



# Mellanox ConnectX<sup>®</sup>-3 Pro Firmware Release Notes for 764285-B21

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Rev 2.42.5700

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# Table of Contents

|  |           |
|--|-----------|
| <b>Release Update History</b>                                    | <b>5</b>  |
| <b>Chapter 1 Overview</b>  | <b>6</b>  |
| 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        |
| <b>Chapter 2 Firmware Rev 2.42.5700 Changes and New Features</b> | <b>17</b> |
| <b>Chapter 3 Known Issues</b>                                    | <b>18</b> |
| <b>Chapter 4 Bug Fixes History</b>                               | <b>21</b> |
| <b>Chapter 5 Firmware Changes and New Feature History</b>        | <b>32</b> |
| <b>Chapter 6 FlexBoot Changes and New Features</b>               | <b>38</b> |
| 6.1 Flexboot Known Issues  | 43        |
| <b>Chapter 7 UEFI Changes and Major New Features</b>             | <b>44</b> |
| 7.1 UEFI Bug Fixes History                                       | 44        |
| <b>Chapter 8 CLP Changes and New Features</b>                    | <b>45</b> |

## 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/<br>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 /<br>FDR10/<br>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-<br>>10GbE | MC2609125-005                  | MT Passive Copper Cable QSFP TO 4 SFP+ 10GB/S 26AWG 5M         |
| 40GbE-<br>>10GbE | MC2609130-001                  | MT Passive Copper Cable QSFP TO 4 SFP+ 10GB/S 30AWG 1M         |
| 40GbE-<br>>10GbE | MC2609130-003                  | MT Passive Copper Cable QSFP TO 4 SFP+ 10GB/S 30AWG 3M         |
| 40GbE-<br>>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-<br>>10GbE | HP 721070-B21                  | QSFP+ to 4x10G SFP+ AOC 7m                                     |
| 40GbE-<br>>10GbE | HP 721073-B21                  | QSFP+ to 4x10G SFP+ AOC 10m                                    |
| 40GbE-<br>>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 Cabl                    |
| 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/<br>FDR10 | SwitchX®      | 712495-B21_712496-B21_Ax | Mellanox® IB QDR/FDR10 36P Switch  |
| QDR/<br>FDR10 | SwitchX®      | 674277-B21               | Mellanox® IB QDR/FDR 648P Switch Chassis                                 |
| QDR/<br>FDR10 | SwitchX®      | 674278-B21               | Mellanox® IB QDR/FDR 324P Switch Chassis                                 |
| QDR/<br>FDR10 | SwitchX®      | 674279-B21               | Mellanox® IB QDR/FDR 216P Switch Chassis                                 |
| QDR/<br>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"> <li>• RH6.5</li> <li>• RH6.8</li> <li>• RH6.9</li> <li>• RH7.2</li> <li>• RH7.4</li> <li>• RH7.5</li> <li>• SLES12 SP2</li> <li>• SLES12 SP3</li> </ul> |

