



NVIDIA ConnectX-6 DE Adapter Cards Firmware Release Notes v22.43.4100 LTS (2024 LTS U4)

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Info

This is a long-term support (LTS) release. LTS is the practice of maintaining a software product for an extended period of time (up to three years) to help increase product stability. LTS releases include bug fixes and security patches.

Release Notes Update History

Version	Date	Description
22.43.4100	January 2026	Initial release of this Release Notes version, This version introduces Bug Fixes .

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.

Firmware Download

Please visit the [firmware webpage](#).

Document Revision History

A list of the changes made to this document are provided in [Document Revision History](#).

Firmware Compatible Products

The chapter contains the following sections:

These are the release notes for the NVIDIA® ConnectX®-6 DE adapters firmware. This firmware supports the following protocols:

- InfiniBand - SDR, QDR, FDR, EDR, HDR100, HDR
- PCI Express 4.0, supporting backwards compatibility for v3.0, v2.0 and v1.1

¹. Speed that supports both NRZ and PAM4 modes in Force mode and Auto-Negotiation mode.

Note

When connecting an NVIDIA-to-NVIDIA adapter card in ETH PAM4 speeds, Auto-Neg should always be enabled.

Note

Please make sure to use a PCIe slot that can supply the required power to the ConnectX-6 DE adapter card as stated in section Specifications in the adapter card's User Manual.

Supported Devices

This firmware supports the devices and protocols listed below: Refer to the [hardware documentation](#) for the list of supported devices.

Driver Software, Tools and Switch Firmware

The following are the drivers' software, tools, switch/HCA firmware versions tested that you can upgrade from or downgrade to when using this firmware version:

	Supported Version
ConnectX-6 DE Firmware	22.43.3608 / 22.43.2566 / 22.43.2026
DOCA-HOST	2.9.3 / 2.9.2 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
MLNX_OFED	24.10-3.2.5.0 / 24.10-1.1.4.0 / 24.10-0.7.0.0 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
MLNX_EN (MLNX_OFED based code)	24.10-3.2.5.0 / 24.10-1.1.4.0 / 24.10-0.7.0.0 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
WinOF-2	24.10.50010 / 24.7.50000 / 24.4.50000 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
MFT	4.30.1-1210 / 4.30.1-113 / 4.30.1-8 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
mstflint	4.30.1-1210 / 4.30.1-113 / 4.30.1-8 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
FlexBoot	3.7.500
UEFI	14.37.13
MLNX-OS	3.12.2002 onwards
Cumulus	5.11.0.0026 onwards
NVIDIA Quantum Firmware	27.2014.2084 onwards

	Supported Version
SwitchX-IB 2 Firmware	15.2010.5108 onwards
SwitchX-IB Firmware	11.2008.3328 onwards

Changes and New Features

Important Notes

Note

SR-IOV - Virtual Functions (VF) per Port - The maximum Virtual Functions (VF) per port is 127. For further information, see [Known Issues](#).

Note

It is recommended to enable the "above 4G decoding" BIOS setting for features that require a large amount of PCIe resources (e.g., SR-IOV with numerous VFs, PCIe Emulated Switch, Large BAR Requests).

Note

Security Hardening Enhancements: This release contains important reliability improvements and security hardening enhancements. NVIDIA recommends upgrading your devices' firmware to this release to improve the devices' firmware security and reliability.

Info

To generate PLDM packages for firmware updates, users must install and use the MFT version that corresponds with the respective firmware release.

Feature/Change	Description
22.43.4100	
General	See <i>Bug Fixes in this Firmware Version</i> section.

Customer Affecting Changes

Changes in This Release

This section provides a list of changes that took place in the current version and break compatibility/interface, discontinue support for features and/or OS versions, etc.

Introduced in Version	Description
xx.43.4098	<p>Transition to 2023 Microsoft UEFI Certificate Authority</p> <p>To align with updated Microsoft UEFI Secure Boot requirements and the upcoming end-of-life of the 2011 Certificate Authority (CA), NVIDIA is transitioning to the 2023 CA.</p> <p>This is the final release signed with the 2011 CA. Beginning in February 2026, all releases will be signed exclusively with the 2023 CA. To ensure successful loading of the Expansion ROM (ExpROM) during the UEFI Secure Boot process, system BIOS and operating system trust stores must be updated to include the 2023 CA.</p> <p>Note: Systems must be updated to recognize the 2023 CA to prevent UEFI drivers or ExpROMs from failing to load during boot before June 27, 2026.</p>

Changes Planned for Future Releases

This section provides a list of changes that will take place in a future version of the product and will break compatibility/interface, discontinue support for features and/or OS versions, etc.

Planned for Version	Description
N/A	N/A

Changes in Earlier Releases

This section provides a list of changes that took place throughout the past two major releases that broke compatibility/interface, discontinued support for features and/or OS versions, etc.

For an archive of all changes, please refer to the Release Notes History section.

