Mellanox Switch-IB Firmware Release Notes

Rev 11.1500.0106

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

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Release Update History

Table 1 - Release Update History

Release	Date	Description
Rev 11.1500.0106	August 31, 2017	First release
	September 19, 2017	• Added “Modules” new feature to Chapter 2, “Changes and New Features in Rev 11.1500.0106,” on page 6 • Added bug fix to Table 7, “Fixed Bugs List,” on page 9

1 Overview

These are the release notes for the Switch-IB™ firmware, Rev 11.1500.0106. This firmware complements the Switch-IB™ silicon architecture with a set of advanced features, allowing easy and remote management of the switch.

Firmware Rev 11.1500.0106 is compatible with MFT tools v4.7.0-42. Using older versions of MFT tools causes failure during image creation.

1.1 Supported Systems

This firmware supports the devices and protocols listed in Table 2. For the most updated list of switches supported, visit the Firmware Download pages on Mellanox.com.

Table 2 - Supported Systems

Device Part Number	Description
MSB7790	Switch-IB™ based EDR InfiniBand switch; 36 QSFP28 ports; externally managed

1.2 Firmware Interoperability

To raise links with platforms based on the following ICs, these minimum requirements must be met:

Table 3 - Firmware Interoperability

HCA/Switch	Firmware Version
Switch-IB™ 2	15.1200.0102
SwitchX®-2	9.2.8000
ConnectX®-5 (Ex)	16.18.1000 Beta
ConnectX®-4	12.18.2000
ConnectX®-4 Lx	14.18.1000
ConnectX®-3 (Pro)	2.40.7000
ConnectX®-2	2.9.1200
Connect-IB®	10.16.1020

1.3 Supported EDR Cables and Modules

Table 4 presents the qualified EDR cables for externally managed EDR switch systems.

Table 4 - Qualified EDR Cables

Mellanox P/N	Description	Cable Length
MMS1C00-C500	Mellanox® transceiver, 100GbE, QSFP28, MPO, 1550nm PSM4, up to 2km	-
MMS1C10-CM	Mellanox® active optical module, 100Gb/s, QSFP, MPO, 1310nm, PSM4	-

Table 4 - Qualified EDR Cables

Mellanox P/N	Description	Cable Length
MMA1L10-CR	Mellanox® optical transceiver, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, LR4, up to 10km	-
MCP1600-E00A[a]	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	0.5m
MCP1600-E001[a]	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	1m
MCP1600-E01A[a]	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	1.5m
MCP1600-E002[a]	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	2m
MCP1600-E02A	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	2.5m
MCP1600-E003	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	3m
MCP1600-E004	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	4m
MFA1A00-E005[a]	Mellanox® active fiber cable, up to 100Gb/s, QSFP28	5m
MFA1A00-E010[a]	Mellanox® active fiber cable, up to 100Gb/s, QSFP28	10m
MFA1A00-E015[a]	Mellanox® active fiber cable, up to 100Gb/s, QSFP28	15m
MFA1A00-E050	Mellanox® active fiber cable, up to 100Gb/s, QSFP28	50m
MFA1A00-E100	Mellanox® active fiber cable, up to 100Gb/s, QSFP28	100m

a. Forward Error Correction (FEC) is deactivated on this cable.

ModulesPlease refer to the LinkX™ Cables and Transceivers webpage for the full list of supported cables and transceivers http://www.mellanox.com/products/interconnect/cables-configurator.php

1.4 Firmware Upgrade

Firmware upgrade may be performed directly from any previous version to this version. To upgrade firmware, please refer to the Mellanox Firmware Tools (MFT) package at:

http://www.mellanox.com/page/management_tools

1.5 PRM Revision Compatibility

Firmware Rev 11.1500.0106 complies with the *Mellanox Switches Programmer's Reference Manual (PRM), Rev 1.45* or later.

2 Changes and New Features in Rev 11.1500.0106

Table 5 - Firmware Rev 11.1500.0106 Changes and New Features

Category	Description
General	Added support for IB telemetry, Top Talkers. See “Congestion Telemetry” section in Mellanox Switches PRM (Programmer's Reference Manual).
Modules	Added support for 100GbE PSM4/LR4 modules (for more details see Section 1.3, “Supported EDR Cables and Modules,” on page 4).

3 Known Issues

Table 6 describes known issues in this firmware release and possible workarounds.

