



NVIDIA Quantum Firmware Release Notes v27.2014.1090

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Release Notes Update History

Version	Date	Description
27.2014.1090	August 4, 2024	Initial release of this release notes version.

1 Overview

Firmware, which is added at the time of manufacturing, is used to run user programs on the device and can be thought of as the software that allows hardware to run. Embedded firmware is used to control the functions of various hardware devices and systems, much like a computer's operating system (OS) controls the function of software applications. Firmware may be written into read-only memory (ROM), erasable programmable read-only memory (EPROM), or flash memory.

1.1 Firmware Download

Please visit <https://www.nvidia.com/en-us/networking/> → Support → Support → Firmware Download

1.2 Document Revision History

A list of the changes made to this document are provided in [Changes and New Features](#) and [Changes and New Features History](#).

2 Firmware Compatible Products

These are the release notes for the NVIDIA Quantum™ firmware. This firmware complements the NVIDIA Quantum switch with a set of advanced features, allowing easy and remote management of the switch.

This firmware supports the following protocols:

- InfiniBand—SDR, QDR, FDR EDR, HDR

2.1 Supported Switch Systems


This firmware supports the devices listed in the table below:

Model Number	Description
MQM8790	NVIDIA Quantum 40-port Non-blocking Externally Managed HDR 200Gb/s InfiniBand Smart Switch


2.2 Firmware Interoperability

This firmware version has been validated to work against platforms with the following firmware and software versions.

HCA/Switch	Firmware Version
NVIDIA Quantum	27.2014.1090
Switch-IB 2	15.2010.5002
ConnectX®-7	28.41.1000
ConnectX-6	20.41.1000
ConnectX-5	16.35.2000
ConnectX-4	12.28.2006
Connect-IB®	10.16.1200
Minimal MFT version	4.28.0-97

 The minimal required ConnectX-6 firmware version is 20.25.1532.

2.3 Supported Cables

 NVIDIA does not support InfiniBand cables or modules not qualified or approved by NVIDIA.

2.3.1 Switch and HCAs InfiniBand Cable Connectivity Matrix

NVIDIA Quantum™ based switches and NVIDIA® ConnectX®-6 HCAs support HDR (PAM4, 50Gb/s per lane) and EDR (NRZ, 25Gb/s per lane) technologies. As the ConnectX adapter cards are identified by their maximum supported throughput (e.g. ConnectX-6 VPI 100Gb/s card can support either 2-lanes of 50Gb/s or 4-lanes of 25Gb/s), the exact connectivity will be determined by the cable that is being used.

As a reference:

Speed Mode	Speed Supported	Number of Lanes Used
HDR	200Gb/s InfiniBand	4 lanes of 50Gb/s
HDR100	100Gb/s InfiniBand	2 lanes of 50Gb/s
EDR	100Gb/s InfiniBand	4 lanes of 25Gb/s
FDR	56Gb/s	4 lanes of 14Gb/s

The following tables present the connectivity matrix, between NVIDIA Quantum based switches, ConnectX-6 HCA, and the cables.

2.3.2 Switch-to-Switch Connectivity

Switch	Switch	Cable					
		H cable DAC	H cable AOC	HDR DAC	HDR AOC	EDR DAC/AOC	FDR DAC/AOC
NVIDIA Quantum™	NVIDIA Quantum	No such cable	HDR100	HDR	HDR	EDR	N/A
NVIDIA Quantum	NVIDIA® Switch-IB®/ Switch-IB 2	N/A	N/A	EDR	N/A	EDR	N/A
NVIDIA Quantum	NVIDIA® SWITCHX®-2	N/A	N/A	N/A	N/A	N/A	FDR

2.3.3 HCA-to-Switch Connectivity Matrix

Adapter	Switch		Cable						
			Y cable DAC/AOC	HDR DAC	HDR AOC	HDR100 DAC/AOC (Copper Cables Only)	EDR DAC	EDR AOC	FDR DAC/AOC
ConnectX-6 200Gb/s	NVIDIA Quantum-2	NDR Switch	N/A	2 × HDR	2 × HDR	4 × HDR100	N/A	N/A	N/A
ConnectX-6 100Gb/s	NVIDIA Quantum-2		N/A	2 × EDR	N/A	4 × HDR100	N/A	N/A	N/A
ConnectX-4/ ConnectX-5	NVIDIA Quantum-2		N/A	2 × EDR	N/A	N/A	N/A	N/A	N/A
ConnectX-6 200Gb/s	NVIDIA Quantum	HDR Switch	HDR100	HDR	HDR	N/A	EDR	EDR	N/A
ConnectX-6 100Gb/s	NVIDIA Quantum		HDR100	EDR	EDR	N/A	EDR	EDR	N/A
ConnectX-4/ ConnectX-5	NVIDIA Quantum		N/A	EDR	N/A	N/A	EDR	EDR	FDR
ConnectX-3/ ConnectX-3 Pro	NVIDIA Quantum		N/A	N/A	N/A	N/A	N/A	FDR ^a	FDR ^a
ConnectX-6	Switch-IB/ Switch-IB 2	EDR Switch	N/A	EDR	N/A	N/A	EDR	EDR	N/A
ConnectX-6	SWITCHX-2	FDR Switch	N/A	N/A	N/A	N/A	N/A	N/A	FDR

a. Connectivity between NVIDIA Quantum and ConnectX-3 and ConnectX-3 Pro is not supported when using ports #27-34.

2.3.4 Supported Link Speed

The table below lists the current supported link speed.

Speed	Cable	Cable Length [meters]	Limitations
SDR	Optical	Up to 100	
	Copper	Up to 2	
FDR	Optical	3/10/15/100	Using FDR speed #27-#34, may cause link on the ports to go down.

Speed	Cable	Cable Length [meters]	Limitations
	Copper	Up to 3	
EDR	Optical	Up to 100	
	Copper	Up to 3	
HDR	Optical	Up to 100	HDR optical cables support only EDR & HDR speed. Thus, when mask is configured to HDR, the link is not raised when connecting to EDR devices.
	Copper	Up to 2	

