command: '`flint -clear_semaphore`'
9.	MC2210411-SR4 module with Cable Info MAD	Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module	N/A

Table 12 - Known Issues

Index	Issue	Description	Workaround
10.	PCIe failure on temperature shock 10C/min	Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).	N/A
11.	PCIe Gen2 link	PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV	N/A
12.	Changing from an LLR to non-LLR requires driver restart	Driver restart required when switching from InfiniBand FDR link with LLR enabled to InfiniBand link w/o LLR (for example: between SwitchX® and GD4036).	N/A
13.	Bloom filter	Bloom filter is currently not supported.	N/A

14.	Firmware downgrade	When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3, the following message is displayed due to the mlxconfig tool:
		`You are trying to override configurable FW by non-configurable FW.`
		`If you continue, old FW configurations will be cleared, do you want to continue ? (y/n) [n] : y`
		`You are trying to restore default configuration, do you want to continue ? (y/n) [n] : y`
			N/A

15.	DMFS steering mode with IB in Linux	RM#363520 DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3	Upgrade to MLNX_OFED-2.1-x.x.x or later
16.	ConnectX®-3 Pro virtual function device ID	ConnectX®-3 Pro VF device ID is presented the same as ConnectX®-3 VF device ID due to driver limitations.	Use the physical function device ID to identify the device.
17.	VPD read-only fields	RM#359417 VPD read-only fields are writable.	Do not write to read-only fields if you wish to preserve them
18.	Increasing SymbolErrorCounter	When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly	N/A
19.	128 Byte CQ/EQ stride compatibility with sideband Management	Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.	N/A
20.	128 Byte CQ/EQ stride	CQ and EQ cannot be configured to different stride sizes.	N/A

Table 12 - Known Issues

Index	Issue	Description	Workaround
21.	VPI port protocol change on a port with sideband Management	Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.	1. Unplug the cable from the switch 2. Restart driver 3. Change the protocol via the appropriate tools.
22.	Link Up time	RM#499419 Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.	N/A
23.	Port identification	RM#552282 Adapter card MCX349A-XCCN does not respond to ethtool “identify” command (ethtool -p/--identify).	N/A
24.	VAM	RM #552794 Clearing persistence policy is currently not functional on Mellanox adapter cards.	N/A
25.	RDP over IPv6	RM #563136 RDP over IPv6 is currently not functional.	N/ASet the default RoCE mode in the software to RoCE v2 (also when not using RoCE)
26.	Unicast/Multicast sniffer	RM#597477 Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”	N/A
27.	Boot Entry Vector (BEV)	RM#631212 Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.	N/A
28.	Cables	RM#669662 The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.	N/A
29.	Port Link	RM#665186 56GbE link is not raised when using 100GbE optic cables.	N/A
30.	Server reboot	When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx4_en_get_drvinfo() that is called from asynchronous event handler.	N/A
31.	ibdump	RM#832298 When running ibdump, loopback traffic is mirroring into the kernel driver.	N/A
32.	Cables	RM#790963 Cisco bi-directional transceiver is not supported in the following HCAs: 08KP6W_0M9NW6 0C8Y42_0R3F0N	N/A

4 Bug Fixes History

Table 13 lists the bugs fixed in this release.

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
1.	Driver Start	**RM#890373:** Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.	2.40.5000	2.40.5030
2.	Link Down	**RM#939162:** Fixed an issue which caused the firmware not to send link_down event to the driver when running the close_port command.	2.40.5000	2.40.5030
3.	Auto Sense	**RM#861646:** Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.	2.35.5100	2.40.5000
4.	Signal Integrity	**RM#780205:** Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.	2.35.5100	2.40.5000
5.	DME pages	Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.	2.36.5100	2.40.5000
6.	Counters	**RM#877613:** Fixed an incorrect report of the `PortRcvDataVLExtended/PortXmitDataVLExtended` counters by the firmware.	2.35.5000	2.40.5000
7.	Firmware's Packet Injector	**RM#870787:** Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.	2.35.5100	2.40.5000
8.	TX requests	**RM#702752:** Fixed an issue that caused the response to TX requests to take up to 10 mili-seconds in IEEE clause 72 Link Training.	2.34.5000	2.40.5000
9.	ECN	**RM#770454:** Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state	2.36.5150	2.40.5000
10.	CQE	**RM#748455:** When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the cmdif responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.	2.36.5150	2.40.5000

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
11.	MAC address	**RM#846523:** Fixed an issue that caused the MAC address that was set from the OS using ifconfig to be not reflected in the OCBB buffer.	2.36.5150	2.40.5000
12.	ibdump	**RM#832298:** Fixed an issue where the ibdump got broken when running with loopback traffic.	2.36.5150	2.40.5000
13.	QP to Firmware ownership	**RM#745727:** Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.	2.36.5150	2.40.5000
14.	Cables	**RM#806288:** Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.	2.36.5150	2.40.5000
15.	HCA PoerXmitWait counter	**RM#778739:** Fixed an issue related to the HCA PoerXmitWait counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached 0xFF's regardless of connection to switch.	2.36.5150	2.40.5000
16.	Comm Channel	**RM#763946:** Fixed a wrong timeout calculation in get_irpc_response	2.36.5000	2.36.5150
17.	SR-IOV	**RM#827921:** Fixed an issue which caused the firmware to unconditionally set the subnet prefix in the gid0 mgid_Table to the default prefix, and not according to the configured subnet prefix.	2.36.5000	2.36.5150
18.	ISCSI	**RM#794485:** Added correct response and reason codes for ISCSI commands.	2.36.5000	2.36.5150
19.	VAM	**RM#767993:** Added correct response and reason codes for wrong partition ID.	2.36.5000	2.36.5150
20.	ECN	**RM#465451:** Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).	2.33.5000	2.36.5000
21.		**RM#648800:** Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.	2.35.5100	2.36.5000

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
22.	Cable Info MAD	**RM#636203:** Fixed a wrong returned status in cable info MAD when the cable was not connected.	2.35.5100	2.36.5000
23.	FLR device reset	**RM#669201:** Fixed failure instances when initiating FLR in the Physical Function.	2.35.5100	2.36.5000
24.	High rate steering mode	**RM#637490:** Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.	2.32.5100	2.36.5000
25.	RDP over IPv4	**RM#563136:** Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.	2.30.8000	2.35.5100
26.	SR-IOV security	**RM#592507:** Prevented a Virtual Function from injecting pause frames into the network.	2.30.8000	2.35.5100
27.	PRM:SET_PORT.mac_table	**RM#535924:** Fixed a wrong hash index calculation during inbound traffic.	2.33.5100	2.35.5100
28.	RDP over IPv4	**RM#563136:** Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.	2.30.8000	2.35.5100
29.	NC-SI	**RM#592428:** Fixed and issue causing MLNX_OEM command GET_TEMP to return a wrong value in the max_temp field	2.34.5000	2.35.5100
30.	MTU exceptions	**RM#556872:** Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.	2.32.5100	2.35.5100
31.	NVCONFIG failure	**RM#554066:** Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.	2.34.5000	2.35.5100
32.	IB/RoCE retransmission	**RM#551732:** Fixed a race in handling a duplicated “read request from middle”.	2.34.5000	2.35.5100
33.	IB traffic issues	**RM#549153:** Fixed an issue which caused lack of IB traffic on SR-IOV VPI.	2.33.5000	2.35.5100
34.	NVRAM issues	**RM#548168:** Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.	2.34.5000	2.35.5100
35.	IB APM	**RM#541877:** Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.	2.33.5100	2.35.5100

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
36.	QP alternate context error	**RM#589609:** Fixed an issue which caused a firmware internal error when handling QP alternative context.	2.34.5000	2.35.5100
37.	Flow Control security issue	**RM#431315:** Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.	2.32.5100	2.35.5100
38.	Wrong temperature reporting	RM#577076 Wrong temperature reporting when server is in Auxiliary mode after Moonshot AC power cycle.	2.34.5000	2.35.5100
39.	Link down on MCX-349A-XCCN	RM#441539 Fixed a link down issue with 100MbaseT speed.	2.33.5100	2.34.5000
40.	Packet Ethertype	RM#434267 Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.	2.30.8000	2.34.5000
41.	Broadcast traffic lost	RM#536791 Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.	2.33.5100	2.34.5000
42.	RSS QP update failure	Fixed a failure to update RSS QP in steering rules.	2.33.5100	2.34.5000
43.	Low link speed	RM#516446 Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch	2.33.5100	2.34.5000
44.	40GbE Link down	RM#509713 Fixed a failure to read cable parameter which caused link failure on 40GbE dual port OCP devices.	2.33.5100	2.34.5000
45.	RDMA read retransmission	RM#517941 Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests.	2.33.5100	2.34.5000
46.	VM QoS	RM#523786 Fixed a case where the actual bandwidth did not match the user settings in VM QoS.	2.33.5100	2.34.5000
47.	Sideband communication loss	RM#517351 Fixed a case where on rare cases, communication to BMC was lost during driver initialization.	2.33.5100	2.34.5000
48.	LED behavior	RM#492430 Fixed a wrong LED behavior when the driver is disabled in the following adapter cards: MCX346A-BCQN, MCX-345A-BCQN.	2.33.5100	2.34.5000