Table 6 - Known Issues

Internal Ref.	Issue
955641	**Description**: In VL arbitration, VL_HIGH_LIMIT isn't affecting VL Arbiter as expected
	Workaround: Arbitration Table should be set using only the low priority VL Arbitration Table
	Keywords: General
-	**Description**: Congestion control is not supported
	Workaround: N/A
	Keywords: General
-	**Description**: Port LEDs do not flash on system boot.
	Workaround: N/A
	Keywords: LEDs
-	**Description**: Link width reduction is not supported in this release.
	Workaround: N/A
	Keywords: Power Management
-	**Description**: If QDR is not enabled for the switch's InfiniBand Port Speed while connected to ConnectX-3/Pro or Connect-IB® FDR adapters or to SwitchX® /SwitchX®-2 FDR switches, links will rise at SDR or DDR (even if FDR is enabled)
	Workaround: Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
	Keywords: Interoperability
-	**Description**: Force FDR10 is not supported on EDR products.
	Workaround: To raise link with an FDR10 device, make sure all speeds, including EDR, are configured on Switch-IB.
	Keywords: Interoperability
-	**Description**: Adaptive routing and adaptive routing notification do not support 3D Torus topologies.
	Workaround: N/A
	Keywords: Network
697149	**Description**: Link rises at DDR speed instead of FDR10 when using 100m QDR/FDR10 optical cables.
	Workaround: N/A
	Keywords: Link
-	**Description**: FDR link may rise with symbol errors on optic EDR cable longer than 30M.
	Workaround: N/A
	Keywords: Link

Table 6 - Known Issues

Internal Ref.	Issue
-	**Description**: Fan LEDs may behave unexpectedly in the first 5 seconds of system boot.
	Workaround: N/A
	Keywords: LEDs

4 Bug Fixes History

Table 7 - Fixed Bugs List

Internal Ref.	Issue
1092005	**Description:** Enable SDR speed regardless of cable supported speeds
	Keywords: Link
	Discovered in Release: 11.1400.0102
	Fixed in Release: 11.1500.0106
-	**Description:** VL arbitration does not distribute traffic as expected in case of multiple VLs.
	Keywords: General
	Discovered in Release: 11.1200.0102
	Fixed in Release: 11.1300.0100
-	**Description:** In rare cases, FDR links may rise with errors. (Improved BER performance.)
	Keywords: Link
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.1200.0102
-	**Description:** Insertion of QDR cables into a Switch-IB™ based switch overwrites non-volatile fields (rx_output_amp/emp).
	Keywords: System Management
	Discovered in Release: 11.1100.0072
	Fixed in Release: 11.1200.0102
-	**Description:** Bubbles appear as symbol errors when link raises FDR 1x.
	Keywords: Link
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.1200.0102
-	**Description:** PSU fans set to work with 60% max speed by default.
	Keywords: Chassis Management
	Discovered in Release: 11.0350.0394
	Fixed in Release: 11.1100.0072
-	**Description:** The command “show interfaces ib * transceiver” shows no cable is connected while link is up.
	Keywords: Chassis Management
	Discovered in Release: 11.0350.0394
	Fixed in Release: 11.1100.0072

Table 7 - Fixed Bugs List

Internal Ref.	Issue
690231	**Description:** Fixed MSGI data reading.
	Keywords: General
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.0350.0394
-	**Description:** In rare cases, link may degrade speed from EDR or FDR to a lower speed. In other cases physical errors may increment.
	Keywords: Link
	Discovered in Release: 11.0350.0372
	Fixed in Release: 11.0350.0394
-	**Description:** Minimum fan speed may drop.
	Keywords: Temperature
	Discovered in Release: 11.0200.0120
	Fixed in Release: 11.0204.0124
-	**Description:** Bit error rate is not optimal on QDR links.
	Keywords: Link
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.0200.0118
-	**Description:** Only connections to Switch-IB™, ConnectX®-3, ConnectX-3 Pro, Connect-IB™, and SwitchX® family devices are supported.
	Keywords: Interoperability
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.0100.0112
-	**Description:** Connecting a cable longer than 30m to ConnectX-3, ConnectX-3 Pro or Connect-IB plat- forms causes interoperability issues.
	Keywords: Interoperability
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.0100.0112
-	**Description:** Packets are lost on private linear forwarding table (pLFT).
	Keywords: pLFT
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.0100.0112
-	**Description:** Port LEDs may continue to blink even after a bad cable is removed.
	Keywords: Chassis Management
	Discovered in Release: 11.1.1002
	Fixed in Release: 11.0100.0112

5 Firmware Changes and New Feature History

Table 8 - History of Major Changes and New Features

Category	Description
11.1430.0160	
General	Added support for Adaptive Routine (AR) optimizations with ConnectX-5 (RC Mode)
Link	Added support for Force EDR on Switch IB systems As described in Mellanox Switches Programmer's Reference Manual (PRM) under PTYS Register
11.1400.0102	
General	Added support for IB telemetry, Congestion Monitoring-Thresholds (See Mellanox Switches PRM (Programmer's Reference Manual) - section 9.7 - Congestion Telemetry).
General	Added support for Additional Port Counters Extended (See IB Specification Vol 1-Release-1.3, MgtWG 1.3 Errata).
General	Added support for IB Router Port (Port 37) Counters (See IB Specification Vol 1-Release-1.3)
11.1300.0126	
General	Added support for burst/traffic histograms (described in Vendor Specific MAD PRM Rev 1.3, Section 3.33 – Mellanox Performance Histograms)
Link	Added support for Port PHY Link Mode (PLLM) register (For register description, See Switch PRM - PPLM - Port Phy Link Mode)
Link	Added support for QSFP copper cables which do not publish attenuation in the memory map