NVIDIA ConnectX-6 Dx Adapter Cards Firmware Release Notes v22.35.4030 LTS

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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.

1 Release Notes Update History

Revision	Date	Description
22.35.4030	July 04, 2024	Initial release of this Release Notes version, This version introduces Bug Fixes.

2 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.

2.1 Firmware Download

Please visit the firmware webpage.

2.2 Document Revision History

A list of the changes made to this document are provided in Document Revision History.

3 Firmware Compatible Products

The chapter contains the following sections:

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

- Ethernet - 1GbE, 10GbE, 25GbE, 40GbE, 50GbE[1], 100GbE[1], 200GbE[2]
- 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.

[2]. Speed that supports PAM4 mode only.

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

3.1 Supported Devices

This firmware supports the devices and protocols listed below:

NVIDIA SKU	Legacy OPN	PSID	Device Name	FlexBoot	UEFI x86	UEFI ARM	Enable/ disable exprom Feature
900-9X658-0016-MB0	MCX623435MN-CDAB	MT_0000000326	ConnectX-6 Dx EN adapter card; 100GbE for OCP 3.0; with Multi-Host and host management; Single-port QSFP56; PCIe 3.0/4.0 x16; Internal Lock	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AP-0053-ST0	MCX623102AN-ADAT	MT_0000000355	ConnectX-6 Dx EN adapter card; 25GbE; Dual-port SFP28; PCIe 4.0/3.0 x16	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X661-0053-SQ0	MCX621102AN-ADAT	MT_0000000356	ConnectX-6 Dx EN adapter card; 25GbE; Dual-port SFP28; PCIe 4.0/3.0 x8	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0056-ST1	MCX623106AN-CDAT	MT_0000000359	ConnectX-6 Dx EN adapter card; 100GbE; Dual-port QSFP56; PCIe 4.0/3.0 x16;	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0086-SB0	MCX623436AC-CDAB	MT_0000000394	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management; Dual-port QSFP56; PCIe 4.0 x16; Crypto and Secure Boot;	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X671-0016-SN0	MCX623405AN-CDAN	MT_0000000396	ConnectX-6 Dx EN adapter card; 100GbE OCP2.0; With Host management; Type 2; Single-port QSFP56; PCIe 4.0 x16; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists

NVIDIA SKU	Legacy OPN	PSID	Device Name	FlexBoot	UEFI x86	UEFI ARM	Enable/ disable exprom Feature
900-9X671-0018-SN0	MCX623405AN-VDAN	MT_0000000602	ConnectX®-6 Dx EN adapter card, 200GbE OCP2.0, With Host management, Type 2, Single-port QSFP56, PCIe 4.0 x16, No Crypto, No Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X661-0083-ST1	MCX621102AC-ADAT	MT_0000000430	ConnectX-6 Dx EN adapter card; 25GbE; Dual-port SFP28; PCIe 4.0 x8; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0016-ST0	MCX623105AN-CDAT	MT_0000000434	ConnectX-6 Dx EN adapter card; 100GbE; Single-port QSFP56; PCIe 4.0 x16; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0086-ST0	MCX623106AC-CDAT	MT_0000000436	ConnectX-6 Dx EN adapter card; 100GbE; Dual-port QSFP56; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0076-ST0	MCX623106AS-CDAT	MT_0000000437	ConnectX-6 Dx EN adapter card; 100GbE; Dual-port QSFP56; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X671-0046-SN0	MCX623405AC-CDAN	MT_0000000459	ConnectX-6 Dx EN adapter card; 100GbE OCP2.0; With Host management ; Type 2; Single-port QSFP56; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AP-0083-ST0	MCX623102AC-ADAT	MT_0000000460	ConnectX-6 Dx EN adapter card; 25GbE; Dual-port SFP28; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0076-SI0	MCX623436AS-CDAI	MT_0000000471	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management ; Dual-port QSFP56; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0018-ST0	MCX623105AN-VDAT	MT_0000000362	ConnectX-6 Dx EN adapter card; 200GbE; Single-port QSFP56; PCIe 4.0 x16; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0048-ST0	MCX623105AC-VDAT	MT_0000000442	ConnectX-6 Dx EN adapter card; 200GbE; Single-port QSFP56; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0018-SB0	MCX623435AN-VDAB	MT_0000000512	ConnectX-6 Dx EN adapter card; 200GbE; OCP3.0; With Host management; Single-port QSFP56; PCIe 4.0 x16; No Crypto;	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists

NVIDIA SKU	Legacy OPN	PSID	Device Name	FlexBoot	UEFI x86	UEFI ARM	Enable/ disable exprom Feature
900-9X658-0038-SI0	MCX623435AS-VDAI	MT_0000000458	ConnectX-6 Dx EN adapter card; 200GbE; OCP3.0; With Host management ; Single-port QSFP56; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0048-SB0	MCX623435AC-VDAB	MT_0000000457	ConnectX-6 Dx EN adapter card; 200GbE; OCP3.0; With Host management ; Single-port QSFP56; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0038-ST0	MCX623105AS-VDAT	MT_0000000435	ConnectX-6 Dx EN adapter card; 200GbE; Single-port QSFP56; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AP-0085-ST0	MCX623102AC-GDAT	MT_0000000432	ConnectX-6 Dx EN adapter card; 50GbE; Dual-port SFP56; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AP-0075-ST0	MCX623102AS-GDAT	MT_0000000433	ConnectX-6 Dx EN adapter card; 50GbE; Dual-port SFP56; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AP-0055-ST1	MCX623102AN-GDAT	MT_0000000353	ConnectX-6 Dx EN adapter card; 50GbE; Dual-port SFP56; PCIe 4.0/3.0 x16	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0056-SB1	MCX623436AN-CDAB	MT_0000000327	ConnectX-6 Dx EN adapter card; 100GbE for OCP 3.0; with host management; Dual-port QSFP56; PCIe 3.0/4.0 x16; Internal Lock	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X624-0055-SI0 / 900-9X624-0055-SB0	MCX623432AN-GDA	MT_0000000325	ConnectX-6 Dx EN adapter card; 50GbE for OCP 3.0; with host management; Dual-port SFP56; PCIe 3.0/4.0 x16; Internal Lock	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist
900-9X6AP-0065-ST0	MCX623102AE-GDAT	MT_0000000529	ConnectX-6 Dx EN adapter card; 50GbE; Dual-port SFP56; PCIe 4.0 x16; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist
900-9X6AG-0028-ST0	MCX623105AE-VDAT	MT_0000000530	ConnectX-6 Dx EN adapter card; 200GbE; Single-port QSFP56; PCIe 4.0 x16; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled	Exist
900-9X6AG-0066-ST0	MCX623106AE-CDAT	MT_0000000528	ConnectX-6 Dx EN adapter card; 100GbE; Dual-port QSFP56; PCIe 4.0 x16; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist

