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# **MellanoxConnectX-3 Pro Firmware Release Notes**

Rev 2.34.5000

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# Release Update History

**Table 1 - Release Update History**

Release	Date	Description
2.34.5000	June 17th, 2015	<ul style="list-style-type: none"><li>Added the following OPNs to the Supported Devices:<ul style="list-style-type: none"><li>MCX346A-BCQN</li><li>MCX349A-XCCN</li></ul></li><li>Added Known Issue # 21 and # 22 to <a href="#">Section 3, "Known Issues"</a>, on page 22</li></ul>
	May 15 <sup>th</sup> , 2015	Initial version

# 1 Overview

These are the release notes for the ConnectX-3 Pro adapters firmware Rev 2.34.5000. This firmware supports the following protocols:

- InfiniBand – SDR, DDR, QDR, FDR10, FDR
- Ethernet - 1GigE, 10GigE, 40GigE and 56GigE<sup>1</sup>
- 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
MCX311A-XCCT	MT_1480111023	ConnectX®-3 Pro EN network interface card; 10GigE; single-port SFP+; PCIe3.0 x8 8GT/s; RoHS R6
MCX312B-XCCT	MT_1200111023	ConnectX®-3 Pro EN network interface card; 10GigE; dual-port SFP+; PCIe3.0 x8 8GT/s; RoHS R6
MCX312C-XCCT	MT_2340111023	ConnectX®-3 Pro EN network interface card, 10GbE, dual-port SFP+, PCIe3.0 x8 8GT/s, tall bracket, RoHS R6
MCX313A-BCCT	MT_1060111023	ConnectX®-3 Pro EN network interface card; 40GigE; single-port QSFP; PCIe3.0 x8 8GT/s; RoHS R6
MCX314A-BCCT	MT_1090111023	ConnectX®-3 Pro EN network interface card; 40GigE; dual-port QSFP; PCIe3.0 x8 8GT/s; RoHS R6
MCX349A-XCCN	MT_2330111004	ConnectX®-3 Pro EN network interface card, 10GBASE-T quad-port, PCIe 3.0 x8 8GT/s, RoHS R6
	MT_2330110004	
MCX353A-FCCT	MT_1100111019	ConnectX®-3 Pro VPI adapter card; single-port QSFP; FDR IB (56Gb/s) and 40GigE; PCIe3.0 x8 8GT/s
MCX354A-FCCT	MT_1090111019	ConnectX®-3 Pro VPI adapter card; dual-port QSFP; FDR IB (56Gb/s) and 40GigE; PCIe3.0 x8 8GT/s; RoHS R6
MCX341A-XCPN	MT_1270115023	ConnectX®-3 Pro EN network interface card for OCP, 10GbE single-port SFP+, PCIe3.0 x8, no bracket, RoHS R6
MCX341A-XCQN	MT_1270116023	ConnectX®-3 Pro EN network interface card for OCP, 10GbE, with IPMI and NC-SI, single-port SFP+, PCIe3.0 x8, no bracket, RoHS R6
MCX342A-XCPN	MT_1680115023	ConnectX®-3 Pro EN network interface card for OCP, 10GbE dual-port SFP+, PCIe3.0 x8, no bracket, RoHS R6

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
MCX342A-XCQN	MT_1680116023	ConnectX®-3 Pro EN network interface card for OCP with IPMI and NC-SI, 10GbE dual-port SFP+, PCIe3.0 x8, no bracket, RoHS R6
MCX345A-BCPN	MT_1740111023	ConnectX®-3 Pro EN network interface card for OCP, 40GbE single-port QSFP, PCIe3.0 x8, no bracket, RoHS R6
MCX345A-BCQN	MT_1740110023	ConnectX®-3 Pro EN network interface card for OCP, 40GbE, with IPMI and NC-SI, single-port QSFP, PCIe3.0 x8, no bracket, RoHS R6
MCX346A-BCPN	MT_1760111023	ConnectX®-3 Pro EN network interface card for OCP, 40GbE dual-port QSFP, PCIe3.0 x8, no bracket, RoHS R6
MCX346A-BCQN	MT_1760110023	ConnectX®-3 Pro EN network interface card for OCP; 40GbE; dual-port QSFP; PCIe3.0 x8; IPMI and NC-SI support; R6
MCX349A-XCCN	MT_2330111004	ConnectX®-3 Pro EN network interface card, 10GBASE-T quad-port, PCIe 3.0 x8 8GT/s, RoHS R6
	MT_2330110004	

## 1.2 Supported Cables and Modules

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

### 1.2.1 Tested Cables and Modules

**Table 3 - Tested Cables and Modules (Sheet 1 of 9)**

Speed	OPN #	Description	Vendor
NA	MAMIQ00A-QSA	MELLANOX QSFP TO SFP+ ADAPTER	MELLANOX
DDR	MC1204128-001	MELLANOX PASSIVE COPPER HYBRID CABLE IB DDR 20GB/S QSFP TO CX4 1M	MELLANOX
DDR	MC1204128-003	MELLANOX PASSIVE COPPER HYBRID CABLE IB DDR 20GB/S QSFP TO CX4 3M	MELLANOX
DDR	MC1204128-005	MELLANOX PASSIVE COPPER HYBRID CABLE IB DDR 20GB/S QSFP TO CX4 5M	MELLANOX
DDR	MC1204130-002	MELLANOX PASSIVE COPPER HYBRID CABLE IB DDR 20GB/S QSFP TO CX4 2M	MELLANOX
QDR	MC2206125-007	MELLANOX PASSIVE COPPER CABLE IB QDR 40GB/S QSFP 7M	MELLANOX

**Table 3 - Tested Cables and Modules (Sheet 2 of 9)**

Speed	OPN #	Description	Vendor
QDR	MC2206126-006	MELLANOX PASSIVE COPPER CABLE IB QDR 40GB/S QSFP 6M	MELLANOX
FDR10	MC2206128-004	MELLANOX PASSIVE COPPER CABLE VPI UP TO 40GB/S QSFP 4M	MELLANOX
FDR10	MC2206128-005	MELLANOX PASSIVE COPPER CABLE VPI UP TO 40GB/S QSFP 5M	MELLANOX
FDR10	MC2206130-001	MELLANOX PASSIVE COPPER CABLE VPI UP TO 40GB/S QSFP 1M	MELLANOX
FDR10	MC2206130-002	MELLANOX PASSIVE COPPER CABLE VPI UP TO 40GB/S QSFP 2M	MELLANOX
FDR10	MC2206130-003	MELLANOX PASSIVE COPPER CABLE VPI UP TO 40GB/S QSFP 3M	MELLANOX
FDR10	MC2206130-00A	MELLANOX PASSIVE COPPER CABLE VPI UP TO 40GB/S QSFP 0.5M	MELLANOX
FDR10	MC2206310-XXX-E	MELLANOX ACTIVE FIBER CABLE IB QDR/ FDR10 40GB/S QSFP from 3M up to 100M	MELLANOX
FDR	MC2207126-004	MELLANOX PASSIVE COPPER CABLE VPI UP TO 56GB/S QSFP 4M	MELLANOX
FDR	MC2207128-003	MELLANOX PASSIVE COPPER CABLE VPI UP TO 56GB/S QSFP 3M	MELLANOX
FDR	MC2207128-0A2	MELLANOX PASSIVE COPPER CABLE VPI UP TO 56GB/S QSFP 2.5M	MELLANOX
FDR	MC2207130-001	MELLANOX PASSIVE COPPER CABLE VPI UP TO 56GB/S QSFP 1M	MELLANOX
FDR	MC2207130-002	MELLANOX PASSIVE COPPER CABLE VPI UP TO 56GB/S QSFP 2M	MELLANOX
FDR	MC2207130-00A	MELLANOX PASSIVE COPPER CABLE VPI UP TO 56GB/S QSFP 0.5M	MELLANOX
FDR	MC2207130-0A1	MELLANOX PASSIVE COPPER CABLE VPI UP TO 56GB/S QSFP 1.5M	MELLANOX
FDR10	MC2206310-XXX-T	MELLANOX ACTIVE FIBER CABLE IB QDR/ FDR10 40GB/S QSFP from 3M up to 100M	MELLANOX
FDR10	MC2206310-XXX-F	MELLANOX ACTIVE FIBER CABLE IB QDR/ FDR10 40GB/S QSFP from 3M up to 100M	MELLANOX
FDR10	MC2206310-300-L	MELLANOX ACTIVE FIBER CABLE IB QDR/ FDR10 40GB/S QSFP 300M	MELLANOX
FDR	MC2207310-XXX-E	MELLANOX ACTIVE FIBER CABLE VPI UP TO 56GB/S QSFP from 3M up to 100M	MELLANOX