## 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  |
|------------------|--|
| <b>Link Type</b> | 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  | <b>RM#1538538:</b> 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  | <b>RM#1119109:</b> Enabling/disabling cq_timestamp using mlxconfig is not supported.  | N/A.  |
| 3.    | LEDs   | <b>RM#1121959:</b> 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   | <b>RM#976761:</b> 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.<br>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:<br>You are trying to override configurable FW by non-configurable FW.<br>If you continue, old FW configurations will be cleared, do you want to continue ? (y/n) [n] : y<br>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<br>2. Restart driver<br>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                       | <b>RM#1482599/1370229:</b> Fixed an issue that occasionally resulted in VPD reading timeout   | 2.42.5044             | 2.42.5056        |
| 2. | Link Down event           | <b>RM#1787300:</b> 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           | <b>RM#1482599/1370229:</b> 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                 | <b>RM#1187529:</b> 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           | <b>RM#1150548:</b> Fixed an issue that prevented communication over iLO shared port after firmware update.  | 2.42.5004             | 2.42.5006        |
| 6. | PortRcvPkts counter       | <b>1009607:</b> 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 | <b>999432:</b> 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                  | <b>1034523:</b> 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        | <b>659925:</b> 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                  | <b>825412:</b> 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 irisc to get stuck.                         | 2.32.5100             | 2.42.5000        |
| 11. | masterSMLID, LID           | <b>1033071:</b> 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                     | <b>1009736:</b> Fixed an issue that prevented ibdump from capturing all MADs packets.  | 2.40.7000             | 2.42.5000        |
| 13. | Link Down                  | <b>1000626:</b> Fixed an issue that prevented the link to go up after reboot.  | 2.40.5030             | 2.42.5000        |
| 14. | PCIe                       | <b>954259:</b> 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                      | <b>908959:</b> 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               | <b>890373:</b> 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                  | <b>939162:</b> 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                 | <b>861646:</b> 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           | <b>780205:</b> 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                   | <b>877613:</b> 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 | <b>870787:</b> 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              | <b>702752:</b> 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                      | <b>70454:</b> 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                      | <b>748455:</b> 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.<br>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              | <b>846523:</b> 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                   | <b>832298:</b> Fixed an issue where the ibdump got broken when running with loopback traffic.   | 2.36.5000             | 2.40.5000        |
| 28. | QP to Firmware ownership | <b>745727:</b> 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                   | <b>806288:</b> 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 | <b>778739:</b> 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 <code>GeneralInfoMad</code> 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 <code>PERST_assertion</code>                             | 2.31.5050             | 2.32.5100        |
| 104. | PCIe Gen3 EQ              | Wrong coefficients were reported during <code>phase3</code>                                | 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 <code>SELECT/DESELECT PACKAGE</code> 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.<br><a href="http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7">http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7</a> | 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 <sup>®</sup> -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 | <b>Bug Fixes:</b> <a href="#">Section 4, “Bug Fixes History,” on page 21</a>  |
| 2.42.5052 | <b>UEFI:</b> See <a href="#">Section 7, “UEFI Changes and Major New Features,” on page 44</a>   |
| 2.42.5044 | <ul style="list-style-type: none"> <li>• <b>LP mode:</b> Disabled LP mode (RTXM320-581 variation) for class 1 modules (HPE JG325B Transceiver).</li> <li>• <b>PXE:</b> See <a href="#">Section 6, “FlexBoot Changes and New Features,” on page 38</a></li> <li>• <b>UEFI:</b> See <a href="#">Section 7, “UEFI Changes and Major New Features,” on page 44</a></li> <li>• <b>Bug Fixes:</b> See <a href="#">Section 4, “Bug Fixes History,” on page 21</a></li> </ul>   |
| 2.42.5016 | <b>Bug fixes:</b> See <a href="#">Section 4, “Bug Fixes History,” on page 21</a>  |
| 2.42.5004 | <b>Bug fixes:</b> See <a href="#">Section 4, “Bug Fixes History,” on page 21</a>  |
| 2.42.5000 | <ul style="list-style-type: none"> <li>• <b>Packet Time-stamping:</b> Added support for new TLV: CX3_GLOBAL_CONF to enable/disable timestamp on incoming packets through mlxconfig configuration.</li> <li>• <b>MAC Configuration:</b> Added support for user MAC configuration.</li> <li>• <b>mstdump:</b> Added support for automatically collecting mstdump before driver reset.</li> <li>• <b>IRISC stuck watchdog:</b> Added a mechanism to detect DEAD_IRISC (plastic) from TPT (iron) and raise an assert.</li> <li>• <b>Debug ability:</b> Improved the debug ability for command timeout cases</li> <li>• <b>MTU size:</b> Added a new field to "set port" command which notifies the firmware what is the user_mtu size.</li> <li>• <b>Bug fixes:</b> See <a href="#">Section 4, “Bug Fixes History,” on page 21</a></li> </ul> |
| 2.40.5072 | <ul style="list-style-type: none"> <li>• <b>PLDM:</b> Added Platform Level Data Model (PLDM) support.</li> </ul>  |
| 2.40.5030 | <ul style="list-style-type: none"> <li>• <b>Temperature thresholds:</b> Added temperature thresholds high/low default for MAD sensing and NCSI/IPMI OEM commands.</li> <li>• <b>MTU Header Size:</b> Added a new field to "set port" command which notifies the firmware what is the user_mtu size.</li> <li>• <b>ifconfig:</b> Added a protection mechanism which ensures the firmware drops packets which are received in internal QPs and disables the WQE producer fetching.</li> <li>• <b>Bug fixes:</b> See <a href="#">Section 4, “Bug Fixes History,” on page 21</a></li> </ul>   |
| 2.40.5000 | <ul style="list-style-type: none"> <li>• <b>Link Down Counters:</b> Added Ethernet Link down counter.</li> <li>• <b>Bug fixes:</b> See <a href="#">Section 4, “Bug Fixes History,” on page 21</a></li> </ul>  |
| 2.36.5000 | <ul style="list-style-type: none"> <li>• <b>Packet Steering:</b> Enables steering packets to receive queues according to Ethertype matching (See PRM 2.1 for more information).</li> <li>• <b>RX Arbiter:</b> Adds support for additional rate values.</li> <li>• <b>Performance counter for WQE fetch:</b> Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.</li> <li>• <b>Checksum Calculation on Image/Device:</b> Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.</li> <li>• For further information, please refer to <a href="#">MFT User Manual</a>.</li> </ul>  |

