NVIDIA ConnectX-6 DE Adapter Cards Firmware Release Notes v22.51.1002

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Release Notes Update History

Version	Date	Description
22.51.1002	November 2026	Initial release of this Release Notes version

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 Firmware Download

Please visit the firmware webpage.

2 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.

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

⚠ 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.

1 Supported Devices

This firmware supports the devices and protocols listed below:

Refer to the hardware documentation for the list of supported devices.

2 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	22.51.1002 / 22.50.1002 / 22.49.1014
DOCA-HOST	3.6.0 / 3.5 0 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
WinOF-2	26.10.50000 / 26.7.50000 / 26.1.50000 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
MFT	4.38.0-134 / 4.37.0-154 / 4.36.0-147 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
FlexBoot	3.9.101
UEFI	14.42.15
MLNX-OS	3.12.6000 onwards
Cumulus	5.15.0 onwards
NVIDIA Quantum Firmware	27.2014.2084 onwards
SwitchX-IB 2 Firmware	15.2010.5108 onwards
SwitchX-IB Firmware	11.2008.3328 onwards

Changes and New Features

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
22.51.1002	
Live Firmware Patch (LFWP) on LTS Branches	Starting with LTS 2026, supported devices can apply LTS patches via live update within the same branch, with no firmware reset required.
Multiplane vport speed reporting	Added explicit speed reporting for two aggregated speed notions per vport: cap_tx_speed (the maximum speed the vport could reach under any circumstances, reflecting the internal connection topology) and effective_tx_speed (the maximum speed currently available to the vport, accounting only for link-up ports).
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

1 Important Notes

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

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).

2 Customer Affecting Changes

1 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
N/A	N/A

2 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

3 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
xx.47.1026	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. 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. **Note:** When performing a firmware update of ConnectX and BlueField devices the new certificate is required for Secure Boot. To continue supporting Secure Boot, systems must be updated to recognize the "Microsoft Option ROM UEFI CA 2023."

4 Discontinued Features

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

N/A

3 Declared Unsupported Features

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

1 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

2 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
5157189 / 4866555	**Description:** Resolved an issue where, when massive flows occurred in parallel with PCC, INIT2RTR could report a false alarm with syndrome 0x7 "dead IRISC."
	Keywords: IRISC, dead IRISC, PCC, INIT2RTR, syndrome 0x7
	Detected in version: 22.47.1026
	Fixed in release: 22.51.1002
4988444	**Description:** Resolved a false-positive "IRISC stuck" detection after cold reboot on Windows.
	Keywords: IRISC stuck, Windows, cold reboot, false positive
	Detected in version: 22.49.1014
	Fixed in release: 22.51.1002
5019624	**Description:** Resolved an issue where a PCIe SBR did not reset the MCTP discovery state, causing the device to miss EndpointDiscovery requests.
	Keywords: PCIe SBR, MCTP, EndpointDiscovery, reset
	Detected in version: 22.50.1002
	Fixed in release: 22.51.1002

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
• 127 VF per PF (254 functions) • 512 PF+VF+SF per PF (1024 functions)	• 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
4901395 / 4919262	**Description:** When PXE is enabled for both Legacy (FlexBoot) and UEFI drivers, the UEFI driver supports only a single TFTP session after the DHCP handshake.
	Workaround: For scenarios that require multiple concurrent TFTP sessions, disable PXE filters via the HCA HII menu.
	Keywords: PXE, Filter enabled, UEFI
	Detected in version: 22.47.1088
4893639	**Description:** Direct Memory Access (DMA) protection is not supported in the ipxe.efi driver.
	Workaround: N/A
	Keywords: DMA

Internal Ref.	Issue
	Detected in version: 22.47.1088
4394475	**Description:** The existing congestion control configuration applies globally, rather than on a per-priority basis.
	Workaround: Ensure that the configuration values for all priorities are aligned in either `mlxconfig ROCE_CC_PRIO_MASK_P$port` or `sysfs ecn/roce_rp/enable/$port`.
	Keywords: Congestion control, ROCE_CC_PRIO
	Detected in version: 22.45.1020
3525865	**Description:** Unexpected system behavior might be observed if the driver is loaded while reset is in progress.
	Workaround: N/A
	Keywords: Sync 1 reset, firmware reset
	Discovered in Version: 22.39.1002
2878841	**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.
	Workaround: N/A
	Keywords: Signature retransmit flow
	Discovered in Version: 22.37.1014
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: 22.36.1010
3200779	**Description:** Changing dynamic PCIe link width is not supported.
	Workaround: N/A
	Keywords: PCIe
	Discovered in Version: 20.34.1002
-	**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.
	Workaround: To be able to identify the ConnectX-6 DE ID, run one of the commands below: • mlxfwmanager • mlxvpd (or mlxburn -vpd)
	Keywords: Device ID
	Discovered in Version: 22.32.2306
2850003	**Description:** Occasionally, when rising a logical link, the link recovery counter is increase by 1.
	Workaround: N/A
	Keywords: Link recovery counter
	Discovered in Version: 22.32.2306