**Table 3 - Tested Cables and Modules (Sheet 3 of 9)**

Speed	OPN #	Description	Vendor
FDR	MC2207310-XXX-T	MELLANOX ACTIVE FIBER CABLE VPI UP TO 56GB/S QSFP from 3M up to 100M	MELLANOX
FDR	MC2207312-XXX	MELLANOX ACTIVE FIBER CABLE VPI UP TO 56GB/S QSFP from 3M up to 300M	MELLANOX
FDR	MC220731V-XXX	MELLANOX ACTIVE FIBER CABLE VPI UP TO 56GB/S QSFP from 3M up to 100M	MELLANOX
FDR	MC2207411-SR4L	MELLANOX OPTICAL MODULE IB FDR 56GB/S QSFP MPO 850NM UP TO 30M	MELLANOX
40GB/S	MC2210126-004	MELLANOX PASSIVE COPPER CABLE ETH 40GBE 40GB/S QSFP 4M	MELLANOX
40GB/S	MC2210126-005	MELLANOX PASSIVE COPPER CABLE ETH 40GBE 40GB/S QSFP 5M	MELLANOX
40GB/S	MC2210128-003	MELLANOX PASSIVE COPPER CABLE ETH 40GBE 40GB/S QSFP 3M	MELLANOX
40GB/S	MC2210130-001	MELLANOX PASSIVE COPPER CABLE ETH 40GBE 40GB/S QSFP 1M	MELLANOX
40GB/S	MC2210130-002	MELLANOX PASSIVE COPPER CABLE ETH 40GBE 40GB/S QSFP 2M	MELLANOX
40GB/S	MC2210310-XXX	MELLANOX ACTIVE FIBER CABLE ETH 40GBE 40GB/S QSFP from 3M up to 100M	MELLANOX
FDR10	MC2210411-SR4	MELLANOX OPTICAL MODULE 40GB/S QSFP MPO 850NM UP TO 100M	MELLANOX
FDR10	MC2210411-SR4E	MELLANOX OPTICAL MODULE 40GB/S QSFP MPO 850NM UP TO 300M	MELLANOX
40GB/S	MC2210411-SR4L	MELLANOX OPTICAL MODULE 40GB/S QSFP MPO 850NM UP TO 30M	MELLANOX
10GB/S	MC2309124-004	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 4M	MELLANOX
10GB/S	MC2309124-005	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 5M	MELLANOX
10GB/S	MC2309124-006	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 6M	MELLANOX
10GB/S	MC2309124-007	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 7M	MELLANOX
10GB/S	MC2309130-001	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 1M	MELLANOX
10GB/S	MC2309130-002	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 2M	MELLANOX

**Table 3 - Tested Cables and Modules (Sheet 4 of 9)**

Speed	OPN #	Description	Vendor
10GB/S	MC2309130-003	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 3M	MELLANOX
10GB/S	MC2309130-00A	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S QSFP TO SFP+ 0.5M	MELLANOX
10GB/S	MC2609125-004	MELLANOX PASSIVE COPPER HYBRID CABLE ETH 40GBE TO 4X10GBE QSFP TO 4X SFP+ 4M	MELLANOX
10GB/S	MC2609125-005	MELLANOX PASSIVE COPPER HYBRID CABLE ETH 40GBE TO 4X10GBE QSFP TO 4X SFP+ 5M	MELLANOX
10GB/S	MC2609130-001	MELLANOX PASSIVE COPPER HYBRID CABLE ETH 40GBE TO 4X10GBE QSFP TO 4X SFP+ 1M	MELLANOX
10GB/S	MC2609130-002	MELLANOX PASSIVE COPPER HYBRID CABLE ETH 40GBE TO 4X10GBE QSFP TO 4X SFP+ 2M	MELLANOX
10GB/S	MC2609130-003	MELLANOX PASSIVE COPPER HYBRID CABLE ETH 40GBE TO 4X10GBE QSFP TO 4X SFP+ 3M	MELLANOX
10GB/S	MC2609130-0A1	MELLANOX PASSIVE COPPER HYBRID CABLE ETH 40GBE TO 4X10GBE QSFP TO 4X SFP+ 1.5M	MELLANOX
1GB/S	MC3208011-SX	MELLANOX OPTICAL MODULE ETH 1GBE 1GB/S SFP LC-LC SX 850NM UP TO 500M	MELLANOX
1GB/S	MC3208411-T	MELLANOX MODULE ETH 1GBE 1GB/S SFP BASE-T UP TO 100M	MELLANOX
10GB/S	MC3309124-004	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 4M	MELLANOX
10GB/S	MC3309124-005	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 5M	MELLANOX
10GB/S	MC3309124-006	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 6M	MELLANOX
10GB/S	MC3309124-007	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 7M	MELLANOX
10GB/S	MC3309124-0A3	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 3.5M	MELLANOX
10GB/S	MC3309130-001	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 1M	MELLANOX

**Table 3 - Tested Cables and Modules (Sheet 5 of 9)**

Speed	OPN #	Description	Vendor
10GB/S	MC3309130-002	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 2M	MELLANOX
10GB/S	MC3309130-003	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 3M	MELLANOX
10GB/S	MC3309130-00A	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 0.5M	MELLANOX
10GB/S	MC3309130-0A1	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 1.5M	MELLANOX
10GB/S	MC3309130-0A2	MELLANOX PASSIVE COPPER CABLE ETH 10GBE 10GB/S SFP+ 2.5M	MELLANOX
EDR	MCP1600-E001	MELLANOX PASSIVE COPPER CABLE VPI 100GB/S QSFP LSZH 1M	MELLANOX
EDR	MCP1600-E002	MELLANOX PASSIVE COPPER CABLE VPI 100GB/S QSFP LSZH 2M	MELLANOX
EDR	MCP1600-E003	MELLANOX PASSIVE COPPER CABLE VPI 100GB/S QSFP LSZH 3M	MELLANOX
EDR	MCP1600-E00A	MELLANOX PASSIVE COPPER CABLE VPI 100GB/S QSFP LSZH 0.5M	MELLANOX
FDR10	MFS4R12CB-XXX	MELLANOX ACTIVE FIBER CABLE VPI UP TO 40GB/S QSFP from 3M up to 100M	MELLANOX
40GB/S	10093084-200AHFLF	FCI QSFP 0.75m 40GbE cable	FCI
40GB/S	10093084-2005HFLF	FCI QSFP 0.5m 40GbE cable	FCI
40GB/S	10093084-2010HFLF	FCI QSFP 1m 40GbE cable	FCI
10GB/S	Cisco SFP-H10GB-CU1M	Cisco SFP+ cable	Cisco
10GB/S	Cisco SFP-H10GB-CU3M	Cisco SFP+ cable	Cisco
10GB/S	Cisco SFP-H10GB-CU5M	Cisco SFP+ cable	Cisco
40GB/S	QSFP-H40G-CU1M	Cisco QSFP 40GbE cable	Cisco
40GB/S	QSFP-H40G-CU3M	Cisco QSFP 40GbE cable	Cisco
40GB/S	QSFP-H40G-CU5M	Cisco QSFP 40GbE cable	Cisco
10GB/S	MC2309124-007	QSFP-4SFP10G	Cisco
40GB/S	QSFP-40G-SR4	CISCO 40G QSFP Module	Cisco
10GB/S	SFP-10G-SR	CISCO 10GBASE-SR SFP Module	Cisco