Planned for Version	Description
N/A	N/A

Discontinued Features

List of features which are supported in previous generations of hardware devices.

N/A

Declared Unsupported Features

This section provides a list of features that are not supported by the software.

Unsupported Features

The following advanced feature are unsupported in the current firmware version:

- The following service types:
 - SyncUMR
 - Mellanox transport
 - RAW IPv6

- INT-A not supported for EQs only MSI-X
- PCI VPD write flow (RO flow supported)
- Streaming Receive Queue (STRQ) and collapsed CQ
- Subnet Manager (SM) on VFs
- RoCE LAG in Multi-Host/Socket-Direct

Unsupported Commands

- QUERY_MAD_DEMUX
- SET_MAD_DEMUX
- CREATE_RQ - MEMORY_RQ_RMP
- MODIFY_LAG_ASYNC_EVENT

Bug Fixes in this Firmware Version

Internal Ref.	Issue
4680948 / 4764255 / 4764292 / 4764330 / 4764370	Description: Fixed a rare firmware issue where, during traffic with repeated QP creation/destruction, QP operations and other commands could hang and hit 2ERR_QP(0x507) timeout, leading to a command resource leak.
	Keywords: QP creation/destruction, QP operations
	Discovered in Version: 22.43.3608
	Fixed in Release: 22.43.4100
4336111 / 4409069 / 4409073 / 4409075 / 4630176 / 4825196	Description: Fixed an issue in the temperature validation logic where a reading of 0°C was incorrectly treated as invalid. The checker now correctly accepts zero as a legitimate temperature value, preventing false alarms and incorrect handling based on that reading.
	Keywords: Temperature
	Discovered in Version: 22.43.3608
	Fixed in Release: 22.43.4100
44527750 / 4400949	Description: Fixed an issue where the MCTP context was incorrectly cleared when a new message arrived over a different transport.
	Keywords: MCTP
	Discovered in Version: 22.43.3608
	Fixed in Release: 22.43.4100

Internal Ref.	Issue
4780433 / 4450570	Description: Fixed an issue where the root complex sent MCTP-over-PCI messages before a BDF was assigned, causing responses to be sent with BDF 0. The fix ensures that MCTP messages routed by ID are ignored until a valid BDF is assigned.
	Keywords: MCTP-over-PCI, BDF, MCTP messages
	Discovered in Version: 22.43.3608
	Fixed in Release: 22.43.4100
4778175 / 4362705	Description: Implemented additional strict validation of incoming NC-SI packets by verifying the payload length parameter to improve robustness and prevent malformed packet handling.
	Keywords: NC-SI
	Discovered in Version: 22.43.3608
	Fixed in Release: 22.43.4100
4727304 / 4718947	Description: Fixed an issue in the steering definers used for LAG with IPv6 traffic.
	Keywords: LAG, IPv6 traffic, steering
	Discovered in Version: 22.43.3608
	Fixed in Release: 22.43.4100

For a list of old Bug Fixes, please see [Bug Fixes History](#).

Known Issues

VF Network Function Limitations in SRIOV Legacy Mode

Dual Port Device	Single Port Device
127 VF per PF (254 functions)	127

VF Network Function Limitations in Switchdev Mode

Dual Port Device	Single Port Device
127 VF per PF (254 functions)	127

VF+SF Network Function Limitations in Switchdev Mode

Dual Port Device	Single Port Device
<ul style="list-style-type: none">• 127 VF per PF (254 functions)• 512 PF+VF+SF per PF (1024 functions)	<ul style="list-style-type: none">• 127 VF (127 functions)• 512 PF+VF+SF per PF (512 functions)

Known Issues

ConnectX-6 DE has the same feature set and limitations as ConnectX-6 adapter card. For the list of ConnectX-6 Known Issues, please go to <https://docs.nvidia.com/networking/category/connectx6fw>.

The below are limitations related to ConnectX-6 DE only.

Internal Ref.	Issue
4402045	<p>Description: When using programmable congestion control instead of hardware-based congestion control, internal loopback traffic is limited to wire speed.</p>
	<p>Workaround: To revert to hardware congestion control and achieve higher bandwidth for internal loopback traffic, use the following command:</p> <pre data-bbox="318 485 1463 569">mlxconfig -d /dev/mst/mt4127_pciconf0 -y s ROCE_CC_LEGACY_DCQCN=1</pre>
	<p>Keywords: Congestion Control, PCC, HW CC</p>
	<p>Discovered in Version: 22.43.2026</p>
3525865	<p>Description: Unexpected system behavior might be observed if the driver is loaded while reset is in progress.</p>
	<p>Workaround: N/A</p>
	<p>Keywords: Sync 1 reset, firmware reset</p>
	<p>Discovered in Version: 22.39.1002</p>
2878841	<p>Description: Firmware rollback fails for the signature retransmit flow if the QPN field is configured in the mkey (as it only allows the given QP to use this Mkey) as the firmware rollback flow relies on an internal QP that uses the mkey.</p>
	<p>Workaround: N/A</p>
	<p>Keywords: Signature retransmit flow</p>
	<p>Discovered in Version: 22.37.1014</p>
3329109	<p>Description: MFS1S50-H003E cable supports only HDR rate when used as a split cable.</p>
	<p>Workaround: N/A</p>
	<p>Keywords: HDR, split cable, MFS1S50-H003E</p>
	<p>Discovered in Version: 22.36.1010</p>
3200779	<p>Description: Changing dynamic PCIe link width is not supported.</p>
	<p>Workaround: N/A</p>
	<p>Keywords: PCIe</p>
	<p>Discovered in Version: 20.34.1002</p>

