

Mellanox ConnectX[®]-3 Pro Firmware Release Notes for 764285-B21

Rev 2.42.5700

NOTE:

THIS HARDWARE, SOFTWARE OR TEST SUITE PRODUCT ("PRODUCT(S)") AND ITS RELATED DOCUMENTATION ARE PROVIDED BY MELLANOX TECHNOLOGIES "AS-IS" WITH ALL FAULTS OF ANY KIND AND SOLELY FOR THE PURPOSE OF AIDING THE CUSTOMER IN TESTING APPLICATIONS THAT USE THE PRODUCTS IN DESIGNATED SOLUTIONS. THE CUSTOMER'S MANUFACTURING TEST ENVIRONMENT HAS NOT MET THE STANDARDS SET BY MELLANOX TECHNOLOGIES TO FULLY QUALIFY THE PRODUCT(S) AND/OR THE SYSTEM USING IT. THEREFORE, MELLANOX TECHNOLOGIES CANNOT AND DOES NOT GUARANTEE OR WARRANT THAT THE PRODUCTS WILL OPERATE WITH THE HIGHEST QUALITY. ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT ARE DISCLAIMED. IN NO EVENT SHALL MELLANOX BE LIABLE TO CUSTOMER OR ANY THIRD PARTIES FOR ANY DIRECT, INDIRECT, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OF ANY KIND (INCLUDING, BUT NOT LIMITED TO, PAYMENT FOR PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY FROM THE USE OF THE PRODUCT(S) AND RELATED DOCUMENTATION EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



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

© Copyright 2020. Mellanox Technologies Ltd. All Rights Reserved.

Mellanox®, Mellanox logo, Connect-IB®, ConnectX®, CORE-Direct®, GPUDirect®, LinkX®, Mellanox Multi-Host®, Mellanox Socket Direct®, UFM®, and Virtual Protocol Interconnect® are registered trademarks of Mellanox Technologies, Ltd.

For the complete and most updated list of Mellanox trademarks, visit <http://www.mellanox.com/page/trademarks>.

All other trademarks are property of their respective owners.

Table of Contents

Release Update History	5
Chapter 1 Overview	6
1.1 Supported Devices	6
1.2 Tested BIOS	6
1.3 Supported Cables and Modules	6
1.3.1 Validated and Supported FDR Cables	6
1.3.2 Validated and Supported QDR/FDR10 Cables	7
1.3.3 Validated and Supported DDR/SDR Cables	9
1.3.4 Validated and Supported 40GbE Cables	9
1.3.5 Validated and Supported 1GbE/10GbE Cables	11
1.4 Supported Switches	12
1.4.1 Supported 1/10GbE Switches	12
1.4.2 Supported 10/40GbE Switches	13
1.4.3 Supported QDR/FDR10 Switches	13
1.4.4 Supported FDR Switches	14
1.4.5 Supported 100GbE Switches	15
1.5 Tools, Switch Firmware and Driver Software	15
1.6 Supported FlexBoot, UEFI and CLP	16
1.7 Revision Compatibility	16
Chapter 2 Firmware Rev 2.42.5700 Changes and New Features	17
Chapter 3 Known Issues	18
Chapter 4 Bug Fixes History	21
Chapter 5 Firmware Changes and New Feature History	32
Chapter 6 FlexBoot Changes and New Features	38
6.1 Flexboot Known Issues	43
Chapter 7 UEFI Changes and Major New Features	44
7.1 UEFI Bug Fixes History	44
Chapter 8 CLP Changes and New Features	45

List of Tables

Table 1:	Release Update History	5
Table 2:	Supported PSIDs	6
Table 3:	Tested BIOS	6
Table 4:	Validated and Supported FDR Cables	6
Table 5:	Validated and Supported QDR/FDR10 Cables	7
Table 6:	Validated and Supported DDR/SDR Cables	9
Table 7:	Validated and Supported 40GbE Cables	9
Table 8:	Validated and Supported 10GbE/1GbE Cables	11
Table 9:	Supported 1/10GbE Switches	12
Table 10:	Supported 10/40GbE Switches	13
Table 11:	Supported QDR/FDR10 Switches	13
Table 12:	Supported FDR Switches	14
Table 13:	Supported 100GbE Switches	15
Table 14:	Tools, Switch Firmware and Driver Software	15
Table 15:	Supported FlexBoot, UEFI and CLP	16
Table 16:	Firmware Rev 2.42.5700 Changes and New Features	17
Table 17:	Known Issues	18
Table 18:	Fixed Bugs List	21
Table 19:	Firmware Changes and New Feature History	32
Table 20:	FlexBoot Changes and New Feature	38
Table 21:	Known Issues	43
Table 22:	UEFI Changes and New Feature	44
Table 23:	UEFI Bug Fixes History	44
Table 24:	CLP Changes and New Feature	45

Release Update History

Table 1 - Release Update History

Release	Date	Description
Rev 2.42.5700	May 11, 2020	Initial version of this firmware version.

1 Overview

These are the release notes for firmware Rev 2.42.5700 of HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter / Alom FDR.

Firmware revision Rev 2.42.5700 supports the following features:

- InfiniBand - FDR
- Ethernet - 40GbE, 10GbE
- PCIe 3.0 and PCIe 2.0
- HP OCSD thermal sensors reporting
- Flexboot - PXE
- UEFI
- CLP

1.1 Supported Devices

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

Table 2 - Supported PSIDs

Device Part Number	PSID	Device Name	Supported Protocols
764285-B21/ 764618-001	HP_1380110017	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter / Alom FDR	InfiniBand

1.2 Tested BIOS

This firmware was tested with the following BIOS versions.

Table 3 - Tested BIOS

Type of Server	BIOS
ProLiant DL380p Gen8	P70

1.3 Supported Cables and Modules

1.3.1 Validated and Supported FDR Cables

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

Table 4 - Validated and Supported FDR Cables

Speed	OPN #	Description
FDR	HP 670760-B21	FDR InfiniBand QSFP active fiber cable, 3m
FDR	HP 670760-B23	FDR InfiniBand QSFP active fiber cable, 100m
FDR	MC2207126-004 / (n/a through HP)	FDR InfiniBand QSFP passive copper cable, 4m

Table 4 - Validated and Supported FDR Cables

Speed	OPN #	Description
FDR	MC2207128-003 / HP 670759-B25	FDR InfiniBand QSFP passive copper cable, 3m
FDR	MC2207130-001 / HP 670759-B22	FDR InfiniBand QSFP passive copper cable, 1m
FDR	MC2207130-002 / HP 670759-B24	FDR InfiniBand QSFP passive copper cable, 2m
FDR	MC2207130-00A / HP 670759-B21	FDR InfiniBand QSFP passive copper cable, 0.5m
FDR	MC2207310-005 / HP 670760-B22	FDR InfiniBand QSFP active fiber cable, 5m
FDR	MC2207310-010 / HP 670760-B24	FDR InfiniBand QSFP active fiber cable, 10m
FDR	MC2207310-015 / HP 670760-B26	FDR InfiniBand QSFP active fiber cable, 15m
FDR	MC2207310-020 / HP 670760-B27	FDR InfiniBand QSFP active fiber cable, 20m
FDR	MC2207310-030 / HP 670760-B28	FDR InfiniBand QSFP active fiber cable, 30m
FDR	MC2207310-050 / (n/a through HP)	FDR InfiniBand QSFP active fiber cable, 50m
FDR	MC2207310-100 / (n/a through HP)	FDR InfiniBand QSFP active fiber cable, 100m
FDR	MC220731V-003 / HP 808722-B21	HP 3 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR	MC220731V-005 / HP 808722-B22	HP 5 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR	MC220731V-007 / HP 808722-B23	HP 7 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR	MC220731V-010 / HP 808722-B24	HP 10 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR	MC220731V-012 / HP 808722-B25	HP 12 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR	MC220731V-015 / HP 808722-B26	HP 15 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR	MC220731V-020 / HP 808722-B27	HP 20 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR	MC220731V-030 / HP 808722-B28	HP 30 Meter InfiniBand FDR QSFP V-series Optical Cable
FDR; 56G VPI	MC2207312-003	MT Active Fiber Cable VPI IB FDR (56GB/S) and ETH 40GBE QSFP 3M
FDR; 56G VPI	MC2207312-100	MT Active Fiber Cable 4X QSFP 56GB/S 100M

1.3.2 Validated and Supported QDR/FDR10 Cables

This firmware was tested with the QDR/FDR10 cables and modules listed in the table below.