**Table 3 - Tested Cables and Modules (Sheet 6 of 9)**

Speed	OPN #	Description	Vendor
10GB/S	MC2309124-007	QSFP-4SFP10G	Cisco
10GB/S	CAB-SFP-SFP-1M	passive copper cable, SFP+, 10 Gb/s, 1m	Arista
10GB/S	CAB-SFP-SFP-2M	passive copper cable, SFP+, 10 Gb/s, 2m	Arista
10GB/S	CAB-SFP-SFP-3M	passive copper cable, SFP+, 10 Gb/s, 3m	Arista
10GB/S	CAB-SFP-SFP-5M	passive copper cable, SFP+, 10 Gb/s, 5m	Arista
40GB/S	40GbE QSFP+ to QSFP	QSFP+ copper cable 3M	Arista
40GB/S	40GbE QSFP+ to QSFP	QSFP+ copper cable 5M	Arista
10GB/S	QFX-SFP-DAC-1M	SFP+ 10 Gigabit Ethernet Direct Attach Copper (twinax copper cable) 1 m	Juniper
10GB/S	QFX-SFP-DAC-3M	SFP+ 10 Gigabit Ethernet Direct Attach Copper (twinax copper cable) 3 m	Juniper
10GB/S	QFX-SFP-DAC-5M	SFP+ 10 Gigabit Ethernet Direct Attach Copper (twinax copper cable) 5 m	Juniper
10GB/S	740-021308	Juniper 10GE SFP+ module	Juniper
10GB/S	90Y9425-N28500A	IBM-Amphenol SFP+ 1m	IBM
10GB/S	46K6184-L36836B	IBM-Amphenol SFP+ 5m	IBM
10GB/S	46K6183-L36836B	IBM-Amphenol SFP+ 3m	IBM
10GB/S	44X1371-N31295E	IBM-Amphenol SFP+ 7m	IBM
10GB/S	95Y1634-N31295E	IBM SFP+ to SFP+ copper cable 5M	IBM
40GB/S	00D5802-N13445C	IBM 40GbE QSFP+ to QSFP+ copper cable 1M	IBM
40GB/S	BN-QS-QS-CBL-3M	IBM 40GbE QSFP+ to QSFP+ copper cable 3M	IBM
40GB/S	BN-QS-QS-CBL-5M	IBM 40GbE QSFP+ to QSFP+ copper cable 5M	IBM
FDR	038-004-066-01	EMC FDR QSFP+ to QSFP+ copper cable 2M	EMC FDR QSFP
FDR	038-004-067-01	EMC FDR QSFP+ to QSFP+ copper cable 3M	EMC FDR QSFP
FDR	038-900-027-01	EMC FDR QSFP+ to QSFP+ copper cable 5M	EMC FDR QSFP
FDR	038-900-030-01	EMC FDR QSFP+ to QSFP+ copper cable 8M	EMC FDR QSFP
FDR	038-004-236-01	FDR QSFP+ to QSFP+ copper cable 0.5m	EMC FDR QSFP

**Table 3 - Tested Cables and Modules (Sheet 7 of 9)**

Speed	OPN #	Description	Vendor
FDR	038-004-065-01	EMC FDR QSFP+ to QSFP+ copper cable 1M	EMC FDR QSFP
FDR	038-004-069-01	EMC FDR QSFP+ to QSFP+ copper cable 5M	EMC FDR QSFP
40GB/S	JG325A	HP X140 40G QSFP+ MPO SR4 Transceiver	HP
40GB/S	JG326A	HP X240 40G QSFP+ QSFP+ 1m DAC Cable	HP
40GB/S	JG327A	HP X240 40G QSFP+ QSFP+ 3m DAC Cable	HP
40GB/S	JG328A	HP X240 40G QSFP+ QSFP+ 5m DAC Cable	HP
10GB/S	J9281B	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	HP
10GB/S	J9283B	HP X242 10G SFP+ SFP+ 3m DAC Cable	HP
10GB/S	J9285B	HP X242 10G SFP+ SFP+ 7m DAC Cable	HP
10GB/S	JD096B	HP X240 10G SFP+ SFP+ 1.2m DAC Cable	HP
10GB/S	JD095B	HP X240 10G SFP+ SFP+ 0.65m DAC Cable	HP
10GB/S	JD097B	HP X240 10G SFP+ SFP+ 3m DAD Cable	HP
10GB/S	487649-B21	HP BLc SFP+ .5m 10GbE Copper Cable	HP
10GB/S	487652-B21	HP BLc SFP+ 1m 10GbE Copper Cable	HP
10GB/S	487655-B21	HP BLc SFP+ 3m 10GbE Copper Cable	HP
10GB/S	537963-B21	HP BLc SFP+ 5m 10GbE Copper Cable	HP
10GB/S	487658-B21	HP BLc SFP+ 7m 10GbE Copper Cable	HP
10GB/S	AP784A	HP 3m C-series Passive Copper SFP+ Cable	HP
10GB/S	AP785A	HP 5m C-series Passive Copper SFP+ Cable	HP
10GB/S	AP818A	HP 1m B-series Active Copper SFP+ Cable	HP
10GB/S	AP819A	HP 3m B-series Active Copper SFP+ Cable	HP
1GB	453151-B21	HP BLc VC 1Gb SX SFP Opt Kit	HP
1GB	453154-B21	HP BLc VC 1Gb RJ-45 SFP Opt Kit	HP
10GB/S	455883-B21	HP BLc 10Gb SR SFP+ Opt	HP
10GB/S	455886-B21	HP BLc 10Gb LR SFP+ Opt	HP
10GB/S	J9150A	HP X132 10G SFP+ LC SR Transceiver	HP
10GB/S	J9151A	HP X132 10G SFP+ LC LR Transceiver	HP
10GB/S	AJ839A	HP 50m Multi-mode OM3 LC/LC FC Cable	HP

**Table 3 - Tested Cables and Modules (Sheet 8 of 9)**

Speed	OPN #	Description	Vendor
10GB/S	AJ838A	HP 30m Multi-mode OM3 LC/LC FC Cable	HP
10GB/S	AJ837A	HP 15m Multi-mode OM3 LC/LC FC Cable	HP
10GB/S	AJ836A	HP 5m Multi-mode OM3 LC/LC FC Cable	HP
10GB/S	AJ834A	HP 1m Multi-mode OM3 LC/LC FC Cable	HP
10GB/S	AJ833A	HP 0.5m Multi-mode OM3 LC/LC FC Cable	HP
10GB/S	JG329A	HP X240 40G QSFP+ to 4x10G SFP+ 1m	HP
10GB/S	JG330A	HP X240 40G QSFP+ to 4x10G SFP+ 3m	HP
10GB/S	JG331A	HP X240 40G QSFP+ to 4x10G SFP+ 5m	HP
10GB/S	JD095C	HP X240 10G SFP+ SFP+ 0.65m DAC Cable	HP
10GB/S	C4D08	Force 10passive copper cable, SFP+, 10 Gb/s, 1m	Force10
10GB/S	53HVN	Force 10passive copper cable, SFP+, 10 Gb/s, 3m	Force10
10GB/S	5CN56	Force 10passive copper cable, SFP+, 10 Gb/s, 5m	Force10
40GB/S	NWGTV	Force 10passive copper cable, QSFP, 40 Gb/s, 1m	Force10
40GB/S	V492M	Force 10passive copper cable, QSFP, 40 Gb/s, 5m	Force10
40GB/S	GP-QSFP-40GE-1SR	Force10 - Dell 40GbB QSFP module	Force10
10GB/S	0NWGTV	SFP+ to SFP+ copper cable 1M	Dell
10GB/S	0C4D08	SFP+ to SFP+ copper cable 1M	Dell
10GB/S	0V250M	SFP+ to SFP+ copper cable 1M	Dell
10GB/S	0NMMT9	SFP+ to SFP+ copper cable 1M	Dell
10GB/S	053HVN	SFP+ to SFP+ copper cable 3M	Dell
10GB/S	05CWK6	SFP+ to SFP+ copper cable 3M	Dell
10GB/S	00F1VT9	SFP+ to SFP+ copper cable 3M	Dell
10GB/S	00358VV	SFP+ to SFP+ copper cable 5M	Dell
10GB/S	05CN56	SFP+ to SFP+ copper cable 5M	Dell
10GB/S	0V492M	SFP+ to SFP+ copper cable 5M	Dell
10GB/S	0W25W9	SFP+ to SFP+ copper cable 5M	Dell
40GB/S	05NP8R	40GbE QSFP+ to QSFP+ copper cable 1M	Dell
40GB/S	00FC6KV	40GbE QSFP+ to QSFP+ copper cable 3M	Dell
10GB/S	0J90VN	40GbE QSFP+ to QSFP+ copper cable 5M	Dell

**Table 3 - Tested Cables and Modules (Sheet 9 of 9)**

Speed	OPN #	Description	Vendor
10GB/S	TCPM2	QSFP+ to 4xSFP+ copper cable 1M	Dell
10GB/S	27GG5	QSFP+ to 4xSFP+ copper cable 3M	Dell
10GB/S	P8T4W	QSFP+ to 4xSFP+ copper cable 5m	Dell
10GB/S	0WTRD1	Dell 10Gb SR SFP+ Opt	Dell
40GB/S	0RF2MY	Dell 40GbB QSFP module	Dell
10GB/S	XDL-TWX0101	Brocade passive copper cable, SFP+, 10 Gb/s, 1m	Brocade
10GB/S	XDL-TWX0301	Brocade passive copper cable, SFP+, 10 Gb/s, 3m	Brocade
10GB/S	XDL-TWX0501	Brocade passive copper cable, SFP+, 10 Gb/s, 5m	Brocade