2.3.5 Validated and Supported HDR Cables

Data Rate	NVIDIA P/N	Legacy OPN	Description	Lifecycle Phase
HDR	980-9I86N-00H003*	MCA1J00-H003E*	NVIDIA Active Copper cable, IB HDR, up to 200Gb/s, QSFP56, 3m, yellow pulltab	EOL [MP]
HDR	980-9I86O-00H004*	MCA1J00-H004E*	NVIDIA Active Copper cable, IB HDR, up to 200Gb/s, QSFP56, 4m, yellow pulltab	EOL [MP]
HDR	980-9I977-00H003*	MCA7J50-H003R*	NVIDIA Active copper hybrid cable, IB HDR 200Gb/s to 2xHDR100 100Gb/s, QSFP56 to 2xQSFP56, 3m, colored	EOL [MP]
HDR	980-9I978-00H004*	MCA7J50-H004R*	NVIDIA Active copper hybrid cable, IB HDR 200Gb/s to 2xHDR100 100Gb/s, QSFP56 to 2xQSFP56, 4m, colored	EOL [MP]
HDR	980-9I979-00H005	MCA7J50-H005R	NVIDIA Active copper hybrid cable, IB HDR 200Gb/s to 2xHDR100 100Gb/s, QSFP56 to 2xQSFP56, 5m, colored	EOL [Prototype]
HDR	980-9I548-00H001	MCP1650-H001E30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 1m	HVM
HDR	980-9I549-00H002	MCP1650-H002E26	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 2m	HVM
HDR	980-9I54A-00H00A	MCP1650-H00AE30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 0.5m	HVM
HDR	980-9I54B-00H01A	MCP1650-H01AE30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 1.5 m	HVM
HDR	980-9I39E-00H001	MCP7H50-H001R30	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 1m	HVM
HDR	980-9I99F-00H002	MCP7H50-H002R26	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 2m	HVM
HDR	980-9I98G-00H01A	MCP7H50-H01AR30	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 1.5m	HVM
HDR	980-9I46K-00H001	MCP7Y60-H001	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 1m, fin to flat	MP

Data Rate	NVIDIA P/N	Legacy OPN	Description	Lifecycle Phase
HDR	980-9I46L-00H002	MCP7Y60-H002	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 2m, fin to flat	MP
HDR	980-9I93M-00H01A	MCP7Y60-H01A	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 1.5m, fin to flat	MP
HDR	980-9I93N-00H001	MCP7Y70-H001	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 1m, fin to flat	MP
HDR	980-9I93O-00H002	MCP7Y70-H002	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 2m, fin to flat	MP
HDR	980-9I47P-00H01A	MCP7Y70-H01A	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 1.5m, fin to flat	MP
HDR	980-9I41X-00H003	MFA7U10-H003	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 3m	P-Rel
HDR	980-9I11Z-00H005	MFA7U10-H005	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 5m	P-Rel
HDR	980-9I111-00H010	MFA7U10-H010	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 10m	P-Rel
HDR	980-9I113-00H015	MFA7U10-H015	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 15m	P-Rel
HDR	980-9I115-00H020	MFA7U10-H020	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 20m	P-Rel
HDR	980-9I117-00H030	MFA7U10-H030	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 30m	P-Rel
HDR	980-9I11V-00H050	MFA7U10-H050	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 50m	Prototype
HDR	980-9I124-00H003	MFS1S00-H003E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 3m	EOL [HVM]
HDR	980-9I123-00H003	MFS1S00-H003-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 3m	EOL [P-Rel]
HDR	980-9I457-00H003	MFS1S00-H003V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 3m	MP
HDR	980-9I45A-00H005	MFS1S00-H005E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 5m	EOL [HVM]
HDR	980-9I449-00H005	MFS1S00-H005-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 5m	EOL [P-Rel]
HDR	980-9I45D-00H005	MFS1S00-H005V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 5m	MP
HDR	980-9I45G-00H010	MFS1S00-H010E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 10m	EOL [HVM]
HDR	980-9I45H-00H010	MFS1S00-H010E_FF	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 10m	EOL [HVM]

Data Rate	NVIDIA P/N	Legacy OPN	Description	Lifecycle Phase
HDR	980-9I44F-00H010	MFS1500-H010-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 10m	EOL [P-Rel]
HDR	980-9I45J-00H010	MFS1500-H010V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 10m	MP
HDR	980-9I45M-00H015	MFS1500-H015E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 15m	EOL [HVM]
HDR	980-9I44L-00H015	MFS1500-H015-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 15m	EOL [P-Rel]
HDR	980-9I45O-00H015	MFS1500-H015V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 15m	MP
HDR	980-9I45R-00H020	MFS1500-H020E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 20m	EOL [HVM]
HDR	980-9I44Q-00H020	MFS1500-H020-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 20m	EOL [P-Rel]
HDR	980-9I45T-00H020	MFS1500-H020V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 20m	MP
HDR	980-9I45Y-00H030	MFS1500-H030E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 30m	EOL [HVM]
HDR	980-9I45X-00H030	MFS1500-H030-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 30m	EOL [P-Rel]
HDR	980-9I44O-00H030	MFS1500-H030V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 30m	MP
HDR	980-9I455-00H050	MFS1500-H050E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 50m	EOL [HVM]
HDR	980-9I447-00H050	MFS1500-H050V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 50m	MP
HDR	980-9I44G-00H100	MFS1500-H100E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 100m	EOL [HVM]
HDR	980-9I44H-00H100	MFS1500-H100V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 100m	MP
HDR	980-9I44I-00H130	MFS1500-H130E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 130m	EOL [HVM]
HDR	980-9I44K-00H130	MFS1500-H130V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 130m	MP
HDR	980-9I45L-00H150	MFS1500-H150E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 150m	EOL [HVM]
HDR	980-9I44N-00H150	MFS1500-H150V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 150m	MP
HDR	980-9I452-00H003	MFS1550-H003E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 3m	EOL [HVM]
HDR	980-9I445-00H003	MFS1550-H003V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 3m	HVM

Data Rate	NVIDIA P/N	Legacy OPN	Description	Lifecycle Phase
HDR	980-9I956-00H005	MFS1S50-H005E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 5m	EOL [HVM]
HDR	980-9I969-00H005	MFS1S50-H005V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 5m	HVM
HDR	980-9I95A-00H010	MFS1S50-H010E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 10m	EOL [HVM]
HDR	980-9I96D-00H010	MFS1S50-H010V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 10m	HVM
HDR	980-9I95E-00H015	MFS1S50-H015E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 15m	EOL [HVM]
HDR	980-9I96H-00H015	MFS1S50-H015V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 15m	HVM
HDR	980-9I95I-00H020	MFS1S50-H020E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 20m	EOL [HVM]
HDR	980-9I96L-00H020	MFS1S50-H020V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 20m	HVM
HDR	980-9I95M-00H030	MFS1S50-H030E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 30m	EOL [HVM]
HDR	980-9I96P-00H030	MFS1S50-H030V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 30m	HVM
HDR	980-9I95S-00H040	MFS1S50-H040V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 40m	Prototype
HDR	980-9I95T-00H050	MFS1S50-H050V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 50m	Prototype
HDR	980-9I95Z-00H003	MFS1S90-H003E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 3m	EOL [HVM]
HDR	980-9I960-00H005	MFS1S90-H005E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 5m	EOL [HVM]
HDR	980-9I961-00H010	MFS1S90-H010E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 10m	LTB [HVM]
HDR	980-9I962-00H015	MFS1S90-H015E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 15m	EOL [HVM]
HDR	980-9I423-00H020	MFS1S90-H020E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 20m	LTB [HVM]
HDR	980-9I424-00H030	MFS1S90-H030E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 30m	EOL [HVM]