Table 5 - Validated and Supported QDR/FDR10 Cables

Speed	OPN #	Description
QDR/FDR10	MC2206125-007 / HP 498385-B25	QDR/FDR10 InfiniBand QSFP copper cable, 7m

Table 5 - Validated and Supported QDR/FDR10 Cables

Speed	OPN #	Description
QDR/FDR10	MC2206126-006 / (n/a through HP)	QDR/FDR10 InfiniBand QSFP copper cable, 6m
QDR/FDR10	MC2206128-004 / (n/a through HP)	QDR/FDR10 InfiniBand QSFP copper cable, 4m
QDR/FDR10	MC2206128-005 / HP 498385-B24	QDR/FDR10 InfiniBand QSFP copper cable, 5m
QDR/FDR10	MC2206130-001 / HP 498385-B21	QDR/FDR10 InfiniBand QSFP copper cable, 1m
QDR/FDR10	MC2206130-002 / HP 498385-B22	QDR/FDR10 InfiniBand QSFP copper cable, 2m
QDR/FDR10	MC2206130-003 / HP 498385-B23	QDR/FDR10 InfiniBand QSFP copper cable, 3m
QDR/FDR10	MC2206130-00A	MT Passive Copper Cable 4X QSFP 40GB/S 30AWG 0.5M
QDR	MC2206230-010	MT Active Copper Cable IB QDR 40GB/S QSFP 10M
QDR/FDR10	MC2206310-003/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 3m
QDR/FDR10	MC2206310-005/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 5m
QDR/FDR10	MC2206310-010/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 10m
QDR/FDR10	MC2206310-015/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 15m
QDR/FDR10	MC2206310-020/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 20m
QDR/FDR10	MC2206310-030/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 30m
QDR/FDR10	MC2206310-050/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 50m
QDR/FDR10	MC2206310-100/ (n/a through HP)	QDR/FDR10 InfiniBand QSFP active fiber cable, 100m
QDR	MC2206310-300	MT Active Fiber Cable 4X QSFP 40GB/S 200M
QDR / FDR10/ 40GbE	MC2210411-SR4	Mellanox® Optical Module, 40Gb/s, QSFP, MPO, 850nm, up to 100m
QDR/FDR10	MFS4R12CB-003 / HP 498386-B23	QDR/FDR10 InfiniBand QSFP active fiber cable, 3m
QDR/FDR10	MFS4R12CB-005 / HP 498386-B24	QDR/FDR10 InfiniBand QSFP active fiber cable, 5m
QDR/FDR10	MFS4R12CB-010 / HP 498386-B25	QDR/FDR10 InfiniBand QSFP active fiber cable, 10m
QDR/FDR10	MFS4R12CB-015 / HP 498386-B26	QDR/FDR10 InfiniBand QSFP active fiber cable, 15m
QDR/FDR10	MFS4R12CB-020 / HP 498386-B27	QDR/FDR10 InfiniBand QSFP active fiber cable, 20m
QDR/FDR10	MFS4R12CB-030 / HP 498386-B28	QDR/FDR10 InfiniBand QSFP active fiber cable, 30m

Table 5 - Validated and Supported QDR/FDR10 Cables

Speed	OPN #	Description
QDR / FDR10/ 40GbE	MFS4R12CB-100	MT Active Fiber Cable IB QDR/FDR10 40GB/S QSFP 100M

1.3.3 Validated and Supported DDR/SDR Cables

This firmware was tested with the DDR/SDR cables and modules listed in the table below.

Table 6 - Validated and Supported DDR/SDR Cables

Speed	OPN #	Description
SDR	MC1104130-001	MT Passive Copper Cable 4X CX4 20GB/S 30AWG 1M
SDR	MC1104130-003	MT Passive Copper Cable 4X CX4 20GB/S 30AWG 3M
DDR	MC1204128-005	MT Passive Copper Cable 4X CX4 TO QSFP 20GB/S 28AWG 5M
DDR	MC1204130-001	MT Passive Copper Cable 4X CX4 TO QSFP 20GB/S 30AWG 1M
DDR	MC1204130-003	MT Passive Copper Cable 4X CX4 TO QSFP 20GB/S 30AWG 3M

1.3.4 Validated and Supported 40GbE Cables

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

Table 7 - Validated and Supported 40GbE Cables

Speed	OPN #	Description
40GbE	JG325A	HP X140 40G QSFP+ MPO SR4 Transceiver
40GbE	JG325A	HP X140 40G QSFP+ MPO SR4 Transceiver
40GbE	JG325B	HP X140 40G QSFP+ MPO SR4 Transceiver
40GbE	JG326A	HP X240 40G QSFP+ QSFP+ 1m DAC Cable
40GbE	JG326A	HP X240 40G QSFP+ QSFP+ 1m DAC Cable
40GbE	JG327A	HP X240 40G QSFP+ QSFP+ 3m DAC Cable
40GbE	JG327A	HP X240 40G QSFP+ QSFP+ 3m DAC Cable
40GbE	JG328A	HP X240 40G QSFP+ QSFP+ 5m DAC Cable
40GbE	JG328A	HP X240 40G QSFP+ QSFP+ 5m DAC Cable
40GbE	MC2207310-030 /HP 670760-B28	40GE QSFP active fiber cable, 30m
40GbE	MC2210126-004/(n/a through HP)	40GE QSFP passive copper cable, 4m

Table 7 - Validated and Supported 40GbE Cables

Speed	OPN #	Description
40GbE	MC2210126-005	MT PASSIVE COPPER CABLE 4X QSFP 40GbE 26AWG 5M
40GbE	MC2210128-003/(n/a through HP)	40GE QSFP passive copper cable, 3m
40GbE	MC2210130-001/(n/a through HP)	40GE QSFP passive copper cable, 1m
40GbE	MC2210130-002/(n/a through HP)	40GE QSFP passive copper cable, 2m
40GbE	MC2210310-020/(n/a through HP)	40GE QSFP passive copper cable, 4m
40GbE	MC2210310-100	Mellanox® active fiber cable, ETH 40GbE, 40Gb/s, QSFP
40GbE	MC2210310-30	Mellanox® active fiber cable, ETH 40GbE, 40Gb/s, QSFP
40GbE	MC2210411-SR4	Mellanox® Optical Module, 40Gb/s, QSFP, MPO, 850nm, up to 100m
40GbE- >10GbE	MC2609125-005	MT Passive Copper Cable QSFP TO 4 SFP+ 10GB/S 26AWG 5M
40GbE- >10GbE	MC2609130-001	MT Passive Copper Cable QSFP TO 4 SFP+ 10GB/S 30AWG 1M
40GbE- >10GbE	MC2609130-003	MT Passive Copper Cable QSFP TO 4 SFP+ 10GB/S 30AWG 3M
40GbE- >10GbE	MC6709309-050	MT Passive Optical Cable Multimode Splitter MPO to 8XLC 50M
40GbE	QSFP-40G-SR4	CISCO 40G QSFP Module
40GbE	QSFP-H40G-CU1M	Cisco QSFP 40GbE cable
40GbE	QSFP-H40G-CU3M	Cisco QSFP 40GbE cable
40GbE	QSFP-H40G-CU5M	Cisco QSFP 40GbE cable
40GbE	HP 720205-B21	40GbE QSFP+ to QSFP+ AOC 7m copper cable
40GbE	HP 720208-B21	40GbE QSFP+ to QSFP+ AOC 10m copper cable
40GbE	HP 720211-B21	40GbE QSFP+ to QSFP+ AOC 15m copper cable
40GbE- >10GbE	HP 721070-B21	QSFP+ to 4x10G SFP+ AOC 7m
40GbE- >10GbE	HP 721073-B21	QSFP+ to 4x10G SFP+ AOC 10m
40GbE- >10GbE	HP 721076-B21	QSFP+ to 4x10G SFP+ AOC 15m