NVIDIA SKU	Legacy OPN	PSID	Device Name	FlexBoot	UEFI x86	UEFI ARM	Enable/ disable exprom Feature
900-9X624-0075-SI0	MCX623432AS-GDAI	MT_0000000472	ConnectX-6 Dx EN adapter card; 50GbE OCP3.0; With Host management ; Dual-port SFP56; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist
900-9X661-0063-ST0	MCX621102AE-ADAT	MT_0000000536	ConnectX-6 Dx EN adapter card; 25GbE ; Dual-port SFP28; PCIe 4.0 x8; Crypto; No Secure Boot;	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist
900-9X624-0053-SI0 / 900-9X624-0003-SB0	MCX623432AN-ADA	MT_0000000357	ConnectX-6 Dx EN adapter card; 25GbE for OCP 3.0; with host management; Dual-port SFP28; PCIe 3.0/4.0 x16	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist
900-9X624-0083-SB0	MCX623432AC-ADAB	MT_0000000440	ConnectX-6 Dx EN adapter card; 25GbE OCP3.0; With Host management; Dual-port SFP28; PCIe 4.0 x16; Crypto and Secure Boot;	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist
900-9X624-0085-SB0	MCX623432AC-GDAB	MT_0000000393	ConnectX-6 Dx EN adapter card; 50GbE OCP3.0; With Host management; Dual-port SFP56; PCIe 4.0 x16; Crypto and Secure Boot;	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exist
900-9X658-0066-SB0	MCX623436AE-CDAB	MT_0000000456	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management ; Dual-port QSFP56; PCIe 4.0 x16; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X624-0063-SB0	MCX623432AE-ADAB	MT_0000000455	ConnectX-6 Dx EN adapter card; 25GbE OCP3.0; With Host management ; Dual-port SFP28; PCIe 4.0 x16; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X675-0046-MB0	MCX623439MC-CDAB	MT_0000000652	ConnectX-6 Dx EN adapter card; 100GbE OCP3.0; With Host management ; Single-port DSFP; Multi Host or Socket Direct;PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X624-0073-SB0	MCX623432AS-ADAB	MT_0000000759	ConnectX-6 Dx EN adapter card; 25GbE OCP3.0; With Host management ; Dual-port SFP28; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AP-0073-ST0	MCX623102AS-ADAT	MT_0000000760	ConnectX-6 Dx EN adapter card; 25GbE; Dual-port SFP28; PCIe 4.0 x16; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists

NVIDIA SKU	Legacy OPN	PSID	Device Name	FlexBoot	UEFI x86	UEFI ARM	Enable/ disable exprom Feature
900-9X658-0076-MB0	MCX623436MS-CDAB	MT_0000000773	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management ; Dual-port QSFP56; Multi Host or Socket Direct;PCIe 4.0 x16; Secure Boot; No Crypto; Thumbscrew (Pull Tab) Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0056-MB0	MCX623436MN-CDAB	MT_0000000771	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management ; Dual-port QSFP56; Multi Host or Socket Direct;PCIe 4.0 x16; No Crypto; Thumbscrew (Pull Tab) Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X675-0076-MB0	MCX623430MS-CDAB	MT_0000000774	ConnectX-6 Dx EN adapter card; 100GbE OCP3.0; With Host management ; Dual-port DSFP; Multi Host or Socket Direct;PCIe 4.0 x16; Secure Boot; No Crypto; Thumbscrew (Pull Tab) Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0018-MB1 / 900-9X658-0018-MI0	MCX623435MN-VDA	MT_0000000358	ConnectX-6 Dx EN adapter card; 200GbE for OCP 3.0; with Multi Host and host management; Single-port QSFP56; PCIe 4.0 x16	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0016-SB0	MCX623435AN-CDAB	MT_0000000694	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management ; Single-port QSFP56; PCIe 4.0 x16; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0046-ST0	MCX623105AC-CDAT	MT_0000000709	ConnectX-6 Dx EN adapter card; 100GbE; Single-port QSFP56; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0046-SB0 / 900-9X658-0046-SI0	MCX623435AC-CDA	MT_0000000695	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management ; Single-port QSFP56; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AG-0026-ST0	MCX623105AE-CDAT	MT_0000000710	ConnectX-6 Dx EN adapter card; 100GbE; Single-port QSFP56; PCIe 4.0 x16; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X658-0026-SB0	MCX623435AE-CDAB	MT_0000000696	ConnectX-6 Dx EN adapter card; 100GbE; OCP3.0; With Host management ; Single-port QSFP56; PCIe 4.0 x16; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists

NVIDIA SKU	Legacy OPN	PSID	Device Name	FlexBoot	UEFI x86	UEFI ARM	Enable/ disable exprom Feature
900-9X624-0053-MB0	MCX623432MN-ADAB	MT_0000000808	ConnectX-6 Dx EN adapter card; 25GbE OCP3.0; With Host management ; Dual-port SFP56; Multi Host or Socket Direct; PCIe 4.0 x16; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X663-0083-SQ0	MCX621202AC-ADAT	MT_0000000846	ConnectX-6 Dx EN adapter card; 25GbE; With active cooling; Dual-port SFP28; PCIe 4.0 x8; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X663-0073-SQ0	MCX621202AS-ADAT	MT_0000000845	ConnectX-6 Dx EN adapter card; 25GbE; With active cooling; Dual-port SFP28; PCIe 4.0 x8; Secure Boot; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AK-0086-SQ0	MCX623106TC-CDAT	MT_0000000761	ConnectX-6 Dx EN adapter card; 100GbE; Dual-port QSFP56; Enhanced-SyncE & PTP GM support; PPS In/ Out; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
900-9X6AK-0086-SQ1	MCX623106GC-CDAT	MT_0000000762	ConnectX-6 Dx EN adapter card; 100GbE; Dual-port QSFP56; Enhanced-SyncE & PTP GM support and GNSS; PPS Out ; PCIe 4.0 x16; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists

3.2 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 Dx Firmware	22.35.4030 / 22.35.3502 / 22.35.3006
MLNX_OFED	5.8-5.1.1.2 / 5.8-4.1.5.0 / 5.8-3.0.7.0 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
MLNX_EN (MLNX_OFED based code)	5.8-5.1.1.2 / 5.8-4.1.5.0 / 5.8-3.0.7.0 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
WinOF-2	3.10.52010 / 3.10.51000 / 3.10.50000 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.