### 1.3 Tested Switches

**Table 4 - Tested Switches (Sheet 1 of 4)**

Speed	OPN # /Name	Description	Vendor
10/40Gb/s	7050Q	16-port 40Gb Switch	Arista
10/40Gb/s	7050S	48-port 10Gb/40Gb Switch	Arista
40GbE	7050QX	32-port 40Gb Switch	Arista
10Gb/s	Brocade 8000	Brocade 10GB ETH switch	Brocade
10/40Gb/s	3064	48-port 10Gb/40Gb Switch	Cisco
10Gb/s	5548	Cisco 10GB ETH switch	Cisco
40GbE	3016	Cisco 40GB ETH switch	Cisco
40GbE	3132Q	Cisco 40GB ETH switch	Cisco
10/40Gb/s	S5000	10GbE switch	Dell
10Gb/s	8024F	10GbE switch	Dell
10Gb/s	8132F	10GbE switch	Dell
10Gb/s	8164F	10GbE switch	Dell
1Gb/s	7024F	1/10GbE switch	Dell
40GbE	S6000	32-port 40Gb Switch	Dell
10/40Gb/s	S4810P-AC	48-port 10Gb/40Gb Switch	Force 10
10Gb/s	Fujitsu 10GbE (XAUI)	Ethernet Switch 24 ports, 20xCX4 and 4xQSFP	Fujitsu
10/40Gb/s	ASF5900	HP 10GB ETH switch	HP

**Table 4 - Tested Switches (Sheet 2 of 4)**

Speed	OPN # /Name	Description	Vendor
10Gb/s	HP ProCurve 6600-24XG	24-port 10GbE switch	HP
10GbE	516733-B21	HP ProCurve 6120XG 10GbE Ethernet Blade Switch	HP
10GbE	6125XLG Blade Switch	HP 6125XLG 10/40G Ethernet Blade Switch	HP
10GbE	538113-B21	HP 10GbE Pass-Through Module (PTM)	HP
1Gb/s	2810-24G.	HP 1GB ETH switch	HP
1GbE	3020X	Cisco Catalyst 3020X 1GbE switch blade	HP
1GbE	3020	Cisco Catalyst 3020 1GbE switch blade	HP
1GbE	438030-B21	HP 1GbE switch module - GbE2c Layer 2/3 Ethernet Blade Switch	HP
1GbE	6120G	HP ProCurve 6120G/XG 1GbE switch blade	HP
40GbE	689638-B21	Mellanox SX1018HP Enet Switch 40G Ethernet	HP
IB DDR	410398-B21	HP BLc 4X DDR IB Switch	HP
IB FDR	775144-001	SwitchX-2 based 18-port QSFP FDR 1U unmanaged InfiniBand switch; R6; compatible to HP Apollo racks	HP
IB FDR	648311-B21	HP BLc 4X FDR IB Switch	HP
IB QDR	489184-B21	HP BLc 4X QDR IB Switch	HP
10/40Gb/s	IBM G8264	IBM 10/40GB ETH switch	IBM
10GbE	B22	IBM B22 10 Gigabit Scalable Switch Module	IBM
10GbE	EN4093	IBM PureFlex System Fabric EN4093 10 Gigabit Scalable Switch Module	IBM
40GbE	IBM G8316	IBM 40GB RackSwitch G8316	IBM
40GbE	90Y3477	BM Flex System EN6131 40Gb Ethernet Switch	IBM
IB FDR	90Y3452	IBM Flex System IB6131 Infiniband Switch	IBM
10/40Gb/s	Juniper EX3500	Juniper 10/40GB ETH switch	Juniper
10Gb/s	Juniper EX2500	Juniper 10GB ETH switch	Juniper
10Gb/s	Juniper EX4550	Juniper 10GB ETH switch	Juniper
40GbE	Juniper-QFX5100	Juniper40GB ETH switch	Juniper



**Table 4 - Tested Switches (Sheet 3 of 4)**

Speed	OPN # /Name	Description	Vendor
10/40Gb/s	MSX1024B-1BFS	SwitchX®-2 based 48-port SFP+ 10GbE, 12 port QSFP 40GbE, 1U Ethernet switch	Mellanox
10Gb/s	MSX1016X-1BFR	SwitchX™ based 64-port SFP+ 10GigE, 1U Ethernet switch	Mellanox
40Gb/s	MSX1036B-1BFR	SwitchX™ based 36-port QSFP 40GigE 1U Ethernet	Mellanox
EDR	MSB7790-EB2F	Switch-IB(TM) based EDR InfiniBand Switch, 36 QSFP ports, non-blocking switching capacity of 7.2Tbps,	Mellanox
IB DDR	F-X430044	24-port DDR-Switch	Mellanox
IB DDR	Mellanox M2401G	Infiniscale III 24-Port 20Gb/s InfiniBand Switch for Dell M1000E Blade System	Mellanox
IB FDR	MSX6710-FB2F2	SwitchX®-2 based FDR InfiniBand 1U Switch, 36 QSFP+ ports, 2 Power Supplies (AC), x86 dual core, short depth, P2C airflow, Rail Kit, RoHS6	Mellanox
IB 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	Mellanox
IB FDR	Mellanox M4001F	SwitchX® 56Gb/s 16+16 port InfiniBand switch blade for the Dell M1000e Blade System	Mellanox
IB FDR10	MSX6025T-1SFR	SwitchX™ based FDR10 Infiniband Switch, 36 QSFP ports, 1 Power Supply, Standard depth, Unmanaged, PSU side to Connector side airflow, Rail Kit and RoHS6	Mellanox
IB FDR10	Mellanox M4001T	SwitchX® 40Gb/s 16+16 port InfiniBand switch blade for the Dell M1000e Blade System	Mellanox
IB QDR	MIS5025Q-1SFC	InfiniScale® IV QDR InfiniBand Switch, 36 QSFP ports, 1 Power Supply, Unmanaged, PSU side to connector side airflow, Standard depth, Rail Kit and RoHS5	Mellanox
IB QDR	MIS5024Q-1BFR	InfiniScale® IV QDR InfiniBand Switch, 36 QSFP ports, 1 power supply, Unmanaged, PSU side to Connector side airflow, no FRUs, with rack rails, Short Depth Form Factor	Mellanox
IB QDR	QDR-Switch 4036	InfiniScale® IV QDR Mellanox Grid Director 4036 36-Port QDR InfiniBand Switch - Part ID: VLT-30011	Mellanox
IB QDR	Mellanox M3601Q	40Gb/s 16+16 port InfiniBand switch blade for the Dell M1000e Blade System	Mellanox
IB SDR	F-X430060	24-port SDR-Switch	Mellanox

**Table 4 - Tested Switches (Sheet 4 of 4)**

Speed	OPN # /Name	Description	Vendor
IB DDR	9024	24-port DDR-Switch	Qlogic
IB QDR	12300	36-Port 40Gb QDR Infiniband Switch, Management Module, Dual Power	Qlogic
1/10Gb/s	Summit X650	Extreme 10GB ETH switch	Summit

## 1.4 Tools, Switch Firmware and Driver Software

Firmware Rev 2.34.5000 is tested with the following tools, SwitchX® firmware, and driver software:

**Table 5 - Tools, Switch Firmware and Driver Software**

	Supported Version
MLNX_OFED	3.0-0.0.0/2.4-1.0.0/2.3-x.0.0
MLNX_EN (MLNX_OFED based code)	3.0-0.0.0/2.4-1.0.0/2.3-x.0.0
WinOF	4.95/4.90/4.80
VMware	1.9.9.4/1.8.2.4
MFT	4.0.0/3.8.0
SwitchX/SwitchX-2 Firmware	v9.3.2000
InfiniScale 4 Firmware	v7.4.3000

## 1.5 Supported FlexBoot

Firmware Rev 2.34.5000 supports the following FlexBoot version:

**Table 6 - Supported FlexBoot**

	Supported Version
FlexBoot	3.4.521

## 1.6 Revision Compatibility

Firmware Rev 2.34.5000 complies with the following programmer's reference manual:

- *ConnectX Programmer's Reference Manual (PRM), Rev 1.7 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) 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 Supported Features

### 2.1 Firmware Rev 2.34.5000 Changes and New Features

**Table 7 - Firmware Rev 2.34.5000 Changes and New Features**

Category	Description
RoCE	Support multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
PRM	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.
RDMA Retransmission	Improved RDMA WRITE/SEND performance with retransmissions.
Firmware burning/querying	Enabled firmware burning/querying using the PRM ACCESS_REG command.
Cable reading	Enabled bad cable EEPROM reporting to the driver.
NC-SI	Added support for Platform Level Data Model (PLDM) sideband protocol.
Packet Steering	Added support for priority based A0-DMFS mode (For further information, please refer to the PRM).
Embedded switch	Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
Packet Steering	Removed the source IP from the hash calculation (For further information, please refer to the PRM)
Inline Receive	Added support for Inline Receive mode up to 2KB.