Data Rate	NVIDIA P/N	Legacy OPN	Description	Lifecycle Phase
HDR	980-9I17S-00HS00	MMA1T00-HS	NVIDIA transceiver, HDR, QSFP56, MPO, 850nm, SR4, up to 100m	HVM
HDR	980-9I055-00H000*	MMS1W50-HM*	NVIDIA transceiver, IB HDR, up to 200Gb/s, QSFP56, LC-LC, 1310nm, FR4	MP



*These cables were approved for switch-to-switch connectivity. For switch-to-host connectivity there may be some issues. See Known Issue 2073222/1959529 (see [Known Issues](#))

2.3.6 Validated and Supported EDR Cables

Data Rate	NVIDIA P/N	Legacy OPN	Description	Lifecycle Phase
EDR	980-9I62P-00C001	MCP1600-E001	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m 30AWG	EOL [HVM]
EDR	980-9I62Q-00E001	MCP1600-E001E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1m, Black, 30AWG	HVM
EDR	980-9I62S-00C002	MCP1600-E002	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2m 28AWG	EOL [HVM]
EDR	980-9I62T-00E002	MCP1600-E002E26	NVIDIA® Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2m, Black, 26AWG	Preliminary
EDR	980-9I62U-00E002	MCP1600-E002E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2m, Black, 30AWG	HVM
EDR	980-9I62V-00C003	MCP1600-E003	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m 26AWG	EOL [HVM]
EDR	980-9I62W-00E003	MCP1600-E003E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 3m, Black, 26AWG	HVM
EDR	980-9I62Y-00E004	MCP1600-E004E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 4m, Black, 26AWG	EOL [HVM]
EDR	980-9I62Z-00E005	MCP1600-E005E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 5m, Black, 26AWG	HVM
EDR	980-9I620-00E00A	MCP1600-E00A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 0.5m 30AWG	EOL [HVM]
EDR	980-9I621-00E00A	MCP1600-E00AE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 0.5m, Black, 30AWG	EOL [HVM]
EDR	980-9I622-00E00B	MCP1600-E00BE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 0.75m, Black, 30AWG	EOL [HVM] [HIBERN/ATE]
EDR	980-9I623-00C01A	MCP1600-E01A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1.5m 30AWG	EOL [HVM]

Data Rate	NVIDIA P/N	Legacy OPN	Description	Lifecycle Phase
EDR	980-9I624-00E01A	MCP1600-E01AE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1.5m, Black, 30AWG	HVM
EDR	980-9I625-00E01C	MCP1600-E01BE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1.25m, Black, 30AWG	EOL [HVM] [HIBERN/ ATE]
EDR	980-9I626-00C02A	MCP1600-E02A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2.5m 26AWG	EOL [HVM]
EDR	980-9I627-00E02A	MCP1600-E02AE26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2.5m, Black, 26AWG	HVM
EDR	980-9I13D-00E001	MFA1A00-E001	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m	HVM
EDR	980-9I13F-00E003	MFA1A00-E003	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m	HVM
EDR	980-9I13J-00E005	MFA1A00-E005	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 5m	HVM
EDR	980-9I13M-00E007	MFA1A00-E007	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 7m	LTB [HVM]
EDR	980-9I13O-00E010	MFA1A00-E010	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 10m	HVM
EDR	980-9I13R-00E010	MFA1A00-E010_FF	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 10m	EOL [HVM] [HIBERN/ ATE]
EDR	980-9I13S-00E015	MFA1A00-E015	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 15m	HVM
EDR	980-9I13V-00E020	MFA1A00-E020	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 20m	HVM
EDR	980-9I13Y-00E030	MFA1A00-E030	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 30m	HVM
EDR	980-9I133-00E050	MFA1A00-E050	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 50m	HVM
EDR	980-9I135-00E100	MFA1A00-E100	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 100m	LTB [HVM]
EDR	980-9I17L-00E000	MMA1B00-E100	NVIDIA transceiver, IB EDR, up to 100Gb/s, QSFP28, MPO, 850nm, SR4, up to 100m	HVM
100 GbE	980-9I17P-00CR00	MMA1L10-CR	NVIDIA optical transceiver, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, LR4 up to 10km	HVM
100 GbE	980-9I17Q-00CM00	MMA1L30-CM	NVIDIA optical module, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, CWDM4, up to 2km	MP
100 GbE	980-9I16X-00C000	MMS1C10-CM	NVIDIA active optical module, 100Gb/s, QSFP, MPO, 1310nm, PSM4, up to 500m	EOL [MP]

2.3.7 Firmware Upgrade

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

network.nvidia.com/products/adapter-software/firmware-tools/

2.4 PRM Revision Compatibility

This firmware version complies with the NVIDIA Switches Programmer's Reference Manual (PRM), Rev 1.40 or later.

3 Changes and New Features

This firmware version includes the following new features. For a list of new features from previous versions, please see [Changes and New Features History](#).

Keyword	Description
27.2014.1090	
Split, NDR200, Backplane	Enabled dynamic splitting of backplane ports using the <code>mlxconfig</code> command. Extended support for split configurations to all modules (previously limited to 32 modules). Added support for non-sequential module configurations.
Fast Recovery from Unhealthy Links	Exposed link-down reasons through the Fast Recovery event notification channel.
Telemetry	Added indication of egress queue depth for enhanced congestion visibility.
Bug Fixes	See Bug Fixes .

4 Bug Fixes in this Firmware Version

This firmware version includes the following bug fixes. For a list of bug fixes from previous versions, please see [Bug Fixes History](#).

Internal Ref.	Issues
3888873	<p>Description: Head-of-line blocking between QP1 and QP0 MADs from the switch to the firmware packet buffer occurs when the firmware is busy handling a MAD, causing another MAD with the same QP to wait in the queue ahead of MADs from different QPs.</p> <p>Keywords: MADs</p> <p>Discovered in Version: 27.2012.2200</p> <p>Fixed in Version: 27.2014.1090</p>
3887857	<p>Description: In cases where MirroringAgent MAD was sent without configuring fast recovery mirroring using MirroringGlobalTrigger MAD, the agent that was configured will send fast recovery mirroring notifications.</p> <p>Keywords: Mirroring</p> <p>Discovered in Version: 27.2012.4036</p> <p>Fixed in Version: 27.2014.1090</p>

5 Known Issues

The following sections describe known issues in firmware releases and possible workarounds.