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
49.	Link down on cable plugging	RM#510935 Fixed an issue with cable reading, which caused the link not to raise	2.33.5100	2.34.5000
50.	PRM: EQN range	RM#501749 Set the maximum EQN number to 1024.	2.30.8000	2.34.5000
51.	Vital Product Data read failure	RM#514720 Fixed a rare issue with VPD init flow which caused read failures.	2.31.5050	2.34.5000
52.	PRM: Statistic counters not reported	RM#519904 Fixed an issue with RX size counter not being reported.	2.30.8000	2.34.5000
53.	RoCE/InfiniBand reliable connection	RM#486082 The first Read response was not treated as implicit ACK.	2.30.8000	2.33.5100
54.	40GbE Link up time	RM#461970 Reduced a long 40GbE link up time with Cisco Nexus3064 and Arista-7050S	2.32.5100	2.33.5100
55.	Promiscuous mode	Fixed promiscuous mode compatibility with A0-DMFS steering.	2.32.5100	2.33.5000
56.		RM#433344 Fixed promiscuous mode compatibility when NC-SI is enabled and configured.	2.32.5100	2.33.5000
57.	NC-SI OEM commands	RM#480037 Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.	2.32.5100	2.33.5000
58.	Packet Drops	RM#463613 Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.	2.32.5100	2.33.5000
59.	Side Band Functionality	RM#462058 Fixed long management communication loss and SOL hang during reboot cycles.	2.32.5100	2.33.5000
60.		RM#408615 Fixed wrong processing of inbound traffic towards BMC which caused communication loss.	2.32.5100	2.33.5000
61.		RM#431178 Fixed management link loss upon closing port interface through the driver.	2.32.5100	2.33.5000
62.	NC-SI on SFP+ Adapter Cards	RM#466306/468870 Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.	2.32.5100	2.33.5000
63.	Port Links	RM#423472 Fixed an issue which caused a link down on a port when the cable was removed from the other port.	2.32.5100	2.33.5000

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
64.	Inbound Packet Processing	RM#457685 Fixed a rare case where packet with length zero got stuck in hardware queues.	2.32.5100	2.33.5000
65.		RM#431123 Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.	2.32.5100	2.33.5000
66.	Asynchronous Event Notification (AEN)	RM#418910 Fixed an issue which caused AEN to be sent after channel reset.	2.32.5100	2.33.5000
67.	Bandwidth Degradation with QoS	RM#409894 Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.	2.31.5050	2.33.5000
68.	Port Link Up Time	RM#409894 Fixed an occasional long link up time with 10GbE based devices.	2.32.5100	2.33.5000
69.	SFP Cable Reading	RM#438000 Fixed an issue preventing cable readings from i2c slave address 0x51	2.32.5100	2.33.5000
70.	PCIe Gen3 Equalization	RM#429495 Fixed a wrong parity bit calculation when transmitting PCIe TS1 packets.	2.32.5100	2.33.5000
71.	PCIe Power Management	RM#400184 Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.	2.32.5100	2.33.5000
72.	PCIe width Degrade	RM#414914 Fixed a rare case with alignments state machines which caused occasional width degradation.	2.32.5100	2.33.5000
73.	Rate Limiters Hang with ECN/QCN Enabled	RM#397967 Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN)	2.32.5100	2.33.5000
74.	Unexpected Completion Syndrome with Status 0x77	RM#425700 Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.	2.30.8000	2.33.5000
75.	IB Spec MADs	RM#432155Fixed an issue which caused `SetPortInfo` to return a good status when receiving invalid `LinkSpeedEnabled` value.	2.32.5100	2.33.5000
76.	GPIO Mapping	RM#468870Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander	2.32.5100	2.33.5000
77.	Steering Mode	Fixed an issue where firmware overrides the steering mode that was chosen by the driver.	2.32.5100	2.33.5000

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Index	Issue	Description	Discovered in Release	Fixed in Release
78.	Port sensing	RM#463615Fixed invalid return sensing results occurred when the link was up.	2.32.5100	2.33.5000
79.		RM#429579Fixed an issue causing the sensing result to be delayed when cable was unplugged.	2.32.5100	2.33.5000
80.	Wrong link type display	RM#417741Fixed an issue causing the link type to be displayed as ETH when set to AUTO.	2.32.5100	2.33.5000
81.	WoL Functionality	RM#440027Fixed 2us glitch in Wake Up signal.	2.32.5100	2.33.5000
82.	RoCE default configuration	RM#387047Fixed a mismatch between the RoCE default configuration and the driver's default RoCE mode	2.32.5100	2.33.5000
83.	Promiscuous Mode with Side Band management incompatibility	RM#433344Fixed an issue preventing the promiscuous QP receiving traffic whenever it was set on a port that had side-band management protocol enabled.	2.32.5100	2.33.5000
84.	Port sensing	RM#427810Fixed a bad sensing result reported to the driver and a wrong link type raised vs. Switch-IB.	2.32.5100	2.33.5000
85.	InfiniBand Multicast	RM#441131Fixed an issue related to attaching IB multicast rule on VPI cards.	2.32.5100	2.33.5000
86.	IBDump performance	Fixed performance degradation when running IBDump	2.30.8000	2.32.5100
87.	PCIe link Disable/ Enable	RM#416928Occasionally, a link training timeout occurred in EQ phase0 during disable/enable test.	2.31.5050	2.32.5100
88.	40GbE QoS	Improved strict bandwidth mode functionality	2.30.8000	2.32.5100
89.	Port Counters reporting	RM#417689/RM#417604Fixed an issue with the PortRcvPkts counter always displaying zero value.	2.31.5050	2.32.5100
90.	GMP MADs in SecureHost	RM#418175Fixed an issue with processing GMP MADs with SET method in SecureHost mode.	2.31.5050	2.32.5100
91.	NC-SI over IPv6	RM#417195Fixed an issue causing a wrong usage of MCG size when configuring Global Multicast filter	2.31.5050	2.32.5100
92.	NC SI link failure	RM#396165Disabling the first port occasionally causes second port TX failure.	2.31.5050	2.32.5100

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Index	Issue	Description	Discovered in Release	Fixed in Release
93.	10GbE link failure	RM#389541Fixed a mismatch in links status reported. The adapter reports links as down while the switch perceives them as up	2.31.5050	2.32.5100
94.	Link failure	RM#392288Fixed an occasional 40GbE link failure with SCM5 Switch blade	2.31.5050	2.32.5100
95.	ExtPortInfo MAD	RM#392199Fixed a wrong FDR10 speed reporting in MAD	2.31.5050	2.32.5100
96.	IB link failure	RM#397903Fixed an issue preventing theports to to rise up when set to FDR10 vs QDR	2.31.5050	2.32.5100
97.	40GbE link failure	RM#388327Fixed an occasional link failure vs Arista switch	2.31.5050	2.32.5100
98.	RDMA Write retransmission	RM#412450Retransmission started from the first PSN of message instead of the last acknowledged PSN	2.30.3200	2.32.5100
99.	Firmware burning	RM#401399Firmware hangs when receiving `GeneralInfoMad` during inline firmware burning	2.30.3200	2.32.5100
100.	PCIe PML1	RM#399366,387863L1 flow adjustments and threshold tuning	2.31.5050	2.32.5100
101.	PCIe reset	RM#398004Fixed a rare hanging issue during PERST_ assertion	2.31.5050	2.32.5100
102.	PCIe Gen3 EQ	RM#392933Wrong coefficients were reported during phase3	2.31.5050	2.32.5100
103.	Boot	Fixed an issue causing wrong behavior due to reset timing	2.31.5050	2.32.5100
104.	VXLAN/NVGRE	RM#409948Fixed lack of steering options	2.30.8000	2.32.5010
105.	SMBUS	RM#409011Fixed long timeout issues	2.31.5050	2.32.5100
106.	NVRAM	RM#409998Fixed NVRAM write issues in driver-less mode	2.31.5050	2.32.5100
107.	40GbE Link support	RM#408020Fixed 40GbE link support in aux mode	2.31.5050	2.32.5100
108.	NC-SI	RM#408414Dropped commands with non-existing channel ID	2.31.5050	2.32.5100
109.	PRM PortInfo command	RM#394311/408483Fixed issues in extended speed reporting	2.31.5050	2.32.5100
110.	Trap 257/8(IB)	RM#403705Fixed bad QP reporting in trap 257/8	2.30.8000	2.32.5100