Internal Ref.	Issue
-	<p>Description: A wrong device ID is presented When running the “dev_id” command for ConnectX-6 DE. The device ID shown is the ConnectX-6 Dx instead.</p>
	<p>Workaround: To be able to identify the ConnectX-6 DE ID, run one of the commands below:</p> <ul style="list-style-type: none"> • mlxfwmanager • mlxvpd (or mlxburn -vpd)
	<p>Keywords: Device ID</p>
	<p>Discovered in Version: 22.32.2306</p>
2850003	<p>Description: Occasionally, when rising a logical link, the link recovery counter is increase by 1.</p>
	<p>Workaround: N/A</p>
	<p>Keywords: Link recovery counter</p>
	<p>Discovered in Version: 22.32.2306</p>

PreBoot Drivers (FlexBoot/UEFI)

FlexBoot Changes and New Features

For further information, please refer to the [FlexBoot Release Notes](#).

UEFI Changes and Major New Features

For further information, please refer to the [UEFI Release Notes](#).

Validated and Supported Cables and Switches

Validated and Supported Cables and Modules

Cables Lifecycle Legend

Lifecycle Phase	Definition
EOL	End of Life
LTB	Last Time Buy
HVM	GA level
MP	GA level
P-Rel	GA level
Preliminary	Engineering Sample
Prototype	Engineering Sample