1.3.5 Validated and Supported 1GbE/10GbE Cables

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

Table 8 - Validated and Supported 10GbE/1GbE Cables

Speed	OPN #	Description
1GbE	453151-B21	HP BLc VC 1Gb SX SFP Opt Kit
1GbE/10GbE	453154-B21	HP BLc VC 1Gb RJ-45 SFP Opt Kit
1GbE/10GbE	455883-B21	HP BLc 10Gb SR SFP+ Opt
1GbE/10GbE	455886-B21	HP BLc 10Gb LR SFP+ Opt
1GbE/10GbE	487649-B21 / 487651-001	HP BLc SFP+ 0.5m 10GbE Copper Cable
1GbE/10GbE	487652-B21 / 487654-001	HP BLc SFP+ 1m 10GbE Copper Cable
1GbE/10GbE	487655-B21 / 487657-001	HP BLc SFP+ 3m 10GbE Copper Cable
1GbE/10GbE	487658-B21 / 487660-001	HP BLc SFP+ 7m 10GbE Copper Cable
1GbE/10GbE	537963-B21	HP BLc SFP+ 5m 10GbE Copper Cable
1GbE/10GbE	655874-B21	HP QSFP/SFP+ Adapter Kit
1GbE/10GbE	AJ833A	HP 0.5m Multi-mode OM3 LC/LC FC Cable
1GbE/10GbE	AJ834A	HP 1m Multi-mode OM3 LC/LC FC Cable
1GbE/10GbE	AJ836A	HP 5m Multi-mode OM3 LC/LC FC Cable
1GbE/10GbE	AJ837A	HP 15m Multi-mode OM3 LC/LC FC Cable
1GbE/10GbE	AJ838A	HP 30m Multi-mode OM3 LC/LC FC Cable
1GbE/10GbE	AJ839A	HP 50m Multi-mode OM3 LC/LC FC Cable
1GbE/10GbE	AP784A	HP 3m C-series Passive Copper SFP+ Cable
1GbE/10GbE	AP785A	HP 5m C-series Passive Copper SFP+ Cable
1GbE/10GbE	AP818A	HP 1m B-series Active Copper SFP+ Cable
1GbE/10GbE	AP819A	HP 3m B-series Active Copper SFP+ Cable
1GbE/10GbE	J9150A	HP X132 10G SFP+ LC SR Transceiver
1GbE/10GbE	J9151A	HP X132 10G SFP+ LC LR Transceiver
1GbE/10GbE	J9281B	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable
1GbE/10GbE	J9283B	HP X242 10G SFP+ SFP+ 3m DAC Cable
1GbE/10GbE	J9285B	HP X242 10G SFP+ SFP+ 7m DAC Cable
1GbE/10GbE	JD095B	HP X240 10G SFP+ SFP+ 0.65m DAC Cable
10GbE	JD095C	HP X240 10G SFP+ SFP+ 0.65m DAC Cable
1GbE/10GbE	JD096B	HP X240 10G SFP+ SFP+ 1.2m DAC Cable
1GbE/10GbE	JD096C	HP X240 10G SFP+ SFP+ 1.2m DAC Cable
1GbE/10GbE	JD097B	HP X240 10G SFP+ SFP+ 3m DAD Cable
1GbE/10GbE	JD097C	HP X240 10G SFP+ SFP+ 3m DAD Cable

Table 8 - Validated and Supported 10GbE/1GbE Cables

Speed	OPN #	Description
10GbE	JG330A	HP X240 40G QSFP+ to 4x10G SFP+ 3m
10GbE	JG331A	HP X240 40G QSFP+ to 4x10G SFP+ 5m
1GbE/10GbE	MAM1Q00A-QSA	MELLANOX QSFP TO SFP+ ADAPTER
1GbE/10GbE	MC2309124-006	Mellanox Passive Copper Cable 1X SFP+ TO QSFP 10GB/S 24AWG 7M
1GbE/10GbE	MC2309124-007	Mellanox Passive Copper Cable 1X SFP+ to QSFP 10GB/ S 24AWG 7M
1GbE/10GbE	MC2309130-003	Mellanox Passive Copper Cable 1X SFP+ to QSFP 10GB/ S 30AWG 3M
1GbE/10GbE	MC2309130-00A	Mellanox Passive Copper Cable 1X SFP+ to QSFP 10GB/ S 30AWG 0.5M
1GbE	MC3208011-SX	Mellanox Optical Module ETH 1GBE 1GB/S SFP LC-LC SX 850NM UP TO 500M
1GbE	MC3208411-T	Mellanox Module ETH 1GBE 1GB/S SFP BASE-T UP TO 100M
1GbE/10GbE	MC3309124-005	MT Passive Copper Cable 1X SFP+ 10GB/S 24AWG 5M
1GbE/10GbE	MC3309124-007	MT Passive Copper Cable 1X SFP+ 10GB/S 24AWG 7M
1GbE/10GbE	MC3309130-003	MT Passive Copper Cable 1X SFP+ 10GB/S 30AWG 3M
1GbE/10GbE	MC3309130-00A	MT Passive Copper Cable 1X SFP+ 10GB/S 30AWG 0.5M
1GbE/10GbE	MFM1T02A-LR	Mellanox Optical Module ETH 10GBE 10GB/S SFP+ LC-LC 1310NM LR UP to 10KM
1GbE/10GbE	MFM1T02A-SR	MT Optical Module ETH 10GBE 10GB/S SFP+ LC-LC 850NM SR UP To 300M
1GbE/10GbE	SFP-10G-SR	Cisco 10GBASE-SR SFP Module
1GbE/10GbE	SFP-H10GB-CU1M	Cisco SFP+ cable
1GbE/10GbE	SFP-H10GB-CU3M	Cisco SFP+ cable
1GbE/10GbE	SFP-H10GB-CU5M	Cisco SFP+ cable

1.4 Supported Switches

1.4.1 Supported 1/10GbE Switches

This firmware was tested with the 1/10GbE switches listed in the table below.

Table 9 - Supported 1/10GbE Switches

Speed	Switch Family	OPN # / Name	Description
10GbE	N/A	5548	Cisco 10GB ETH switch

Table 9 - Supported 1/10GbE Switches

Speed	Switch Family	OPN # / Name	Description
10GbE	N/A	Fujitsu 10GbE (XAUI)	Ethernet Switch 24 ports, 20xCX4 and 4xQSFP
10GbE	N/A	HP ProCurve 6600-24XG	24-port 10GbE switch
10GbE	SwitchX®-2	SX1016X-1BFR	64-Port 10GbE Switch System
1GbE	N/A	2810-24G	HP 1GB ETH switch

1.4.2 Supported 10/40GbE Switches

This firmware was tested with the 10/40GbE switches listed in the table below.

Table 10 - Supported 10/40GbE Switches

Speed	Switch Family	OPN # / Name	Description
10/40GbE	N/A	3064	48-port 10Gb/40Gb Switch
10/40GbE	N/A	7050Q	16-port 40Gb Switch
10/40GbE	N/A	7050S	48-port 10Gb/40Gb Switch
10/40GbE	N/A	S4810P-AC	48-port 10Gb/40Gb Switch
10/40GbE	N/A	ASF5900	HP 10GB ETH switch
10/40GbE	SwitchX®-2	SX1024B-1BFS	48 port 10GbE + 12 port 40/56GbE Switch System
40GbE	SwitchX®-2	SX1036B-1BFR	36-Port 40/56GbE Switch System
40GbE	N/A	3016	Cisco 40GB ETH switch
40GbE	N/A	3132Q	Cisco 40GB ETH switch
40GbE	N/A	7050QX	32-port 40Gb Switch
40GbE	N/A	7060CX	32-port 100Gb Switch

1.4.3 Supported QDR/FDR10 Switches

This firmware was tested with the FDR switches listed in the table below.