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111.	Bad Q_KEY errors	RM#402793Fixed an issue causing false bad q_key error messages	2.30.8000	2.32.5100
112.	PFC	RM#404640Fixed Pause Frame opcode mismatch	2.30.8000	2.32.5100
113.	Sideband Communication	RM#400883Fixed communication loss upon PCIe error detection	2.31.5050	2.32.5100
114.	NC-SI	RM#348276Fixed wrong channel value in the SELECT/DESELECT PACKAGE commands	2.30.8000	2.31.5050
115.		RM#355833Fixed an issue caused response packet to include 4 extra bytes	2.30.8000	2.31.5050
116.		RM#352300Fixed wrong reason code value returned when using Set Link command with unsupported speed.	2.30.8000	2.31.5050
117.		RM#372909Added protection from bad MAC address given by BMC	2.30.8000	2.31.5050
118.	False Link Indication	Fixed an issue causing the device to report false link up when no cable is connected.	2.30.8000	2.31.5050
119.	PCIe	RM#333854Removed false TX pulse after PERST_ de-assertion	2.30.8000	2.31.5050
120.		RM#347082Fixed FLR capability bit inconsistency when SR-IOV is enabled.	2.30.32002.30.8000	2.31.5050
121.		RM#126811Fixed an issue with the device not reporting PCIe related errors.	2.30.8000	2.31.5050
122.	SDR instead of DDR ConnectX-3 to SX6036	RM#360360When a link is configured to DDR in a setup of ConnectX-3 to SX6036, SDR link is established instead.	2.30.8000	2.31.5050
123.	VXLAN	VXLAN used the wrong default UDP port. the UDP port number was changed to 4789.	2.30.8000	2.31.5050
124.		RM#383099Fixed wrong setting of the UDP destination port for VXLAN.	2.30.8000	2.31.5050
125.	Flow Steering	Fixed an internal error caused when moving to the DMS mode with IPMI/NC-SI enabled.	2.30.8000	2.31.5050
126.	FDR speed degradation with 0.5m cables	In a back-to-back setup of FDR cards connected with a 0.5m FDR cable, a link may be established as FDR10 instead of FDR.	2.30.32002.30.8000	2.31.5050
127.	PCI interrupt	Fixed issues related to working with PCI legacy interrupts.	2.30.8000	2.31.5050

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Index	Issue	Description	Discovered in Release	Fixed in Release
128.	TCP/UDP Checksum	Fixed wrong checksum calculation for short packets which were padded by the software.	2.30.8000	2.31.5050
129.	MFT tool deadlock	RM#371530Reading PCIe configuration space after using the MFT flint tool caused the device to crash.	2.10.00002.30.8000	2.31.5050
130.	Side band packet loss	RM#378750Fixed occasional packet loss over IPMI	2.30.8000	2.31.5050
131.	Eye opening MAD	RM#378178Fixed wrong values reported in the Eye opening MAD.	2.30.8000	2.31.5050
132.	PCIe Link width	RM#372794/383729Fixed occasional link width degrades during link negotiation and link transitions from L1 state.	2.30.8000	2.31.5050
133.	PCIe signal detect	RM#372794Fixed adjust signal detect thresholds	2.30.8000	2.31.5050
134.	Error counters	RM#354360PortExtendedSpeedsCounters MAD counters were mistakenly increased while LLR was active	2.30.8000	2.31.5050
135.	PCIe Gen3 Equalization	RM#354125Lane reversal was not considered when configured TX parameters	2.30.8000	2.31.5050
136.	Reset On LAN (ROL)	RM#359319Fixed ROL factory MAC usage when a FlexBoot address was given.	2.30.8000	2.31.5050
137.	Flow Control	RM#359354Fixed Pause frames factory MAC usage when a FlexBoot address was given.	2.30.32002.30.8000	2.31.5050
138.	WOL/ROL	RM#336331The device did not different between WOL/ROL packets.	2.30.8000	2.31.5050
139.	PortInfo MAD	RM#13401Fixed a set of extended fields in PortInfo MAD which did not function.	2.10.00002.30.8000	2.31.5050
140.	LLR cell size	RM#342184Adjusted LLR cell size according to the MLPN negotiation of ib_128b_llr	2.30.8000	2.31.5050
141.	Link max speed	RM#367756The max speed restriction was active in full power mode instead of standby mode only.	2.30.8000	2.31.5050
142.	InfiniBand Automatic Path Migration	RM#362812The InfiniBand Path migration did not work with GRH. http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7	2.10.00002.30.8000	2.31.5050
143.	Packet steering	RM#362468Reading MGM after writing it returned wrong members count.	2.30.8000	2.31.5050

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144.	RSS QP context	RM#372480Fixed corruption of the RSS hash key given by the driver.	2.30.8000	2.31.5050
145.	10Gb/s QoS	RM#193130Fixed QoS rate limit bandwidth offset.	2.30.32002.30.8000	2.31.5050
146.	ExtendedPortInfo MAD	RM#365884Fixed FDR10 speed_en reporting.	2.30.8000	2.31.5050
147.	Management link	RM#354487Fixed long management link com loss.	2.30.8000	2.31.5050
148.	PRM Query_Port Command	RM#358772The command results reported both link types active at the same time.	2.30.32002.30.8000	2.31.5050
149.	Link not raising	RM#376157Fixed collision between forcing phy type and port sensing.	2.30.8000	2.31.5050
150.	Core clock reporting	RM#372353Fixed a wrong core clock freq reporting in QUERY_HCA command.	2.30.32002.30.8000	2.31.5050
151.	56GbE link issues	RM#379940Fixeds occasional link failure when 56GbE is enabled	2.30.8000	2.31.5050
152.	RX calibration	RM#359331Fixed max eye margins to be per protocol.	2.30.8000	2.31.5050
153.	VPI symbol errors	RM#354443perfquery reported wrong error symbol on ConnectX©-3 VPI mode: IB, ETH.	2.30.8000	2.31.5050
154.	Symbol error on ConnectX-3 Pro dual-port QDR with MC2207312-030 AOCs	RM#197609On ConnectX-3 Pro dual-port QDR and FDR/FDR10 switch setups, symbol errors may occur with MC2207312-030 AOCs.	2.30.8000	2.31.5050
155.	Symbol error on Falcon QDR against FDR switches with MC2207126-004 copper cables	RM#197612Symbol errors occur on ConnectX-3 Pro dual-port QDR connected to FDR switches with MC2207126-004 copper cables.	2.30.8000	2.31.5050
156.	Changing from an LLR to non-LLR requires driver restart	Driver restart required when switching from InfiniBand FDR link with LLR enabled to InfiniBand link w/o LLR (for example: between SwitchX® and GD4036).	2.30.8000	2.31.5050
157.	40GbE link up issue	On rare occasions, the adapter card may fail to link up when performing parallel detect to 40GbE.	2.30.8000	2.30.8050

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158.	Automatic Path Migration (APM)	Automatic Path Migration (APM) did not update the new MGIDs from the Alternate Path.	2.30.8000	2.30.8050
159.	PCIe correctable errors in speed change	When PCIe Gen3 is enabled, temporary correctable errors might occur when changing speed between PCIe Gen1 and PCIe Gen2.	2.10.0000	2.30.8000
160.	Incompatibility between Device managed Flow steering and NC-SI	Device managed Flow steering and NC-SI cannot be enabled simultaneously.	2.11.0500	2.30.8000
161.	40GbE is not supported in Auto-Sensing	Auto-Sensing is not supported with 40GbE connections in VPI cards	2.10.0000	2.30.8000
162.	InfiniBand port_rcv_pkts counter	RM#219993InfiniBand port_rcv_pkts counter over counts when LLR is enabled on the port. The port_rcv_pkts counter continues to count packets even when no traffic is received.	2.10.0000	2.30.8000
163.	PXE	PXE is currently not supported in 40GbE in VPI cards	2.10.0000	2.30.8000
164.		PXE is currently not supported in QSFP to SFP+ hybrid cable	2.10.0000	2.30.8000
165.	sense_port failure	Ethernet cards failed to work with MLNX-_OFED unless the do_sense was disabled in the INI	RH6.4 driver	MLNX-_OFED 2.0-3.0.0
166.	Link errors	RM#348501BER of 10^{-11} with 7M copper SFP+ 10GbE cable against Arista switch	2.30.3200	2.30.8000
167.	Linkup Failure vs SwitchX®-2 based switch	RM#350852Port failed to link up in 10GbE if it was previously linked up in 40GbE vs. SwitchX®-2 based switch	2.30.3200	2.30.8000
168.	NC-SI 40GbE reporting	RM#197996Added 40GbE reporting in get_link_status NC-SI command	2.30.3000	2.30.8000
169.	Packets drop in receive when DMFS enabled	RM#292045Steering entries overlapping caused packets to drop in the receive due to wrong hash size calculation of QP hash folding.	2.30.3000	2.30.8000
170.	PCIe speed degrade	RM#207866Occasionally, PCIe speed degraded during speed change test	2.30.3000	2.30.8000
171.	Link failure vs Cisco	RM#301956Device failed to raise the link against Cisco b-22 Blade switch	2.30.3000	2.30.8000