Note

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

HDR / 200GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	N/A	980-9I86N-00H003*	MCA1J00-H003E*	NVIDIA Active Copper cable, IB HDR, up to 200Gb/s, QSFP56, 3m, yellow pulltab	EOL [MP]
HDR	N/A	980-9I86O-00H004*	MCA1J00-H004E*	NVIDIA Active Copper cable, IB HDR, up to 200Gb/s, QSFP56, 4m, yellow pulltab	EOL [MP]
HDR	N/A	980-9I86P-00H005	MCA1J00-H005E	NVIDIA Active Copper cable, IB HDR, up to 200Gb/s, QSFP56, 5m, yellow pulltab	EOL [Prototype]
HDR	N/A	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	N/A	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	N/A	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	200GE	980-9I548-00H001	MCP1650-H001E30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 1m	HVM
HDR	200GE	980-9I549-00H002	MCP1650-H002E26	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 2m	HVM
HDR	200GE	980-9I54A-00H00A	MCP1650-H00AE30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 0.5m	HVM
HDR	200GE	980-9I54B-00H01A	MCP1650-H01AE30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 1.5 m	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	200GE	980-9I39E-00H001	MCP7H50-H001R30	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 1m	HVM
HDR	200GE	980-9I99F-00H002	MCP7H50-H002R26	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 2m	HVM
HDR	200GE	980-9I98G-00H01A	MCP7H50-H01AR30	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 1.5m	HVM
HDR	200GE	980-9I46K-00H001	MCP7Y60-H001	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 1m, fin to flat	MP
HDR	200GE	980-9I46L-00H002	MCP7Y60-H002	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 2m, fin to flat	MP
HDR	200GE	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	200GE	980-9I93N-00H001	MCP7Y70-H001	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 1m, fin to flat	MP
HDR	200GE	980-9I93O-00H002	MCP7Y70-H002	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 2m, fin to flat	MP
HDR	200GE	980-9I47P-00H01A	MCP7Y70-H01A	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 1.5m, fin to flat	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	N/A	980-91123-00H003	MFS1S00-H003-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 3m	EOL [P-Rel]
HDR	N/A	980-91124-00H003	MFS1S00-H003E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 3m	EOL [HVM]
HDR	200GE	980-91457-00H003	MFS1S00-H003V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 3m	MP
HDR	N/A	980-91449-00H005	MFS1S00-H005-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 5m	EOL [P-Rel]
HDR	N/A	980-9145A-00H005	MFS1S00-H005E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 5m	EOL [HVM]
HDR	200GE	980-9145D-00H005	MFS1S00-H005V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 5m	MP
HDR	N/A	980-9144F-00H010	MFS1S00-H010-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 10m	EOL [P-Rel]
HDR	N/A	980-9145G-00H010	MFS1S00-H010E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 10m	EOL [HVM]
HDR	200GE	980-9145J-00H010	MFS1S00-H010V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 10m	MP
HDR	N/A	980-9144L-00H015	MFS1S00-H015-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 15m	EOL [P-Rel]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	N/A	980-9I45M-00H015	MFS1S00-H015E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 15m	EOL [HVM]
HDR	200GE	980-9I450-00H015	MFS1S00-H015V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 15m	MP
HDR	N/A	980-9I44Q-00H020	MFS1S00-H020-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 20m	EOL [P-Rel]
HDR	N/A	980-9I45R-00H020	MFS1S00-H020E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 20m	EOL [HVM]
HDR	200GE	980-9I45T-00H020	MFS1S00-H020V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 20m	MP
HDR	N/A	980-9I45X-00H030	MFS1S00-H030-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 30m	EOL [P-Rel]
HDR	N/A	980-9I45Y-00H030	MFS1S00-H030E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 30m	EOL [HVM]
HDR	200GE	980-9I440-00H030	MFS1S00-H030V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 30m	MP
HDR	N/A	980-9I455-00H050	MFS1S00-H050E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 50m	EOL [HVM]
HDR	200GE	980-9I447-00H050	MFS1S00-H050V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 50m	MP
HDR	N/A	980-9I44G-00H100	MFS1S00-H100E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 100m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	200GE	980-9I44H-00H100	MFS1S00-H100V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 100m	MP
HDR	N/A	980-9I44I-00H130	MFS1S00-H130E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 130m	EOL [HVM]
HDR	200GE	980-9I44K-00H130	MFS1S00-H130V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 130m	MP
HDR	N/A	980-9I45L-00H150	MFS1S00-H150E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 150m	EOL [HVM]
HDR	200GE	980-9I44N-00H150	MFS1S00-H150V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 150m	MP
HDR	N/A	980-9I45O-00H200	MFS1S00-H200E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 200m	EOL [EVT]
HDR	N/A	980-9I452-00H003	MFS1S50-H003E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 3m	EOL [HVM]
HDR	200GE	980-9I445-00H003	MFS1S50-H003V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 3m	HVM
HDR	N/A	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	200GE	980-9I969-00H005	MFS1S50-H005V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 5m	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	N/A	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	200GE	980-9I96D-00H010	MFS1S50-H010V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 10m	HVM
HDR	N/A	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	200GE	980-9I96H-00H015	MFS1S50-H015V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 15m	HVM
HDR	N/A	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	200GE	980-9I96L-00H020	MFS1S50-H020V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 20m	HVM
HDR	N/A	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	200GE	980-9I96P-00H030	MFS1S50-H030V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 30m	HVM
HDR	N/A	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	N/A	980-9I960-00H005	MFS1S90-H005E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 5m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	N/A	980-91961-00H010	MFS1S90-H010E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 10m	LTB [HVM]
HDR	N/A	980-91962-00H015	MFS1S90-H015E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 15m	EOL [HVM]
HDR	N/A	980-91423-00H020	MFS1S90-H020E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 20m	LTB [HVM]
HDR	N/A	980-91424-00H030	MFS1S90-H030E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 30m	EOL [HVM]
HDR	N/A	980-9117S-00HS00	MMA1T00-HS	NVIDIA transceiver, HDR, QSFP56, MPO, 850nm, SR4, up to 100m	HVM
HDR	NA	980-9145E-09H070	MFS1S00-H070V	NVIDIA active optical cable, up to 200Gb/s IB HDR, QSFP56, LSZH, 70m	MP

(i) Note

* These cables were approved for switch-to-switch connectivity. For switch-to-host connectivity there may be some issues. See Known Issue 1959529 in the Known Issues section.

Note

HDR links raise with RS_FEC.