### 3 Known Issues

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

**Table 8 - Known Issues**

Index	Issue	Description	Workaround	Scheduled Release (fix)
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.	Future Release
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 0xffff).	N/A
3.	SBR assertion	SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters	N/A	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	N/A
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	N/A
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	Future Release
7.	SR-IOV disabled in the BIOS	When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.	Enable SR-IOV in the BIOS	Future Release

**Table 8 - Known Issues**

Index	Issue	Description	Workaround	Scheduled Release (fix)
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'	Future Release
9.	MC2210411-SR4 module with Cable Info MAD	Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module	N/A	Future Release
10.	PCIe failure on temperature shock 10C/min	Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).	N/A	Future Release
11.	PCIe Gen2 link	PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV	N/A	Future Release
12.	Bloom filter	Bloom filter is currently not supported.	N/A	Future Release
13.	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	Future Release
14.	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	Future Release
15.	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.	N/A
16.	VPD read-only fields	VPD read-only fields are writable.	Do not write to read-only fields if you wish to preserve them	Future Release

**Table 8 - Known Issues**

Index	Issue	Description	Workaround	Scheduled Release (fix)
17.	Increasing SymbolErrorCounter	When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly	N/A	Future Release
18.	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	Future Release
19.	128 Byte CQ/EQ stride	CQ and EQ cannot be configured to different stride sizes.	N/A	Future Release
20.	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.	<ol style="list-style-type: none"> <li>1. Unplug the cable from the switch</li> <li>2. Restart driver</li> <li>3. Change the protocol via the appropriate tools.</li> </ol>	N/A
21.	Link Up time	Habanero (P/N MCX349A-XCCN) may experience longer linkup times of a few seconds with specific switches.	N/A	Future Release
22.	Port identification	Habanero (P/N MCX349A-XCCN) does not respond to ethtool "identify" command (ethtool -p/--identify)	N/A	Future Release



## 4 Bug Fixes History

Table 9 lists the bugs fixed in this release.

**Table 9 - Fixed Bugs List**

Index	Issue	Description	Discovered in Release	Fixed in Release
1.	Packet Ethertype	Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.	2.30.8000	2.34.5000
2.	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
3.	RSS QP update failure	Fixed a failure to update RSS QP in steering rules.	2.33.5100	2.34.5000
4.	Low link speed	Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch	2.33.5100	2.34.5000
5.	40GbE Link down	Fixed a failure to read cable parameter which caused link failure on 40GbE dual port OCP devices.	2.33.5100	2.34.5000
6.	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
7.	VM QoS	Fixed a case where the actual bandwidth did not match the user settings in VM QoS.	2.33.5100	2.34.5000
8.	Sideband communication loss	Fixed a case where on rare cases, communication to BMC was lost during driver initialization.	2.33.5100	2.34.5000
9.	LED behavior	Fixed a wrong LED behavior when the driver is disabled in the following adapter cards: MCX346A-BCQN, MCX345A-BCQN.	2.33.5100	2.34.5000
10.	Link down on cable plugging	Fixed an issue with cable reading, which caused the link not to raise	2.33.5100	2.34.5000
11.	PRM: EQN range	Set the maximum EQN number to 1024.	2.30.8000	2.34.5000
12.	Vital Product Data read failure	Fixed a rare issue with VPD init flow which caused read failures.	2.31.5050	2.34.5000
13.	PRM: Statistic counters not reported	Fixed an issue with RX size counter not being reported.	2.30.8000	2.34.5000
14.	RoCE/InfiniBand reliable connection	The first Read response was not treated as implicit ACK.	2.30.8000	2.33.5100

**Table 9 - Fixed Bugs List**

Index	Issue	Description	Discovered in Release	Fixed in Release
15.	40GbE Link up time	Reduced a long 40GbE link up time with Cisco Nexus3064 and Arista-7050S	2.32.5100	2.33.5100
16.	Promiscuous mode	Fixed promiscuous mode compatibility with A0-DMFS steering.	2.32.5100	2.33.5000
17.		Fixed promiscuous mode compatibility when NC-SI is enabled and configured.	2.32.5100	2.33.5000
18.	NC-SI OEM commands	Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.	2.32.5100	2.33.5000
19.	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	2.33.5000
20.	Side Band Functionality	Fixed long management communication loss and SOL hang during reboot cycles.	2.32.5100	2.33.5000
21.		Fixed wrong processing of inbound traffic towards BMC which caused communication loss.	2.32.5100	2.33.5000
22.		Fixed management link loss upon closing port interface through the driver.	2.32.5100	2.33.5000
23.	NC-SI on SFP+ Adapter Cards	Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.	2.32.5100	2.33.5000
24.	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	2.33.5000
25.	Inbound Packet Processing	Fixed a rare case where packet with length zero got stuck in hardware queues.	2.32.5100	2.33.5000
26.		Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.	2.32.5100	2.33.5000
27.	Asynchronous Event Notification (AEN)	Fixed an issue which caused AEN to be sent after channel reset.	2.32.5100	2.33.5000
28.	Bandwidth Degradation with QoS	Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.	2.31.5050	2.33.5000
29.	Port Link Up Time	Fixed an occasional long link up time with 10GbE based devices.	2.32.5100	2.33.5000
30.	SFP Cable Reading	Fixed an issue preventing cable readings from i2c slave address 0x51	2.32.5100	2.33.5000

**Table 9 - Fixed Bugs List**

Index	Issue	Description	Discovered in Release	Fixed in Release
31.	PCIe Gen3 Equalization	Fixed a wrong parity bit calculation when transmitting PCIe TS1 packets.	2.32.5100	2.33.5000
32.	PCIe Power Management	Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.	2.32.5100	2.33.5000
33.	PCIe width Degrade	Fixed a rare case with alignments state machines which caused occasional width degradation.	2.32.5100	2.33.5000
34.	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	2.33.5000
35.	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	2.33.5000
36.	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	2.33.5000
37.	GPIO Mapping	Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander	2.32.5100	2.33.5000
38.	Steering Mode	Fixed an issue where firmware overrides the steering mode that was chosen by the driver.	2.32.5100	2.33.5000
39.	Port sensing	Fixed invalid return sensing results occurred when the link was up.	2.32.5100	2.33.5000
40.		Fixed an issue causing the sensing result to be delayed when cable was unplugged.	2.32.5100	2.33.5000
41.	Wrong link type display	Fixed an issue causing the link type to be displayed as ETH when set to AUTO.	2.32.5100	2.33.5000
42.	WoL Functionality	Fixed 2us glitch in Wake Up signal.	2.32.5100	2.33.5000
43.	IBDump performance	Fixed performance degradation when running IBDump	2.30.8000	2.32.5100
44.	PCIe link Disable/Enable	Occasionally, a link training timeout occurred in EQ phase0 during disable/enable test.	2.31.5050	2.32.5100
45.	40GbE QoS	Improved strict bandwidth mode functionality	2.30.8000	2.32.5100
46.	Port Counters reporting	Fixed an issue with the <code>PortRcvPkts</code> counter always displaying zero value.	2.31.5050	2.32.5100

**Table 9 - Fixed Bugs List**

Index	Issue	Description	Discovered in Release	Fixed in Release
47.	GMP MADs in SecureHost	Fixed an issue with processing GMP MADs with SET method in SecureHost mode.	2.31.5050	2.32.5100
48.	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
49.	NC SI link failure	Disabling the first port occasionally causes second port TX failure.	2.31.5050	2.32.5100
50.	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
51.	Link failure	Fixed an occasional 40GbE link failure with SCM5 Switch blade	2.31.5050	2.32.5100
52.	ExtPortInfo MAD	Fixed a wrong FDR10 speed reporting in MAD	2.31.5050	2.32.5100
53.	IB link failure	Fixed an issue preventing the ports to rise up when set to FDR10 vs QDR	2.31.5050	2.32.5100
54.	40GbE link failure	Fixed an occasional link failure vs Arista switch	2.31.5050	2.32.5100
55.	RDMA Write retransmission	Retransmission started from the first PSN of message instead of the last acknowledged PSN	2.30.3200	2.32.5100
56.	Firmware burning	Firmware hangs when receiving GeneralInfoMad during inline firmware burning	2.30.3200	2.32.5100
57.	PCIe PML1	L1 flow adjustments and threshold tuning	2.31.5050	2.32.5100
58.	PCIe reset	Fixed a rare hanging issue during PERST_assertion	2.31.5050	2.32.5100
59.	PCIe Gen3 EQ	Wrong coefficients were reported during phase3	2.31.5050	2.32.5100
60.	Boot	Fixed an issue causing wrong behavior due to reset timing	2.31.5050	2.32.5100
61.	VXLAN/NVGRE	Fixed lack of steering options	2.30.8000	2.32.5010
62.	SMBUS	Fixed long timeout issues	2.31.5050	2.32.5100
63.	NVRAM	Fixed NVRAM write issues in driver-less mode	2.31.5050	2.32.5100
64.	40GbE Link support	Fixed 40GbE link support in aux mode	2.31.5050	2.32.5100
65.	NC-SI	Dropped commands with non-existing channel ID	2.31.5050	2.32.5100