PreBoot Drivers (FlexBoot/UEFI)

1 FlexBoot Changes and New Features

For further information, please refer to the FlexBoot Release Notes.

2 UEFI Changes and Major New Features

For further information, please refer to the UEFI Release Notes.

Validated and Supported Cables and Switches

1 Validated and Supported Cables and Modules

1 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

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

2 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]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
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	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
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
HDR	N/A	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	N/A	980-9I124-00H003	MFS1S00-H003E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 3m	EOL [HVM]
HDR	200GE	980-9I457-00H003	MFS1S00-H003V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 3m	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	N/A	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	N/A	980-9I45A-00H005	MFS1S00-H005E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 5m	EOL [HVM]
HDR	200GE	980-9I45D-00H005	MFS1S00-H005V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 5m	MP
HDR	N/A	980-9I44F-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	980-9I45G-00H010	MFS1S00-H010E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 10m	EOL [HVM]
HDR	200GE	980-9I45J-00H010	MFS1S00-H010V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 10m	MP
HDR	N/A	980-9I44L-00H015	MFS1S00-H015-LL	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, low latency, 15m	EOL [P-Rel]
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	980-9I45O-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]
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]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
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
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]
HDR	N/A	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	N/A	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	N/A	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	N/A	980-9I424-00H030	MFS1S90-H030E	NVIDIA active fiber splitter cable, IB HDR, 2x200Gb/s to 2x200Gb/s, 2xQSFP56 to 2xQSFP56 , LSZH, 30m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
HDR	N/A	980-9I17S-00HS00	MMA1T00-HS	NVIDIA transceiver, HDR, QSFP56, MPO, 850nm, SR4, up to 100m	HVM
HDR	NA	980-9I45E-09H070	MFS1S00-H070V	NVIDIA active optical cable, up to 200Gb/s IB HDR, QSFP56, LSZH, 70m	MP

*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.

HDR links raise with RS_FEC.

3 EDR / 100GbEs Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
EDR	100GE	980-9I62P-00C001	MCP1600-E001	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m 30AWG	EOL [HVM]
EDR	N/A	980-9I62Q-00E001	MCP1600-E001E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1m, Black, 30AWG	HVM
EDR	100GE	980-9I62S-00C002	MCP1600-E002	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2m 28AWG	EOL [HVM]
EDR	N/A	980-9I62U-00E002	MCP1600-E002E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2m, Black, 30AWG	HVM
EDR	100GE	980-9I62V-00C003	MCP1600-E003	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m 26AWG	EOL [HVM]
EDR	N/A	980-9I62W-00E003	MCP1600-E003E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 3m, Black, 26AWG	HVM
EDR	N/A	980-9I62Y-00E004	MCP1600-E004E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 4m, Black, 26AWG	EOL [HVM]
EDR	N/A	980-9I62Z-00E005	MCP1600-E005E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 5m, Black, 26AWG	HVM
EDR	N/A	980-9I620-00E00A	MCP1600-E00A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 0.5m 30AWG	EOL [HVM]
EDR	N/A	980-9I621-00E00A	MCP1600-E00AE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 0.5m, Black, 30AWG	EOL [HVM]
EDR	100GE	980-9I623-00C01A	MCP1600-E01A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1.5m 30AWG	EOL [HVM]
EDR	N/A	980-9I624-00E01A	MCP1600-E01AE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1.5m, Black, 30AWG	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy P/N	Description	LifeCycle Phase
EDR	100GE	980-9I626-00C02A	MCP1600-E02A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2.5m 26AWG	EOL [HVM]
EDR	N/A	980-9I627-00E02A	MCP1600-E02AE26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2.5m, Black, 26AWG	HVM
EDR	N/A	980-9I13D-00E001	MFA1A00-E001	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m	HVM
EDR	N/A	980-9I13F-00E003	MFA1A00-E003	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m	HVM
EDR	N/A	980-9I13J-00E005	MFA1A00-E005	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 5m	HVM
EDR	N/A	980-9I13M-00E007	MFA1A00-E007	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 7m	LTB [HVM]
EDR	N/A	980-9I13O-00E010	MFA1A00-E010	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 10m	HVM
EDR	N/A	980-9I13S-00E015	MFA1A00-E015	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 15m	HVM
EDR	N/A	980-9I13V-00E020	MFA1A00-E020	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 20m	HVM
EDR	N/A	980-9I13Y-00E030	MFA1A00-E030	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 30m	HVM
EDR	N/A	980-9I133-00E050	MFA1A00-E050	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 50m	HVM
EDR	N/A	980-9I135-00E100	MFA1A00-E100	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 100m	LTB [HVM]
EDR	N/A	980-9I17L-00E000	MMA1B00-E100	NVIDIA transceiver, IB EDR, up to 100Gb/s, QSFP28, MPO, 850nm, SR4, up to 100m	HVM