EDR / 100GbEs Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
EDR	100GE	980-9162P-00C001	MCP1600-E001	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m 30AWG	EOL [HVM]
EDR	N/A	980-9162Q-00E001	MCP1600-E001E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1m, Black, 30AWG	HVM
EDR	100GE	980-9162S-00C002	MCP1600-E002	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2m 28AWG	EOL [HVM]
EDR	N/A	980-9162T-00E002	MCP1600-E002E26	NVIDIA® Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2m, Black, 26AWG	Preliminary
EDR	N/A	980-9162U-00E002	MCP1600-E002E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2m, Black, 30AWG	HVM
EDR	100GE	980-9162V-00C003	MCP1600-E003	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m 26AWG	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
EDR	N/A	980-9162W-00E003	MCP1600-E003E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 3m, Black, 26AWG	HVM
EDR	N/A	980-9162Y-00E004	MCP1600-E004E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 4m, Black, 26AWG	EOL [HVM]
EDR	N/A	980-9162Z-00E005	MCP1600-E005E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 5m, Black, 26AWG	HVM
EDR	N/A	980-91620-00E00A	MCP1600-E00A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 0.5m 30AWG	EOL [HVM]
EDR	N/A	980-91621-00E00A	MCP1600-E00AE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 0.5m, Black, 30AWG	EOL [HVM]
EDR	N/A	980-91622-00E00B	MCP1600-E00BE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 0.75m, Black, 30AWG	EOL [HVM] [HIBERN/ATE]
EDR	100GE	980-91623-00C01A	MCP1600-E01A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1.5m 30AWG	EOL [HVM]
EDR	N/A	980-91624-00E01A	MCP1600-E01AE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1.5m, Black, 30AWG	HVM
EDR	N/A	980-91625-00E01C	MCP1600-E01BE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1.25m, Black, 30AWG	EOL [HVM] [HIBERN/ATE]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
EDR	100GE	980-91626-00C02A	MCP1600-E02A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2.5m 26AWG	EOL [HVM]
EDR	N/A	980-91627-00E02A	MCP1600-E02AE26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2.5m, Black, 26AWG	HVM
EDR	N/A	980-9113D-00E001	MFA1A00-E001	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m	HVM
EDR	N/A	980-9113F-00E003	MFA1A00-E003	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m	HVM
EDR	N/A	980-9113J-00E005	MFA1A00-E005	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 5m	HVM
EDR	N/A	980-9113M-00E007	MFA1A00-E007	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 7m	LTB [HVM]
EDR	N/A	980-9113O-00E010	MFA1A00-E010	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 10m	HVM
EDR	N/A	980-9113S-00E015	MFA1A00-E015	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 15m	HVM
EDR	N/A	980-9113V-00E020	MFA1A00-E020	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 20m	HVM
EDR	N/A	980-9113Y-00E030	MFA1A00-E030	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 30m	HVM
EDR	N/A	980-91133-00E050	MFA1A00-E050	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 50m	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
EDR	N/A	980-91135-00E100	MFA1A00-E100	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 100m	LTB [HVM]
EDR	N/A	980-9117L-00E000	MMA1B00-E100	NVIDIA transceiver, IB EDR, up to 100Gb/s, QSFP28, MPO, 850nm, SR4, up to 100m	HVM

Note

EDR links raise with RS-FEC.

FDR Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
FDR	56GE	980-91679-00L004	MC2207126-004	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 4m	EOL [HVM]
FDR	56GE	980-9167A-00L003	MC2207128-003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m	EOL [HVM]
FDR	56GE	980-9167C-00L02A	MC2207128-0A2	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2.5m	EOL [MP]
FDR	56GE	980-9167D-00L001	MC2207130-001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
FDR	56GE	980-9I67E-00L002	MC2207130-002	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m	EOL [HVM]
FDR	56GE	980-9I67F-00L00A	MC2207130-00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 0.5m	EOL [HVM]
FDR	56GE	980-9I67G-00L01A	MC2207130-0A1	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1.5m	EOL [HVM]
FDR	56GE	980-9I15U-00L003	MC220731V-003	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 3m	EOL [HVM]
FDR	56GE	980-9I15V-00L005	MC220731V-005	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 5m	EOL [HVM]
FDR	56GE	980-9I15W-00L010	MC220731V-010	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 10m	EOL [HVM]
FDR	56GE	980-9I15X-00L015	MC220731V-015	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 15m	EOL [HVM]
FDR	56GE	980-9I15Y-00L020	MC220731V-020	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 20m	EOL [HVM]
FDR	56GE	980-9I15Z-00L025	MC220731V-025	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 25m	EOL [HVM]
FDR	56GE	980-9I150-00L030	MC220731V-030	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 30m	EOL [HVM]
FDR	56GE	980-9I151-00L040	MC220731V-040	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 40m	EOL [HVM] [HIBERN/ATE]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
FDR	56GE	980-91152-00L050	MC220731V-050	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 50m	EOL [HVM]
FDR	56GE	980-91153-00L075	MC220731V-075	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 75m	EOL [HVM]
FDR	56GE	980-91154-00L100	MC220731V-100	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 100m	EOL [HVM]
FDR	56GE	980-91675-00L001	MCP170L-F001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1m	EOL [P-Rel]
FDR	56GE	980-91678-00L00A	MCP170L-F00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 0.5m	EOL [P-Rel]
FDR	56GE	980-91679-00L01A	MCP170L-F01A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1.5m	EOL [P-Rel] [HIBERN/ATE]
FDR	N/A	980-9117M-00FS00	MMA1B00-F030D	NVIDIA transceiver, FDR, QSFP+, MPO, 850nm, SR4, up to 30m, DDMI	LTB [HVM]