	Supported Version
MFT	4.22.1-417 / 4.22.1-406 / 4.22.1-307 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
FlexBoot	3.6.902 **Note:** Please be aware that not all firmware binaries contain FlexBoot or UEFI, support may vary between cards.
UEFI	14.29.15 **Note:** Please be aware that not all firmware binaries contain FlexBoot or UEFI, support may vary between cards.
Cumulus	5.4 onwards

3.3 Supported Cables and Modules

3.3.1 Validated and Supported 200GbE Cables

Speed	Cable OPN	Description
200GE	MCP1650-V001E30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1m, black pulltab, 30AWG
200GE	MCP1650-V002E26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2m, black pulltab, 26AWG
200GE	MCP1650-V002E26_FF	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2m, black pulltab, 26AWG
200GE	MCP1650-V003E26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 3m, black pulltab, 26AWG
200GE	MCP1650-V00AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 0.5m, black pulltab, 30AWG
200GE	MCP1650-V01AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1.5m, black pulltab, 30AWG
200GE	MCP1650-V02AE26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2.5m, black pulltab, 26AWG
200GE	MCP7H50-V001R30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1m, 30AWG
200GE	MCP7H50-V002R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2m, 26AWG
200GE	MCP7H50-V003R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 3m, 26AWG
200GE	MCP7H50-V01AR30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1.5m, 30AWG

Speed	Cable OPN	Description
200GE	MCP7H50-V02AR26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2.5m, 26AWG
200GE	MCP7H70-V001R30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 1m, 30AWG
200GE	MCP7H70-V002R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 2m, 26AWG
200GE	MCP7H70-V003R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4x4SFP56, colored, 3m, 26AWG
200GE	MCP7H70-V01AR30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 1.5m, 30AWG
200GE	MCP7H70-V02AR26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to4x50Gb/s, QSFP56 to 4xSFP56, colored, 2.5m, 26AWG
200GE	MFS1S00-V003E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 3m
200GE	MFS1S00-V005E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 5m
200GE	MFS1S00-V010E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 10m
200GE	MFS1S00-V015E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 15m
200GE	MFS1S00-V020E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 20m
200GE	MFS1S00-V030E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 30m
200GE	MFS1S00-V050E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 50m
200GE	MFS1S00-V100E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 100m
200GE	MCP1650-V00AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 0.5m, black pulltab, 30AWG
200GE	MMA1T00-VS	NVIDIA transceiver, 200GbE, up to 200Gb/s, QSFP56, MPO, 850nm, SR4, up to 100m
200GE	MFS1S50-V003E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 3m
200GE	MFS1S50-V005E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 5m
200GE	MFS1S50-V010E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 10m

Speed	Cable OPN	Description
200GE	MFS1S50-V015E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 15m
200GE	MFS1S50-V020E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 20m
200GE	MFS1S50-V030E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 30m

3.3.2 Validated and Supported 100GbE Cables

Speed	Cable OPN	Description
100GbE	MCP1600-C001	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 1m 30AWG
100GbE	MCP1600-C001E30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1m, Black, 30AWG, CA-N
100GbE	MCP1600-C002	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 2m 30AWG
100GbE	MCP1600-C002E30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2m, Black, 30AWG, CA-N
100GbE	MCP1600-C003	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 3m 28AWG
100GbE	MCP1600-C003E26N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, Black, 26AWG, CA-N
100GbE	MCP1600-C003E30L	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, Black, 30AWG, CA-L
100GbE	MCP1600-C005E26L	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 5m, Black, 26AWG, CA-L
100GbE	MCP1600-C00A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 0.5m 30AWG
100GbE	MCP1600-C00AE30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 0.5m, Black, 30AWG, CA-N
100GbE	MCP1600-C00BE30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 0.75m, Black, 30AWG, CA-N
100GbE	MCP1600-C01A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 1.5m 30AWG
100GbE	MCP1600-C01AE30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1.5m, Black, 30AWG, CA-N
100GbE	MCP1600-C02A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 2.5m 30AWG
100GbE	MCP1600-C02AE26N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2.5m, Black, 26AWG, CA-N
100GbE	MCP1600-C02AE30L	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28,2.5m, Black, 30AWG, CA-L
100GbE	MCP1600-C03A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 3.5m 26AWG

Speed	Cable OPN	Description
100GbE	MCP1600-E001	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m 30AWG
100GbE	MCP1600-E002	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2m 28AWG
100GbE	MCP1600-E003	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m 26AWG
100GbE	MCP1600-E01A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1.5m 30AWG
100GbE	MCP1600-E02A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2.5m 26AWG
100GbE	MCP7F00-A001R	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pulltabs, 1m, 30AWG
100GbE	MCP7F00-A001R30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 1m, Colored, 30AWG, CA-N
100GbE	MCP7F00-A002R	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pulltabs, 2m, 30AWG
100GbE	MCP7F00-A002R30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2m, Colored, 30AWG, CA-N
100GbE	MCP7F00-A003R26N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m, Colored, 26AWG, CA-N
100GbE	MCP7F00-A003R30L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m, Colored, 30AWG, CA-L
100GbE	MCP7F00-A005R26L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 5m, Colored, 26AWG, CA-L
100GbE	MCP7F00-A01AR	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pulltabs,1.5m, 30AWG
100GbE	MCP7F00-A01AR30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 1.5m, Colored, 30AWG, CA-N
100GbE	MCP7F00-A02AR26N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, Colored, 26AWG, CA-N
100GbE	MCP7F00-A02AR30L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, Colored, 30AWG, CA-L
100GbE	MCP7F00-A02ARLZ	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, LSZH, Colored, 28AWG
100GbE	MCP7F00-A03AR26L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3.5m, Colored, 26AWG, CA-L
100GbE	MCP7H00-G001	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1m, 30AWG
100GbE	MCP7H00-G001R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 1m, 30AWG
100GbE	MCP7H00-G001R30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1m, Colored, 30AWG, CA-N
100GbE	MCP7H00-G002R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 2m, 30AWG

