



# Mellanox Switch-IB™ 2 Firmware Release Notes

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Rev 15.1300.0126



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# 1 Overview

These are the release notes for the Switch-IB™ 2 firmware, Rev 15.1300.0126. This firmware complements the Switch-IB™ 2 silicon architecture with a set of advanced features, allowing easy and remote management of the switch.



Firmware Rev 15.1300.0126 is compatible with MFT tools v4.5.0-31. 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 1](#). For the most updated list of switches supported, visit the Firmware Download pages on Mellanox.com.

**Table 1 - Supported Systems**

Device Part Number	Description
MSB7890	Switch-IB™ 2 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 2 - Firmware Interoperability**

HCA/Switch	Firmware Version
Switch-IB™ 2	v15.0300.0354
SwitchX®-2	v9.2.8000
ConnectX-5 / ConnectX-5 Ex	v16.18.1000 “Beta”
ConnectX-4	v12.18.1000
ConnectX-4 Lx	v14.18.1000
ConnectX®-3 (Pro)	v2.31.6130
ConnectX®-2	v2.9.1000
Connect-IB®	v10.10.4020

## 1.3 Supported EDR Cables and Modules

[Table 3](#) presents the qualified EDR cables for externally managed EDR switch systems.

**Table 3 - Qualified EDR Cables**

Mellanox P/N	Description	Cable Length
MCP1600-E00A <sup>a</sup>	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	0.5m
MCP1600-E001 <sup>a</sup>	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	1m
MCP1600-E01A <sup>a</sup>	Mellanox® passive copper cable, up to 100Gb/s, QSFP28, LSZH	1.5m

**Table 3 - Qualified EDR Cables**

Mellanox P/N	Description	Cable Length
MCP1600-E002 <sup>a</sup>	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 <sup>a</sup>	Mellanox® active fiber cable, up to 100Gb/s, QSFP28	5m
MFA1A00-E010 <sup>a</sup>	Mellanox® active fiber cable, up to 100Gb/s, QSFP28	10m
MFA1A00-E015 <sup>a</sup>	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.

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

## 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](http://www.mellanox.com/page/management_tools)

## 1.5 PRM Revision Compatibility

Firmware Rev 15.1300.0126 complies with the Mellanox Switches Programmer's Reference Manual (PRM), Rev 1.45 or later.

## 2 Changes and New Features in Rev 15.1300.0126

*Table 4 - Firmware Rev 15.1300.0126 Changes and New Features*

Category	Description
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 Port Diagnostics Database Register (PDDR) which enables mlx-link tool to collect data on the PHY link status, and offers analysis of link-down events and link related information (For register description See Switch PRM - PDDR - Port Diagnostics Database Register)
Link	Added support for QSFP copper cables which do not publish attenuation in the memory map

### 3 Known Issues

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

**Table 5 - Known Issues**

Internal Ref.	Issue
-	<b>Description:</b> Congestion control is not supported.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> General
-	<b>Description:</b> VL2VL mode is not supported from an aggregation port to an egress port.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> General
-	<b>Description:</b> FDR link may rise with symbol errors on optic EDR cable longer than 30M.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> Link
-	<b>Description:</b> Port LEDs do not flash on system boot.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> LEDs
-	<b>Description:</b> Link width reduction is not supported in this release.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> Power Management
-	<b>Description:</b> 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).
	<b>Workaround:</b> Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
	<b>Keywords:</b> Interoperability
-	<b>Description:</b> When explicitly configuring FDR10 on Switch-IB™ 2, the link may not rise.
	<b>Workaround:</b> To raise link with an FDR10 device, make sure all speeds, including EDR, are configured on Switch-IB.
	<b>Keywords:</b> Interoperability
-	<b>Description:</b> Force FDR10 is not supported on EDR products.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> Interoperability
-	<b>Description:</b> Adaptive routing and adaptive routing notification do not support 3D Torus topologies.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> Network