FDR10 Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
FDR10	40GE	980-9166U-00B004	MC2206128-004	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 4m	EOL [HVM] [HIBERN/ATE]
FDR10	40GE	980-9166V-00B005	MC2206128-005	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 5m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
FDR10	40GE	980-9I66W-00B001	MC2206130-001	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 1m	EOL [HVM]
FDR10	40GE	980-9I66X-00B002	MC2206130-002	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 2m	EOL [HVM]
FDR10	40GE	980-9I66Y-00B003	MC2206130-003	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 3m	EOL [HVM]
FDR10	40GE	980-9I66Z-00B00A	MC2206130-00A	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 0.5m	EOL [HVM]
FDR10	N/A	980-9I140-00T003	MC2206310-003	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 3m	EOL [HVM]
FDR10	N/A	980-9I141-00T005	MC2206310-005	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 5m	EOL [HVM]
FDR10	N/A	980-9I142-00T010	MC2206310-010	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 10m	EOL [HVM]
FDR10	N/A	980-9I143-00T015	MC2206310-015	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 15m	EOL [HVM]
FDR10	N/A	980-9I144-00T020	MC2206310-020	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 20m	EOL [HVM]
FDR10	N/A	980-9I145-00T030	MC2206310-030	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 30m	EOL [HVM]
FDR10	N/A	980-9I147-00T050	MC2206310-050	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 50m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
FDR10	N/A	980-91148-00T100	MC2206310-100	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 100m	EOL [HVM]
FDR10	40GE	980-91170-00BM00	MC2210411-SR4E	NVIDIA optical module, 40Gb/s, QSFP, MPO, 850nm, up to 300m	EOL [HVM]
FDR10	N/A	980-91210-00TRO0	MC2210511-LR4	NVIDIA optical module, 40Gb/s, QSFP, LC-LC, 1310nm, LR4 up to 10km	EOL [MP]

Tested Switches

HDR / 200Gb/s Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
HDR	Quantum	MQM8700-xxx	40-port Managed Non-blocking HDR 200Gb/s InfiniBand Smart Switch	NVIDIA
HDR	Quantum	MQM8790-xxx	40-port Unmanaged, Non-blocking HDR 200Gb/s InfiniBand Smart Switch	NVIDIA

EDR / 100Gb/s Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
EDR	Switch-IB	MSB7790-XXX	36-port Unmanaged EDR 100Gb/s InfiniBand Switch Systems	Mellanox
EDR	Switch-IB	MSB7700-XXX	36-port Managed EDR 100Gb/s InfiniBand Switch Systems	Mellanox

Speed	Switch Silicon	OPN # / Name	Description	Vendor
EDR	Switch-IB 2	MSB7800-XXX	36-port Managed EDR 100Gb/s InfiniBand Switch Systems	Mellanox

PRM Revision Compatibility

This firmware version complies with the following Programmer's Reference Manual:

- Adapters Programmer's Reference Manual (PRM), Rev 0.53 or later, which has Command Interface Revision 0x5. The command interface revision can be retrieved by means of the QUERY_FW command and is indicated by the field cmd_interface_rev.

Supported Non-Volatile Configurations

Configuration	mlxconfig Parameter Name	Class
NV_MEMIC_CONF	MEMIC_BAR_SIZE	GLOBAL (0)
	MEMIC_SIZE_LIMIT	
NV_HOST_CHAINING_CONF	HOST_CHAINING_MODE	
	HOST_CHAINING_DESCRIPTOR	
	HOST_CHAINING_TOTAL_BUFFER_SIZE	
NV_FLEX_PARS_CONF	FLEX_PARSER_PROFILE_ENABLE	
	FLEX_IPV4_OVER_VXLAN_PORT	
NV_ROCE_1_5_CONF	ROCE_NEXT_PROTOCOL	
NV_INTERNAL_RESOURCE_CONF	ESWITCH_HAIRPIN_DESCRIPTOR	
	ESWITCH_HAIRPIN_TOT_BUFFER_SIZE	
NV_GLOBAL_PCI_CONF	NON_PREFETCHABLE_PF_BAR	
	NUM_OF_VFS	
	SRIOV_EN	
	PF_LOG_BAR_SIZE	
	VF_LOG_BAR_SIZE	
	NUM_PF_MSIX	
	NUM_VF_MSIX	
NV_TPT_CONF	INT_LOG_MAX_PAYLOAD_SIZE	
NV_POWER_CONF	SW_RECOVERY_ON_ERRORS	
	RESET_WITH_HOST_ON_ERRORS	
	ADVANCED_POWER_SETTINGS	
NV_GLOBAL_MASK	ece_disable_mask	

Configuration	mlxconfig Parameter Name	Class
NV_SW_OFFLOAD_CONFIG	CQE_COMPRESSION	
	IP_OVER_VXLAN_EN	
	PCI_ATOMIC_MODE	
	LRO_LOG_TIMEOUT0	
	LRO_LOG_TIMEOUT1	
	LRO_LOG_TIMEOUT2	
	LRO_LOG_TIMEOUT3	
	log_max_outstandng_wqe	
	NV_config.sr_enable (ConnectX-6 Dx and above)	
NV_IB_DC_CONF	LOG_DCR_HASH_TABLE_SIZE	
	DCR_LIFO_SIZE	