Speed	Cable OPN	Description
100GbE	MCP7H00-G002R30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2m, Colored, 30AWG, CA-N
100GbE	MCP7H00-G003R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 3m, 28AWG
100GbE	MCP7H00-G003R26N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m, Colored, 26AWG, CA-N
100GbE	MCP7H00-G003R30L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m, Colored, 30AWG, CA-L
100GbE	MCP7H00-G004R26L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 4m, Colored, 26AWG, CA-L
100GbE	MCP7H00-G01AR	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 1.5m, 30AWG
100GbE	MCP7H00-G01AR30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1.5m, Colored, 30AWG, CA-N
100GbE	MCP7H00-G02AR	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 2.5m, 30AWG
100GbE	MCP7H00-G02AR26N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, Colored, 26AWG, CA-N
100GbE	MCP7H00-G02AR30L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, Colored, 30AWG, CA-L
100GbE	MFA1A00-C003	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 3m
100GbE	MFA1A00-C005	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 5m
100GbE	MFA1A00-C010	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 10m
100GbE	MFA1A00-C015	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 15m
100GbE	MFA1A00-C020	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 20m
100GbE	MFA1A00-C030	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 30m
100GbE	MFA1A00-C050	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 50m
100GbE	MFA1A00-C100	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 100m
100GbE	MFA7A20-C003	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 3m
100GbE	MFA7A20-C005	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 5m
100GbE	MFA7A20-C010	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 10m
100GbE	MFA7A20-C020	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 20m
100GbE	MFA7A50-C003	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m
100GbE	MFA7A50-C005	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 5m
100GbE	MFA7A50-C010	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 10m

Speed	Cable OPN	Description
100GbE	MFA7A50-C015	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 15m
100GbE	MFA7A50-C020	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 20m
100GbE	MFA7A50-C030	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 30m
100GbE	MMA1B00-C100D	NVIDIA transceiver, 100GbE, QSFP28, MPO, 850nm, SR4, up to 100m, DDMI
100GbE	MMA1L10-CR	NVIDIA optical transceiver, 100GbE, QSFP28, LC-LC, 1310nm, LR4 up to 10km **Note:** Only revision A2 and above.
100GbE	MFA1A00-C001-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 1m
100GbE	MFA1A00-C002-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP28, LSZH, 2m
100GbE	MFA1A00-C003-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 3m
100GbE	MFA1A00-C005-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 5m
100GbE	MFA1A00-C007-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP28, LSZH, 7m
100GbE	MFA1A00-C010-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 10m
100GbE	MFA1A00-C015-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 15m
100GbE	MFA1A00-C020-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 20m
100GbE	MFA1A00-C030-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 30m
100GbE	MFA1A00-C050-TG	NVIDIA customized active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 50m
100GbE	MMA1L30-CM	NVIDIA optical module, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, CWDM4, up to 2km
100GbE	MMS1C10-CM	NVIDIA active optical module, 100Gb/s, QSFP, MPO, 1310nm, PSM4, up to 500m
100GbE	MMS1V70-CM	NVIDIA transceiver, 100GbE, QSFP28, LC-LC, 1310nm, DR1

3.3.3 Validated and Supported 56GbE Cables

The 56GbE cables are used to raise 40GbE link speed as the 56GbE speed is not supported.

Speed	Cable OPN	Description
56GE	MC2207126-004	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 4m

Speed	Cable OPN	Description
56GE	MC2207128-003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m
56GE	MC2207128-0A2	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2.5m
56GE	MC2207130-001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m
56GE	MC2207130-002	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m
56GE	MC2207130-00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 0.5m
56GE	MC2207130-0A1	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1.5m
56GE	MC220731V-003	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 3m
56GE	MC220731V-005	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 5m
56GE	MC220731V-010	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 10m
56GE	MC220731V-015	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 15m
56GE	MC220731V-020	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 20m
56GE	MC220731V-025	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 25m
56GE	MC220731V-030	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 30m
56GE	MC220731V-040	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 40m
56GE	MC220731V-050	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 50m
56GE	MC220731V-075	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 75m
56GE	MC220731V-100	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 100m
56GE	MCP1700-F001C	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m, Red Pulltab
56GE	MCP1700-F001D	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m, Yellow Pulltab
56GE	MCP1700-F002C	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m, Red Pulltab
56GE	MCP1700-F002D	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m, Yellow Pulltab
56GE	MCP1700-F003C	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m, Red Pulltab
56GE	MCP1700-F003D	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m, Yellow Pulltab

Speed	Cable OPN	Description
56GE	MCP170L-F001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1m
56GE	MCP170L-F002	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 2m
56GE	MCP170L-F003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 3m
56GE	MCP170L-F00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 0.5m
56GE	MCP170L-F01A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1.5m

3.3.4 Validated and Supported 40GbE Cables

Speed	Cable OPN	Description
40GE	MC2206128-004	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 4m
40GE	MC2206128-005	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 5m
40GE	MC2206130-001	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 1m
40GE	MC2206130-002	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 2m
40GE	MC2206130-003	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 3m
40GE	MC2206130-00A	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 0.5m
40GE	MC2210126-004	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 4m
40GE	MC2210126-005	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 5m
40GE	MC2210128-003	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 3m
40GE	MC2210130-001	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1m
40GE	MC2210130-002	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2m
40GE	MC2210310-003	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 3m
40GE	MC2210310-005	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 5m
40GE	MC2210310-010	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 10m
40GE	MC2210310-015	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 15m

Speed	Cable OPN	Description
40GE	MC2210310-020	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 20m
40GE	MC2210310-030	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 30m
40GE	MC2210310-050	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 50m
40GE	MC2210310-100	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 100m
40GE	MC2210411-SR4E	NVIDIA optical module, 40Gb/s, QSFP, MPO, 850nm, up to 300m
40GE	MC2609125-005	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 5m
40GE	MC2609130-001	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 1m
40GE	MC2609130-003	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 3m
40GE	MCP1700-B001E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1m, Black Pulltab
40GE	MCP1700-B002E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2m, Black Pulltab
40GE	MCP1700-B003E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 3m, Black Pulltab
40GE	MCP1700-B01AE	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1.5m, Black Pulltab
40GE	MCP1700-B02AE	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2.5m, Black Pulltab
40GE	MMA1B00-B150D	NVIDIA transceiver, 40GbE, QSFP+, MPO, 850nm, SR4, up to 150m, DDMI
40GE	MCP7900-X01AA	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 1.5m, Blue Pulltab, customized label
40GE	MCP7904-X002A	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 2m, Black Pulltab, customized label
40GE	MCP7904-X003A	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 3m, Black Pulltab, customized label
40GE	MCP7904-X01AA	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 1.5m, Black Pulltab, customized label
40GE	MCP7904-X02AA	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 2.5m, Black Pulltab, customized label
40GE	MC2210511-LR4	NVIDIA Optical Module 40Gb/s FDR 10 QSFP LC-LC 1310nm LR4 up to 10km
40GE	MC6709309-005	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 5m

Speed	Cable OPN	Description
40GE	MC6709309-010	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 10m
40GE	MC6709309-020	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 20m
40GE	MC6709309-030	NVIDIA passive fiber hybrid cable, MPO to 8xLC, 30m

3.3.5 Validated and Supported 25GbE Cables

⚠ The 25GbE cables can be supported only when connected to the MAM1Q00A-QSA28 module.