Table 11 - Supported QDR/FDR10 Switches

Speed	Switch Family	OPN # / Name	Description
FDR10	SwitchX®-2	SX6025T-1SFR	36-port 56Gb/s InfiniBand/VPI Switch Systems
QDR	InfiniScale® IV	IS5025Q-1SFC	36-port 40Gb/s InfiniBand Switch Systems
QDR	InfiniScale® IV	IS5024Q-1BFR	36-port Non-blocking Remotely-managed 40Gb/s InfiniBand Switch System
QDR	InfiniScale® IV	Switch 4036	Grid Director™ 4036E

Table 11 - Supported QDR/FDR10 Switches

Speed	Switch Family	OPN # / Name	Description
QDR	N/A	12300	Qlogic 36-Port 40Gb QDR InfiniBand Switch, Management Module, Dual Power
QDR	SwitchX®	674283-B21_Ax	Mellanox® IB QDR Modular Line Board
QDR	SwitchX®	674281-B21_Ax	Mellanox® IB QDR Modular Fabric Board
QDR	SwitchX®-2	674283-B21_Bx	Mellanox® IB QDR Modular Line Board
QDR	SwitchX®-2	674281-B21_Bx	Mellanox® IB QDR Modular Fabric Board
QDR/ FDR10	SwitchX®	712495-B21_712496-B21_Ax	Mellanox® IB QDR/FDR10 36P Switch
QDR/ FDR10	SwitchX®	674277-B21	Mellanox® IB QDR/FDR 648P Switch Chassis
QDR/ FDR10	SwitchX®	674278-B21	Mellanox® IB QDR/FDR 324P Switch Chassis
QDR/ FDR10	SwitchX®	674279-B21	Mellanox® IB QDR/FDR 216P Switch Chassis
QDR/ FDR10	SwitchX®-2	712497-B21_712498-B21	Mellanox® IB QDR/FDR10 36P Managed Switch

1.4.4 Supported FDR Switches

This firmware was tested with the FDR switches listed in the table below.

Table 12 - Supported FDR Switches

Speed	Switch Family	Switch OPN # / Name	Description
FDR	SwitchX®	648312-B21_Bx	HP BLc 4X FDR IB Switch
FDR	SwitchX®	648311-B21_Bx	HP BLc 4X FDR IB Managed Switch
FDR	SwitchX®	670768-B21_670767-B21_Ax	Mellanox® IB FDR 36P RAF switch
FDR	SwitchX®	670770-B21_670769-B21_Ax	Mellanox® IB FDR 36P RAF Managed Switch
FDR	SwitchX®	674282-B21_Ax	Mellanox® IB FDR Modular Fabric Board
FDR	SwitchX®	674284-B21_Ax	Mellanox® IB FDR Modular Line Board
FDR	SwitchX®-2	SX6710-FB2F2	36-port 56Gb/s InfiniBand/VPI Switch System
FDR	SwitchX®-2	SX6036F-1BFR	36-port 56Gb/s InfiniBand/VPI Switch Systems
FDR	SwitchX®-2	648312-B21_Cx	HP BLc 4X FDR IB Switch

Table 12 - Supported FDR Switches

Speed	Switch Family	Switch OPN # / Name	Description
FDR	SwitchX®-2	648311-B21_Cx	HP BLc 4X FDR IB Managed Switch
FDR	SwitchX®-2	670770-B21_670769-B21_Bx	Mellanox® IB FDR 36P RAF Managed Switch
FDR	SwitchX®-2	670768-B21_670767-B21_Bx	Mellanox® IB FDR 36P RAF switch
FDR	SwitchX®-2	674282-B21_Bx	Mellanox® IB FDR Modular Fabric Board
FDR	SwitchX®-2	674284-B21_Bx	Mellanox® IB FDR Modular Line Board
FDR	SwitchX®-2	774059-B21/775144-001	Infiniband Apollo 8000
FDR	SwitchX®-2	SX6512	216-port 56Gb/s InfiniBand/VPI Switch System

1.4.5 Supported 100GbE Switches

This firmware was tested with the 100GbE switches listed in the table below.

Table 13 - Supported 100GbE Switches

Speed	Switch Family	OPN # / Name	Description
10GbE	Spectrum™	MSN2700-CS2R	32-port Non-blocking 100GbE Open Ethernet Spine Switch System

1.5 Tools, Switch Firmware and Driver Software

Firmware Rev 2.42.5700 is tested with the following tools, SwitchX® firmware, and driver software:

Table 14 - Tools, Switch Firmware and Driver Software

	Supported Version
MLNX_OFED	4.4-1.0.0.0
MLNX_EN (MLNX_OFED based code)	4.4-1.0.0.0
MFT	4.10.0-104
Linux Inbox Drivers	<ul style="list-style-type: none"> • RH6.5 • RH6.8 • RH6.9 • RH7.2 • RH7.4 • RH7.5 • SLES12 SP2 • SLES12 SP3

1.6 Supported FlexBoot, UEFI and CLP

Firmware Rev 2.42.5700 supports the following FlexBoot, UEFI and CLP:

Table 15 - Supported FlexBoot, UEFI and CLP

	Supported Version
FlexBoot	3.4.754
UEFI	14.11.49
CLP	8025

1.7 Revision Compatibility

Firmware fw-ConnectX3 Rev 2.42.5700 complies with the following programmer's reference manual:

- *Mellanox Adapters Programmer's Reference Manual (PRM), Rev 0.44 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 Rev 2.42.5700 Changes and New Features

Table 16 - Firmware Rev 2.42.5700 Changes and New Features

Category	Description
Link Type	Modified the <code>mlx_cmd_get_mlx_link_status</code> command return value to return "Link Type = Ethernet" in Ethernet adapter cards.

3 Known Issues

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

Table 17 - Known Issues

Index	Issue	Description	Current Implemented Workaround in FW
1.	Link up	RM#1538538: When using the QSFP module RTX320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.	Reboot the system
2.	mlxconfig	RM#1119109: Enabling/disabling cq_timestamp using mlxconfig is not supported.	N/A.
3.	LEDs	RM#1121959: In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LES will not be active while the ETH link is in an idle mode.	N/A.
4.	mlxconfig/SR-IOV	RM#976761: In SR-IOV setup, using mlxconfig when the PF is passed through to a VM requires a reboot of the Hypervisor.	N/A.
5.	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.
6.	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 0xffff).
7.	SBR assertion	SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters	N/A
8.	PCIe	On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed	Production SL230 should be used for PCIe Gen3 operation
9.	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
10.	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

Table 17 - Known Issues

Index	Issue	Description	Current Implemented Workaround in FW
11.	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
12.	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: <code>'flint -clear_semaphore'</code>
13.	MC2210411-SR4 module with Cable Info MAD	Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module	N/A
14.	PCIe failure on temperature shock 10C/min	Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).	N/A
15.	PCIe Gen2 link	PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV	N/A
16.	Bloom filter	Bloom filter is currently not supported.	N/A
17.	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
18.	DMFS steering mode with IB in Linux	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
19.	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.
20.	VPD read-only fields	VPD read-only fields are writable.	Do not write to read-only fields if you wish to preserve them
21.	Increasing SymbolErrorCounter	When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly	N/A

Table 17 - Known Issues

Index	Issue	Description	Current Implemented Workaround in FW
22.	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
23.	128 Byte CQ/EQ stride	CQ and EQ cannot be configured to different stride sizes.	N/A
24.	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.
25.	Link Up time	Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.	N/A
26.	Port identification	Adapter card MCX349A-XCCN does not respond to ethtool “identify” command (ethtool -p/--identify).	N/A
27.	RDP over IPv6	RDP over IPv6 is currently not functional.	Set the default RoCE mode in the software to RoCE v2 (also when not using RoCE)
28.	Unicast/Multicast sniffer	Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”	N/A
29.	Boot Entry Vector (BEV)	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
30.	Cables	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
31.	Port Link	56GbE link is not raised when using 100GbE optic cables.	N/A
32.	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
33.	ibdump	832298When running ibdump, loopback traffic is mirroring into the kernel driver.	N/A
34.	MAC address	RM#846523: MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer.	N/A

4 Bug Fixes History

Table 18 lists the bugs fixed in this release.