Configuration	mlxconfig Parameter Name	Class
NV_VPI_LINK_TYPE	LINK_TYPE	PHYSICAL_PO (2)
NV_ROCE_CC	ROCE_CC_PRIO_MASK	
	ROCE_CC_ALGORITHM	
NV_ROCE_CC_ECN	CLAMP_TGT_RATE_AFTER_TIME_INC	
	CLAMP_TGT_RATE	
	RPG_TIME_RESET	
	RPG_BYTE_RESET	
	RPG_THRESHOLD	
	RPG_MAX_RATE	
	RPG_AI_RATE	
	RPG_HAI_RATE	
	RPG_GD	
	RPG_MIN_DEC_FAC	
	RPG_MIN_RATE	
	RATE_TO_SET_ON_FIRST_CNP	
	DCE_TCP_G	
	DCE_TCP_RTT	
	RATE_REDUCE_MONITOR_PERIOD	
	INITIAL_ALPHA_VALUE	
	MIN_TIME_BETWEEN_CNPS	
	CNP_802P_PRIO	
CNP_DSCP		
NV_LLDP_NB_CONF	LLDP_NB_DCBX	
	LLDP_NB_RX_MODE	
	LLDP_NB_TX_MODE	

Configuration	mlxconfig Parameter Name	Class
NV_LLDP_NB_DCBX	DCBX_IEEE	
	DCBX_CEE	
	DCBX_WILLING	
NV_KEEP_LINK_UP	KEEP_ETH_LINK_UP	
	KEEP_IB_LINK_UP	
	KEEP_LINK_UP_ON_BOOT	
	KEEP_LINK_UP_ON_STANDBY	
NV_QOS_CONF	NUM_OF_VL	
	NUM_OF_TC	
	NUM_OF_PFC	
NV_MPFS_CONF	DUP_MAC_ACTION	
	SRIOV_IB_ROUTING_MODE	
	IB_ROUTING_MODE	

Configuration	mlxconfig Parameter Name	Class
NV_HCA_CONF	PCI_WR_ORDERING	HOST-FUNCTION (3)
	MULTI_PORT_VHCA_EN	
NV_EXTERNAL_PORT_CTRL	PORT_OWNER	
	ALLOW_RD_COUNTERS	
	RENEG_ON_CHANGE	
	TRACER_ENABLE	
NV_ROM_BOOT_CONF2	IP_VER	
	BOOT_UNDI_NETWORK_WAIT	
NV_ROM_UEFI_CONF	UEFI_HII_EN	
NV_ROM_UEFI_DEBUG_LEVEL	BOOT_DBG_LOG	
	UEFI_LOGS	
NV_ROM_BOOT_CONF1	BOOT_VLAN	
	LEGACY_BOOT_PROTOCOL	
	BOOT_RETRY_CNT	
	BOOT_LACP_DIS	
	BOOT_VLAN_EN	
NV_ROM_IB_BOOT_CONF	BOOT_PKEY	
NV_PCI_CONF	ADVANCED_PCI_SETTINGS	HOST (7)
SAFE_MODE_CONF	SAFE_MODE_THRESHOLD	
	SAFE_MODE_ENABLE	

Release Notes History

Changes and New Feature History

Note

This section includes history of 3 major releases back. For [older releases history](#), please refer to the relevant firmware versions.

Feature/Change	Description
22.43.3608	
General	This version does not include any changes to the firmware content of this adapter card. The version has been updated to align with the other adapter cards in the ConnectX family.

Feature/Change	Description
22.43.2566	
General	This version does not include any changes to the firmware content of this adapter card. The version has been updated to align with the other adapter cards in the ConnectX family.

Feature/Change	Description
22.43.2026	
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Feature/Change	Description
22.43.1014	