Speed	Cable OPN	Description
25GbE	MAM1Q00A-QSA28	NVIDIA cable module, ETH 25GbE, 100Gb/s to 25Gb/s, QSFP28 to SFP28
25GbE	MCP2M00-A001	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1m, 30AWG
25GbE	MCP2M00-A001E30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1m, Black, 30AWG, CA-N
25GbE	MCP2M00-A002	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2m, 30AWG
25GbE	MCP2M00-A002E30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2m, Black, 30AWG, CA-N
25GbE	MCP2M00-A003E26N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 3m, Black, 26AWG, CA-N
25GbE	MCP2M00-A003E30L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 3m, Black, 30AWG, CA-L
25GbE	MCP2M00-A004E26L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 4m, Black, 26AWG, CA-L
25GbE	MCP2M00-A005E26L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 5m, Black, 26AWG, CA-L
25GbE	MCP2M00-A00A	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, 30AWG
25GbE	MCP2M00-A00AE30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, Black, 30AWG, CA-N
25GbE	MCP2M00-A01AE30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1.5m, Black, 30AWG, CA-N
25GbE	MCP2M00-A02AE26N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, Black, 26AWG, CA-N
25GbE	MCP2M00-A02AE30L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, Black, 30AWG, CA-L
25GbE	MFA2P10-A003	NVIDIA active optical cable 25GbE, SFP28, 3m
25GbE	MFA2P10-A005	NVIDIA active optical cable 25GbE, SFP28, 5m
25GbE	MFA2P10-A007	NVIDIA active optical cable 25GbE, SFP28, 7m
25GbE	MFA2P10-A010	NVIDIA active optical cable 25GbE, SFP28, 10m
25GbE	MFA2P10-A015	NVIDIA active optical cable 25GbE, SFP28, 15m
25GbE	MFA2P10-A020	NVIDIA active optical cable 25GbE, SFP28, 20m

Speed	Cable OPN	Description
25GbE	MFA2P10-A030	NVIDIA active optical cable 25GbE, SFP28, 30m
25GbE	MFA2P10-A050	NVIDIA active optical cable 25GbE, SFP28, 50m
25GbE	MMA2P00-AS	NVIDIA transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m
25GbE	SFP25G-AOC10M-TG	NVIDIA customized active optical cable 25GbE, SFP28, 10m, Aqua
25GbE	SFP25G-AOC30M-TG	NVIDIA customized active optical cable 25GbE, SFP28, 30m, Aqua
25GbE	SFP25G-AOC07M-TG	NVIDIA customized active optical cable 25GbE, SFP28, 7m, Aqua
25GbE	SFP25G-AOC05M-TG	NVIDIA customized active optical cable 25GbE, SFP28, 5m, Aqua
25GbE	SFP25G-AOC03M-TG	NVIDIA customized active optical cable 25GbE, SFP28, 3m, Aqua
25GbE	SFP25G-AOC20M-TG	NVIDIA customized active optical cable 25GbE, SFP28, 20m, Aqua
25GbE	MMA2P00-AS_FF	NVIDIA transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m
25GbE	MMA2P00-AS-SP	NVIDIA transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m, single package
25GbE	MMA2L20-AR	NVIDIA optical transceiver, 25GbE, 25Gb/s, SFP28, LC-LC, 1310nm, LR up to 10km

3.3.6 Validated and Supported 10GbE Cables

Speed	Cable OPN	Description
10GE	MFM1T02A-LR	NVIDIA SFP+ optical module for 10GBASE-LR
10GE	MFM1T02A-SR	NVIDIA SFP+ optical module for 10GBASE-SR
10GE	MAM1Q00A-QSA	NVIDIA cable module, ETH 10GbE, 40Gb/s to 10Gb/s, QSFP to SFP+
10GE	MC2309124-005	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 5m
10GE	MC2309124-007	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 7m
10GE	MC2309130-001	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 1m
10GE	MC2309130-002	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 2m
10GE	MC2309130-003	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 3m
10GE	MC2309130-00A	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 0.5m
10GE	MC3309124-004	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 4m
10GE	MC3309124-005	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 5m
10GE	MC3309124-006	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 6m

Speed	Cable OPN	Description
10GE	MC3309124-007	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 7m
10GE	MC3309130-001	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m
10GE	MC3309130-002	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m
10GE	MC3309130-003	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m
10GE	MC3309130-00A	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 0.5m
10GE	MC3309130-0A1	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1.5m
10GE	MC3309130-0A2	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2.5m
10GE	MCP2100-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, Blue Pulltab, Connector Label
10GE	MCP2100-X002B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m, Blue Pulltab, Connector Label
10GE	MCP2100-X003B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m, Blue Pulltab, Connector Label
10GE	MCP2101-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, Green Pulltab, Connector Label
10GE	MCP2104-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, Black Pulltab, Connector Label
10GE	MCP2104-X002B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m, Black Pulltab, Connector Label
10GE	MCP2104-X003B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m, Black Pulltab, Connector Label
10GE	MCP2104-X01AB	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1.5m, Black Pulltab, Connector Label
10GE	MCP2104-X02AB	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2.5m, Black Pulltab, Connector Label

3.3.7 Validated and Supported 1GbE Cables

Speed	Cable OPN	Description
1GbE	MC3208011-SX	NVIDIA Optical module, ETH 1GbE, 1Gb/s, SFP, LC-LC, SX 850nm, up to 500m
1GbE	MC3208411-T	NVIDIA module, ETH 1GbE, 1Gb/s, SFP, Base-T, up to 100m