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
1.	VPD	RM#1482599/1370229: Fixed an issue that occasionally resulted in VPD reading timeout	2.42.5044	2.42.5056
2.	Link Down event	RM#1787300: Fixed an issue that resulted in reading from invalid I/O address on handover from UEFI boot to OS boot, when a port was configured as InfiniBand on a VPI adapter device.	2.42.5000	2.42.5056
3.	Link Down event	RM#1482599/1370229: Fixed an issue that prevented the firmware from detecting a link_down event thus preventing the IB bond interface from going to a failover mode.	2.42.5000	2.42.5044
4.	mlxconfig	RM#1187529: Fixed an issue that caused some default parameters to be removed by mistake and not be shown in the mlxconfig output.	2.42.5006	2.42.5016
5.	Firmware Update	RM#1150548: Fixed an issue that prevented communication over iLO shared port after firmware update.	2.42.5004	2.42.5006
6.	PortRcvPkts counter	1009607: Fixed an issue which prevented the PortRcvPkts counter from being cleared after resetting it.	2.40.5030	2.42.5000
7.	FLR, System Time Out, VFs	999432: Fixed an issue which caused a system Time Out on the configuration cycle of the VFs when more than 10 Virtual Functions performed FLR and the completion Time Out value was configured to a range of less than 16 msec.	2.40.5030	2.42.5000
8.	mlxfwtop	1034523: Fixed an issue that caused the server to hang and result in NMI when running “mlxfwtop -d mt4103_pci_cr0” while restarting the driver in parallel (from a different thread). In this case, the downstream bridge over the device reported completion timeout error.	2.40.5030	2.42.5000
9.	Flow steering, BMC	659925: Fixed an issue in flow_steering where BMC could not receive a ping over IPV6 after running bmc_reboot.	2.40.7000	2.42.5000

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
10.	RX packet	825412: Fixed an issue while closing the HCA, where RX packet caused bad access to resources that did not exist, and consequently caused the QPCGW or the iris to get stuck.	2.32.5100	2.42.5000
11.	masterSMLID, LID	1033071: Fixed an issue where the masterSMLID and the LID was either 0 or 0xFFFF when the port was neither active nor armed.	2.40.7000	2.42.5000
12.	ibdump	1009736: Fixed an issue that prevented ibdump from capturing all MADs packets.	2.40.7000	2.42.5000
13.	Link Down	1000626: Fixed an issue that prevented the link to go up after reboot.	2.40.5030	2.42.5000
14.	PCIe	954259: Fixed a rare issue that cause the PCIe configuration cycle that arrived during the time of sw_reset to generate 2 completions.	2.36.5100	2.42.5000
15.	NC-SI	908959: Fixed an issue that caused NC-SI not to work when adding the <code>disable_static_steering_ini</code> field in the ini file, due to memory allocation issue for this field in the scratchpad.	2.36.5100	2.42.5000
16.	Driver Start	890373: Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.	2.40.5000	2.40.5030
17.	Link Down	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
18.	Auto Sense	861646: Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.	2.35.5100	2.40.5000
19.	Signal Integrity	780205: Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.	2.35.5100	2.40.5000
20.	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.	2.36.5000	2.40.5000
21.	Counters	877613: Fixed an incorrect report of the <code>PortRcvDataVLExtended/PortXmitDataVLExtended</code> counters by the firmware.	2.35.5000	2.40.5000
22.	Firmware's Packet Injector	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

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
23.	TX requests	702752: Fixed an issue that caused the response to TX requests to take up to 10 milliseconds in IEEE clause 72 Link Training.	2.34.5000	2.40.5000
24.	ECN	70454: Fixed a race between 2 irises which caused a QP to get stuck in burst control limit state	2.36.5000	2.40.5000
25.	CQE	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.	2.36.5000	2.40.5000
26.	MAC address	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.	2.36.5000	2.40.5000
27.	ibdump	832298: Fixed an issue where the ibdump got broken when running with loopback traffic.	2.36.5000	2.40.5000
28.	QP to Firmware ownership	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.	2.36.5000	2.40.5000
29.	Cables	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.	2.36.5000	2.40.5000
30.	HCA PoerXmitWait counter	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.	2.36.5000	2.40.5000
31.	ECN	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
32.		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
33.	Cable Info MAD	Fixed a wrong returned status in cable info MAD when the cable was not connected.	2.35.5100	2.36.5000
34.	FLR device reset	Fixed failure instances when initiating FLR in the Physical Function.	2.35.5100	2.36.5000

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
35.	High rate steering mode	Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.	2.32.5100	2.36.5000
36.	Performance	Fixed performance issues causing slow performance when running in NO-DRAM-NIC mode.	2.34.5000	2.36.5000
37.	RDP over IPv4	Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.	2.30.8000	2.35.5100
38.	SR-IOV security	Prevented a Virtual Function from injecting pause frames into the network.	2.30.8000	2.35.5100
39.	NC-SI	MLNX_OEM command GET_TEMP returned a wrong value in the max_temp field.	2.34.5000	2.35.5100
40.	MTU exceptions	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
41.	NVCONFIG failure	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
42.	IB/RoCE retransmission	Fixed a race in handling a duplicated “read request from middle”.	2.34.5000	2.35.5100
43.	IB traffic issues	Fixed an issue which caused lack of IB traffic on SR-IOV VPI.	2.33.5000	2.35.5100
44.	NVRAM issues	Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.	2.34.5000	2.35.5100
45.	IB APM	Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.	2.33.5100	2.35.5100
46.	QP alternate context error	Fixed an issue which caused a firmware internal error when handling QP alternative context.	2.34.5000	2.35.5100
47.	Flow Control security issue	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
48.	Packet Ethertype	Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.	2.30.8000	2.34.5000

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
49.	Broadcast traffic lost	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
50.	RSS QP update failure	Fixed a failure to update RSS QP in steering rules.	2.33.5100	2.34.5000
51.	Low link speed	Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch	2.33.5100	2.34.5000
52.	RDMA read retransmission	Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests.	2.33.5100	2.34.5000
53.	VM QoS	Fixed a case where the actual bandwidth did not match the user settings in VM QoS.	2.33.5100	2.34.5000
54.	Sideband communication loss	Fixed a case where on rare cases, communication to BMC was lost during driver initialization.	2.33.5100	2.34.5000
55.	Link down on cable plugging	Fixed an issue with cable reading, which caused the link not to raise	2.33.5100	2.34.5000
56.	PRM: EQN range	Set the maximum EQN number to 1024.	2.30.8000	2.34.5000
57.	Vital Product Data read failure	Fixed a rare issue with VPD init flow which caused read failures.	2.31.5050	2.34.5000
58.	PRM: Statistic counters not reported	Fixed an issue with RX size counter not being reported.	2.30.8000	2.34.5000
59.	RoCE/InfiniBand reliable connection	The first Read response was not treated as implicit ACK.	2.30.8000	2.33.5100
60.	40GbE Link up time	Reduced a long 40GbE link up time with Cisco Nexus3064 and Arista-7050S	2.32.5100	2.33.5100
61.	Promiscuous mode	Fixed promiscuous mode compatibility with A0-DMFS steering.	2.32.5100	2.33.5000
62.		Fixed promiscuous mode compatibility when NC-SI is enabled and configured.	2.32.5100	2.33.5000
63.	NC-SI OEM commands	Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.	2.32.5100	2.33.5050
64.	Packet Drops	Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.	2.32.5100	2.33.5050

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
65.	Side Band Functionality	Fixed long management communication loss and SOL hang during reboot cycles.	2.32.5100	2.33.5050
66.		Fixed wrong processing of inbound traffic towards BMC which caused communication loss.	2.32.5100	2.33.5050
67.		Fixed management link loss upon closing port interface through the driver.	2.32.5100	2.33.5050
68.	NC-SI on SFP+ Adapter Cards	Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.	2.32.5100	2.33.5050
69.	Port Links	Fixed an issue which caused a link down on a port when the cable was removed from the other port.	2.32.5100	2.33.5050
70.	Inbound Packet Processing	Fixed a rare case where packet with length zero got stuck in hardware queues.	2.32.5100	2.33.5050
71.		Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.	2.32.5100	2.33.5050
72.	Asynchronous Event Notification (AEN)	Fixed an issue which caused AEN to be sent after channel reset.	2.32.5100	2.33.5050
73.	Bandwidth Degradation with QoS	Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.	2.31.5050	2.33.5050
74.	Port Link Up Time	Fixed an occasional long link up time with 10GbE based devices.	2.32.5100	2.33.5050
75.	SFP Cable Reading	Fixed an issue preventing cable readings from i2c slave address 0x51	2.32.5100	2.33.5050
76.	PCIe Gen3 Equalization	Fixed a wrong parity bit calculation when transmitting PCIe TS1 packets.	2.32.5100	2.33.5050
77.	PCIe Power Management	Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.	2.32.5100	2.33.5050
78.	PCIe width Degrade	Fixed a rare case with alignments state machines which caused occasional width degradation.	2.32.5100	2.33.5050
79.	Rate Limiters Hang with ECN/QCN Enabled	Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN)	2.32.5100	2.33.5050
80.	Unexpected Completion Syndrome with Status 0x77	Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.	2.30.8000	2.33.5050