**Table 9 - Fixed Bugs List**

Index	Issue	Description	Discovered in Release	Fixed in Release
66.	PRM PortInfo command	Fixed issues in extended speed reporting	2.31.5050	2.32.5100
67.	Trap 257/8(IB)	Fixed bad QP reporting in trap 257/8	2.30.8000	2.32.5100
68.	Bad Q_KEY errors	Fixed an issue causing false bad q_key error messages	2.30.8000	2.32.5100
69.	PFC	Fixed Pause Frame opcode mismatch	2.30.8000	2.32.5100
70.	Sideband Communication	Fixed communication loss upon PCIe error detection	2.31.5050	2.32.5100
71.	NC-SI	Fixed wrong channel value in the SELECT/DESELECT PACKAGE commands	2.30.8000	2.31.5050
72.		Fixed an issue caused response packet to include 4 extra bytes	2.30.8000	2.31.5050
73.		Fixed wrong reason code value returned when using Set Link command with unsupported speed.	2.30.8000	2.31.5050
74.		Added protection from bad MAC address given by BMC	2.30.8000	2.31.5050
75.	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
76.	PCIe	Removed false TX pulse after PERST_ deassertion	2.30.8000	2.31.5050
77.		Fixed FLR capability bit inconsistency when SR-IOV is enabled.	2.30.8000	2.31.5050
78.		Fixed an issue with the device not reporting PCIe related errors.	2.30.8000	2.31.5050
79.	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
80.	VXLAN	VXLAN used the wrong default UDP port. the UDP port number was changed to 4789.	2.30.8000	2.31.5050
81.		Fixed wrong setting of the UDP destination port for VXLAN.	2.30.8000	2.31.5050
82.	Flow Steering	Fixed an internal error caused when moving to the DMS mode with IPMI/NC-SI enabled.	2.30.8000	2.31.5050

**Table 9 - Fixed Bugs List**

Index	Issue	Description	Discovered in Release	Fixed in Release
83.	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.	2.30.8000	2.31.5050
84.	PCI interrupt	Fixed issues related to working with PCI legacy interrupts.	2.30.8000	2.31.5050
85.	TCP/UDP Checksum	Fixed wrong checksum calculation for short packets which were padded by the software.	2.30.8000	2.31.5050
86.	MFT tool deadlock	Reading PCIe configuration space after using the MFT flint tool caused the device to crash.	2.30.8000	2.31.5050
87.	Side band packet loss	Fixed occasional packet loss over IPMI	2.30.8000	2.31.5050
88.	Eye opening MAD	Fixed wrong values reported in the Eye opening MAD.	2.30.8000	2.31.5050
89.	PCIe Link width	Fixed occasional link width degrades during link negotiation and link transitions from L1 state.	2.30.8000	2.31.5050
90.	PCIe signal detect	Fixed adjust signal detect thresholds	2.30.8000	2.31.5050
91.	Error counters	PortExtendedSpeedsCounters MAD counters were mistakenly increased while LLR was active	2.30.8000	2.31.5050
92.	PCIe Gen3 Equalization	Lane reversal was not considered when configured TX parameters	2.30.8000	2.31.5050
93.	Reset On LAN (ROL)	Fixed ROL factory MAC usage when a FlexBoot address was given.	2.30.8000	2.31.5050
94.	Flow Control	Fixed Pause frames factory MAC usage when a FlexBoot address was given.	2.30.8000	2.31.5050
95.	WOL/ROL	The device did not different between WOL/ROL packets.	2.30.8000	2.31.5050
96.	PortInfo MAD	Fixed a set of extended fields in PortInfo MAD which did not function.	2.30.8000	2.31.5050
97.	LLR cell size	Adjusted LLR cell size according to the MLPN negotiation of ib_128b_llr	2.30.8000	2.31.5050
98.	Link max speed	The max speed restriction was active in full power mode instead of standby mode only.	2.30.8000	2.31.5050

**Table 9 - Fixed Bugs List**

Index	Issue	Description	Discovered in Release	Fixed in Release
99.	InfiniBand Automatic Path Migration	The InfiniBand Path migration did not work with GRH. <a href="http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7">http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7</a>	2.30.8000	2.31.5050
100.	Packet steering	Reading MGM after writing it returned wrong members count.	2.30.8000	2.31.5050
101.	RSS QP context	Fixed corruption of the RSS hash key given by the driver.	2.30.8000	2.31.5050
102.	10Gb/s QoS	Fixed QoS rate limit bandwidth offset.	2.30.8000	2.31.5050
103.	ExtendedPortInfo MAD	Fixed FDR10 speed_en reporting.	2.30.8000	2.31.5050
104.	Management link	Fixed long management link com loss.	2.30.8000	2.31.5050
105.	PRM Query_Port Command	The command results reported both link types active at the same time.	2.30.8000	2.31.5050
106.	Link not raising	Fixed collision between forcing phy type and port sensing.	2.30.8000	2.31.5050
107.	Core clock reporting	Fixed a wrong core clock freq reporting in QUERY_HCA command.	2.30.8000	2.31.5050
108.	56GbE link issues	Fixed occasional link failure when 56GbE is enabled	2.30.8000	2.31.5050
109.	RX calibration	Fixed max eye margins to be per protocol.	2.30.8000	2.31.5050
110.	VPI symbol errors	perfquery reported wrong error symbol on ConnectX <sup>®</sup> -3 VPI mode: IB, ETH.	2.30.8000	2.31.5050
111.	Symbol error on ConnectX-3 Pro dual-port QDR with MC2207312-030 AOCs	On 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
112.	Symbol error on Falcon QDR against FDR switches with MC2207126-004 copper cables	Symbol errors occur on ConnectX-3 Pro dual-port QDR connected to FDR switches with MC2207126-004 copper cables.	2.30.8000	2.31.5050

**Table 9 - Fixed Bugs List**

<b>Index</b>	<b>Issue</b>	<b>Description</b>	<b>Discovered in Release</b>	<b>Fixed in Release</b>
113.	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
114.	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
115.	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 10 - Firmware Changes and New Feature History**

Firmware Version	Description
2.33.5100	<ul style="list-style-type: none"> <li>• Enabled ConnectX®-3 Pro to work in packet parsing mode to enable checksum calculation of non-TCP/UDP packets.</li> <li>• Bug fixes - see <a href="#">“Bug Fixes History” on page 25</a></li> </ul>
2.33.5000	<ul style="list-style-type: none"> <li>• Virtual QoS:             <ul style="list-style-type: none"> <li>• Bandwidth allocation support: Including maximum bandwidth and bandwidth share guarantee between VMs for InfiniBand and Ethernet.</li> </ul> </li> <li>• Performance/Flow Control:             <ul style="list-style-type: none"> <li>• Increased inbound traffic buffer capacity when the PFC on all priorities is enabled.</li> </ul> </li> <li>• Non-Volatile Device Configuration:             <ul style="list-style-type: none"> <li>• Added support for changing UAR BAR (PCI BAR 2) size.</li> </ul> </li> <li>• Cables:             <ul style="list-style-type: none"> <li>• Added support for cable sub-power class for Mellanox MFA1A00-EXXX and SMFA1A00-CXXX EDR cables.</li> </ul> </li> <li>• Device Managed Steering:             <ul style="list-style-type: none"> <li>• Improvements in attachment/detachment flows’ rules in both A0-DMFS and DMFS modes.</li> </ul> </li> <li>• RoCE Link Aggregation (LAG):             <ul style="list-style-type: none"> <li>• Added physical port forcing on specific QPs when virtual mapping is applied</li> <li>• Added support for dynamic enablement of LAG mode</li> </ul> </li> <li>• NC-SI:             <ul style="list-style-type: none"> <li>• Added support for vendor specific command to report the ports’ MAC addresses.</li> </ul> </li> <li>• Link Speeds:             <ul style="list-style-type: none"> <li>• Enabled 100Mb ability exposure and its enablement via an INI parameter.</li> <li>• Added support for SFP+ with 1GbE when the adapter card is enabled in the EEPROM.</li> </ul> </li> <li>• SideBand Management:             <ul style="list-style-type: none"> <li>• Optimized the SideBand connectivity loss during driver initialization to minimum.</li> </ul> </li> <li>• SMBUS:             <ul style="list-style-type: none"> <li>• Added support for SMBUS ARP.</li> <li>• Enabled thermal reporting of TMP421 sensor in OCP cards.</li> </ul> </li> <li>• RDMA:             <ul style="list-style-type: none"> <li>• RDMA Read retransmission optimizations to improve performance and ensure forward progress while packet drops occur.</li> </ul> </li> <li>• Performance:             <ul style="list-style-type: none"> <li>• Improved data path WQE prefetch algorithm.</li> </ul> </li> <li>• Hardware Checksum Calculation:             <ul style="list-style-type: none"> <li>• Enabled ConnectX-3 Pro to work in packet parsing mode to enable checksum calculation of non TCP/UDP packets.</li> </ul> </li> </ul>