3.4 Supported 3rd Party Cables and Modules

Speed	Cable OPN	Description
1GbE	FTLF8519P3BNL-IB	Fibre Optic Transmitters, Receivers, Transceivers GigE 1x/2x FC, 2.128 Gb/s trnscvr, 550m
1GbE	FTLF1318P3BTL-IB	Fibre Optic Transmitters, Receivers, Transceivers 1310nmFP GigE 1x LC 1.25Gb/s trnscvr10km
40GbE	QSFP-40G-SR-BD	Cisco 40GBASE-SR-BiDi, duplex MMF
50GbE	FTLF8556D1BCW	Finisar 10/25/50GbE SR multimode SFP56 Transceiver, 10GBASE-SR/25GBASE-SR/50GBASE-SR, 850nm, VCSEL, 0°C to 70°C, LC, 100m/400m
100GbE	FTLC1151RDPL	TRANSCIEVER 100GBE QSFP LR4
100GbE	FCBN425QE1C10-C1	AOC 100GBE QSFP 1M
100GbE	FTLC9152RGPL	100G 100M QSFP28 SWDM4 OPT TRANS
100GbE	QSFP28-LR4-AJ	CISCO-PRE 100G AOM
100G	DMM8211-DC07	Hisense DSFP AOC 7m
100G	DMM8211-DC10	Hisense DSFP AOC 10m
100G	ATRP-B007	Hgtech DSFP AOCs 7m
100G	ATRP-B010	Hgtech DSFP AOCs 10m
100G	RTXM520-107	Accelink DSFP AOCs 7m
100G	RTXM520-110	Accelink DSFP AOCs 10m
100G	C-PD2FNM010-N00	Innolight DSFP AOCs 10m
25G	LTF8507-PC05	Hisense SFP28 AOCs 5m
25G	LTF8507-PC07	Hisense SFP28 AOCs 7m
25G	ATRS-2005	Hgtech SFP28 AOCs 5m
25G	ATRS-2007	Hgtech SFP28 AOCs 7m
25G	RTXM330-005	Accelink SFP28 AOCs 5m
25G	RTXM330-007	Accelink SFP28 AOCs 7m
25G	FCBG125SD1C05M	Finisar SFP28 AOCs 5m
25G	FCBG125SD1C10M	Finisar SFP28 AOCs 7m
100G	DQF8503-4C07	Hisense QSFP28 AOCs 7m
100G	DQF8503-4C10	Hisense QSFP28 AOCs 10m
100G	ATRQ-A007	Hgtech QSFP28 AOCs 7m
100G	ATRQ-A010	Hgtech QSFP28 AOCs 10m
100G	RTXM420-007	Accelink QSFP28 AOCs 7m
100G	RTXM420-010	Accelink QSFP28 AOCs 10m
200G	AB-QS200GYOCa05	QSFP56 to 2x100G QSFP56 AOC

3.5 Tested Switches

3.5.1 Tested 400GbE Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
400GbE	N/A	Wedge 400	Wedge 400-48X 400GbE Data Center Switch	Facebook

3.5.2 Tested 200GbE Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
200GbE	Spectrum	MSN3700-XXXX	32 QSFP56 ports, 200GbE Open Ethernet Switch System	Mellanox

3.5.3 Tested 100GbE Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
100GbE	Spectrum-3	MSN4600-XXXX	64-port Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	Spectrum-2	MSN3700C-XXXX	32-port Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	Spectrum-2	MSN3420-XXXX	48 SFP + 12 QSFP ports Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	Spectrum	MSN2700-XXXX	32-port Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	N/A	QFX5200-32C-32	32-port 100GbE Ethernet Switch System	Juniper
100GbE	N/A	7060CX-32S	32-port 100GbE Ethernet Switch System	Arista
100GbE	N/A	3232C	32-port 100GbE Ethernet Switch System	Cisco
100GbE	N/A	N9K-C9236C	36-port 100GbE Ethernet Switch System	Cisco
100GbE	N/A	93180YC-EX	48-port 25GbE + 6-port 100GbE Ethernet Switch System	Cisco
100GbE	N/A	S6820-56HF	H3C S6850-56HF L3 Ethernet Switch with 48 SFP28 Ports and 8 QSFP28 Ports	H3C
100GbE	N/A	BMS T7032-IX7	32 QSFP28 ports support for 10/25/40/50/100GbE	QuantaMesh
100GbE	N/A	CE8860EI	Huawei 02350NBS CE8860-EI-B-B0A CE8860EI Bundle	Huawei
100GbE	N/A	Wedge100	Wedge 100-32X 100GbE Data Center Switch	Facebook

3.6 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.

4 Changes and New Features

4.1 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).

⚠ 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.

4.2 Changes and New Feature in this Firmware Version

Feature/Change	Description
22.35.4030	
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

4.3 Unsupported Features and Commands

4.3.1 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

4.3.2 Unsupported Commands

- QUERY_MAD_DEMUX

- SET_MAD_DEMUX
- CREATE_RQ - MEMORY_RQ_RMP
- MODIFY_LAG_ASYNC_EVENT

5 Bug Fixes in this Firmware Version

For a list of old Bug Fixes, please see Bug Fixes History.

Internal Ref.	Issue
3887759	**Description:** Fixed an issue that caused Completion Timeout to mistakenly be treated as Advisory Non-Fatal error. Now Completion Timeout is treated as uncorrectable error.
	Keywords: Completion Timeout, Advisory Non-Fatal error
	Discovered in Version: 22.35.3006
	Fixed in Release: 22.35.4030
3812331	**Description:** Fixed an issue in PDDR that resulted in raw EEPROM reads returning all zeros while unplugging the cable.
	Keywords: Cables, PDDR
	Discovered in Version: 22.35.3006
	Fixed in Release: 22.35.4030
3679805	**Description:** Added the TX_SCHEDULER_FWS_REACTIVITY nvconfig flag to solved an mlnx_qos ETS settings issue.
	Keywords: nvconfig, ETS
	Discovered in Version: 22.35.3006
	Fixed in Release: 22.35.4030

6 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

Internal Ref.	Issue	RM Tickets Status
3525865	**Description:** Unexpected system behavior might be observed if the driver is loaded while reset is in progress.	**[ConnectX FW Core - Design]** BS #3525865: ASSIGNED **[Host FW - 43.1000 GA Release]**
	Workaround: N/A	
	Keywords: Sync 1 reset, firmware reset	
	Discovered in Version: 22.35.3006	
3463527	**Description:** PhyLess Reset is currently not supported.	**[ConnectX FW PHY - Design]** BS #3463527: WON'T FIX **[Host FW - Oct22 LTS-U4 35.3500 (Dec23)]**
	Workaround: N/A	
	Keywords: PhyLess Reset	
	Discovered in Version: 22.35.3006	
2745023	**Description:** RDMA statistics for sent packets are not updated when RoCE traffic is running in a loopback on the same uplink.	**[ConnectX FW Core - Design]** BS #2745023: FIXED **[Host FW - 37.1000 GA Release]**
	Workaround: N/A	
	Keywords: RoCE	
	Discovered in Version: 22.35.2302	
3266807	**Description:** PMA loop-back is not supported on PAM4 speeds.	**[ConnectX FW PHY - Design]** BS #3266807: CLOSED **[Host FW - Oct22 LTS-U1 35.2000 (Nov22)]**
	Workaround: N/A	
	Keywords: Counters, CRC	