⚠ EDR links raise with RS-FEC.

4 FDR Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
FDR	56GE	980-9I679-00L004	MC2207126-004	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 4m	EOL [HVM]
FDR	56GE	980-9I67A-00L003	MC2207128-003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m	EOL [HVM]
FDR	56GE	980-9I67C-00L02A	MC2207128-0A2	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2.5m	EOL [MP]
FDR	56GE	980-9I67D-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]
FDR	56GE	980-9I152-00L050	MC220731V-050	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 50m	EOL [HVM]
FDR	56GE	980-9I154-00L100	MC220731V-100	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 100m	EOL [HVM]
FDR	56GE	980-9I675-00L001	MCP170L-F001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1m	EOL [P-Rel]
FDR	56GE	980-9I678-00L00A	MCP170L-F00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 0.5m	EOL [P-Rel]
FDR	56GE	980-9I679-00L01A	MCP170L-F01A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1.5m	EOL [P-Rel] [HIBERN/ATE]
FDR	N/A	980-9I17M-00FS00	MMA1B00-F030D	NVIDIA transceiver, FDR, QSFP+, MPO, 850nm, SR4, up to 30m, DDMI	LTB [HVM]

5 FDR10 / 40GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
FDR10	40GE	980-9I66V-00B005	MC2206128-005	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 5m	EOS
FDR10	40GE	980-9I66W-00B001	MC2206130-001	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 1m	EOS

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
FDR10	40GE	980-9I66X-00B002	MC2206130-002	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 2m	EOS
FDR10	40GE	980-9I66Y-00B003	MC2206130-003	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 3m	EOS
FDR10	40GE	980-9I66Z-00B00A	MC2206130-00A	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 0.5m	EOS
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]
FDR10	N/A	980-9I148-00T100	MC2206310-100	NVIDIA active fiber cable, IB QDR/FDR10, 40Gb/s, QSFP, 100m	EOL [HVM]
N/A	40GE	980-9I666-00B004	MC2210126-004	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 4m	EOL [HVM]
N/A	40GE	980-9I667-00B005	MC2210126-005	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 5m	EOL [HVM]
N/A	40GE	980-9I668-00B003	MC2210128-003	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 3m	EOL [HVM]
N/A	40GE	980-9I66A-00B001	MC2210130-001	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1m	EOL [HVM]
N/A	40GE	980-9I66C-00B002	MC2210130-002	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2m	EOL [HVM]
N/A	40GE	980-9I14D-00B003	MC2210310-003	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 3m	EOL [MP]
N/A	40GE	980-9I14E-00B005	MC2210310-005	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 5m	EOL [MP]
N/A	40GE	980-9I14F-00B010	MC2210310-010	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 10m	EOL [MP]
N/A	40GE	980-9I14G-00B015	MC2210310-015	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 15m	EOL [MP]
N/A	40GE	980-9I14H-00B020	MC2210310-020	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 20m	EOL [MP]
N/A	40GE	980-9I14I-00B030	MC2210310-030	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 30m	EOL [MP]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	40GE	980-9I14J-00B050	MC2210310-050	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 50m	EOL [MP]
N/A	40GE	980-9I14K-00B100	MC2210310-100	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 100m	EOL [MP]
FDR10	40GE	980-9I170-00BM00	MC2210411-SR4E	NVIDIA optical module, 40Gb/s, QSFP, MPO, 850nm, up to 300m	EOL [HVM]
FDR10	N/A	980-9I21O-00TR00	MC2210511-LR4	NVIDIA optical module, 40Gb/s, QSFP, LC-LC, 1310nm, LR4 up to 10km	EOL [MP]
N/A	40GE	980-9I64V-00B005	MC2609125-005	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 5m	EOL [P-Rel]
N/A	40GE	980-9I64W-00B001	MC2609130-001	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 1m	EOL [HVM]
N/A	40GE	980-9I64Y-00B003	MC2609130-003	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 3m	EOL [HVM]
N/A	40GE	980-9I72J-00B005	MC6709309-005	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 5m	EOL [HVM]
N/A	40GE	980-9I72K-00B010	MC6709309-010	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 10m	EOL [HVM]
N/A	40GE	980-9I72L-00B020	MC6709309-020	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 20m	EOL [HVM]
N/A	40GE	980-9I72M-00B030	MC6709309-030	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 30m	EOL [HVM]
N/A	40GE	980-9I66U-00B001	MCP1700-B001E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1m, Black Pulltab	EOL [HVM]
N/A	40GE	980-9I66V-00B002	MCP1700-B002E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2m, Black Pulltab	EOL [HVM]
N/A	40GE	980-9I66W-00B003	MCP1700-B003E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 3m, Black Pulltab	EOL [HVM]
N/A	40GE	980-9I66X-00B01A	MCP1700-B01AE	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1.5m, Black Pulltab	EOL [MP]
N/A	40GE	980-9I66Y-00B02A	MCP1700-B02AE	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2.5m, Black Pulltab	EOL [MP]
N/A	40GE	980-9I426-00BM00	MMA1B00-B150D	NVIDIA transceiver, 40GbE, QSFP+, MPO, 850nm, SR4, up to 150m, DDMI	EOL [HVM]