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
81.	IB Spec MADs	Fixed an issue which caused <code>SetPortInfo</code> to return a good status when receiving invalid <code>LinkSpeedEnabled</code> value.	2.32.5100	2.33.5050
82.	GPIO Mapping	Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander	2.32.5100	2.33.5050
83.	Steering Mode	Fixed an issue where firmware overrides the steering mode that was chosen by the driver.	2.32.5100	2.33.5050
84.	Port sensing	Fixed invalid return sensing results occurred when the link was up.	2.32.5100	2.33.5050
85.		Fixed an issue causing the sensing result to be delayed when cable was unplugged.	2.32.5100	2.33.5050
86.	Wrong link type display	Fixed an issue causing the link type to be displayed as ETH when set to AUTO.	2.32.5100	2.33.5050
87.	WoL Functionality	Fixed 2us glitch in Wake Up signal.	2.32.5100	2.33.5050
88.	IBDump performance	Fixed performance degradation when running IBDump	2.30.8000	2.32.5100
89.	PCIe link Disable/Enable	Occasionally, a link training timeout occurred in EQ phase0 during disable/enable test.	2.31.5050	2.32.5100
90.	40GbE QoS	Improved strict bandwidth mode functionality	2.30.8000	2.32.5100
91.	Port Counters reporting	Fixed an issue with the <code>PortRcvPkts</code> counter always displaying zero value.	2.31.5050	2.32.5100
92.	GMP MADs in SecureHost	Fixed an issue with processing GMP MADs with SET method in SecureHost mode.	2.31.5050	2.32.5100
93.	NC-SI over IPv6	Fixed an issue causing a wrong usage of MCG size when configuring Global Multicast filter	2.31.5050	2.32.5100
94.	NC-SI link failure	Disabling the first port occasionally causes second port TX failure.	2.31.5050	2.32.5100
95.	10GbE link failure	Fixed 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
96.	Link failure	Fixed an occasional 40GbE link failure with SCM5 Switch blade	2.31.5050	2.32.5100
97.	ExtPortInfo MAD	Fixed a wrong FDR10 speed reporting in MAD	2.31.5050	2.32.5100
98.	IB link failure	Fixed an issue preventing the ports to rise up when set to FDR10 vs QDR	2.31.5050	2.32.5100
99.	40GbE link failure	Fixed an occasional link failure vs Arista switch	2.31.5050	2.32.5100

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
100.	RDMA Write retransmission	Retransmission started from the first PSN of message instead of the last acknowledged PSN	2.30.3200	2.32.5100
101.	Firmware burning	Firmware hangs when receiving GeneralInfoMad during inline firmware burning	2.30.3200	2.32.5100
102.	PCIe PML1	L1 flow adjustments and threshold tuning	2.31.5050	2.32.5100
103.	PCIe reset	Fixed a rare hanging issue during PERST_assertion	2.31.5050	2.32.5100
104.	PCIe Gen3 EQ	Wrong coefficients were reported during phase3	2.31.5050	2.32.5100
105.	Boot	Fixed an issue causing wrong behavior due to reset timing	2.31.5050	2.32.5100
106.	VXLAN/NVGRE	Fixed lack of steering options	2.30.8000	2.32.5100
107.	SMBUS	Fixed long timeout issues	2.31.5050	2.32.5100
108.	NVRAM	Fixed NVRAM write issues in driver-less mode	2.31.5050	2.32.5100
109.	40GbE Link support	Fixed 40GbE link support in aux mode	2.31.5050	2.32.5100
110.	NC-SI	Dropped commands with non-existing channel ID	2.31.5050	2.32.5100
111.	PRM PortInfo command	Fixed issues in extended speed reporting	2.31.5050	2.32.5100
112.	Trap 257/8(IB)	Fixed bad QP reporting in trap 257/8	2.30.8000	2.32.5100
113.	Bad Q_KEY errors	Fixed an issue causing false bad q_key error messages	2.30.8000	2.32.5100
114.	PFC	Fixed Pause Frame opcode mismatch	2.30.8000	2.32.5100
115.	Sideband Communication	Fixed communication loss upon PCIe error detection	2.31.5050	2.32.5100
116.	NC-SI	Fixed wrong channel value in the SELECT/DESELECT PACKAGE commands	2.30.8000	2.31.5050
117.		Fixed an issue caused response packet to include 4 extra bytes	2.30.8000	2.31.5050
118.		Fixed wrong reason code value returned when using Set Link command with unsupported speed.	2.30.8000	2.31.5050
119.		Added protection from bad MAC address given by BMC	2.30.8000	2.31.5050

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
120.	PCIe	Removed false TX pulse after PERST_ deassertion	2.30.8000	2.31.5050
121.		Fixed FLR capability bit inconsistency when SR-IOV is enabled.	2.30.3200	2.31.5050
122.		Fixed an issue with the device not reporting PCIe related errors.	2.30.8000	2.31.5050
123.	SDR instead of DDR ConnectX-3 to SX6036	When 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
124.	VXLAN	VXLAN used the wrong default UDP port. the UDP port number was changed to 4789.	2.30.8000	2.31.5050
125.		Fixed wrong setting of the UDP destination port for VXLAN.	2.30.8000	2.31.5050
126.	Flow Steering	Fixed an internal error caused when moving to the DMS mode with IPMI/NC-SI enabled.	2.30.8000	2.31.5050
127.	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.	2.30.3200	2.31.5050
128.	PCI interrupt	Fixed issues related to working with PCI legacy interrupts.	2.30.8000	2.31.5050
129.	TCP/UDP Checksum	Wrong checksum calculation for short packets which are padded by the software.	2.30.8000	2.31.5050
130.	MFT tool deadlock	Reading PCIe configuration space after using the MFT flint tool caused the device to crash.	2.10.0000	2.31.5050
131.	Side band packet loss	Fixed occasional packet loss over IPMI	2.30.8000	2.31.5050
132.	Eye opening MAD	Fixed wrong values reported in the Eye opening MAD.	2.30.8000	2.31.5050
133.	PCIe Link width	Fixed occasional link width degrades during link negotiation and link transitions from L1 state.	2.30.8000	2.31.5050
134.	PCIe signal detect	Fixed adjust signal detect thresholds	2.30.8000	2.31.5050
135.	Error counters	PortExtendedSpeedsCounters MAD counters were mistakenly increased while LLR was active	2.30.8000	2.31.5050
136.	PCIe Gen3 Equalization	Lane reversal was not considered when configured TX parameters	2.30.8000	2.31.5050
137.	Reset On LAN (ROL)	Fixed ROL factory MAC usage when a Flex-Boot address was given.	2.30.8000	2.31.5050