Internal Ref.	Issue
3441123	Description: On rare occasions, when a SHARP QP exceeded the allowed amount of retries, the switch may hang due to an incorrect flow execution.
	Workaround: N/A
	Keywords: SHARP
	Discovered in Version: 27.2012.1010
3329109	Description: MFS1S50-H003E cable supports only HDR rate when used as a split cable.
	Workaround: N/A
	Keywords: HDR, split cable, MFS1S50-H003E
	Discovered in Version: 27.2010.6064
3327881	Description: On Quantum unmanaged platforms, when using FDR speed with 1m Copper cable MCP1600-E001, on rare occasions, high effective errors may be observed.
	Workaround: N/A
	Keywords: BER
	Discovered in Version: 27.2010.5042
3047036	Description: On rare occasions, there can be long link up time on active copper cables MCA1J00-H003E.
	Workaround: N/A
	Keywords: Cables, MCA1J00-H003E
	Discovered in Version: 27.2010.4010
2278846	Description: On rare occasions, when using Quantum systems with Optical cables MFS1S00-H003E and MFS1S00-H030E, the link up time may take up to 100 seconds.
	Workaround: N/A
	Keywords: Optical Cables
	Discovered in Version: 27.2010.2036
2355994	Description: In AOCs MFS1S00-H0xx-LL and splitter cables MFS1S50-H0xxE-LL, effective BER of 1e-12 in EDR speed may be observed.
	Workaround: N/A
	Keywords: Cables, BER
	Discovered in Version: 27.2008.2102
2127531	Description: When using H-cable MFS1S90 with HDR speed in split mode, the link, on rare occasion, goes down.
	Workaround: N/A
	Keywords: Cables, Link
	Discovered in Version: 27.2008.1300
2917504	Description: On 2KM HDR transceiver, MMS1W50-HM, QM87xx-HS2R (1U switch with C2P air flow) support power consumption of up to 6W per port.

Internal Ref.	Issue
	<p>Workaround: N/A</p> <p>Keywords: QM87xx, Cables</p>
2223568	<p>Description: When using active copper cables, link down counter may be observed on occasion.</p> <p>Workaround: N/A</p> <p>Keywords: Active Copper Cables</p> <p>Discovered in Version: 27.2008.0232</p>
2109975	<p>Description: Occasionally, EDR linkup time might take up to 1 minute when using Amphenol 100G (EDR) optical cables.</p> <p>Workaround: N/A</p> <p>Keywords: Cables, EDR</p> <p>Discovered in Version: 27.2008.0232</p>
2239632	<p>Description: EDR linkup time might take up to 50sec when using HDR optical cable.</p> <p>Workaround: N/A</p> <p>Keywords: Cables, EDR</p> <p>Discovered in Version: 27.2008.0232</p>
2145881	<p>Description: Occasionally, when using Active Fiber Splitter cables (OPNs: MFS1S90-Hxxx), unclean RAW BER (10e-6) might be seen.</p> <p>Workaround: N/A</p> <p>Keywords: Cables, BER</p> <p>Discovered in Version: 27.2008.0232</p>
2145881	<p>Description: FDR link is unstable when using an FDR cable in ports: #27-#34.</p> <p>Workaround: N/A</p> <p>Keywords: FDR, cables</p> <p>Discovered in Version: 27.2008.0232</p>
2057793	<p>Description: Congestion profiles in VS-MAD <code>PortProfileSetting</code> support only fixed mode. Percentage mode is not supported.</p> <p>Workaround: N/A</p> <p>Keywords: DCQCN Congestion Control</p> <p>Discovered in Version: 27.2007.0300</p>
1959529	<p>Description: When HDR Active Copper cables are used between Quantum switches, or between Quantum switch and ConnectX-6 HCA, the counter indicating 'Link Down' may have a value other than zero, after the first time the cable is connected. As this may happened only at the first time, it is recommend to clear the counters after the cluster is brought up.</p> <p>Workaround: N/A</p> <p>Keywords: Cables</p> <p>Discovered in Version: 27.2000.3276</p>

Internal Ref.	Issue
1856717	<p>Description: High BER may occur when connecting cables of type 0.5/1m DAC to an HDR speed.</p> <p>Workaround: N/A</p> <p>Keywords: Cables</p> <p>Discovered in Version: 27.2000.1886</p>
-	<p>Description: The supported length of HDR copper cables is currently up to 2M.</p> <p>Workaround: N/A</p> <p>Keywords: HDR cables</p>
-	<p>Description: Although the effective BER (after FEC) is expected to meet our design targets (e.g. 10e-14 or lower), occasionally it may be higher.</p> <p>Workaround: N/A</p> <p>Keywords: Cables</p>
-	<p>Description: The following features are currently not supported on Quantum-based systems:</p> <ul style="list-style-type: none"> • IB Router • Congestion Control • Voltage reading via MVCR <p>Workaround: N/A</p> <p>Keywords: Quantum</p>
955641	<p>Description: VL_HIGH_LIMIT is not affecting the VL arbiter as expected.</p> <p>Workaround: Arbitration table should be set using only the low priority VL arbitration table.</p> <p>Keywords: VL Arbitration</p>
1249608	<p>Description: Configuring weight "0" for VL, results in unexpected behavior.</p> <p>Workaround: Arbitration table should be configured with weights other than "0".</p> <p>Keywords: VL Arbitration</p>
-	<p>Description: Module info page in Diagnostics Data VS-MAD is not supported</p> <p>Workaround: N/A</p> <p>Keywords: Diagnostics Data VS-MAD</p>

6 Changes and New Features History

For older versions history, please refer to their dedicated Release Notes.

Keyword	Description
27.2012.4036	
General	See Bug Fixes .
27.2012.3040	
General	Stability improvements.
27.2012.3008	
General	Stability improvements.
27.2012.2014	
Counters	Added PPCNT new group 0x26 and a new page 241 for Diagnostic Data VS MAD.
Counters	Added support for two performance class MADs : 1. PortXmitConCtrl 2. PortVLXmitTimeCong
Resiliency	Added a mechanism to release the packet interface when a long command packet handling timeout is detected to reduce firmware freeze.
Telemetry	Added support for Fast Recovery notifications of the OS entity in the network.

Category	Description
27.2012.1048	
General	Stability improvements.
27.2012.1010	
Fast Recovery from Unhealthy Links	Added support of the fast recovery from unhealthy links including BER monitor and credit watchdog.
Fast Recovery Notifications Towards UFM	Added support for notifications of Fast Recovery towards UFM entity (collector) in the network.
27.2010.6102	
General	Stability improvements.
27.2010.6064	
Counters: Unhealthy Link	Added BER Monitor counters for unhealthy link.
Additional Status in Each MAD	Added support of <i>AdditionalStatus</i> in MAD packets.
Mirroring Congested Packets Towards UFM	Added support for mirroring of congested packets towards UFM entity (collector) in the network.
General	See Bug Fixes .