2 Tested Switches

1 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

2 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
EDR	Switch-IB 2	MSB7800-XXX	36-port Managed EDR 100Gb/s InfiniBand Switch Systems	Mellanox

3 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	TLV ID
NV_MEMIC_CONF	MEMIC_BAR_SIZE	GLOBAL (0)	0x6
	MEMIC_SIZE_LIMIT		
NV_HOST_CHAINING_CONF	HOST_CHAINING_MODE		0x8
	HOST_CHAINING_DESCRIPTORS		
	HOST_CHAINING_TOTAL_BUFFER_SIZE		
NV_FLEX_PARS_CONF	FLEX_PARSER_PROFILE_ENABLE		0xe
	FLEX_IPV4_OVER_VXLAN_PORT		
NV_ROCE_1_5_CONF	ROCE_NEXT_PROTOCOL		0x10
NV_INTERNAL_RESOURCE_CONF	ESWITCH_HAIRPIN_DESCRIPTORS		0x13
	ESWITCH_HAIRPIN_TOT_BUFFER_SIZE		
NV_GLOBAL_PCI_CONF	NON_PREFETCHABLE_PF_BAR		0x80
	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		0x82
NV_POWER_CONF	SW_RECOVERY_ON_ERRORS		0x88
	RESET_WITH_HOST_ON_ERRORS		
	ADVANCED_POWER_SETTINGS		
NV_GLOBAL_MASK	ece_disable_mask		0x116
NV_SW_OFFLOAD_CONFIG	CQE_COMPRESSION		0x10a
	IP_OVER_VXLAN_EN		
	PCI_ATOMIC_MODE		
	LRO_LOG_TIMEOUT0		
	LRO_LOG_TIMEOUT1		
	LRO_LOG_TIMEOUT2		

Configuration	mlxconfig Parameter Name	Class	TLV ID
	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		0x190
	DCR_LIFO_SIZE		
NV_VPI_LINK_TYPE	LINK_TYPE	PHYSICAL_PORT (2)	0x12
NV_ROCE_CC	ROCE_CC_PRIO_MASK		0x107
	ROCE_CC_ALGORITHM		
NV_ROCE_CC_ECN	CLAMP_TGT_RATE_AFTER_TIME_INC		0x108
	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		0x10a
	LLDP_NB_RX_MODE		
	LLDP_NB_TX_MODE		
NV_LLDP_NB_DCBX	DCBX_IEEE		0x18e
	DCBX_CEE		
	DCBX_WILLING		
NV_KEEP_LINK_UP	KEEP_ETH_LINK_UP		0x190
	KEEP_IB_LINK_UP		
	KEEP_LINK_UP_ON_BOOT		