**Table 10 - Firmware Changes and New Feature History**

Firmware Version	Description
2.32.5100	<ul style="list-style-type: none"> <li>• Ethtool Improvements: <ul style="list-style-type: none"> <li>• Added support to query PTYS, PTOS registers through ACCESS_REG PRM command.</li> </ul> </li> <li>• Non-volatile Random Access Memory (NVRAM): <ul style="list-style-type: none"> <li>• Added support for CLP access to NVRAM</li> </ul> </li> <li>• Packet Steering: <ul style="list-style-type: none"> <li>• Added support for more than 22 QPs per MCG in DMFS.</li> <li>• Added support for high rate steering mode (a.k.a Simplified Steering)</li> </ul> </li> <li>• PRM <ul style="list-style-type: none"> <li>• Added support for reading current hardware mode through the QUERY_PORT PRM command</li> <li>• Added CSUM mode reporting in QUERY_DEV_CAP command</li> <li>• Added additional configuration options for UPDATE_QP command</li> <li>• Added support for 128 Byte stride for CQ/EQ</li> <li>• Enabled module EEPROM access using command I/F</li> </ul> </li> <li>• Device Reset and Error recovery: <ul style="list-style-type: none"> <li>• Reset Flow improvements and graceful handling of error caused by Virtual Functions</li> </ul> </li> <li>• Performance: <ul style="list-style-type: none"> <li>• RX performance optimization for single port cards</li> <li>• Promiscuous mode performance improvements</li> </ul> </li> <li>• Secure Host: <ul style="list-style-type: none"> <li>• Added support for Secure Host mode</li> </ul> </li> <li>• Non-Volatile device configuration: <ul style="list-style-type: none"> <li>• Added Port protocol configuration option.</li> </ul> </li> <li>• GPIO: <ul style="list-style-type: none"> <li>• Added support for GPIO swap</li> </ul> </li> <li>• Signal Integrity (SI): <ul style="list-style-type: none"> <li>• 40GbE SI improvements</li> </ul> </li> <li>• MAD: <ul style="list-style-type: none"> <li>• Added support for Temp Sensing Vendor specific MAD.</li> </ul> </li> <li>• NC-SI: <ul style="list-style-type: none"> <li>• Added Temp Sensing NC-SI cmd.</li> <li>• Added support for AEN.</li> </ul> </li> <li>• SMBUS: <ul style="list-style-type: none"> <li>• Added new command to report firmware revision.</li> </ul> </li> <li>• Quantized Congestion Notification (QCN): <ul style="list-style-type: none"> <li>• Added support for QCN</li> </ul> </li> <li>• VXLAN Offload support: <ul style="list-style-type: none"> <li>• Enabled the driver to use VXLAN offloads on TX side without Device Managed Flow Steering (DMFS)</li> </ul> </li> <li>• FDR10 cable Locking: <ul style="list-style-type: none"> <li>• Enabled non Mellanox cables to rise FDR10 link via new INI parameter. To unlock the cables run: Fdr10_cable_stamping_override</li> </ul> </li> </ul>

**Table 10 - Firmware Changes and New Feature History**

Firmware Version	Description
2.31.5050	<ul style="list-style-type: none"> <li>• MAD: <ul style="list-style-type: none"> <li>• Added support for GeneralInfo SMP MAD</li> <li>• Updated capability mask in GeneralInfo SMP/GMP MAD</li> <li>• Added support for PortCountersVL MAD</li> <li>• Added support for PortSamplesControl/PortSamplesResults/PortSamplesExtended MADs</li> </ul> </li> <li>• INI: <ul style="list-style-type: none"> <li>• Added Exponential Backoff Timer support. It is enabled via the <code>rtm_ini</code> parameter. The default value is 0</li> </ul> </li> <li>• Flow Steering (DMFS): <ul style="list-style-type: none"> <li>• Added VLAN steering to Device Managed Flow Steering (DMFS)</li> </ul> </li> <li>• Non-Volatile configuration tool: <ul style="list-style-type: none"> <li>• Added support for Non-Volatile configuration of TLVs to set device attributes: <ul style="list-style-type: none"> <li>• Query and set of configurations is available through PRM ACCEES_REG command</li> <li>• PRM ACCESS_REG command is now also supported through the <code>tools_hcr</code> command interface</li> </ul> </li> <li>• Added support for MTF <code>mlxconfig</code> tool</li> </ul> </li> <li>• Management protocols: <ul style="list-style-type: none"> <li>• Added IPv6 support for NC-SI and IPMI Pass-Through</li> <li>• Added support for the same unicast MAC simultaneously for both IPMI and NC-SI</li> </ul> </li> <li>• PCIe: <ul style="list-style-type: none"> <li>• Added enhancements for receiver equalization in Gen3: <ul style="list-style-type: none"> <li>• Enhancements are enabled by the INI. The default value is disabled. Please contact Mellanox support if required to enable it.</li> </ul> </li> <li>• PCIe power optimizations for 8X/4X links</li> </ul> </li> <li>• Side Band protocols: <ul style="list-style-type: none"> <li>• SMBUS optimizations</li> </ul> </li> <li>• Physical and Virtual Functions reset flows: <ul style="list-style-type: none"> <li>• Added new Physical and Virtual Functions reset flows support</li> </ul> </li> <li>• PXE support: <ul style="list-style-type: none"> <li>• Added support for 64Bit BIOS mode</li> </ul> </li> <li>• PRM: <ul style="list-style-type: none"> <li>• Added IEEE802.3 CL73 autoneg support to the QUERY_PORT command.</li> <li>• Added factory MAC address reporting to the Query_Port command.</li> <li>• Added support for reverting virtual MAC configuration per port and restoring to factory MAC through MOD_STAT_CFG command.</li> <li>• Added support for inline TLV read through MOD_STAT_CFG command.</li> <li>• Added current MTU reporting to the QUERY_PORT command.</li> <li>• Added support query for additional MAC addresses per port (up to 7) through the QUERY_PORT command.</li> </ul> </li> </ul>
2.30.8050	<ul style="list-style-type: none"> <li>• Bug fixes - see <a href="#">“Bug Fixes History” on page 25</a></li> </ul>

**Table 10 - Firmware Changes and New Feature History**

Firmware Version	Description
2.30.8000	<ul style="list-style-type: none"> <li>• Initial GA release of ConnectX-3 Pro</li> <li>• UDP packets with zero checksum</li> <li>• RoCE v2 support, including CONFIG_DEV command support</li> <li>• Enabled SR-IOV by default on all Mellanox ConnectX-3 Pro cards with 8 virtual functions</li> <li>• indiscard packets counter support in DUMP_ETH_STAT command</li> <li>• NVGRE support</li> <li>• VXLAN support</li> <li>• DMFS and GRE steering: Rule insertion adjustments</li> <li>• Removed DIF support from reported capabilities in QUERY_DEV_CAP PRM command</li> <li>• Flow control by DSCP priority for IPv4</li> <li>• DMFS improvements: Insertion scheme enforcement and block loopback for InfiniBand</li> <li>• Added I2C resiliency support</li> <li>• Support for NC-SI over MCTP over SMBus</li> <li>• Added a flash access interface for persistent (non-volatile) configuration support</li> <li>• Added port BW arbitration configuration through the CONFIG_DEV command</li> <li>• Added IP-in-IP TCP checksum offload support</li> <li>• PCI Express compliancy Tx and Rx adjustments</li> <li>• 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.</li> </ul> <p>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.</p> <ul style="list-style-type: none"> <li>• Added support for 40GbE in WoL and pre-OS driver modes</li> </ul> <p>To enable this, add/change the following flags in the INI file in the IB and HCA tabs respectively:</p> <ul style="list-style-type: none"> <li>• restrict_max_eth_standby_speed = NO_RESTRICTION</li> <li>• slow_clock_enable = 0</li> </ul> <ul style="list-style-type: none"> <li>• Bug fixes - see <a href="#">“Bug Fixes History”</a> on page 25</li> </ul>