27.2010.5108	
General	Stability improvements.
27.2010.5002	
General	Stability improvements.
27.2010.4102	
General	Stability improvements.
27.2010.4010	
pFRN Collector	Added support for mirroring of PFRN packets towards UFM entity (collector) in the subnet.
PKEY Filter for Multicast	Added support for MulticastPKeyTrapSuppression (PKEY mismatch filtering).
SL to VL Mapping	Added switch support for port mask optimization of SL to VL Mapping Table configuration.
27.2010.3118	
Temperature Drift Tolerance	Improved HDR InfiniBand temperature drift tolerance on Quantum systems. Improved the algorithm for periodic link maintenance which is performed by NVIDIA IC during normal link operation in order to compensate for changes in link environment that might influence the analog behavior of the SerDes blocks in order to prevent a degradation in link performance.
27.2010.3004	
pFRN	Added support for pFRN (Proactive Fault Routing Notification) which allows for dynamic link failure detection and route correction for topologies based on Adaptive Routing.
Counters	Added support for PortXmitWaitVLExtended counters.
Fans	Enlarged fans' PRM registers to support up to 16 fans.
27.2010.2246	
General	Stability improvements.
27.2010.2110	
General	Stability improvements.
27.2010.2036	
General	Stability improvements.
27.2010.1404	
General	Stability improvements.

Version 27.2010.1310	
Congestion Control	Added ES-level support for congestion control class key.
Vendor Key	Added ES-level support for vendor class key.

Version 27.2010.1202	
Counters	Added support for PortVLXmitFlowCtlUpdateErrors counters.
Version 27.2008.3328	
Cables	Added GA-level support for AOC splitter cables MFS1S50-H0xxE-LL. *Note that the cables above are HDR-only and are supported up to 30 meters.
LinkX Cable Upgrade	Added GA-level support, on supported cables, for direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
PKEY	Added support for PKEY traps.
Version 27.2008.2500	
Cables	Added support for cable MMS1W50-HM NVIDIA transceiver, IB HDR, up to 200Gb/s, QSFP56, MPO, 1310nm, FR4 on MQM8700-HS2R and MQM8790-HS2R systems.
Cables	Added GA-level support for Active Optical Cables MFS1S00-H0xx-LL. *Note that the cables above are HDR-only and are supported up to 30 meters.
Version 27.2008.2402	
Bug Fixes	Stability improvements.
Version 27.2008.2300	
Bug Fixes	Stability improvements.
Version 27.2008.2202	
LinkX Cable Upgrade	Added beta-level support on supported cables for direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
Version 27.2008.2102	
BER	100Gb/s speed BER improvements. con
Cables	Added support for the following Active Fiber HDR cables: MFS1S00-H130E and MFS1S00-H150E. For further information see section Validated and Supported HDR Cables .
Counters	Added support for "Maximum PLR Counts per second (cps)" counter.
IBdiagnet	Updated the PPNCT group/DiagnosticData to use SymbolBER counters instead of Effective BER counters.
Telemetry	Added support for performance analysis using histogram-based traffic models to obtain the queue length distribution.
Version 27.2008.1904	
SHARP	Added support for SHARP SAT performance counters.
Adaptive Routing	Added support for a new Adaptive Router counter (PortARTrials) as part of the PortRNCounters group. PortARTrials is used to indicate the number of times the AR decision mechanism is used per port
Version 27.2008.1604	
SHARP	Added support for MAD security policy for SHARP.

Cables	Enabled PLR with Low-Latency (LL)-FEC mode in optical cables up to 30m.
Version 27.2008.1300	
EDR Link in ConnectX-6 100Gb/s cards	EDR link speed is now supported when using ConnectX-6 100Gb/s HCA and connecting with HDR optical cables.
Version 27.2008.0232	
Link Speed	Added support for FDR link speed when connecting a ConnectX-3 HCA with an HDR Quantum switch.
SHARP	SHARP stability improvements.
SHARP	Added support for legacy SHARP port and performance counters.
Cables	Enabled KP4RS FEC on Active Fiber cables (OPN: MFS1S00-V0xxE).
Cables	Disabled PLR on Active Fiber cables.
Version 27.2007.1124	
Bug Fixes	Stability improvements.
Version 27.2007.0618	
Bug Fixes	Stability improvements.
Version 27.2007.0300	
Performance	Added support for link-negotiated credit size.
General	Added support for DCQCN Congestion Control.
Version 27.2000.3276	
NVIDIA Scalable Hierarchical Aggregation and Reduction Protocol (SHARP) [™]	SHARP (SAT) is at GA level. *SAT: Streaming Aggregation Tree
Version 27.2000.2708	
SHARP	SHARP now supports running 2 flows in parallel.
Version 27.2000.2626	
Speed Link	SDR link speed on InfiniBand systems is now available for all cables, including cables that do not advertise InfiniBand speed in their memory map.
NVIDIA Scalable Hierarchical Aggregation and Reduction Protocol (SHARP)	SHARP (LLT) is at GA level, whereas SHARP (SAT) is at Beta level. *LLT: Local Latency Tree *SAT: Streaming Aggregation Tree
General	Added support for Error Injection with PTER register.
Version 27.2000.2306	
General	Stability improvements.
Version 27.2000.2182	
General	Stability improvements.
Version 27.2000.2046	

NVIDIA Scalable Hierarchical Aggregation and Reduction Protocol (SHARP)	[Beta] NVIDIA Scalable Hierarchical Aggregation and Reduction Protocol (SHARP) technology improves the performance of MPI operations by offloading collective operations from the CPU to the switch network, and by eliminating the need to send data multiple times between endpoints.
Link Speed	Added QDR/FDR support in Quantum switch systems when using optical cables of up to 30m. Note: QDR speed is only supported when using the FDR cables. See Validated and Supported FDR Cables
Cables	Removed PLR from active cables longer than 30m.
Version 27.2000.1886	
Physical Layer Retransmission (PLR)	Added support to the Physical Layer Retransmission (PLR) functionality for HDR speed.
Link Speed	Link-up time improvements. The link up time is up to 60 sec
Version 27.2000.1600	
General	Stability improvements.
Version 27.2000.1400	
Link Speed	HDR speed rate is at GA level.
Cables	Added support for Break-Out Cable auto-sensing.
Version 27.2000.1142	
Link Speed	HDR link stability enhancements. Note: HDR is at beta level.
Version 27.2000.1012	
Link Speed	HDR speed rate is currently at beta level.
Version 27.2000.1004	
Link Speed	Stability improvements for HDR link.
Subnet Manager (Adaptive Routing)	Added support for Adaptive Routing. Adaptive routing (AR) allows optimizing data traffic flow. The InfiniBand protocol uses multiple paths between any two points. Thus, when unexpected traffic patterns cause some paths to be overloaded, AR can automatically move traffic to less congested paths according to the current temporal state of the network.
Adaptive Routing	Added support for Private Linear Forwarding Tables (PLFT). This capability helps SM to optimize traffic.