Configuration	mlxconfig Parameter Name	Class	TLV ID
	KEEP_LINK_UP_ON_STANDBY		
NV_QOS_CONF	NUM_OF_VL		0x192
	NUM_OF_TC		
	NUM_OF_PFC		
NV_MPFS_CONF	DUP_MAC_ACTION		0x196
	SRIOV_IB_ROUTING_MODE		
	IB_ROUTING_MODE		
NV_HCA_CONF	PCI_WR_ORDERING	HOST-FUNCTION (3)	0x112
	MULTI_PORT_VHCA_EN		
NV_EXTERNAL_PORT_CTRL	PORT_OWNER		0x192
	ALLOW_RD_COUNTERS		
	RENEG_ON_CHANGE		
	TRACER_ENABLE		
NV_ROM_BOOT_CONF2	IP_VER		0x195
	BOOT_UNDI_NETWORK_WAIT		
NV_ROM_UEFI_CONF	UEFI_HII_EN		0x196
NV_ROM_UEFI_DEBUG_LEVEL	BOOT_DBG_LOG		0x206
	UEFI_LOGS		
NV_ROM_BOOT_CONF1	BOOT_VLAN		0x221
	LEGACY_BOOT_PROTOCOL		
	BOOT_RETRY_CNT		
	BOOT_LACP_DIS		
	BOOT_VLAN_EN		
NV_ROM_IB_BOOT_CONF	BOOT_PKEY		0x222
NV_PCI_CONF	ADVANCED_PCI_SETTINGS	HOST (7)	0x80
SAFE_MODE_CONF	SAFE_MODE_THRESHOLD		0x82
	SAFE_MODE_ENABLE		

Release Notes History

1 Changes and New Feature History

⚠ This section includes history of 3 major releases back. For older releases history, please refer to the relevant firmware versions.

Feature/Change	Description
22.50.1002	
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
26.50.1002	
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.49.1014	
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
26.49.1014	
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.48.1000	
PLDM PDR Repository Change Event Support	PLDM now supports the PDR Repository Change event type, enabling notification to the BMC when PDRs change. With this flow, the BMC can detect cable insertion/removal events. Refer to DSP0248 for details.

Feature/Change	Description
22.48.1000	
NVGRE VSID Modify-Header Support	Extended packet modify-header operations to support `set` and `copy` actions on the NVGRE VSID (Virtual Subnet Identifier). A new field, `TUNNEL_HDR_DW_2` (0x84), enables dynamic VSID modification, adding header rewrite support for NVGRE tunnel traffic in addition to existing filtering capabilities.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.47.1088	
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.47.1026	
Parallel Suspends of VFs	Added support for parallel suspend operations across multiple VFs.
ADP-RETX Timeout Profile	Firmware now allows the ADP-RETX timeout profile to be configured even when there are open QPs.
Passing Metadata Registers between the NIC Layer and the E-Switch (esw) Layer	This enhancement enables seamless metadata propagation across layers, allowing flow steering rules and packet processing logic to share contextual information such as flow identifiers, source context, or policy tags. It improves coordination between NIC and E-Switch pipelines, enabling more flexible traffic handling and advanced offload capabilities.
Enable/Disable ECN in Upstream	Added the ability to enable or disable ECN in the upstream by allowing the MODIFY_CONG_STATUS and QUERY_CONG_STATUS commands in mlx5_fwctl.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.46.3048	
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.

Feature/Change	Description
22.46.1006	
RSS with Crypto Offload	Added support for RSS with crypto offload enabling the NIC to parallelize packet processing across CPU cores while performing encryption/decryption in hardware. Additionally, introduced a new l4_type_ext parameter with values: 0 (None), 1 (TCP), 2 (UDP), 3 (ICMP).

Feature/Change	Description
22.46.1006	
Incoming NC-SI Messages Validation for the payload_len Field	Added an extra validation for the payload_len field in incoming NC-SI messages. Previously, invalid packets might have been accepted; now, such packets are silently dropped.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

2 Bug Fixes History

⚠ 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.