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
138.	Flow Control	Fixed Pause frames factory MAC usage when a FlexBoot address was given.	2.30.3200	2.31.5050
139.	WOL/ROL	The device did not different between WOL/ROL packets.	2.30.8000	2.31.5050
140.	PortInfo MAD	Fixed a set of extended fields in PortInfo MAD which did not function.	2.10.0000	2.31.5050
141.	LLR cell size	Adjusted LLR cell size according to the MLPN negotiation of ib_128b_llr	2.30.8000	2.31.5050
142.	Link max speed	The max speed restriction was active in full power mode instead of standby mode only.	2.30.8000	2.31.5050
143.	InfiniBand Automatic Path Migration	The InfiniBand Path migration did not work with GRH. http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7	2.10.0000	2.31.5050
144.	Packet steering	Reading MGM after writing it returned wrong members count.	2.30.8000	2.31.5050
145.	RSS QP context	Fixed corruption of the RSS hash key given by the driver.	2.30.8000	2.31.5050
146.	10Gb/s QoS	Fixed QoS rate limit BW offset.	2.30.3200	2.31.5050
147.	ExtendedPortInfo MAD	Fixed FDR10 speed_en reporting.	2.30.8000	2.31.5050
148.	Management link	Fixed long management link com loss.	2.30.8000	2.31.5050
149.	PRM Query_Port Command	The command results reported both link types active at the same time.	2.30.3200	2.31.5050
150.	Link not raising	Fixed collision between forcing phy type and port sensing.	2.30.8000	2.31.5050
151.	Core clock reporting	Fixed a wrong core clock freq reporting in QUERY_HCA command.	2.30.3200	2.31.5050
152.	56GbE link issues	Fixeds occasional link failure when 56GbE is enabled	2.30.8000	2.31.5050
153.	RX calibration	Fixed max eye margins to be per protocol.	2.30.8000	2.31.5050
154.	VPI symbol errors	perfquery reported wrong error symbol on ConnectX [®] -3 VPI mode: IB, ETH.	2.30.8000	2.31.5050
155.	Symbol error on ConnectX-3 Pro dual-port QDR with MC2207312-030 AOCs	On ConnectX-3Pro dual-port QDR and FDR/FDR10 switch setups, symbol errors may occur with MC2207312-030 AOCs.	2.30.8000	2.31.5050

Table 18 - Fixed Bugs List

	Issue	Description	Discovered in Release	Fixed in Release
156.	Symbol error on Falcon QDR against FDR switches with MC2207126-004 copper cables	Symbol errors occur on ConnectX-3Pro dual-port QDR connected to FDR switches with MC2207126-004 copper cables.	2.30.8000	2.31.5050
157.	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	2.31.5000
158.	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
159.	Automatic Path Migration (APM)	Automatic Path Migration (APM) did not update the new MGIDs from the Alternate Path.	2.30.8000	2.30.8050

5 Firmware Changes and New Feature History

Table 19 - Firmware Changes and New Feature History

Release	Description
2.42.5056	Bug Fixes: See Section 4, “Bug Fixes History,” on page 21
2.42.5052	UEFI: See Section 7, “UEFI Changes and Major New Features,” on page 44
2.42.5044	<ul style="list-style-type: none"> • LP mode: Disabled LP mode (RTXM320-581 variation) for class 1 modules (HPE JG325B Transceiver). • PXE: See Section 6, “FlexBoot Changes and New Features,” on page 38 • UEFI: See Section 7, “UEFI Changes and Major New Features,” on page 44 • Bug Fixes: See Section 4, “Bug Fixes History,” on page 21
2.42.5016	Bug fixes: See Section 4, “Bug Fixes History,” on page 21
2.42.5004	Bug fixes: See Section 4, “Bug Fixes History,” on page 21
2.42.5000	<ul style="list-style-type: none"> • Packet Time-stamping: Added support for new TLV: CX3_GLOBAL_CONF to enable/disable timestamp on incoming packets through mlxconfig configuration. • MAC Configuration: Added support for user MAC configuration. • mstdump: Added support for automatically collecting mstdump before driver reset. • IRISC stuck watchdog: Added a mechanism to detect DEAD_IRISC (plastic) from TPT (iron) and raise an assert. • Debug ability: Improved the debug ability for command timeout cases • MTU size: Added a new field to "set port" command which notifies the firmware what is the user_mtu size. • Bug fixes: See Section 4, “Bug Fixes History,” on page 21
2.40.5072	<ul style="list-style-type: none"> • PLDM: Added Platform Level Data Model (PLDM) support.
2.40.5030	<ul style="list-style-type: none"> • 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 firm-ware 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 21
2.40.5000	<ul style="list-style-type: none"> • Link Down Counters: Added Ethernet Link down counter. • Bug fixes: See Section 4, “Bug Fixes History,” on page 21
2.36.5000	<ul style="list-style-type: none"> • 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. • 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.

Table 19 - Firmware Changes and New Feature History

Release	Description
2.35.5100	<ul style="list-style-type: none"> • 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 <code>diag_rprt</code> 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.
2.34.5000	<ul style="list-style-type: none"> • Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now. • Added a new QP command <code>"INIT2RTS_QP"</code> 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 <code>ACCESS_REG</code> 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.
2.33.5220	<ul style="list-style-type: none"> • FlexBoot: See Section 6, "FlexBoot Changes and New Features," on page 38

Table 19 - Firmware Changes and New Feature History

Release	Description
2.33.5050	<ul style="list-style-type: none"> Hardware Checksum Calculation: <ul style="list-style-type: none"> Enabled ConnectX-3 Pro to work in packet parsing mode to enable checksum calculation of non TCP/UDP packets. Virtual QoS: <ul style="list-style-type: none"> Bandwidth allocation support: Including maximum bandwidth and bandwidth share guarantee between VMs for InfiniBand and Ethernet. Performance/Flow Control: <ul style="list-style-type: none"> Increased inbound traffic buffer capacity when the PFC on all priorities is enabled. Non-Volatile Device Configuration: <ul style="list-style-type: none"> Added support for changing UAR BAR (PCI BAR 2) size. Cables: <ul style="list-style-type: none"> Added support for cable sub-power class for Mellanox MFA1A00-EXXX and SMFA1A00-CXXX EDR cables. Device Managed Steering: <ul style="list-style-type: none"> Improvements in attachment/detachment flows' rules in both A0-DMFS and DMFS modes. RoCE Link Aggregation (LAG): <ul style="list-style-type: none"> Added physical port forcing on specific QPs when virtual mapping is applied Added support for dynamic enablement of LAG mode NC-SI: <ul style="list-style-type: none"> Added support for vendor specific command to report the ports' MAC addresses. Link Speeds: <ul style="list-style-type: none"> 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. SideBand Management: <ul style="list-style-type: none"> Optimized the SideBand connectivity loss during driver initialization to minimum. SMBUS: <ul style="list-style-type: none"> Added support for SMBUS ARP. Enabled thermal reporting of TMP421 sensor in OCP cards. RDMA: <ul style="list-style-type: none"> RDMA Read retransmission optimizations to improve performance and ensure forward progress while packet drops occur. Performance: <ul style="list-style-type: none"> Improved data path WQE prefetch algorithm.

Table 19 - Firmware Changes and New Feature History

Release	Description
2.32.5150	<ul style="list-style-type: none"> Quantized Congestion Notification (QCN): <ul style="list-style-type: none"> Added support for QCN VXLAN Offload support: <ul style="list-style-type: none"> Enabled the driver to use VXLAN offloads on TX side without Device Managed Flow Steering (DMFS) FDR10 cable Locking: Enabled non Mellanox cables to rise FDR10 link via new INI parameter. To unlock the cables run: <code>Fdr10_cable_stamping_override</code> Ethtool Improvements: <ul style="list-style-type: none"> Added support to query PTYS, PTOS registers through ACCESS_REG PRM command. Non-volatile Random Access Memory (NVRAM): <ul style="list-style-type: none"> Added support for CLP access to NVRAM Packet Steering: <ul style="list-style-type: none"> Added support for more than 22 QPs per MCG in DMFS. Added support for high rate steering mode (a.k.a Simplified Steering) PRM <ul style="list-style-type: none"> 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 Device Reset and Error recovery: <ul style="list-style-type: none"> Reset Flow improvements and graceful handling of error caused by Virtual Functions Performance: <ul style="list-style-type: none"> RX performance optimization for single port cards Promiscuous mode performance improvements Secure Host: <ul style="list-style-type: none"> Added support for Secure Host mode Non-Volatile device configuration: <ul style="list-style-type: none"> Added Port protocol configuration option. GPIO: <ul style="list-style-type: none"> Added support for GPIO swap Signal Integrity (SI): <ul style="list-style-type: none"> 40GbE SI improvements
2.32.5150 (cont.)	<ul style="list-style-type: none"> MAD: <ul style="list-style-type: none"> Added support for Temp Sensing Vendor specific MAD. NC-SI: <ul style="list-style-type: none"> Added Temp Sensing NC-SI cmd. Added support for AEN. SMBUS: <ul style="list-style-type: none"> Added new command to report firmware revision.