**Table 19 - Firmware Changes and New Feature History**

| Release   | Description   |
|-----------|---|
| 2.35.5100 | <ul style="list-style-type: none"> <li>• New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)</li> <li>• Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)</li> <li>• Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)</li> <li>• CQ creation offload by software</li> <li>• Support for rst2rts command</li> <li>• Invalidates a TLV during the firmware boot stage</li> <li>• A new counter for the <code>diag_rprt</code> PRM command to count packet drops due to no-receive buffer</li> <li>• Support for Ethernet TX lifetime cycle control (Head of Queue)</li> <li>• A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)</li> <li>• A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets</li> <li>• Inspur LED scheme: A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.</li> </ul>  |
| 2.34.5000 | <ul style="list-style-type: none"> <li>• Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.</li> <li>• Added a new QP command <code>INIT2RTS_QP</code> to enhance QP connection readiness time.</li> <li>• Disabled FCS checks to support switches that replace FCS with Timestamp.</li> <li>• Added RX Port identification for direct rout packets.</li> <li>• Improved RDMA WRITE/SEND performance with retransmissions.</li> <li>• Enabled firmware burning/querying using the PRM <code>ACCESS_REG</code> command.</li> <li>• Added support for VAM.</li> <li>• Enabled bad cable EEPROM reporting to the driver.</li> <li>• Added support for Platform Level Data Model (PLDM) sideband protocol.</li> <li>• Added support for priority based A0-DMFS mode (For further information, please refer to the PRM).</li> <li>• Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)</li> <li>• Removed the source IP from the hash calculation (For further information, please refer to the PRM)</li> <li>• Added support for Inline Receive mode up to 2KB.</li> </ul> |
| 2.33.5220 | <ul style="list-style-type: none"> <li>• FlexBoot: See Section 6, “FlexBoot Changes and New Features,” on page 38</li> </ul>  |