Feature/Change	Description
RDMA Telemetry	<p>Added the option to indicate an error CQE event on every selected function per eSwitch manager. This indication is defined as a new WQE including the relevant information about the error (such as: syndrome, function_id, timestamp, QPs num etc.).</p> <p>The feature is configured using a new general object: RDMA-Telemetry object, and depends on the following new caps: <code>HCA_CAP.rdma_telemetry_notification_types</code> and <code>HCA_CAP.rdma_telemetry</code>.</p>
UID Permissions	<p>Extended kernel lockdown permission set. The following sub-operations can now be called by tools (permission <code>TOOLS_RESOURCES</code>) using new HCA capability bitmask field: <code>tool_partial_cap</code>.</p> <p>The 5 sub-operations are:</p> <ul style="list-style-type: none"> • <code>QUERY_HCA_CAP</code> with other function • <code>QUERY_VUID</code> with direct data • <code>QUERY_ROCE_ADDRESS</code> with other vport • <code>SET_HCA_CAP</code> with other function • <code>POSTPONE_CONNECTED_QP_TIMEOUT</code> with other vport <p>The new added caps are:</p> <ul style="list-style-type: none"> • <code>tool_partial_cap.postpone_conn_qp_timeout_other_vport</code>, • <code>tool_partial_cap.set_hca_cap_other_func</code> • <code>tool_partial_cap.query_roce_addr_other_vport</code> • <code>tool_partial_cap.query_vuid_direct_data</code> • <code>tool_partial_cap.query_hca_cap_other_func</code>
Jump from NIC_TX to FDB_TX	<p>Added <code>'table_type_valid'</code> and <code>'table_type'</code> fields to the steering action (STC) "Jump To Flow" table parameters to enable the user to jump from NIC_TX to FDB_TX and bypass the ACL table.</p>
Jump to TIR or queue from FDB on Tx	<p>Enabled hop reduction by bypassing NIC domain in various use cases. Such action reduces the number of hops (improves PPS) to deal with mass number of flows and devices.</p> <p>To enable this new capability, a new STC action type "JUMP_TO_FDB_RX" was added to allow jumping into the RX side of a table.</p>
Cross E-Switch Scheduling	<p>Added support for QoS scheduling across multiple E-Switches grouped in a LAG. VPort members of a Physical Function can be added to a rate group from another Physical Function and rate limits of the group will apply to those VPort members as well.</p>

Feature/Change	Description
Flex Parser: ARC-IN and ARC-OUT	Increased the maximum number of supported "ARC-IN" from 1 to 8 and "ARC-OUT" from 3 to 8 for the dynamic flex parser.
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Feature/Change	Description
22.42.1000	
Memory Slow Release	Added a new command interface "Memory slow release" to enable/disable holding memory pages for a defined period of time. Once the timer expires, the firmware will return the pages to the driver.
Kernel Lockdown	Added support for MVTs register via a miscellaneous driver using the access_register PRM command.
Steering SF Traffic to a Specific PF MSI-X	MSI-X on SF can be received now through the PF's MSI-X vector.
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Feature/Change	Description
22.41.1000	
Unify Rx/Tx Table Domains in FDB	The new unified_fdb subdomain simplifies the FDB model by eliminating the need to duplicate rules for RX and TX tables. This domain is directionless, meaning no RX/TX specific actions are allowed. Firmware now handlea packet transitions IN and OUT of the unified domain, allowing for a more streamlined packet flow management. Software can now transition between unified_fdb and FDB_RX/FDB_TX domains as long as the packet maintains the same direction, without the risk of dropping the packet when crossing between RX and TX.
TRNG FIPS Compliance	Implemented Deterministic Random Bit Generator (DRBG) algorithm on top of firmware TRNG (the source for raw data input) in accordance with NIST SP800-90A.

Feature/Change	Description
vDPA Live Migration	Added support for vDPA virtual queue state change from suspend to ready, and discrete mkey for descriptor. vDPA Live Migration uses these two new capabilities to reduce downtime since vq can go back to ready state for traffic and descriptor-only-mkey can help reduce mkey mapping time.
64M Active Connections	Added the ability to generate up to 2^30 STE objects through the general object creation command.
NVConfig	Added a new NVConfig option to copy AR bit from the BTH header to the DHCP header.
Steering	Added the option provide field's offset and length in Steering add_action option.
Steering Match	Added support for steering match on packet l4_type through FTG/FTE.
Flex Parser Merge Mechanism	Extended Flex Parser merge mechanism to support hardware capabilities.
Flex Parser	Enabled the option to disable the native parser when the parse graph node is configured with the same conditions.
Flex Parser	Added support for father/son headers parsing.
LRO	Added support for tunnel_offload in LRO.
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Feature/Change	Description
22.40.1000	

Feature/Change	Description
Socket Direct Single netdev Mapped to Two PCIe Devices	<p>Enabled Single Netdev mapping to two PCIe devices (Socket Direct).</p> <p>Now multiple devices (PFs) of the same port can be combined under a single netdev instance. Traffic is passed through different devices belonging to different NUMA sockets, thus saving cross-NUMA traffic and allowing apps running on the same netdev from different NUMAs to still feel a sense of proximity to the device and achieve improved performance.</p> <p>The netdev is destroyed once any of the PFs is removed. A proper configuration would utilize the correct close NUMA when working on a certain app/CPU.</p> <p>Currently, this capability is limited to PFs only, and up to two devices (sockets). To enable the feature, one must configure the same Socket Direct group (non zero) for both PFs through mlxconfig SD_GROUP.</p>
ACL	<p>Added support for egress ACL to the uplink by adding a new bit to the Set Flow Table Entry: allow_fdb_uplink_hairpin.</p>
Bug Fixes	<p>See <i>Bug Fixes in this Firmware Version</i> section.</p>

Bug Fixes History

Note

This section includes history of bug fixes of 3 major releases back. For [older releases history](#), please refer to the relevant firmware versions Release Notes .

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