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172.	False RX drops indication	RM#301956Fixed an issue causing RX drop counters to falsely increase when using MLNX_OFED 2.0.-3.0.0	2.30.3000	2.30.8000
173.	NC-SI wrong command info	RM#307087Wrong port information provided in get link status command.	2.30.3000	2.30.8000
174.	Port interfaces stay down	RM#303426After firmware upgrade, the device failed to raise port interface.	2.30.3000	2.30.8000
175.	SR-IOV guest failure	RM#270160Guest VM failed to execute firmware commands operations and crashed.	2.30.3000	2.30.8000
176.	ConnectX®-3 Pro: MCG write timeout	RM#294397PRM WRITE_MCG command caused the device to hang.	2.30.3000	2.30.8000
177.	ConnectX®-3 Pro: Driver start failure	RM#322721Driver could not start when NIC was configured for NC-SI SNP.	2.30.3000	2.30.8000
178.	SR-IOV command timeouts	RM#326715Guest MSIX vectors were not assigned properly.	2.30.3000	2.30.8000
179.	PCIe speed degrade/ link down	RM#299251Occasionally, the PCIe link experienced speed degrading or link falling in driver restart/reboot	2.30.3000	2.30.8000
180.	QP Sniffer issue	Fixed a hash fold issue for sniffer QPs	2.30.3000	2.30.8000
181.	Long link up time	RM #216687A long link up time is experienced in the HCA connected to a 10GbE cable against the MSX1012 switch	2.30.3000	2.30.8000
182.	PCIe TS parity bit	RM#213219/208709In recovery.EQLZ state TSs used incorrect parity bit calculation	2.30.3000	2.30.8000
183.	PRM Init_port failure	RM#230457Init port command may fail on a system with NC-SI	2.30.3000	2.30.8000
184.	PortInfo MAD link width support	RM#203632Wrong link_width_support is reported occasionally in PORT_INFO MAD	2.30.3000	2.30.8000
185.	Wrong Virtual Function completer ID	RM#228422In SR-IOV a wrong completer ID is added in some of the VF completion packets	2.30.3000	2.30.8000
186.	PCIe PML1 failures	RM#206369Fixed occasional failures upon entering and exiting L1 state in PCIe Gen1 & 2 speeds	2.30.3000	2.30.8000
187.	IB: APM failures in ConnectX-3 Pro	RM#229255Occasional FSM transition timeouts are seen on APM requests	2.30.3000	2.30.8000
188.	ipmitool OOB commands	On rare occasions, ipmitool OOB commands failed upon send payload.	2.30.3000	2.30.8000

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189.	Sideband communication	On rare occasions, after stress of power cycles, side- band communication might disconnect.	2.30.3000	2.30.8000
190.	Expansion ROM partition	Expansion ROM partition not found	2.30.3000	2.30.8000
191.	AC power cycle issue	In certain servers, AC power cycle may cause BMC connectivity loss.	2.30.3000	2.30.8000
192.	PXE issue	Occasionally, during DC cycle stress, failure occurred in PXE due to race condition	2.30.3000	2.30.8000
193.	SMBUS communication	SMBUS communication lost during AC/DC cycle	2.30.3000	2.30.8000
194.	MTU configuration	Temporal wrong MTU configuration during initialization may cause Serial over LAN disconnection	2.30.3000	2.30.8000
195.	IPMI connectivity	IPMI OOB communication lost during stress	2.30.3000	2.30.8000
196.	iperf stress test	Packet drops during iperf stress w/ different MSS	2.30.3000	2.30.8000
197.	Loss of connection to BMC upon firmware upgrade	Upgrading from firmware v2.10.3898 may cause loss of connection to BMC.	2.30.3000	2.30.8000
198.	Running rmmod may cause unexpected behavior	Removing the mlx4_en driver using the "rmmod" command, may cause unexpected behavior	2.30.3000	2.30.8000
199.	IPMI connectivity	On rare occasions, after stress of BMC cold reset, link failure might occur	2.30.3000	2.30.8000
200.	Flexboot 3.4.100-UEFI-4.0.410 BIOS menu	Enter the BIOS menu while using FlexBoot 3.4.100- UEFI-4.0.410 may cause the server to stop responding (hang)	2.30.3000	2.30.8000
201.	ROL failure	ROL failure after disassembling the driver on the SUT	2.30.3000	2.30.8000
202.	IPMI link failure	IPMI link failure after disabling the WoL or disassembling the driver	2.30.3000	2.30.8000
203.	WoL and RoL issues	WoL and RoL issues caused when the IPMI is disabled	2.30.3000	2.30.8000
204.	A link flapping issue	Alignment marker arrival can no longer drop the link.	2.30.3000	2.30.8000
205.	IPMI - SOL traffic performance improvement	SOL with multiple data streams occasionally hang	2.30.3000	2.30.8000

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206.	RoCE	RoCE does not function properly after running "ethtool ethX”	2.30.3000	2.30.8000
207.	PCI link errors	PCI link errors false indication. Cleared errors during PCIe link retraining	2.30.3000	2.30.8000
208.	PCIe speed change	RM#209199Fixed a false indication for incoming PCIe speed change request	2.30.3000	2.30.8000
209.	No NC-SI after PXE teardown	Management transport was not supported, after PXE driver teardown (unload). Fixed the flow to issue software reset, after the driver was stopped	2.30.3000	2.30.8000
210.	Ports PLL calibration issue	RM #199503PLL calibration were affected by operating point configuration	2.30.3000	2.30.8000
211.	Cable Info MAD issue	RM #208874Wrong cable info was received when using the MC2210411-SR4 module	2.30.3000	2.30.8000
212.	Revision ID	Updated the Revision ID of Node Info and General Info MADs to reflect HW Rev ID instead of 0	2.30.3000	2.30.8000
213.	Port Error counters reset	RM #190185Port error counters were not cleared upon XAUI/SGMII link up	2.30.3000	2.30.8000
214.	RDMA retransmission on ConnectX®-3 Pro	RM #211404RDMA retransmission failed in specific scenario of receiving NAKs on ConnectX®-3 Pro due to bad static configuration	2.30.3000	2.30.8000
215.	NMI on PCIe Gen2 server	RM #107249Fixed a PCIe Gen2 firmware flow to prevent NMI during hibernation on PCIe Gen2 server	2.30.3000	2.30.8000
216.	Access to closed resources	RM#203944Fixed a possible access to unmapped resource memory	2.30.3000	2.30.8000
217.	Slow link establishment in NC-SI	Slow link establishment in NC-SI caused due to slow cable reading in boot	2.30.3000	2.30.8000
218.	PCIe speed change	RM#193971Occasionally, a failure occurred in speed when changing to Gen2	2.30.3000	2.30.8000
219.	PXE teardown issue	PXE might halt during teardown	2.30.3000	2.30.8000
220.	InfiniBand loopback	InfiniBand loopback was blocked during link negotiation on the same port	2.11.0500	2.30.8000
221.	Voltage scaling	Fixed process voltage scaling issue	2.30.3000	2.30.8000
222.	DMA address 0x0	Fixed a possible read access to DMA address 0x0	2.11.0500	2.30.8000
223.	cqe issue	Fixed miss cqe issue due to interrupt moderation	2.11.0500	2.30.8000