Table 19 - Firmware Changes and New Feature History

Release	Description
2.31.5050	<ul style="list-style-type: none"> Performance: <ul style="list-style-type: none"> Inbound traffic performance enhancements for lossy traffic RSS inline MCG Added RSS Ethernet Performance Optimization- RSS inline MCG MAD: <ul style="list-style-type: none"> 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 support query for additional MAC addresses per port (up to 7) through the QUERY_PORT command. INI: <ul style="list-style-type: none"> Added Exponential Backoff Timer support. It is enabled via the <code>rtm_ini</code> parameter. The default value is 0. Flow Steering (DMFS): <ul style="list-style-type: none"> Added VLAN steering to Device Managed Flow Steering (DMFS). Non-Volatile configuration tool: <ul style="list-style-type: none"> Added support for Non-Volatile configuration of TLVs to set device attributes: <ul style="list-style-type: none"> Query and set of configurations is available through PRM ACCEES_REG command PRM ACCESS_REG command is now also supported through the <code>tools_hcr</code> command interface Added support for MTF <code>mlxconfig</code> tool Management protocols: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Added enhancements for receiver equalization in Gen3: <ul style="list-style-type: none"> Enhancements are enabled by the INI. The default value is disabled. Please contact Mellanox support if required to enable it. PCIe power optimizations for 8X/4X links. Side Band protocols: <ul style="list-style-type: none"> SMBUS optimizations Physical and Virtual Functions reset flows: <ul style="list-style-type: none"> Added new Physical and Virtual Functions reset flows support. PXE support: <ul style="list-style-type: none"> Added support for 64Bit BIOS mode.
2.31.5050 (cont.)	<ul style="list-style-type: none"> PRM: <ul style="list-style-type: none"> 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.

Table 19 - Firmware Changes and New Feature History

Release	Description
2.30.8000	<ul style="list-style-type: none"> DMFS 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. 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: <ul style="list-style-type: none"> <code>restrict_max_eth_standby_speed = NO_RESTRICTION</code> <code>slow_clock_enable = 0</code> Bug fixes, see Section 4, "Bug Fixes History," on page 21

6 FlexBoot Changes and New Features

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

Table 20 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.754	<ul style="list-style-type: none"> RM#1540513: Enabled the Client Identifier for the following OPNs: <ul style="list-style-type: none"> 764284-B21_Ax 764285-B21_Ax 764283-B21_AX 779793-B21_0A 779799-B21_AX
Rev 3.4.753	<ul style="list-style-type: none"> RM#1120282: Fixed the broken Blink LEDs feature in Flexboot configuration menu.
Rev 3.4.752	<ul style="list-style-type: none"> Added support for Secure Firmware Update Enabled booting Grub 2.02 over IB Disabled SOL by default
Rev 3.4.746	<ul style="list-style-type: none"> Added support for the following SHELL CLI commands: <ul style="list-style-type: none"> 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. 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. Synced the source with iPXE (upstream sync).

Table 20 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.718	<ul style="list-style-type: none"> Added IPv6 support (Beta level) Removed support for the following SHELL CLI commands: <ul style="list-style-type: none"> 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 <p>For further information, please refer to: http://ipxe.org/cmd</p>
Rev 3.4.648	<ul style="list-style-type: none"> Added support for .mrom images larger than 128kB Added boot over IB with non-default PKey for ConnectX®-3, ConnectX®-3 Pro cards Synced the source with iPXE (upstream sync) Moved to flat real mode when calling INT 1a,b101 to avoid BIOSes issues Fixed HTTP boot over IPoIB
Rev 3.4.521	<ul style="list-style-type: none"> 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
Rev 3.4.467	<ul style="list-style-type: none"> Fixed an issue preventing TFTP filename with absolute path functionality

Table 20 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.460	<ul style="list-style-type: none"> • 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 • 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, Net-mask, 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. • 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. • Changed DHCP discover timeouts to comply with PXE spec

Table 20 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.306	<ul style="list-style-type: none"> • 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 20 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.225	<ul style="list-style-type: none"> • 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 downloaded." issue • Fixed compilation issue • Fixed broken VLAN support issues
Rev 3.4.151	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Fixed memory corruption issues • Modified TLV flash access • Added additional WQ
Rev 3.4.142	<ul style="list-style-type: none"> • 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
Rev 3.4.112	<ul style="list-style-type: none"> • Broadcast responses for firewall support • Enabled request broadcast responses from DHCP server to support firewall.

Table 20 - FlexBoot Changes and New Feature

Version	Description
Rev 3.4.100	<ul style="list-style-type: none"> • 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 21 - 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 22 - UEFI Changes and New Feature

Version	Description
14.11.49	<ul style="list-style-type: none"> Bug Fixes: See bug #1787300 in Section 4, “Bug Fixes History,” on page 21
14.11.48	<ul style="list-style-type: none"> Changed the firmware version string format in the iLO (from xx.yy.vv.zz to xx.yy.zzzz).
14.11.46	<ul style="list-style-type: none"> Bug Fixes: See bug #1127830 in Section 4, “Bug Fixes History,” on page 21
14.11.45	<ul style="list-style-type: none"> Added default value 00:00:00:00:00:00 for the VirtualMacAddress attribute NIC Partitioning Configuration Form is now deprecated.
14.11.34	<ul style="list-style-type: none"> Changed the iSCSI IP strings minimum length from 7 to 0 in the UEFI menu
14.11.31	<ul style="list-style-type: none"> Enabled booting with non default pkey in InfiniBand mode Added boot to target configuration Set the NumberVFSupported value to 63 Deprecated BootOptionROM attribute
14.9.46	<ul style="list-style-type: none"> Updated to comply with the current firmware version
14.08.43	<ul style="list-style-type: none"> AARCH64 support for ConnectX-3/ConnectX-3 Pro Firmware burning with different PSID (FMP) HII Banner Message Timeout Manual Link type configuration for VPI devices
14.7.24	<ul style="list-style-type: none"> Added resilient behavior toward link detection during UNDI initialization Enabled HII R/W configurations for HP platforms
14.6.25	<ul style="list-style-type: none"> Enabled WoL and SRIOV HII configurations for HP G9 platforms.
13.5.22	<ul style="list-style-type: none"> Added agentless (spices) support Added OCSD configuration - (ConnectX®-3) Added 'Platform To Driver' protocol
13.5.14	<ul style="list-style-type: none"> Added support for G9 spec as defined in HP document except for CLP Protocol and Adapter Information Protocol (AIP)

7.1 UEFI Bug Fixes History

Table 23 - UEFI Bug Fixes History

Version	Description
14.11.49	<ul style="list-style-type: none"> RM#1787300: Fixed an issue that caused the internal resources for handling packets not to be flushed when the driver was brought down and occasionally caused RSOD. The fix was applied to the ROM code only and has only external timing influences upon the driver's teardown.
14.11.45	<ul style="list-style-type: none"> RM#1040270: Fixed an issue where the ConnectFirstTgt and FirstTgtTcpPort attributes were corrupted when reading them from the flash memory. RM#1026373: Fixed an issue where SR-IOV Settings were not propagated properly when changing them from legacy mode.
14.11.34	<ul style="list-style-type: none"> RM#849659: Fixed an issue with the UEFI driver which caused the firmware to hang.
14.9.46	<ul style="list-style-type: none"> Fixed a rare issue causing a link bring-up problem
14.7.24	<ul style="list-style-type: none"> Fixed MTFTP performance issue

8 CLP Changes and New Features

Table 24 - CLP Changes and New Feature

Version	Description
Rev 8025	<ul style="list-style-type: none"> Reverted the flash configuration from v8033 to v8025 to maintain ROM code as small as possible. Reverting the code, does not affect the added flash configuration read/write capability added in v8033. Fixed the following CLP v8024 issue: Occasionally, an uninitialized variable on systems supporting OCSD causes system reboot.
Rev 8024	<ul style="list-style-type: none"> 644161-B21/B22 NFF Mezz 40GbE enabling CLP fix specifically related to 40GbE enabling on NFF Mezz card 644161-B21/B22.
Rev 8023	<ul style="list-style-type: none"> CLP version display Changed the CLP version format to be autonomic and be presented separately from the FlexBoot PXE version. 40GbE addition to the FDR NFF Mezz card Added CLP configuration support of 40GbE mode to the FDR NFF Mezz card (this change is not related to the Watatic ALOM card). 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' BIOS configuration.