**Table 19 - Firmware Changes and New Feature History**

| Release   | Description  |
|-----------|--|
| 2.33.5050 | <ul style="list-style-type: none"> <li>• <b>Hardware Checksum Calculation:</b> <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> <li>• <b>Virtual QoS:</b> <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>• <b>Performance/Flow Control:</b> <ul style="list-style-type: none"> <li>• Increased inbound traffic buffer capacity when the PFC on all priorities is enabled.</li> </ul> </li> <li>• <b>Non-Volatile Device Configuration:</b> <ul style="list-style-type: none"> <li>• Added support for changing UAR BAR (PCI BAR 2) size.</li> </ul> </li> <li>• <b>Cables:</b> <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>• <b>Device Managed Steering:</b> <ul style="list-style-type: none"> <li>• Improvements in attachment/detachment flows' rules in both A0-DMFS and DMFS modes.</li> </ul> </li> <li>• <b>RoCE Link Aggregation (LAG):</b> <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>• <b>NC-SI:</b> <ul style="list-style-type: none"> <li>• Added support for vendor specific command to report the ports' MAC addresses.</li> </ul> </li> <li>• <b>Link Speeds:</b> <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>• <b>SideBand Management:</b> <ul style="list-style-type: none"> <li>• Optimized the SideBand connectivity loss during driver initialization to minimum.</li> </ul> </li> <li>• <b>SMBUS:</b> <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>• <b>RDMA:</b> <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>• <b>Performance:</b> <ul style="list-style-type: none"> <li>• Improved data path WQE prefetch algorithm.</li> </ul> </li> </ul> |

**Table 19 - Firmware Changes and New Feature History**

| Release              | Description   |
|----------------------|---|
| 2.32.5150            | <ul style="list-style-type: none"> <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:</li> <li>• Enabled non Mellanox cables to rise FDR10 link via new INI parameter.<br/>To unlock the cables run:<br/><code>Fdr10_cable_stamping_override</code></li> <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> </ul> |
| 2.32.5150<br>(cont.) | <ul style="list-style-type: none"> <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> </ul>  |

**Table 19 - Firmware Changes and New Feature History**

| Release              | Description   |
|----------------------|---|
| 2.31.5050            | <ul style="list-style-type: none"> <li>• Performance:               <ul style="list-style-type: none"> <li>• Inbound traffic performance enhancements for lossy traffic</li> <li>• RSS inline MCG</li> </ul> </li> <li>• Added RSS Ethernet Performance Optimization- RSS inline MCG</li> <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> <li>• Added support query for additional MAC addresses per port (up to 7) through the QUERY_PORT command.</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> </ul> |
| 2.31.5050<br>(cont.) | <ul style="list-style-type: none"> <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> </ul> </li> </ul>   |

**Table 19 - Firmware Changes and New Feature History**

| Release   | Description   |
|-----------|---|
| 2.30.8000 | <ul style="list-style-type: none"> <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.<br/>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.</li> <li>• Added support for 40GbE in WoL and pre-OS driver modes<br/>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"> <li>• restrict_max_eth_standby_speed = NO_RESTRICTION</li> <li>• slow_clock_enable = 0</li> </ul> </li> <li>• Bug fixes, see <a href="#">Section 4, "Bug Fixes History,"</a> on page 21</li> </ul> |

## 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"> <li>• <b>RM#1540513:</b> Enabled the Client Identifier for the following OPNs: <ul style="list-style-type: none"> <li>• 764284-B21_Ax</li> <li>• 764285-B21_Ax</li> <li>• 764283-B21_AX</li> <li>• 779793-B21_0A</li> <li>• 779799-B21_AX</li> </ul> </li> </ul>   |
| Rev 3.4.753 | <ul style="list-style-type: none"> <li>• <b>RM#1120282:</b> Fixed the broken Blink LEDs feature in Flexboot configuration menu.</li> </ul>  |
| Rev 3.4.752 | <ul style="list-style-type: none"> <li>• Added support for Secure Firmware Update</li> <li>• Enabled booting Grub 2.02 over IB</li> <li>• Disabled SOL by default</li> </ul>  |
| Rev 3.4.746 | <ul style="list-style-type: none"> <li>• Added support for the following SHELL CLI commands: <ul style="list-style-type: none"> <li>• Non-volatile option storage commands</li> <li>• SAN boot commands</li> <li>• Menu commands</li> <li>• Login command</li> <li>• Sync command</li> <li>• DNS resolving command</li> <li>• Time commands</li> <li>• Image crypto digest commands</li> <li>• Loopback testing commands</li> <li>• VLAN commands</li> <li>• PXE commands</li> <li>• Reboot command</li> </ul> </li> <li>• For further information, please refer to: <a href="http://ipxe.org/cmd">http://ipxe.org/cmd</a></li> <li>• iSCSI re-imaging: enables the user to install a new image on active iSCSI target.</li> <li>• Removed link status line printout at boot time.</li> <li>• Deprecated the option "rom enable" bit.</li> <li>• Enabled interrupt support.</li> <li>• 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.</li> <li>• Set default banner timeout to 4.</li> <li>• Enabled UDP interface usage after UNDI shutdown.</li> <li>• 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.</li> <li>• 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.</li> <li>• Synced the source with iPXE (upstream sync).</li> </ul> |