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224.	Cable reading issue	Fixed a rare cable reading issue upon cable insertion	2.30.3000	2.30.8000
225.	Linkup issue	Fixed a linkup issue against MSX60XX FDR switch	2.30.3000	2.30.8000
226.	LLR Vendor Specific MAD	LLR Dropped cell counter reported CSN error	2.11.0500	2.30.8000
227.	PXE boot failure	On rare occasions, PXE boot fails due to a firmware issue interfering with the PXE load from the card's flash. Upon failure, the following message is received: “Payload inaccessible - cannot continue”	2.30.3000	2.30.8000
228.	MLNX_OFED v2.0-2.0.3 reports ETH RX errors	MLNX_OFED v2.0-2.0.3 reported RX errors when the driver operated in the ETH only mode.	MLNX-_OFED v2.0.2.0.3	2.30.3200
229.	SR-IOV guest communication channel error	RM#270160Under certain conditions, SR-IOV guest experienced request timeouts and got stuck.	2.11.0500	2.30.3200
230.	No NC-SI after PXE teardown	Management transport was not supported, after PXE driver teardown (unload). Fixed the flow to issue software reset, after the driver was stopped.	2.11.0500	2.30.3000
231.	Revision ID	Updated the Revision ID of Node Info and General Info MADs to reflect hardware Rev ID instead of 0	2.11.0500	2.30.3000
232.	Ports PLL calibration issue	RM #199503PLL calibration were affected by operating point configuration	2.11.0500	2.30.3000
233.	Port Error counters reset	RM #190185Port error counters were not cleared upon XAUI/SGMII link up	2.11.0500	2.30.3000
234.	Receiver SerDes tuning	Enhanced the receiver SerDes tuning for 10GE, to support specific 10GbE QSFP to SFP+ splitter cables	2.11.0500	2.30.3000
235.	Access to closed resources	RM#203944Fixed a possible access to unmapped resource memory	2.11.0500	2.30.3000
236.	Slow link establishment in NC-SI	Slow link establishment in NC-SI caused due to slow cable reading in boot	2.11.0500	2.30.3000
237.	PCIe speed change	RM#193971Occasionally, a failure occurred in speed when changing to Gen2	2.11.0500	2.30.3000
238.	PXE teardown issue	PXE might halt during teardown	2.11.0500	2.30.3000
239.	InfiniBand loopback	InfiniBand loopback was blocked during link negotiation on the same port	2.11.0500	2.30.3000

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
240.	Voltage scaling	Fixed process voltage scaling issue	2.11.0500	2.30.3000
241.	DMA address 0x0	Fixed a possible read access to DMA address 0x0	2.11.0500	2.30.3000
242.	cqe issue	Fixed miss cqe issue due to interrupt moderation	2.11.0500	2.30.3000
243.	Cable reading issue	Fixed a rare cable reading issue upon cable insertion	2.11.0500	2.30.3000
244.	PXE boot failure	On rare occasions, PXE boot fails due to a firmware issue interfering with the PXE load from the card's flash. Upon failure, the following message is received: “Payload inaccessible - cannot continue”	2.11.0500	2.30.3000
245.	Momentarily packet drop on one port while the other port goes down	When the same VLAN is configured for both ports and one port goes down, the second port may suffer a momentarily packet drop	2.11.0500	2.30.3000
246.	Advanced Error Reporting	Fixes to Advanced Error Reporting according to the PTC (PCIe compliancy) Test failures	2.11.0500	2.30.3000
247.	10GbE link remains down after changing to a 40GbE link	When changing link connection between 40Gbe to 10Gbe, the port might stay down until the next driver restart.	2.11.0500	2.30.3000
248.	Race in PCIe L1 flow	The device may enter an L1 power state before completing an incoming configuration request if it arrived before the power state change ack for Root Complex	2.11.0500	2.30.3000
249.	Wrong link speed after several cable reinsertions	During repeated cable reinsertion, the link may raise in a lower speed than expected/	2.11.0500	2.30.3000
250.	Changing port protocol from ETH to IB requires driver restart	Bad configuration of `ib_protocol` when setting the port to InfiniBand after exchanging it from Ethernet/RoCE on the same port	2.11.0500	2.30.3000
251.	Rare NMI error on HP servers when using PXE	On rare occasions, an NMI error is received when stopping PXE boot in the middle of an action on HP servers	2.11.0500	2.30.3000
252.	Race in PCI configuration handling	The system was unresponsive when a race between PCI configuration cycles handling in hardware and firmware occurred.	2.11.0500	2.30.3000
253.	RoCE breaks IPv6 traffic	IPv6 packets dropped while RoCE was enabled	2.11.0500	2.30.3000

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
254.	Link reset, HCA to SwitchX®	On rare link reset occasions, an HCA to SwitchX® link may remain in ARM state after SwitchX reboot, and not reach the Active state.	2.11.0500	2.30.3000
255.	40GbE switches link down upon repeated insertion and removing of cables	When repeatedly plugging out and plugging in cables to/from a 40GbE switch, the link remains down.	2.10.0800	2.11.0500
256.	FDR/QDR vs DDR switch	The link is raised as SDR rather than DDR	2.10.0800	2.11.0500
257.	0.5M, 1M Copper FDR cable support	0.5M, 1M Copper FDR cables (Paralink11, Paralink14) are not supported in back to back connection.	2.10.0800	2.11.0500
258.	Changing FDR cables from Fiber to Copper	Changing FDR cables from Fiber to Copper and vice versa might cause link speed degradation from FDR to FDR10 or FDR10 to QDR.	2.10.0800	2.11.0500
259.	Changing 40GbE connection	Changing 40GbE connection from back to back to a switch port and vice versa might cause the link to stay down in the ConnectX®-3 side.	2.10.0800	2.11.0500
260.	SDR vs QDR switch	InfiniBand link vs QDR switch rises as DDR or SDR	2.10.0800	2.11.0500
261.	QDR link up time	On rare occasions, the QDR link up time between an FDR card and a QDR device was up to 4 minutes	2.10.0800	2.11.0500
262.	QDR Link stability	QDR Link stability between ConnectX®-3 and InfiniScale® IV	2.10.0800	2.11.0500
263.	Signal integrity issues	Signal integrity issues in all speeds	2.10.0800	2.11.0500
264.	PCI correctable error	Fixed bad PCI reporting	2.10.0800	2.11.0500
265.	RoCE re-transmission	Not re-transmitting from the beginning of the message but from PSN NAK.	2.10.0800	2.11.0500
266.	RoCE	R-RoCE ignored SMAC check	2.10.0800	2.11.0500
267.	Function Level Reset (FLR)	FLR to PPF in SRIOV	2.10.0800	2.11.0500
268.		FLR in no-driver mode	2.10.0800	2.11.0500
269.	SR-IOV	Comchannel bug fix	2.10.0800	2.11.0500

Table 13 - Fixed Bugs List

Index	Issue	Description	Discovered in Release	Fixed in Release
270.	40GbE performance	40GbE full wire speed was not reached with former cards configuration for MCX314 and MCX313 40GbE cards. **Fix:** Increased core frequency to support 40GbE full wire speed. This change requires 1V input. **Affected cards:** MCX313A-BCB, MCX-314A-BCB	2.10.0700	2.10.0800
271.		The ConnectX® card was not receiving frames with minimum IPG when configured to 40GbE. Fix: Updated firmware configuration. Affected cards: All cards capable of 40GbE speed	2.10.0700	2.10.0800
272.	GUIDs for RoCE	Ethernet only cards did not have GUIDs flashed on the device. This caused RoCE to fail once two or more cards were active on the same machine. **Fix:** The firmware generates the GUIDs from the flashed MACs for ETH only cards. **Affected cards:** All ETH only cards.	2.10.0700	2.10.0800
273.	40GbE signal integrity	Signal integrity improved in 40GbE speed.	2.10.0000	2.10.0700
274.				
275.	PCIe Gen3 receiver sensitivity due to BIOS changes	Due to BIOS changes required by latest Intel guidelines for PCIe Gen3, a sensitivity in PCIe eye_centering algorithm caused link degradation on some platforms.	2.10.0600	2.10.0620
276.	FDR, FDR10, 10GbE XFI/SFI signal integrity	Signal integrity improved for the following speeds: FDR, FDR10, 10GbE XFI/SFI.	2.10.0000	2.10.0600
277.				
278.	VDD_MODE GPIO changed after reset	In boards with VDD_MODE GPIO, the GPIO was dropped after reset hence, causing voltage to be reduced to 0.9v. **Fix:** The GPIO in boards with VDD_-MODE GPIO is no longer dropped across resets.	2.10.0000	2.10.0600
279.	PCIe configuration type1 requests were dropped after a PCIe hot reset	After a PCIe hot reset, PCIe configuration type1 requests were dropped instead of being replied as unsupported. **Fix:** A proper notification is sent every time PCIe configuration type1 requests are dropped.	2.10.0000	2.10.0600