Internal Ref.	Issue	RM Tickets Status
	Discovered in Version: 22.35.2302	
3267506	**Description:** CRC is included in the traffic byte counters as a port byte counter.	**[ConnectX FW Core - Design]** BS #3267506: WON'T FIX **[Host FW - Oct22 LTS-U1 35.2000 (Nov22)]**
	Workaround: N/A	
	Keywords: Counters, CRC	
	Discovered in Version: 22.35.2302	
3235397	**Description:** PCC force mode does not work if the link is raised after disabling DCQCN with PPCC.	**[ConnectX FW Core - Design]** BS #3235397: CLOSED **[Host FW - 35.1000 GA Release]**
	Workaround: N/A	
	Keywords: PCC	
	Discovered in Version: 22.35.1012	
3200779	**Description:** Changing dynamic PCIe link width is not supported.	**[ConnectX FW PCI - Design]** BS #3200779: CLOSED (REJECTED) **[Host FW - 35.1000 GA Release]**
	Workaround: N/A	
	Keywords: PCIe	
	Discovered in Version: 22.34.1002	
3033910	**Description:** BAR misses caused by a memory write/read actions are not reported in the AER and the device status.	**[ConnectX FW PCI - Design]** BS #3033910: WON'T FIX **[Host FW - 34.4000 MUR1 Release]**
	Workaround: N/A	
	Keywords: BAR miss, AER	
	Discovered in Version: 22.34.1002	
2169950	**Description:** When decapsulation on a packet occurs, the FCS indication is not calculated correctly.	**[ConnectX FW Core - Design]** BS #2169950: CLOSED **[Host FW - 27.6000: MUR Release]**
	Workaround: N/A	
	Keywords: FCS	
	Discovered in Version: 22.34.1002	
3141072	**Description:** The "max_shaper_rate" configuration query via QEEC mlxreg returns a value translated to hardware granularity.	**[ConnectX FW Core - Design]** BS #3141072: WON'T FIX **[Host FW - 34.1000 GA Release]**
	Workaround: N/A	
	Keywords: RX Rate-Limiter, Multi-host	
	Discovered in Version: 22.34.1002	
3106146	**Description:** Live migration of MPV affiliated function pair is not supported when port numbers are changed. Each function should stay on the same port number as before migration.	**[ConnectX FW Core - Design]** BS #3106146: CLOSED **[Host FW - 34.1000 GA Release]**

Internal Ref.	Issue	RM Tickets Status
	Workaround: N/A	
	Keywords: MPV live migration	
	Discovered in Version: 22.34.1002	
2870970	**Description:** GTP encapsulation (flex parser profile 3) is limited to the NIC domain. Encapsulating in the FDB domain will render a 0-size length in GTP header.	**[ConnectX FW Core - Design]** BS #2870970: WON'T FIX **[future release]**
	Workaround: N/A	
	Keywords: GTP encapsulation	
	Discovered in Version: 22.34.1002	
2937445	**Description:** A long linkup time can be seen 1/5 toggles when raising link in autoneg flow in ConnectX-6 Dx vs Ixia in 200G_4x.	**[ConnectX FW PHY - Design]** BS #2937445: CLOSED **[Host FW - 35.1000 GA Release]**
	Workaround: N/A	
	Keywords: AN, port toggling, Ixia	
	Discovered in Version: 22.33.1048	
2850003	**Description:** Occasionally, when rising a logical link, the link recovery counter is increase by 1.	**[ConnectX FW PHY - Design]** BS #2850003: WON'T FIX **[Host FW - 33.1000 GA Release]**
	Workaround: N/A	
	Keywords: Link recovery counter	
	Discovered in Version: 22.33.1048	
2825403	**Description:** When connecting NVIDIA Spectrum-3 devices and ConnectX-6 Dx devices with DAC MCP7F80-W002R26 while splitting to 8x with 50GbE per lane in force mode, effective BER may appear.	**[FW Eth PHY - Design]** BS #2825403: CLOSED **[4.5.2200/2010.2200 (MUR Apr22)]**
	Workaround: N/A	
	Keywords: NVIDIA Spectrum-3, Cables, Split	
	Discovered in Version: 22.32.2004	
2866931	**Description:** When the host powers up directly into the standby mode, the adapter may not handle WOL packets.	**[ConnectX FW System Mng - Design]** BS #2866931: CLOSED **[Host FW - 32.1000 GA Release]**
	Workaround: N/A	
	Keywords: WOL packets	
	Discovered in Version: 22.32.1010	

Internal Ref.	Issue	RM Tickets Status
2864238	**Description:** VPD cannot be accessed after firmware upgrade or reset when the following sequence is performed: 1. Upgrade to a new firmware and perform a cold reboot 2. Downgrade to an old firmware 3. Run fwreset 4. Upgrade to a new firmware 5. Run fwreset	**[ConnectX FW Core - Design]** BS #2864238: WON'T FIX **[TBD]**
	Workaround: Run the upgrade or reset sequence as follow: 1. Upgrade to a new firmware and perform a cold reboot 2. Downgrade to an old firmware 3. Run fwreset 4. Upgrade to a new firmware 5. **Perform a cold reboot**	
	Keywords: VDP	
	Discovered in Version: 22.32.1010	
2863674	**Description:** Host management magic packet is not supported in Socket-Direct adapter cards' single PF per Numa mode.	**[ConnectX FW Core - Design]** BS #2863674: CLOSED **[Host FW - 32.2000 MUR1 Release]**
	Workaround: N/A	
	Keywords: Socket-Direct, single PF per Numa, host management, magic packet	
	Discovered in Version: 22.32.1010	
2836032	**Description:** When using SW steering mlx5dv_dr API to create rules containing encapsulation actions in MLNX_OFED v5.5-1.x.x.x, the user should upgrade firmware to the latest version. Otherwise, the maximum number of encapsulation actions that can be created will be limited to only 16K, and degradation for the rule insertion rate is expected compared to MLNX_OFED v5.4-.x.x.x.x.	**[ConnectX FW - Core]** ST #2836032: CLOSED
	Workaround: N/A	
	Keywords: Encapsulation rules insertion rate, firmware upgrade, MLNX_OFED	
	Discovered in Version: 22.32.1010	
2756866 / 2740651	**Description:** On rare occasions, following fast linkup (toggle link from the NIC side) a few effective errors might be seen in the first 20 seconds.	**[ConnectX FW Serdes - Design]** BS #2756866: WON'T FIX **[Host FW - 33.4000 MUR1 Release]** / **[ConnectX FW Serdes - Design]** BS #2740651: CLOSED **[Host FW - 33.1000 GA Release]**
	Workaround: Perform link maintenance to fix it so additional errors will not be seen afterwards.	
	Keywords: Link toggle, effective errors	
	Discovered in Version: 22.31.2006	