7 Bug Fixes History

This section includes the bug fix history for the last three major releases. For the history of older releases, please refer to the relevant versions.

Internal Ref.	Issues
3864399	Description: Sending pFRN packets to ports that were connected to themselves (loop), caused the switch hanged due to semaphore lock mismatch.
	Keywords: pFRN
	Discovered in Version: 27.2012.2108
	Fixed in Version: 27.2012.4036
3591193 3591151 3591197	Description: Adjusted the PLL bandwidth to accommodate certain deviations in the switch link margins for improved resilience against temperature variations.
	Keywords: PLL Bandwidth
	Discovered in Version: 27.2010.1202
	Fixed in Version: 27.2012.4036
3608820	Description: On rare occasions, following an event of port link down, the SHARP resources cleanup may fail.
	Keywords: SHARP
	Discovered in Version: 27.2012.2014
	Fixed in Version: 27.2012.4006
3824931 3843040	Description: Illegal packets of a permissive LID (0xFFFF) and VL other than 15 were incorrectly configured to destined for port 0 and be proceeded by the switch firmware, which lead to overloading of the switch firmware.
	Keywords: Checks
	Discovered in Version: 27.2012.2108
	Fixed in Version: 27.2012.4006

Internal Ref.	Issues
3638090	Description: Fixed the DeviceSoftReset MAD hardware reset process to avoid a possible failure by the system to execute the reset, which consequently resulted in system hanging.
	Keywords: DeviceSoftReset MAD hardware reset
	Discovered in Version: 27.2012.2014
	Fixed in Version: 27.2012.3008

Internal Ref.	Issues
3536538	Description: For mirror agent configured with dynamic port analyzer, configuring linear forwarding table may cause mirror agent enablement and unexpected mirrored packets.
	Keywords: Recovery

Internal Ref.	Issues
	Discovered in Version: 27.2012.1010
	Fixed in Version: 27.2012.2014

Internal Ref.	Issues
3477039	Description: Wrong RTT value is exposed under PRTL PRM.
	Keywords: Registers, RTT Value
	Discovered in Version: 27.2010.6064
	Fixed in Version: 27.2012.1010
3481394	Description: When trying to choose the threshold for the Fast Recovery feature (BER Config), it is possible that threshold 0 will be loaded.
	Keywords: Fast Recovery, BER Configuration
	Discovered in Version: 27.2010.6064
	Fixed in Version: 27.2012.1010
3451519	Description: When using ibdiagnet, an incorrect module alarm type was reported.
	Keywords: ibdiagnet, Module Temperature Alarm Type
	Discovered in Version: 27.2010.5108
	Fixed in Version: 27.2012.1010
3448282	Description: At times, the link gets stuck due to unresponsive peer having very high BER.
	Keywords: BER
	Discovered in Version: 27.2010.2110
	Fixed in Version: 27.2012.1010
3447029	Description: On some occasions, if a peer's port resets or is physically toggled, the port may be reported as unhealthy due to BER threshold crossing.
	Keywords: Port, Reboot, BER
	Discovered in Version: 27.2010.6102
	Fixed in Version: 27.2012.1010

Internal Ref.	Issues
3326692	Description: Wrap-around of the time_since_last_clear counter caused incorrect reporting of counters on the port.
	Keywords: Counters
	Discovered in Version: 27.2010.3118
	Fixed in Version: 27.2010.6102
3436317	Description: On rare occasions, when a SHARP QP exceeds the allowed amount of retries, the switch may hang due to an incorrect flow execution.
	Keywords: SHARP

Internal Ref.	Issues
	Discovered in Version: 27.2010.2300
	Fixed in Version: 27.2010.6102
3283303/3298590	Description: In the rare event of an error burst, the link maintenance stopped working.
	Keywords: Link Maintenance
	Discovered in Version: 27.2010.3118
	Fixed in Version: 27.2010.6064
3339363	Description: pFRN notification state machine got halted in busy-wait on all riscs due to inability to free TX credits.
	Keywords: pFRN
	Discovered in Version: 27.2010.3118
	Fixed in Version: 27.2010.6064
3301825	Description: The firmware does not return values for the counters "PortSwLifetimeLimitDiscards" and "PortSwHOQLifetimeLimitDiscards". Support has now been added for the counters.
	Keywords: Counters
	Discovered in Version: 27.2010.3118
	Fixed in Version: 27.2010.5042
3335002	Description: pFRN mirror v1 header pad count showed an invalid padding size.
	Keywords: PFRN
	Discovered in Version: 27.2010.4010
	Fixed in Version: 27.2010.5042
3261861	Description: Connecting an HDR device to an NDR device with Optical cables longer than 30m causes degradation in the bandwidth.
	Keywords: HDR-to-NDR
	Discovered in Version: 27.2010.4102
	Fixed in Version: 27.2010.5002
3269531	Description: After multiple MSPS (Management System Power Supply register) calls, the switch gets stuck.
	Keywords: MSPS
	Discovered in Version: 27.2010.3118
	Fixed in Version: 27.2010.5002
3199650	Description: A physical link failure between switches while a SHARP job is running and utilizing the link can cause one of the switches to become invalid for further SHARP jobs. This can result in either a "No resource" response for new SHARP job requests or in jobs getting stuck. The bug fix requires SHARP version 3.2.
	Keywords: SHARP
	Discovered in Version: 27.2010.4010
	Fixed in Version: 27.2010.4102

Internal Ref.	Issues
3245821	<p>Description: In case of an AR group table set request, the ARN mask is flushed for group that has an active pFRN timer.</p> <p>Keywords: PFRN</p> <p>Discovered in Version: 27.2010.4010</p> <p>Fixed in Version: 27.2010.4102</p>
3253717	<p>Description: mask_force_clear_timeout timer in pFRN feature was not functional (the mask was not cleared when the timer expired).</p> <p>Keywords: PFRN</p> <p>Discovered in Version: 27.2010.4010</p> <p>Fixed in Version: 27.2010.4102</p>
3242209	<p>Description: Set PFRN mad did not return error on wrong inputs in mask_clear_timer and mask_force_clear_timer fields.</p> <p>Keywords: PFRN</p> <p>Discovered in Version: 27.2010.4010</p> <p>Fixed in Version: 27.2010.4102</p>
3174239	<p>Description: On rare occasions, traps were not properly repressed, which caused redundant traps to be sent multiple times.</p> <p>Keywords: Traps</p> <p>Discovered in Version: 27.2010.3118</p> <p>Fixed in Version: 27.2010.4010</p>
2998597	<p>Description: Bandwidth degradation may be visible in large scale random traffic patterns (e.g., all2all and Adaptive Routing) due to wrong fast path configurations.</p> <p>Keywords: Performance</p> <p>Discovered in Version: 31.2008.2500</p> <p>Fixed in Version: 31.2010.3004</p>
3040232	<p>Description: PLFT mapping for SMA port (port 0) was configured in a way that caused PLFT of FDB 0 to be used instead of PLFT of FDB 1.</p> <p>Keywords: PLFT, SMA</p> <p>Discovered in Version: 27.2010.2110</p> <p>Fixed in Version: 27.2010.2246</p>
2646440	<p>Description: I²C bus got stuck in start state.</p> <p>Keywords: I²C</p> <p>Discovered in Release: 27.2008.2102</p> <p>Fixed in Release: 27.2010.2036</p>
2709851	<p>Description: In some cases, traps that were sent when there is a change in link state may not be sent to SM due to wrong logic of the link state machine in the firmware.</p> <p>Keywords: SM Traps</p> <p>Discovered in Version: 27.2008.2500</p>