5 Firmware Changes and New Feature History

Table 14 - Firmware Changes and New Feature History

Firmware Version	Description
2.40.5030	• **Temperature thresholds:** Added temperature thresholds high/low default for MAD sensing and NCSI/IPMI OEM commands. • **MTU Header Size:** Added a new field to "set port" command which notifies the firmware what is the user_mtu size. • **ifconfig:** Added a protection mechanism which ensures the firmware drops packets which are received in internal QPs and disables the WQE producer fetching. • **Bug fixes:** See Section 4, “Bug Fixes History”, on page 15
2.40.5000	• **Link Down Counters:** Added Ethernet Link down counter. • **Bug fixes:** See Section 4, “Bug Fixes History”, on page 15
2.36.5150	• **Q-in-Q in VST Mode:** Added support for VLAN insertion offload, and VLAN stripping for raw Ethernet frames, by controlling CV and SV bits in QPC. • **Bug fixes** - see “Bug Fixes History” on page 15
2.36.5000	• RM#578187**Packet Steering:** Enables steering packets to receive queues according to Ethertype matching (See PRM 2.1 for more information). • **RX Arbiter:** Adds support for additional rate values. • RM#669209**Performance counter for WQE fetch:** Counters that count the number of repeated Send WQE cache lookups that resulted in a miss. • **Checksum Calculation on Image/Device:** Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. • For further information, please refer to MFT User Manual.
2.35.5100	• New performance and back-pressure counters command via PRM (For further information, please refer to the PRM) • Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM) • Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM) • CQ creation offload by software • Support for rst2rts command • Invalidates a TLV during the firmware boot stage • A new counter for the `diag_rprt` PRM command to count packet drops due to no-receive buffer • Support for Ethernet TX lifetime cycle control (Head of Queue) • A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM) • A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets • Inspur LED scheme: A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.

Table 14 - Firmware Changes and New Feature History

Firmware Version	Description
2.34.5000	• Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now. • Added a new QP command "INIT2RTS_QP" to enhance QP connection readiness time. • Disabled FCS checks to support switches that replace FCS with Timestamp. • Added RX Port identification for direct rout packets. • Improved RDMA WRITE/SEND performance with retransmissions. • Enabled firmware burning/querying using the PRM ACCESS_REG command. • Added support for VAM. • Enabled bad cable EEPROM reporting to the driver. • Added support for Platform Level Data Model (PLDM) sideband protocol. • Added support for priority based A0-DMFS mode (For further information, please refer to the PRM). • Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM) • Removed the source IP from the hash calculation (For further information, please refer to the PRM) • Added support for Inline Receive mode up to 2KB.
2.33.5100	• Enabled ConnectX®-3 Pro to work in packet parsing mode to enable checksum calculation of non-TCP/UDP packets. • Bug fixes - see "Bug Fixes History" on page 15
2.33.5000	• Enabled ConnectX-3 Pro to work in packet parsing mode to enable checksum calculation of non TCP/UDP packets. • Bandwidth allocation support: Including maximum bandwidth and bandwidth share guarantee between VMs for InfiniBand and Ethernet. • Increased inbound traffic buffer capacity when the PFC on all priorities is enabled. • Added support for changing UAR BAR (PCI BAR 2) size. • Added support for cable sub-power class for Mellanox MFA1A00-EXXX and SMFA1A00-CXXX EDR cables. • Improvements in attachment/detachment flows' rules in both A0-DMFS and DMFS modes. • Added physical port forcing on specific QPs when virtual mapping is applied • Added support for dynamic enablement of LAG mode • Added support for vendor specific command to report the ports' MAC addresses. • Enabled 100Mb ability exposure and its enablement via an INI parameter. • Added support for SFP+ with 1GbE when the adapter card is enabled in the EEPROM. • Optimized the SideBand connectivity loss during driver initialization to minimum. • Added support for SMBUS ARP. • Enabled thermal reporting of TMP421 sensor in OCP cards. • RDMA Read retransmission optimizations to improve performance and ensure forward progress while packet drops occur. • Improved data path WQE prefetch algorithm.

Table 14 - Firmware Changes and New Feature History

Firmware Version	Description
2.32.5100	• Added support to query PTYS, PTOS registers through ACCESS_REG PRM command. • Added support for CLP access to NVRAM • Added support for more than 22 QPs per MCG in DMFS. • Added support for high rate steering mode (a.k.a Simplified Steering) • Added support for reading current hardware mode through the QUERY_PORT PRM command • Added CSUM mode reporting in QUERY_DEV_CAP command • Added additional configuration options for UPDATE_QP command • Added support for 128 Byte stride for CQ/EQ • Enabled module EEPROM access using command I/F • Reset Flow improvements and graceful handling of error caused by Virtual Functions • RX performance optimization for single port cards • Promiscuous mode performance improvements • Added support for Secure Host mode • Added Port protocol configuration option. • Added support for GPIO swap • 40GbE SI improvements • Added support for Temp Sensing Vendor specific MAD. • Added Temp Sensing NC-SI cmd. • Added support for AEN. • Added new command to report firmware revision. • Added support for QCN • Enabled the driver to use VXLAN offloads on TX side without Device Managed Flow Steering (DMFS) • Enabled non Mellanox cables to rise FDR10 link via new INI parameter. To unlock the cables run: `Fdr10_cable_stamping_override`

2.31.5050	• Added support for GeneralInfo SMP MAD
	• Updated capability mask in GeneralInfo SMP/GMP MAD
	• Added support for PortCountersVL MAD
	• Added support for PortSamplesControl/PortSamplesResults/PortSamplesExtended MADs
	• Added Exponential Backoff Timer support. It is enabled via the `rtm_ini` parameter. The default value is 0
	• Added VLAN steering to Device Managed Flow Steering (DMFS)
	• Added support for Non-Volatile configuration of TLVs to set device attributes:
	  • Query and set of configurations is available through PRM ACCEES_REG command
	  • PRM ACCESS_REG command is now also supported through the tools_hcr command interface
	• Added support for MTF mlxconfig tool
	• Added IPv6 support for NC-SI and IPMI Pass-Through
	• Added support for the same unicast MAC simultaneously for both IPMI and NC-SI
	• PCIe power optimizations for 8X/4X links
	• SMBUS optimizations

Table 14 - Firmware Changes and New Feature History

Firmware Version	Description
2.31.5050 (cont.)	• Added enhancements for receiver equalization in Gen3: • Enhancements are enabled by the INI. The default value is disabled. Please contact Mellanox support if required to enable it. • Added new Physical and Virtual Functions reset flows support • Added support for 64Bit BIOS mode • Added IEEE802.3 CL73 autoneg support to the QUERY_PORT command. • Added factory MAC address reporting to the Query_Port command. • Added support for reverting virtual MAC configuration per port and restoring to factory MAC through MOD_STAT_CFG command. • Added support for inline TLV read through MOD_STAT_CFG command. • Added current MTU reporting to the QUERY_PORT command. • Added support query for additional MAC addresses per port (up to 7) through the QUERY_PORT command.
2.30.8050	• Bug fixes - see "Bug Fixes History" on page 15
2.30.8000	• Initial GA release of ConnectX-3 Pro • RM# 175941UDP packets with zero checksum • RoCE v2 support, including CONFIG_DEV command support • Enabled SR-IOV by default on all Mellanox ConnectX-3 Pro cards with 8 virtual functions • RM #113295indiscard packets counter support in DUMP_ETH_STAT command • NVGRE support • VXLAN support • RM#326702 RM#349757, RM#193967DMFS and GRE steering: Rule insertion adjustments • Removed DIF support from reported capabilities in QUERY_DEV_CAP PRM command • Flow control by DSCP priority for IPv4 • DMFS improvements: Insertion scheme enforcement and block loopback for InfiniBand • Added I2C resiliency support • Support for NC-SI over MCTP over SMBus • Added a flash access interface for persistent (non-volatile) configuration support • Added port BW arbitration configuration through the CONFIG_DEV command • Added IP-in-IP TCP checksum offload support • PCI Express compliancy Tx and Rx adjustments • Removed software limitations that were required for the use of Mellanox-certified FDR InfiniBand cables with Mellanox FDR InfiniBand adapters and switches. Please refer to "Memo: FDR 56Gb/s InfiniBand Cables" that was released on Dec/2013. Mellanox will offer an EXTENDED diagnostics support plan which will be available for mixed environments only and that will help identify issues they may encounter with the FDR installations.