**Table 20 - FlexBoot Changes and New Feature**

| Version     | Description  |
|-------------|--|
| Rev 3.4.718 | <ul style="list-style-type: none"> <li>• Added IPv6 support (Beta level)</li> <li>• Removed support for the following SHELL CLI commands:               <ul style="list-style-type: none"> <li>• Non-volatile option storage commands</li> <li>• SAN boot commands</li> <li>• Menu commands</li> <li>• Login command</li> <li>• Sync command</li> <li>• DNS resolving command</li> <li>• Time commands</li> <li>• Image crypto digest commands</li> <li>• Loopback testing commands</li> <li>• VLAN commands</li> <li>• PXE commands</li> <li>• Reboot command</li> </ul> </li> </ul> <p>For further information, please refer to: <a href="http://ipxe.org/cmd">http://ipxe.org/cmd</a></p> |
| Rev 3.4.648 | <ul style="list-style-type: none"> <li>• Added support for .mrom images larger than 128kB</li> <li>• Added boot over IB with non-default PKey for ConnectX®-3, ConnectX®-3 Pro cards</li> <li>• Synced the source with iPXE (upstream sync)</li> <li>• Moved to flat real mode when calling INT 1a,b101 to avoid BIOSes issues</li> <li>• Fixed HTTP boot over IPoIB</li> </ul>  |
| 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 3.4.467 | <ul style="list-style-type: none"> <li>• Fixed an issue preventing TFTP filename with absolute path functionality</li> </ul>   |

**Table 20 - FlexBoot Changes and New Feature**

| Version     | Description  |
|-------------|--|
| 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.<br/>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>• 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.<br/>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.<br/>The previous packet which includes all the information of the first port (IP, MAC, Net-mask, etc...) is used.<br/>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.</li> <li>• PXE shutdown is called if int22 with function 0x000C is called.</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> <li>• Changed DHCP discover timeouts to comply with PXE spec</li> </ul> |

**Table 20 - FlexBoot Changes and New Feature**

| Version     | Description  |
|-------------|--|
| 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> <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> |

**Table 20 - FlexBoot Changes and New Feature**

| Version     | Description  |
|-------------|--|
| 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> |
| 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>  |

**Table 20 - FlexBoot Changes and New Feature**

| Version     | Description  |
|-------------|--|
| 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> |