Internal Ref.	Issues
	Fixed in Release: 27.2010.1128
2635607	<p>Description: SM timeouts on PortInfo MAD SET may occur when Operational VLs are decreased (for example, when running different SM with different op_vl configuration) due to wrong logic in firmware of buffers allocation per VL. The fix is to first handle the VLs needed to be decreased in size and then enlarge the ones needed to increase in size.</p> <p>Keywords: SM, Operational VL, Timeout</p> <p>Fixed in Release: 27.2008.3328</p>
2578261	<p>Description: In rare cases, on FR4 CMIS MMS1W50-HM, unplugging and plugging the module during link up flow may cause the link to get stuck on "Polling ."</p> <p>Keywords: Cables, FR4</p> <p>Discovered in Version: 27.2008.2402</p> <p>Fixed in Release: 27.2008.3328</p>
2700834	<p>Description: A division by zero issue in uC code caused infinite loop to uC database alignment which prevents memory corruption that was a result of illegal access of neighboring lanes.</p> <p>Keywords: Memory</p> <p>Fixed in Release: 27.2008.3328</p>
2627108	<p>Description: Setting SHARP QuotaConfig with tree_if higher than 95 result with buffer overrun, and may lead to zombie jobs on the switch.</p> <p>Keywords: SHARP</p> <p>Discovered in Version: 27.2008.2500</p> <p>Fixed in Release: 27.2008.3328</p>
2483974	<p>Description: Configuring split port using mlxconfig using MFT 4.15 resulted in configuring the incorrect ports on the unmanaged switch. On version 27.2008.3100, the issue was fixed. Make sure to use MFT 4.15 and above.</p> <p>Keywords: MFT, Port Split</p> <p>Fixed in Release: 27.2008.3328</p>
2646158	<p>Description: In some cases, traps that are sent when there is a change in link state may not be sent to SM due to a race between trap generation and trap repress. The solution ensures that the latest information will always be sent to SM.</p> <p>Keywords: SM Traps</p> <p>Discovered in Version: 27.2008.2500</p> <p>Fixed in Release: 27.2008.3328</p>
2668318	<p>Description: In SHARP, in case of reusing a QP for son after Set Parent flow uses it as father, the father bit indication might remain set in QP and Resource Cleanup flow may fail. The solution resets the QPC entry in QPAlloc flow.</p> <p>Keywords: SHARP</p> <p>Discovered in Version: 27.2008.2500</p> <p>Fixed in Release: 27.2008.3328</p>
2697623	<p>Description: In SHARP, in case of Set Parent flow, misconfiguration in the TX domain causes credits to return to the wrong hardware unit.</p>

Internal Ref.	Issues
	Keywords: SHARP Discovered in Version: 27.2008.2500 Fixed in Release: 27.2008.3328
2712117	Description: In SHARP, switch may hang on locked semaphore due to misconfiguration in streaming aggregation TreeConfig MAD while ports are toggling. Keywords: SHARP Discovered in Version: 27.2008.2500 Fixed in Release: 27.2008.3328
2571800	Description: New SHARP jobs may hang after abrupt termination of SHARP jobs. Keywords: SHARP Discovered in Version: 27.2008.2402 Fixed in Release: 27.2008.2500
2579752	Description: Modules failed over 400KHz. The default I ² C frequency has now been set to 100KHz for all modules. Keywords: Modules, I ² C Discovered in Version: 27.2008.2102 Fixed in Release: 27.2008.2402
2439961	Description: The IsPLRMaxRetransmissionRateSupported and IsEffectiveCounterSupported counters were incorrectly added to the Virtual Port in the IB switch. Keywords: Counters Discovered in Version: 27.2008.2300 Fixed in Release: 27.2008.2402
2445274	Description: Packet bandwidth does not spread according to the VL Arbitration configuration in split ports. Keywords: VL Arbitration, Split Ports Discovered in Version: 27.2008.2102 Fixed in Version: 27.2008.2402
2441016	Description: On rare cases, SHARP jobs may fail, followed by multiple "SHARP error" traps. In cases this occurs, following jobs on the same tree may fail as well. Keywords: SHARP Fixed in Version: 27.2008.2402
2323467	Description: 32-bits counters per SL or VL were wrongly overflowed at 16-bits instead of 32-bits. Keywords: Counters Discovered in Version: 27.2008.1904 Fixed in Release: 27.2008.2300
2373063	Description: Packet bandwidth does not spread according to the VL Arbitration configuration on 4x port.

Internal Ref.	Issues
	Keywords: VL Arbitration Fixed in Release: 27.2008.2202
2384211	Description: PKEY may return with a value of zero when sending aggregation class MADs to an aggregation node. Keywords: PKEY Discovered in Version: 27.2008.2102 Fixed in Release: 27.2008.2202
2395304	Description: When running non-SHARP traffic, packet drop may occur when SHARP is enabled. Keywords: SHARP Fixed in Release: 27.2008.2202
2196422	Description: On rare occasions, due to a suboptimal configuration of the NVIDIA Rx clock tracking, a link with challenging signal integrity resulted in link failures. Keywords: Rx clock tracking Discovered in Version: 27.2008.0232 Fixed in Release: 27.2008.1904
1848091	Description: Although the effective BER (after FEC) is expected to meet our design targets (e.g. 10e-14 or lower), occasionally it may be higher. Keywords: Cables Discovered in Version: 27.2000.2708 Fixed in Release: 27.2008.0232
2073222	Description: In rare cases, HDR active copper cable link up time might be higher than expected (up to 2 minutes). Keywords: Cables Discovered in Version: 27.2000.3276 Fixed in Release: 27.2008.0232
2169355	Description: TCA port (ports 41/81) counter returns non-zero value since the TCA counters were not supported. Keywords: SHARP, TCA, Port Counters Discovered in Version: 27.2007.0618 Fixed in Release: 27.2008.0232
2136877	Description: Port Counters with "all_ports" attribute returns wrong values since the TCA counters were not supported. Keywords: TCA, Port Counters Discovered in Version: 27.2007.0618 Fixed in Release: 27.2008.0232
2133393	Description: On rare occasions when link is flapping or toggle by the user, the switch may hang. Keywords: Link Flapping