Table 14 - Firmware Changes and New Feature History

Firmware Version	Description

2.30.8000 (cont.)	• Added support for 40GbE in WoL and pre-OS driver modes
	To enable this, add/change the following flags in the INI file in the IB and HCA tabs respectively:
	  • `restrict_max_eth_standby_speed = NO_RESTRICTION`
	  • `slow_clock_enable = 0`
	• Bug fixes - see "Bug Fixes History" on page 15

2.30.3200	• Added support for FDR AOC MC2207312-XXX • Bug Fixes, see "Bug Fixes History" on page 15

2.30.3000	• Added support for the `UPDATE_QP PRM` command
	• Added support for resetting the modified MAC addresses in the standby mode by the `MOD_STAT_CFG` command
	• Added support for receiving TCP and UDP truncated packets of certain type
	• Added support for 56GbE in all devices supporting 40GbE
	  • Establishing 56GbE link with SwitchX® requires 56GbE enablement on the switch
	  • Establishing 56GbE link on back to back setup requires additions to the INI.
	  • For further information, please contact Mellanox Support
	• mlxconfig tool in not supported in this release
	• RDMA/RoCE read retransmission improvement
	• PFC thresholds improvements
	• PCI speed_change flow improvement
	• Added support for `DIAG_RPRT` per port
	• Added PCIe Polling Compliance mode
	• RoCE default configuration fixes:
	  • ethertype now updated per port at `SET_PORT`
	  • The default value of `rroce.ip_next_protocol` is 0xfe
	• Increased the number of extended interface counters (`max_if_cnt_extended`) to 0x80, as reported in `QUERY_DEV_CAP` PRM command
	• Improved link parallel detection calibration of 40GbE
	• Modified Dell Baldur INI
	• Added support for PFC counters in `DUMP_ETH_STAT PRM` command
	• Fixed wrong reporting of RSS context in `QUERY_FW` of RSS QP
	• Added Sniffer QP support on Port#1
	• Device managed Flow Steering performance enhancements
	• Disabled "`pkt.dmac==qp.mac`" for RoCE/RoCE over IP
	• Added missing loopback blocking for device managed Flow Steering
	• Fixed `SET_PORT.mac_table` configuration issue which caused minor packet loss on Port A when working in bonding mode and closing Port B.
	• Fixed issues with NC-SI commands reason codes
	• Fixed the insertion of L4 head rule in device managed Flow Steering
	• Added to the INI for 10/40GbE parallel detect Serdes parameters
	• Added support for "`reset upon parity error`"
	• Added support for 40Gb/s MC2210411-SR4 optical module
	• Fixed interoperability issue with the Intel 12300 switch using firmware version 6.1.0.1.11
	• Improved QDR link stability when connected to InfiniScale® IV and SwitchX® switches

Table 14 - Firmware Changes and New Feature History

Firmware Version	Description
2.11.0500	• Added SR-IOV support • Added VPI auto-sensing support • Mellanox Link Property Negotiation (MLPN) • Enables ports to negotiate link properties between Mellanox devices. • The MLPN is activated by INI. • CR4 + KR4 • Auto-negotiation 40GBASE CR4 and KR4 as described in IEEE 802.3. • CR4 + KR4 is enabled by the INI. • 1GbE Clause37 • Auto-negotiation 1000BASE-X as described in IEEE 802.3 clause 37. • 1GbE Clause37 is enabled by default. • cable_info MAD extension for more I2C addressed • Enables different address for cable access through I2C. • cable_info MAD extension is enabled by the INI. • secure_host • smp firewall described in the PRM • Activated by the INI (active by default). • cq_2_eq mapping command • Modifies EQ by MODIFY_CQ command, described in the PRM • multi-function reserved lkey • Described in the PRM. • increase CQE timestamp to 48bit • Described in the PRM. • 56Gb Ethernet (proprietary) - Beta level • Activated by the INI (disabled by default). • mlxconfig - Beta level (requires MFT 3.0.0-3 or above) • Modifies the device cfg • FMR for SRIOV - Beta level • Described in the PRM. • Power reduction in PCI Gen3 • Fixed general_info MAD • “Bug Fixes History” on page 15
2.10.0800	• Bug fixes - see “Bug Fixes History” on page 15
2.10.0700	• Bug fixes - see “Bug Fixes History” on page 15

Table 14 - Firmware Changes and New Feature History

Firmware Version	Description

2.10.0000	• InfiniBand:
	  • FDR
	  • FDR10
	  • QDR
	  • SDR
	  • DDR
	• Ethernet:
	  • 1GigE
	  • 10GigE XAUI
	  • 10GigE XFI/SFI
	  • 40GigE
	• PCI Express 3.0, with backwards compatibility with v2.0 and v1.1
	• Huge pages
	• ConnectX®-3 firmware includes all ConnectX®-2 cards supported features

6 Flexboot Changes and New Features

For further information, please refer to FlexBoot Release Notes (www.mellanox.com > Software > InfiniBand/VPI Drivers > FlexBoot).

Table 15 - FlexBoot Changes and New Feature

Version	Description

Rev 3.4.746	• Added support for the following SHELL CLI commands:
	  • Non-volatile option storage commands
	  • SAN boot commands
	  • Menu commands
	  • Login command
	  • Sync command
	  • DNS resolving command
	  • Time commands
	  • Image crypto digest commands
	  • Loopback testing commands
	  • VLAN commands
	  • PXE commands
	  • Reboot command
	  For further information, please refer to: http://ipxe.org/cmd
	• iSCSI re-imaging: enables the user to install a new image on active iSCSI target.
	• Removed link status line printout at boot time.
	• Deprecated the option "rom enable" bit.
	• Enabled interrupt support.
	• When Network Boot Program (NBP) uses UNDI, the user can configure the awaiting time (up to 30 seconds) that is needed to raise a link.
	• Set default banner timeout to 4.
	• Synced the source with iPXE (upstream sync).

Rev 3.4.740	• Enabled UDP interface usage after UNDI shutdown. • Fixed a BIOS issue in hybrid BIOSes which resulted in legacy driver load failure when the BIOS loaded legacy driver without closing the UEFI driver. • Fixed an issues causing the PXE to boot first regardless of the boot priority if the client received "PXE boot menu" when contacted the DHCP.

Rev 3.4.718	• Added IPv6 support (Beta level)
	• Removed support for the following SHELL CLI commands:
	  • Non-volatile option storage commands
	  • SAN boot commands
	  • Menu commands
	  • Login command
	  • Sync command
	  • DNS resolving command
	  • Time commands
	  • Image crypto digest commands
	  • Loopback testing commands
	  • VLAN commands
	  • PXE commands
	  • Reboot command
	  For further information, please refer to: http://ipxe.org/cmd

Table 15 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.648	• Added support for .mrom images larger than 128kB • Added boot over IB with non-default PKey for ConnectX®-3, ConnectX®-3 Pro cards • Added support for ConnectX-4 and ConnectX-4 Lx • Synced the source with iPXE (upstream sync) • Moved to flat real mode when calling INT 1a,b101 to avoid BIOSes issues • Fixed chainloading undionly.kpxe over Connect-IB functionality • Fixed HTTP boot over IPoIB
Rev 3.4.521	• Added iSCSI CHAP and mutual CHAP configuration • Added the GRH size when allocating receive buffer for IPoIB • Updated VLAN netdevice's settings with all the trunk's iSCSI required settings • Updated the port event handling process • Enabled console output in Debug mode • Disabled the serial output • Disabled the banner in BEV execution • Disabled function 0x04 (in int21) when serial console is disabled • Preserved COM port settings • Fixed HTTP download over IPoIB • Fixed completion with error handling process