## 6 Flexboot Changes and New Features

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

**Table 11 - FlexBoot Changes and New Feature**

Version	Description
Rev 3.4.521	<ul style="list-style-type: none"> <li>• Added iSCSI CHAP and mutual CHAP configuration</li> <li>• Added the GRH size when allocating receive buffer for IPoIB</li> <li>• Updated VLAN netdevice's settings with all the trunk's iSCSI required settings</li> <li>• Updated the port event handling process</li> <li>• Enabled console output in Debug mode</li> <li>• Disabled the serial output</li> <li>• Disabled the banner in BEV execution</li> <li>• Disabled function 0x04 (in int21) when serial console is disabled</li> <li>• Preserved COM port settings</li> <li>• Fixed HTTP download over IPoIB</li> <li>• Fixed completion with error handling process</li> </ul>
Rev 3.4.460	<ul style="list-style-type: none"> <li>• Boot Menu support: Added new FlexBoot GUI. The device can now be configured in the POST stage.</li> <li>• Non volatile memory read/write support</li> <li>• Configurable URI boot retry and delay between retries</li> <li>• Configurable iSCSI settings using DHCP/NVM</li> <li>• Added new interface in order to update the registered devices on the PXE stage</li> <li>• Enabled ConnectX Ethernet adapter cards family to work with interrupts</li> <li>• Enabled PXE to work in promiscuous VLAN mode (configurable through the INI)</li> <li>• Synced version with ipxe.org: Now the latest code in iPXE is used</li> <li>• Added boot priority capability: iSCSI vs PXE and fallback incase one fails</li> <li>• 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</li> <li>• SHELL CLI is currently supported on ConnectX-3 and ConnectX-3 Pro adapter cards only</li> <li>• 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.</li> </ul>

**Table 11 - FlexBoot Changes and New Feature**

Version	Description
Rev 3.4.460 (cont.)	<ul style="list-style-type: none"> <li>• Both the GUID and the MAC are printed on the screen when the port link layer is set as InfiniBand</li> <li>• PROXYDHCP and PXEBS settings are saved under netdevice settings</li> <li>• rootpath/filename/nextserver are now fetched from the netdevice settings</li> <li>• The cached DHCP packet are received only if working with the same net device.</li> </ul> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• PXE shutdown is called if int22 with function 0x000C is called.</li> <li>• Changed DHCP discover timeouts to comply with PXE spec</li> </ul>
Rev 3.4.306	<ul style="list-style-type: none"> <li>• Added validation script for the released ROMs</li> <li>• Added the option to always keep SAN hook to enable WIN install on iSCSI target</li> <li>• Added compilation flag around the flash readout.</li> <li>• Added URI Boot retry. Default retries = 0.</li> <li>• Added Unmap MPT command in teardown.</li> <li>• Added support for HII iSCSI configuration.</li> <li>• Added 64-bit PCI BAR support (Large bar).</li> <li>• Added the option added for running PXE with promiscuous VLAN.</li> <li>• Re-added COMBOOT image support by default.</li> <li>• Enabled pages-function handling in Connect-IB initialization stage to work according to the PRM.</li> <li>• Applied additional patches from ipxe.org</li> <li>• Updated the window even if ACK does not acknowledge new data.</li> <li>• Modified the error print to debug print.</li> <li>• Modified the printed string when initializing devices.</li> <li>• Modified the error print. Added additional information to make the output more user-friendly.</li> <li>• Changed the size of the domain name array to 0xfd.</li> <li>• Disabled the waiting period for link up on trunk-net-device when VLAN is enabled on port.</li> <li>• Removed unsupported EQ event in Connect-IB®</li> <li>• Fixed an issue for TLV with length 0.</li> <li>• Fixed an issue related to sync VLAN IRQ operation with trunk IRQ operation.</li> </ul>

**Table 11 - FlexBoot Changes and New Feature**

Version	Description
Rev 3.4.306 (cont.)	<ul style="list-style-type: none"> <li>• Fixed an issue which enabled a netdevice (VLAN) to open/close twice.</li> <li>• Fixed an issue which prevented the iSCSI initiator's name from being received from HII.</li> <li>• 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.</li> <li>• Fixed an issue which caused PXE boot failure when using a filename if iSCSI rootpath is set.</li> <li>• Fixed an issue which prevented the device to PXE boot from the 2nd port if first port was already downloaded.</li> <li>• Fixed compilation issue.</li> <li>• Fixed a broken VLAN issue.</li> <li>• Fixed a retry issue when the value is infinite.</li> </ul>
Rev 3.4.225	<ul style="list-style-type: none"> <li>• Added additional information to the error print output</li> <li>• Added compilation flag around the flash readout</li> <li>• Added URI Boot retry. Default retries = 0</li> <li>• Added Unmap MPT command in teardown</li> <li>• Added 64-bit PCI BAR support</li> <li>• Added an option for running PXE with promiscuous VLAN</li> <li>• Added support for HII iSCSI configuration</li> <li>• Enlarged the mailbox size to 4kb</li> <li>• Enlarged the number of WQE to 64 (from 4)</li> <li>• Enabled multiple DHCP offers to be received before proceeding to request state</li> <li>• Changed the size of the domain name array to 0xfd</li> <li>• Changed error print to debug print</li> <li>• Changed printed string when initializing devices</li> <li>• Kept the SAN connection permanently open to enable Windows install on iSCSI target even when the iSCSI target is empty</li> <li>• Re-added COMBOOT image support by default</li> <li>• Prevented a netdevice (VLAN) from opening/closing twice</li> <li>• Removed unsupported EQ event in Connect-IB®</li> <li>• Disabled the waiting time for link up on trunk net device when VLAN is enabled on a port</li> <li>• Fixed sync VLAN IRQ operation with trunk IRQ operation</li> <li>• Fixed iSCSI initiator's name retrieval from HII issue</li> <li>• 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.</li> <li>• Fixed retry issue when the value is infinite</li> <li>• Fixed a TLV with length 0 issue</li> <li>• Fixed a PXE boot failure issue occurred when using a filename when iSCSI rootpath is set</li> <li>• Fixed "Impossible to PXE boot from 2nd port if first port already downloaded." issue</li> <li>• Fixed compilation issue</li> <li>• Fixed broken VLAN support issues</li> </ul>

**Table 11 - FlexBoot Changes and New Feature**

Version	Description
Rev 3.4.151	<ul style="list-style-type: none"> <li>• Enlarged the mailbox size to 4kb</li> <li>• Enlarged the number of WQE to 64 (from 4)</li> <li>• Enabled multiple DHCP offers to be received before proceeding to request state</li> </ul>
Rev 3.4.146	<ul style="list-style-type: none"> <li>• Fixed memory corruption issues</li> <li>• Modified TLV flash access</li> <li>• Added additional WQ</li> </ul>
Rev 3.4.142	<ul style="list-style-type: none"> <li>• Enabled firmware to handle the link state with the Subnet Manager</li> <li>• Updated the DHCP class code to NONE</li> <li>• Added flash access capability for reading software-to-software configurations</li> <li>• Enabled DHCP validation of MAC address and XID for a unique tuple</li> <li>• Improved randomness algorithm for DHCP XID</li> </ul>
Rev 3.4.112	<ul style="list-style-type: none"> <li>• Broadcast responses for firewall support</li> <li>• Enabled request broadcast responses from DHCP server to support firewall.</li> </ul>
Rev 3.4.100	<ul style="list-style-type: none"> <li>• OCSD activation initiation change</li> <li>• Moved the OCSD activation initiation from the FlexBoot to the CLP code. This enables the OCSD</li> <li>• activation to no longer be dependent on the FlexBoot being enabled in the servers's BIOS configuration.</li> <li>• Messages' improvement</li> <li>• Made the FlexBoot on-screen notification messages more informative and user friendly.</li> <li>• FlexBoot and CLP merge improvement</li> <li>• Improved the process of merging the FlexBoot and CLP codes together.</li> <li>• PXE and UFI merge capability</li> <li>• Added the ability to merge the PXE image with a UFI image.</li> <li>• Supported servers</li> <li>• Added FlexBoot support capabilities to several new non-HP servers.</li> <li>• Use of newer iPXE version</li> <li>• Moved to use a newer iPXE version as the basis for the Flexboot release.</li> <li>• Fixed "no more network devices" issues during Flexboot.</li> </ul>