Internal ref.	Issue
5157189 / 4866555	**Description:** Resolved an issue where, when massive flows occurred in parallel with PCC, INIT2RTR could report a false alarm with syndrome 0x7 "dead IRISC."
	Keywords: IRISC, dead IRISC, PCC, INIT2RTR, syndrome 0x7
	Detected in version: 22.47.1026
	Fixed in release: 22.51.1002
4988444	**Description:** Resolved a false-positive "IRISC stuck" detection after cold reboot on Windows.
	Keywords: IRISC stuck, Windows, cold reboot, false positive
	Detected in version: 22.49.1014
	Fixed in release: 22.51.1002
5019624	**Description:** Resolved an issue where a PCIe SBR did not reset the MCTP discovery state, causing the device to miss EndpointDiscovery requests.
	Keywords: PCIe SBR, MCTP, EndpointDiscovery, reset
	Detected in version: 22.50.1002
	Fixed in release: 22.51.1002

Internal Ref.	Issue
4774394 / 4890471 / 4890472 / 4890473	**Description:** Fixed an issue where vDPA doorbell resources were not released, which could cause failures when running other functionality after a vDPA FLR. Doorbell resources are now properly unlocked.
	Keywords: vDPA
	Detected in version: 22.48.1000
	Fixed in Release: 22.49.1014
4796182	**Description:** Fixed an issue where the live migration target did not receive a port state change event on the resume VHCA command. The target now generates this event so software that depends on port state is notified of any changes.
	Keywords: Live migration
	Detected in version: 22.47.1026
	Fixed in Release: 22.49.1014
4924450 / 4942300 / 4942302 / 4942304	**Description:** Fixed an issue in PCC where RDMA traffic could stall at large scale for certain IP and UDP source-port combinations when a PCC user algorithm was active and no CC algorithm was configured in slot 0.
	Keywords: PCC, RDMA
	Detected in version: 22.47.1026
	Fixed in Release: 22.49.1014

Internal Ref.	Issue
4621747 / 4792742 / 4794290	**Description:** Fixed an issue where parallel accesses to the MCIA register could return incorrect data. In some hosts running ethtool -m <interface> repeatedly (e.g., once per second), this could intermittently report Identifier: 0x00 (unknown/no module), causing health checks to fail.
	Keywords: MCIA register
	Detected in version: 22.47.1026
	Fixed in Release: 22.48.1000
4727303 / 4718947	**Description:** Fixed an issue in the steering definers used for LAG with IPv6 traffic.
	Keywords: LAG, IPv6 traffic, steering
	Detected in version: 22.47.1026
	Fixed in Release: 22.48.1000
4450570 / 4780432 / 4780433	**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
	Detected in version: 22.47.1026

Internal Ref.	Issue
	Fixed in Release: 22.48.1000

Internal Ref.	Issue
4575696	**Description:** Fixed an issue where multiple long-running process registers could cause aborted access and timeouts, the internal state is now properly handled.
	Keywords: ibdiagnet2
	Detected in version: 22.46.1006
	Fixed in Release: 22.47.1026
4501554	**Description:** Fixed an assertion failure that could occur with the E-Switch uplink in specific configurations where the e-switch was disabled and Path Migration was active or GVMIs were using SRQ loopback in SQs. The issue occurred because the firmware attempted to perform cleanup operations when the uplink configuration lacked sufficient capacity. Now, when the E-Switch is disabled and no actions are available in the uplink STE, the firmware connects to the uplink STE instead of copying it.
	Keywords: Path migration, steering
	Detected in version: 22.46.1006
	Fixed in Release: 22.47.1026
4531675	**Description:** Fixed an incorrect GPIO indication in the INI file that caused a false signal, preventing module initialization.
	Keywords: GPIO indication
	Detected in version: 22.45.1020
	Fixed in Release: 22.47.1026
4529293	**Description:** Fixed an issue where, during failover or restart, the SM sending a PortInfo MAD to the HCA firmware triggered reinitialization of port buffers, momentarily halting ingress traffic and causing packet drops. The firmware now avoids reconfiguring port buffers when the new configuration matches the current one.
	Keywords: OpenSM
	Detected in version: 22.45.1020
	Fixed in Release: 22.47.1026

Internal Ref.	Issue
4366117	**Description:** Configuring a small MTU leads to fragmentation of packets critical for the PXE boot process. As a result, the PXE boot filters mistakenly discard these packets, causing the PXE boot to fail.
	Keywords: PXE boot filters
	Discovered in Version: 22.45.1020
	Fixed in Release: 22.46.1006

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Product	Version	Legal Notices and 3rd Party Licenses
Firmware	xx.51.10xx	• License • 3rd Party Notice • 3rd Party Unify Notice • HCA Firmware EULA
DOCA-Host	3.6.0	• License • 3rd Party Notice • 3rd Party Unify Notice
MFT FreeBSD	4.38.0-134	• License • 3rd Party Notice • 3rd Party Unify Notice
MFT Linux		• License • 3rd Party Notice • 3rd Party Unify Notice
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