Internal Ref.	Issues
	Discovered in Version: 27.2007.0618
	Fixed in Release: 27.2008.0232
2122186	Description: Traffic loss may be experienced during a spine failover, when two SHARP (SAT) flows are enabled.
	Keywords: InfiniBand; SHARP (SAT)
	Discovered in Version: 27.2007.0618
	Fixed in Release: 27.2008.0232
2063786	Description: Running 2 flows in parallel is currently not functional in SHARP (SAT).
	Keywords: SHARP (SAT), 2 flows
	Discovered in Version: 27.2000.3276
	Fixed in Release: 27.2007.0618
1972573	Description: Reading the Serial Number by the MSPS register is not functional on the new Delta PSU model.
	Keywords: Delta PSU model, MSPS register
	Discovered in Version: 27.2000.2708
	Fixed in Release: 27.2007.0618
1970878	Description: When using NVIDIA AOC cables longer than 50m use one VL to achieve full wire speed.
	Keywords: Cables
	Fixed in Release: 27.2007.0618
2022524	Description: As the switch does not send auto-negotiation indication, after resetting/power cycling a ConnectX-6 HCA, some HCAs get stuck in "polling" state.
	Keywords: Auto-negotiation, HCA, switch
	Discovered in Version: 27.2000.2708
	Fixed in Release: 27.2007.0300
1996051	Description: After performing a software reset on the switch while using an Active Copper Cable or Optics Cable, the link gets high BER and is not available for traffic forwarding.
	Keywords: Cables, BER
	Discovered in Version: 27.2000.2708
	Fixed in Release: 27.2007.0300
2036930	Description: Degradation in throughput might be experienced when using HDR100 cables with a length of 30m and above.
	Keywords: Cables, Bandwidth
	Discovered in Version: 27.2000.2708
	Fixed in Release: 27.2000.3276
1946287	Description: Fixed an issue that resulted in SHARP jobs getting stuck after stopping a job during SAT operation.
	Keywords: SHARP

Internal Ref.	Issues
	<p>Discovered in Version: 27.2000.2306</p> <p>Fixed in Release: 27.2000.2626</p>
1778566	<p>Description: Fixed an issue that caused the Rx buffers allocation after running OpenSM to be based on the default VLCap configuration instead of the Operational VL configuration.</p> <p>Keywords: Rx buffers allocation, OpenSM</p> <p>Discovered in Version: 27.2000.2306</p> <p>Fixed in Release: 27.2000.2626</p>
1930686	<p>Description: Fixed an issue that caused a multicast packet to be forwarded to a wrong port when the switch was configured to use the Split mode.</p> <p>Keywords: Switch multicast forwarding</p> <p>Discovered in Version: 27.2000.2182</p> <p>Fixed in Release: 27.2000.2626</p>
1761271	<p>Description: CWDM4 AOM cable is currently not supported on Quantum switch systems.</p> <p>Keywords: Modules/Cables</p> <p>Discovered in Version: 27.2000.1400</p> <p>Fixed in Release: 27.2000.2626</p>
1713747	<p>Description: When using splitter HDR optical cables, toggling the upper port causes the lower port to be toggled as well.</p> <p>Keywords: Cables, port toggling</p> <p>Discovered in Version: 27.2000.2046</p> <p>Fixed in Release: 27.2000.2626</p>
1834740	<p>Description: Fixed an issue that resulted in high BER when using optical module with module firmware older than 37.50.316.</p> <p>Keywords: Optical cables, BER, cables firmware</p> <p>Discovered in Version: 27.2000.2182</p> <p>Fixed in Release: 27.2000.2306</p>
1899441	<p>Description: Fixed an issue that caused the packets to be transmitted from a wrong output port due to a wrong configuration of the packet classification decision in the switch forwarding database cache key, that caused both AR eligible packets and AR ineligible packets to hit the same cache entry.</p> <p>Keywords: Switch forwarding, Adaptive Routing</p> <p>Discovered in Version: 27.2000.2046</p> <p>Fixed in Release: 27.2000.2182</p>
1885460	<p>Description: On rare occasions, and under high SHARP load, switch SHARP operation might get stuck.</p> <p>Keywords: SHARP</p> <p>Discovered in Version: 27.2000.2046</p> <p>Fixed in Release: 27.2000.2182</p>

Internal Ref.	Issues
1859715	Description: The bandwidth on MFS1S00-H050E cables is 99G/s and on MFS1S00-H100E cables is 67Gb/s when connecting at HDR speed to an HDR switch.
	Keywords: Cables
	Discovered in Version: 27.2000.1886
	Fixed in Release: 27.2000.2046
1797452	Description: A port may hang while Link-Maintenance runs on it and the second port's link is toggled.
	Keywords: Link-Maintenance, port toggling
	Discovered in Version: 27.2000.1600
	Fixed in Release: 27.2000.1886
1698990	Description: HDR link up time when using optical cables may take 6 minutes or more (up to 20 minutes).
	Keywords: HDR, optical cables, link up times
	Discovered in Version: 27.2000.1100
	Fixed in Release: 27.2000.1886
1718734/ 1723236/ 1718645/ 1710631	Description: On rare occasions, HDR link may not raise properly when using optical cables.
	Keywords: HDR link
	Discovered in Version: 27.2000.1012
	Fixed in Release: 27.2000.1600
1774870	Description: Link flapping and packet loss during High/Low temperature changes.
	Keywords: Link
	Discovered in Version: 27.2000.1400
	Fixed in Release: 27.2000.1600
1778837	Description: When using a copper splitter cable up to 2m length in HDR100 mode, traffic may drop.
	Keywords: Cable, HDR100
	Discovered in Version: 27.2000.1400
	Fixed in Release: 27.2000.1600
1534459	Description: When working with 8 VLs, TP does not function due to buffers' configuration.
	Keywords: VLs, latency, performance
	Discovered in Version: 27.2000.1100
	Fixed in Release: 27.2000.1400
1605587	Description: Fixed an issue that cause the green port LED to blink in the same frequency regardless of the link speed rate set.
	Keywords: Port LED
	Discovered in Version: 27.1910.0618
	Fixed in Release: 27.2000.1142

Internal Ref.	Issues
1598550	Description: Fixed an issue that prevented the port from being split when the request (command) was sent from the NV config tool.
	Keywords: Split Port
	Discovered in Version: 27.1910.0618
	Fixed in Release: 27.1910.0620

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