## 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 | <b>Description:</b> FlexBoot banner might not be shown in some BIOSes.                      |
|               | <b>WA:</b> N/A  |
|               | <b>Keywords:</b> BIOS   |
| 572684        | <b>Description:</b> FlexBoot Boot Menu will not be visible in serial output.                |
|               | <b>WA:</b> N/A  |
|               | <b>Keywords:</b> User Interface   |
| 792432        | <b>Description:</b> Booting PXE using Grub2.X over HP G9/G8 servers results in system hang. |
|               | <b>WA:</b> N/A  |
|               | <b>Keywords:</b> 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"> <li>Bug Fixes: See bug #1787300 in Section 4, “Bug Fixes History,” on page 21</li> </ul>   |
| 14.11.48 | <ul style="list-style-type: none"> <li>Changed the firmware version string format in the iLO (from xx.yy.vv.zz to xx.yy.zzzz).</li> </ul>   |
| 14.11.46 | <ul style="list-style-type: none"> <li>Bug Fixes: See bug #1127830 in Section 4, “Bug Fixes History,” on page 21</li> </ul>   |
| 14.11.45 | <ul style="list-style-type: none"> <li>Added default value 00:00:00:00:00:00 for the VirtualMacAddress attribute</li> <li>NIC Partitioning Configuration Form is now deprecated.</li> </ul>   |
| 14.11.34 | <ul style="list-style-type: none"> <li>Changed the iSCSI IP strings minimum length from 7 to 0 in the UEFI menu</li> </ul>  |
| 14.11.31 | <ul style="list-style-type: none"> <li>Enabled booting with non default pkey in InfiniBand mode</li> <li>Added boot to target configuration</li> <li>Set the NumberVFSupported value to 63</li> <li>Deprecated BootOptionROM attribute</li> </ul> |
| 14.9.46  | <ul style="list-style-type: none"> <li>Updated to comply with the current firmware version</li> </ul>   |
| 14.08.43 | <ul style="list-style-type: none"> <li>AARCH64 support for ConnectX-3/ConnectX-3 Pro</li> <li>Firmware burning with different PSID (FMP)</li> <li>HII Banner Message Timeout</li> <li>Manual Link type configuration for VPI devices</li> </ul>   |
| 14.7.24  | <ul style="list-style-type: none"> <li>Added resilient behavior toward link detection during UNDI initialization</li> <li>Enabled HII R/W configurations for HP platforms</li> </ul>  |
| 14.6.25  | <ul style="list-style-type: none"> <li>Enabled WoL and SRIOV HII configurations for HP G9 platforms.</li> </ul>   |
| 13.5.22  | <ul style="list-style-type: none"> <li>Added agentless (spices) support</li> <li>Added OCSD configuration - (ConnectX@-3)</li> <li>Added 'Platform To Driver' protocol</li> </ul>   |
| 13.5.14  | <ul style="list-style-type: none"> <li>Added support for G9 spec as defined in HP document except for CLP Protocol and Adapter Information Protocol (AIP)</li> </ul>  |

### 7.1 UEFI Bug Fixes History

**Table 23 - UEFI Bug Fixes History**

| Version  | Description  |
|----------|--|
| 14.11.49 | <ul style="list-style-type: none"> <li>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.</li> </ul> |
| 14.11.45 | <ul style="list-style-type: none"> <li>RM#1040270: Fixed an issue where the ConnectFirstTgt and FirstTgtTcpPort attributes were corrupted when reading them from the flash memory.</li> <li>RM#1026373: Fixed an issue where SR-IOV Settings were not propagated properly when changing them from legacy mode.</li> </ul>          |
| 14.11.34 | <ul style="list-style-type: none"> <li>RM#849659: Fixed an issue with the UEFI driver which caused the firmware to hang.</li> </ul>  |
| 14.9.46  | <ul style="list-style-type: none"> <li>Fixed a rare issue causing a link bring-up problem</li> </ul>   |
| 14.7.24  | <ul style="list-style-type: none"> <li>Fixed MTFTP performance issue</li> </ul>  |

## 8 CLP Changes and New Features

**Table 24 - CLP Changes and New Feature**

| Version  | Description  |
|----------|--|
| Rev 8025 | <ul style="list-style-type: none"> <li>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.</li> <li>Fixed the following CLP v8024 issue:<br/>Occasionally, an uninitialized variable on systems supporting OCSD causes system reboot.</li> </ul>   |
| Rev 8024 | <ul style="list-style-type: none"> <li>644161-B21/B22 NFF Mezz 40GbE enabling<br/>CLP fix specifically related to 40GbE enabling on NFF Mezz card 644161-B21/B22.</li> </ul>   |
| Rev 8023 | <ul style="list-style-type: none"> <li>CLP version display<br/>Changed the CLP version format to be autonomic and be presented separately from the FlexBoot PXE version.</li> <li>40GbE addition to the FDR NFF Mezz card<br/>Added CLP configuration support of 40GbE mode to the FDR NFF Mezz card (this change is not related to the Watatic ALOM card).</li> <li>OCSD activation initiation change<br/>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.</li> </ul> |