Mellanox Switch-IB Firmware Release Notes

Rev 11.2000.1600

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Table of Contents

List of Tables

Release Update History

Table 1 - Release Update History

Date	Description
July 2, 2019	Initial release of this firmware version.

1 Overview

These are the release notes for the Switch-IB™ firmware, Rev 11.2000.1600. This firmware complements the Switch-IB™ silicon architecture with a set of advanced features, allowing easy and remote management of the switch.

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	PSID	Description
MSB7790	MT_1880110032	Switch-IB™ based EDR InfiniBand switch; 36 QSFP28 ports; externally managed

1.2 Firmware Interoperability

This FW version has been validated to work against platforms with the following SW versions.

Table 3 - Firmware Interoperability

HCA/Switch	Firmware Version
Switch-IB™ 2	15.2000.1600
SwitchX®-2	9.4.2000
ConnectX®-5 (Ex)	16.25.6000
ConnectX-4 Lx	14.25.1600
ConnectX-4	12.25.1600
Connect-IB®	10.16.1200
ConnectX-3 (Pro)	2.42.5000
MFT	4.12.0

1.3 Supported Cables and Modules

For a list of the Mellanox supported cables please visit the LinkX™ Cables and Transceivers page of the Mellanox Website at:

http://www.mellanox.com/products/interconnect/cables-configurator.php

> When using Mellanox AOC cables longer than 50m use one VL to achieve full wire speed.

Please 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 11.2000.1600 complies with the *Mellanox Switches Programmer's Reference Manual (PRM), Rev 1.45* or later.

2   Changes and New Features in Rev 11.2000.1600

Table 4 - Firmware Rev 11.2000.1600 Changes and New Features

Category	Description
11.2000.1140	
Bug Fixes	See Section 4, "Bug Fixes History," on page 11

3 Known Issues

Table 5 describes known issues in this firmware release and possible workarounds.

Table 5 - Known Issues

Internal Ref.	Issue
955641	**Description**: VL_HIGH_LIMIT is not affecting the VL arbiter as expected.
	Workaround: Arbitration table should be set using the low priority VL arbitration table only.
	Keywords: VL Arbitration
1249608	**Description**: Configuring weight "0" for VL, results in unexpected behavior.
	Workaround: Arbitration table should be configured with weights other than "0".
	Keywords: VL Arbitration
982005	**Description**: When connecting 6 & 7 meters, link may raise DDR instead of QDR against GD4000/IS5000 switches.
	Workaround: N/A
	Keywords: Link
-	**Description**: Congestion control 1.3 supports congestion log only.
	Workaround: N/A
	Keywords: QoS
-	**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**: Fallback Routing is not supported for DF+ topology. Fallback Routing Notifications and Adaptive Routing notifications are not supported for topologies others then trees.
	Workaround: N/A
	Keywords: Network

Table 5 - Known Issues

Internal Ref.	Issue
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
-	**Description**: Fan LEDs may behave unexpectedly in the first 5 seconds of system boot.
	Workaround: N/A
	Keywords: LEDs
-	**Description**: Module info page in Diagnostics Data VS-MAD is not supported
	Workaround: N/A
	Keywords: Diagnostics Data VS-MAD

4 Bug Fixes History

Table 6 - Fixed Bugs List

Internal Ref.	Issue
1786686	**Description:** Wrong behavior of ARGroupTableCopy MAD.
	Keywords: Adaptive Routing
	Discovered in Release: 11.2000.1142
	Fixed in Release: 11.2000.1600
1730194	**Description:** In rare cases, when connecting between Switch-IB/Switch-IB 2 and Quantum switch systems, traffic lose might occur.
	Keywords: Traffic, Switch-IB/Switch-IB 2, Quantum
	Discovered in Release: 11.2000.1000
	Fixed in Release: 11.2000.1142
1337469	**Description:** in rare cases, when a receiver's electrical eye is narrow, link might raise with BER higher (worse) than 10^{-12}.
	Keywords: Link
	Discovered in Release: 11.1500.0034
	Fixed in Release: 11.1630.0206
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

Table 6 - Fixed Bugs List

Internal Ref.	Issue
-	**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
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

Table 6 - Fixed Bugs List

Internal Ref.	Issue
-	**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 7 - History of Major Changes and New Features

Category	Description
11.2000.1000	
Chassis Management	Changed the PSU voltage read from "Vout" to "Vin".
General	System stability improvements.
11.1930.0618	
General	Added support for PortStateTable standard SMP MAD
Chassis Management	Added support for PSU utilization and consumption of output power monitoring
Chassis Management	Added support for PSU temperature and 12V Vout monitoring
11.1701.0010	
General	Added support for congestion control log 1.3 as described in IBTA IB specification release 1.3, Annex A10
General	Added additional information (PDDR pages as described in the *Switches PRM*, section 8.15.50 PDDR - Port Diagnostics Database Register) to diagnostics data VS-MAD as described in Mellanox Vendor Specific MAD Specification 1.4 section 3.33 – DiagnosticData
Chassis Management	Added ability to read part numbers and serial numbers for fans (by using MFNR register) and the power supply (by using MSPS register)
11.1630.0206	
General	Bug fixes
11.1610.0196	
General	Added additional information (PDDR pages as described in the *Switches PRM*, section 8.15.50 PDDR - Port Diagnostics Database Register) to diagnostics data VS-MAD as described in Mellanox Vendor Specific MAD Specification 1.4 section 3.33 – DiagnosticData
General	Added support for congestion control log 1.3 as described in IBTA IB specification release 1.3, Annex A10
11.1500.0106	
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.
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)

Table 7 - History of Major Changes and New Features

Category	Description
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