Table 15 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.460	• Boot Menu support: Added new FlexBoot GUI. The device can now be configured in the POST stage. • Non volatile memory read/write support • Configurable URI boot retry and delay between retries • Configurable iSCSI settings using DHCP/NVM • Added new interface in order to update the registered devices on the PXE stage • Enabled ConnectX Ethernet adapter cards family to work with interrupts • Enabled PXE to work in promiscuous VLAN mode (configurable through the INI) • Synced version with ipxe.org: Now the latest code in iPXE is used • Added boot priority capability: iSCSI vs PXE and fallback incase one fails • Updated the Proxy DHCP request method for non-existing option 54. ProxyDHCP request is sent to port 67 with broadcast IP address if the server identifier in option 54 is zero. Packets with source port different than BOOTPS_PORT and PXE_PORT are filtered by the PROXY • SHELL CLI is currently supported on ConnectX-3 and ConnectX-3 Pro adapter cards only • The server's IP address in DHCP server replies is now checked before checking the reply type. This will ignore NACK replies from servers which already were ignored by the client. In case of 2 DHCP servers in the same subnet, the client will eventually choose one of them, by sending the DHCP REQUEST with 'DHCP Server Identifier' (option 54) filled with the requested server's IP address. • Both the GUID and the MAC are printed on the screen when the port link layer is set as InfiniBand • PROXYDHCP and PXEBS settings are saved under netdevice settings • rootpath/filename/nextserver are now fetched from the netdevice settings • The cached DHCP packet are received only if working with the same net device. When pxelinux.0 receives the cached DHCP packet from the UNDI API, it constructs a new (fake) packet for the current net device. If the process is stopped and then restarted and booted from the next boot device which serves as the second port in the HCA, a new (fake) DHCP packet is not constructed. The previous packet which includes all the information of the first port (IP, MAC, Netmask, etc...) is used. If an old (fake) DHCP packet is discovered, its chaddr is compared to the chaddr in the pxe_netdev, if not similar, a new (fake) DHCP packet is created. • PXE shutdown is called if int22 with function 0x000C is called. • Changed DHCP discover timeouts to comply with PXE spec

Table 15 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.306	• Added validation script for the released ROMs • Added the option to always keep SAN hook to enable WIN install on iSCSI target • Added compilation flag around the flash readout. • Added URI Boot retry. Default retries = 0. • Added Unmap MPT command in teardown. • Added support for HII ISCSI configuration. • Added 64-bit PCI BAR support (Large bar). • Added the option added for running PXE with promiscuous VLAN. • Re-added COMBOOT image support by default. • Enabled pages-function handling in Connect-IB initialization stage to work according to the PRM. • Applied additional patches from ipxe.org • Updated the window even if ACK does not acknowledge new data. • Modified the error print to debug print. • Modified the printed string when initializing devices. • Modified the error print. Added additional information to make the output more user-friendly. • Changed the size of the domain name array to 0xfd. • Disabled the waiting period for link up on trunk-net-device when VLAN is enabled on port. • Removed unsupported EQ event in Connect-IB® • Fixed an issue for TLV with length 0. • Fixed an issue related to sync VLAN IRQ operation with trunk IRQ operation. • Fixed an issue which enabled a netdevice (VLAN) to open/close twice. • Fixed an issue which prevented the iSCSI initiator's name from being received from HII. • Fixed an issue related to dual port adapters; occasionally, booting from the second port resulted in TFTP download failure when the first port was already linked up with DHCP, and has received a TFTP address. • Fixed an issue which caused PXE boot failure when using a filename if iSCSI rootpath is set. • Fixed an issue which prevented the device to PXE boot from the 2nd port if first port was already downloaded. • Fixed compilation issue. • Fixed a broken VLAN issue. • Fixed a retry issue when the value is infinite.

Table 15 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.225	• Added additional information to the error print output • Added compilation flag around the flash readout • Added URI Boot retry. Default retries = 0 • Added Unmap MPT command in teardown • Added 64-bit PCI BAR support • Added an option for running PXE with promiscuous VLAN • Added support for HII iSCSI configuration • Enlarged the mailbox size to 4kb • Enlarged the number of WQE to 64 (from 4) • Enabled multiple DHCP offers to be received before proceeding to request state • Changed the size of the domain name array to 0xfd • Changed error print to debug print • Changed printed string when initializing devices • Kept the SAN connection permanently open to enable Windows install on iSCSI target even when the iSCSI target is empty • Re-added COMBOOT image support by default • Prevented a netdevice (VLAN) from opening/closing twice • Removed unsupported EQ event in Connect-IB® • Disabled the waiting time for link up on trunk net device when VLAN is enabled on a port • Fixed sync VLAN IRQ operation with trunk IRQ operation • Fixed iSCSI initiator's name retrieval from HII issue • Fixed an issue caused in dual port adapters, when the first port was already linked up with DHCP, and had received a TFTP address. Booting from the second port resulted in TFTP download failure. • Fixed retry issue when the value is infinite • Fixed a TLV with length 0 issue • Fixed a PXE boot failure issue occurred when using a filename when iSCSI rootpath is set • Fixed "Impossible to PXE boot from 2nd port if first port already down-loaded." issue • Fixed compilation issue • Fixed broken VLAN support issues
Rev 3.4.151	• Enlarged the mailbox size to 4kb • Enlarged the number of WQE to 64 (from 4) • Enabled multiple DHCP offers to be received before proceeding to request state
Rev 3.4.146	• Fixed memory corruption issues • Modified TLV flash access • Added additional WQ
Rev 3.4.142	• Enabled firmware to handle the link state with the Subnet Manager • Updated the DHCP class code to NONE • Added flash access capability for reading software-to-software configurations • Enabled DHCP validation of MAC address and XID for a unique tuple • Improved randomness algorithm for DHCP XID

Table 15 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.112	• Broadcast responses for firewall support • Enabled request broadcast responses from DHCP server to support firewall.
Rev 3.4.100	• OCSD activation initiation change • Moved the OCSD activation initiation from the FlexBoot to the CLP code. This enables the OCSD • activation to no longer be dependent on the FlexBoot being enabled in the servers's BIOS configuration. • Messages' improvement • Made the FlexBoot on-screen notification messages more informative and user friendly. • FlexBoot and CLP merge improvement • Improved the process of merging the FlexBoot and CLP codes together. • PXE and UFI merge capability • Added the ability to merge the PXE image with a UFI image. • Supported servers • Added FlexBoot support capabilities to several new non-HP servers. • Use of newer iPXE version • Moved to use a newer iPXE version as the basis for the Flexboot release. • Fixed "no more network devices" issues during Flexboot.

6.1 Flexboot Known Issues

The following is a list of general limitations and known issues of the various components of this FlexBoot release.

Table 16 - Known Issues

Internal Ref.	Description
673114/821899	**Description:** FlexBoot banner might not be shown in some BIOSes.
	WA: N/A
	Keywords: BIOS
572684	**Description:** FlexBoot Boot Menu will not be visible in serial output.
	WA: N/A
	Keywords: User Interface
792432	**Description:** Booting PXE using Grub2.X over HP G9/G8 servers results in system hang.
	WA: N/A
	Keywords: PXE boot, Grub2.X, HP G9/G8

7 UEFI Changes and Major New Features

Table 17 - UEFI Changes and New Feature

Version	Description
15.11.40	• Bug fixes, 7.1 "UEFI Bug Fixes History," on page 47
14.11.34	• FlexBoot is now disabled by default in Y5WKX adapter card • Removed network link type attribute from the UEFI menu • Changed the iSCSI IP strings minimum length from 7 to 0 in the UEFI menu
14.11.31	• Enabled booting with non default pkey in InfiniBand mode • Added boot to target configuration • Set the NumberVFSupported value to 63 • Deprecated BootOptionROM attrbute

14.11.84	• Added UEFI with HII/UCM support and Agentless for the following cards:
	  • MCX353A-FCBT 00W0037 IBM1100110019
	  • MCX354A-FCBT 00W0041 IBM1090110019
	  • MCX314A-BCBT 95Y3460 IBM1020110023
	  • MCX312A-XCBT 00W0053 IBM1080110023
	  • MCX311A-XCAT 00AE047 IBM1170110023
	• Implemented GUIDed Ops for UCM version and mriname
	• Support for UEFI Spec 2.5
	• Changed the firmware version representation in HII to xx.xx.xxxx format
	• Removed the MAC address from HII form titles for Sally, Marcie and Violet adapters

14.8.43	• Added AARCH64 support for ConnectX-3/Pro • Added the ability to burn FW with different PSID (FMP) • Added HII Banner Message Timeout • Added Manual Link type configuration for VPI devices
14.7.28	• Added resilient behavior toward link detection during UNDI initialization • Bug fixes, 7.1 "UEFI Bug Fixes History," on page 47

7.1 UEFI Bug Fixes History

Table 18 - UEFI Bug Fixes History

Version	Description
15.11.40	• **RM#951620:** Fixed a BIOS crash when resetting ConnectX-3 cards to default via HII in 12G servers • **RM#953866:** Fixed iSCSI IP parameters to support NULL value and set default to NULL
14.11.31	• **RM#849659:** Fixed an issue with the UEFI driver which caused the firmware to hang.
14.11.84	• Updated the length of "Part Number" field in AIM to 7. • Fixed HII ExtractConfig to handle <ConfigHdr> without <BlkName>
14.7.28	• **RM#537236:** Removed HP attributes from UEFI