## 4 Bug Fixes History

*Table 6 - Bug fixes History*

Internal Ref.	Issue
-	<p><b>Description:</b> VL arbitration does not distribute traffic as expected in case of multiple VLs</p> <p><b>Keywords:</b> General</p> <p><b>Discovered in Release:</b> 15.1200.0102</p> <p><b>Fixed in Release:</b> 15.1300.0100</p>
-	<p><b>Description:</b> In rare cases, FDR links may rise with errors. (Improved BER performance.)</p> <p><b>Keywords:</b> Link</p> <p><b>Discovered in Release:</b> 15.1.1002</p> <p><b>Fixed in Release:</b> 15.1300.0092</p>

## 5 Firmware Changes and New Feature History

**Table 7 - History of Major Changes and New Features**

Category	Description
<b>15.1200.0102</b>	
General	Added support for SHArP performance improvements (UD, Group trimming)
General	Added support for fast flash burn with new register MFMC and updates to current flash burn register MFPA (according to Section 3.9 of the Switches PRM)
Link	Added support for PRBS generation tool (according to registers PPTT and PPRT registers in Section 7.14 of the Switches PRM)
Link	Added support for new PHY statistical counters group to register PPCNT (according to Section 7.14 of the Switches PRM)
<b>15.1100.0072</b>	
General	Added support for SHArP
System Management	Added system MKey support
Chassis Management	Added support of IB NodeDescription Set
Modules	Added support for reading from pages with password through cable info MAD For more information, please refer to register MCIA in the Switch PRM and the Cableinfo VS-MAD
<b>15.0400.0064</b>	
General	First beta-level release
General	Added support for port mirroring
General	Added support for SHArP
General	Improved support for adaptive routing, adaptive routing notification, fault routing, fault routing notification
Link	Removed out-of-the-box Forward Error Correction (FEC), reaching 90ns latency, on Mellanox GA level AOCs equal to or shorter than 30m. <ul style="list-style-type: none"> <li>MFA1A00-EXXX: 3, 5, 10, 15, 20, 30</li> </ul>
Link	Added support for FDR10 speed
Chassis Management	Added support for power supply monitoring (for more information please refer to the MSPS register in the SwitchX Family Programmer's Reference Manual)



## List of Tables

Table 1:	Release Update History	5
Table 2:	Supported Systems	6
Table 3:	Supported Systems	6
Table 4:	Supported HP Systems	6
Table 5:	Supported SGI Systems	6
Table 6:	Firmware Interoperability	7
Table 7:	Qualified EDR Cables	7
Table 8:	Supported InfiniBand EDR Cables	8
Table 9:	Supported InfiniBand FDR Cables	8
Table 10:	Supported IB FDR10 and QDR Cables	9
Table 11:	Supported IB DDR Cables	10
Table 12:	Supported IB SDR Cables	11
Table 13:	Firmware Rev 15.1300.0124 Changes and New Features	12
Table 14:	Known Issues	13
Table 15:	Bug fixes History	15
Table 16:	History of Major Changes and New Features	16

## Release Update History

*Table 8 - Release Update History*

Release	Date	Description
Rev 15.1300.0126	February 21, 2017	First release

## Table of Contents

<b>Table of Contents</b> .....	<b>3</b>
<b>List of Tables</b> .....	<b>4</b>
<b>Chapter 1 Overview</b> .....	<b>6</b>
1.1 Supported Systems.....	6
1.2 Firmware Interoperability .....	7
1.3 Firmware Upgrade .....	11
1.4 PRM Revision Compatibility.....	11
<b>Chapter 2 Changes and New Features in Rev 15.1300.0126</b> .....	<b>12</b>
<b>Chapter 3 Known Issues</b> .....	<b>13</b>
<b>Chapter 4 Bug Fixes History</b> .....	<b>15</b>
<b>Chapter 5 Firmware Changes and New Feature History</b> .....	<b>16</b>