Internal Ref.	Issue	RM Tickets Status
-	**Description:** Downgrading to an older firmware version that does not support the new flash type is not supported. Doing so will result in burning process failure and unknown errors will be received. The errors will be more informative in the next tools' version.	
	Workaround: N/A	
	Keywords: Burning tools, firmware downgrading, flash type	
	Discovered in Version: 22.31.2006	
2667681	**Description:** As the Connection Tracking (CT) is not moved to SW state after receiving a TCP RST packet, any packet that matches the windows even after the RST is marked as a valid packets.	**[ConnectX FW Core - Design]** BS #2667681: WON'T FIX **[Host FW - 31.1000 GA Release]**
	Workaround: N/A	
	Keywords: Connection Tracking	
	Discovered in Version: 22.31.1014	
2607158	**Description:** When using more than 512 MSIX per function, the CPU PCIe Completion Timeout Value needs to be set to a value of 200us or higher.	**[ConnectX FW PCI - Design]** BS #2607158: CLOSED **[Host FW - 31.1000 GA Release]**
	Workaround: N/A	
	Keywords: Extended MSIX, Asymmetrical MSIX configuration, PF_NUM_PF_MSIX_VALID, PF_NUM_PF_MSIX	
	Discovered in Version: 22.31.1014	
2577966	**Description:** Fast linkup is not supported when connecting to an Ixia switch.	**[ConnectX FW PHY - Design]** BS #2577966: CLOSED (EXTERNAL) **[Host FW - 30.1000 GA Release]**
	Workaround: N/A	
	Keywords: Fast linkup	
	Discovered in Version: 22.30.1004	
2446583	**Description:** On rare occasions, when both network devices are NVIDIA, PAM4 link will raise with several effective errors. These errors will not affect traffic once the link is up.	**[ConnectX FW - Serdes]** BS #2446583: CLOSED **[Host FW - 33.1000 GA Release]**
	Workaround: Clear counters once the link is up	
	Keywords: Effective errors	
	Discovered in Version: 22.29.2002	
2371060	**Description:** When Emulated PCIe Switch is enabled, and the OS does resource reallocation, the OS boot process might halt.	**[ConnectX FW PCI - Design]** BS #2371060: CLOSED (REJECTED) **[Host FW - 30.1000 GA Release]**
	Workaround: N/A	
	Keywords: Emulated PCIe Switch	

Internal Ref.	Issue	RM Tickets Status
	Discovered in Version: 22.29.1016	
2297201	**Description:** Unable to complete migration when virtio device is in high traffic load (20/20 MPPS) as although vDPA hardware offload solution can support higher speed than the software solution, it needs to enable QEMU auto-converge to complete migration. For further information see: https://wiki.qemu.org/Features/AutoconvergeLiveMigration	**[ConnectX FW Core - Design]** BS #2297201: WON'T FIX **[Host FW - 29.1000 GA Release]**
	Workaround: Turn auto-converge on by adding `"--auto-converge"`. For example: `virsh migrate --verbose --live --persistent gen-l-vrt-295-005-CentOS-7.4 qemu+ssh://gen-l-vrt-295/system --unsafe --auto-converge`	
	Keywords: virtio, vDPA, live migration	
	Discovered in Version: 22.29.1016	
2378593	**Description:** Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.	**[ConnectX FW PCI - Design]** BS #2378593: CLOSED **[Host FW - 29.1000 GA Release]**
	Workaround: Use full reset flow for firmware upgrade/downgrade.	
	Keywords: Sub 1sec firmware update	
	Discovered in Version: 22.29.1016	
2384965	**Description:** Eye-opening can cause effective errors on the port.	**[ConnectX FW PHY - Design]** BS #2384965: CLOSED **[Host FW - 33.1000 GA Release]**
	Workaround: N/A	
	Keywords: Eye-opening	
	Discovered in Version: 22.29.1016	
2384849 / 2373640	**Description:** Phyless Reset functionality is not supported when updating firmware from v22.28.4000 (and below) to v22.29.1016 and higher.	**[ConnectX FW - Serdes]** T #2384849: CLOSED / **[ConnectX FW - Serdes]** BS #2373640: WON'T FIX **[Host FW - 29.2000: MUR1 Release]**
	Workaround: N/A	
	Keywords: Phyless Reset	
	Discovered in Version: 22.29.1016	

Internal Ref.	Issue	RM Tickets Status

2213356	**Description:** The following are the Steering Dump limitations:
	• Supported only on ConnectX-5 adapter cards
	• Requires passing the version (FW/Stelib/MFT) and device type to stelib
	• Re-format is not supported
	• Advanced multi-port feature is not supported - LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)
	• Packet types supported:
	  • Layer 2 Eth
	  • Layer 3 IPv4/Ipv6/Grh
	  • Layer 4 TCP/UDP/Bth/GreV0/GreV1
	  • Tunneling VXLAN/Geneve/GREv0/Mpls
	• FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).
	• Compiles only on x86
		[ConnectX FW - Core] F #2213356: CLOSED **[Host FW - 29.1000 GA Release]**

	Workaround: N/A	
	Keywords: Steering Bump	
	Discovered in Version: 22.29.1016	
2365322	**Description:** When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors.	**[ConnectX FW Core - Design]** BS #2365322: CLOSED **[Host FW - 33.1000 GA Release]**
	Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: `max_average_bw` or `bw_share`	
	Keywords: QoS	
	Discovered in Version: 22.29.1016	
2201468	**Description:** Running multiple resets ("mlxfwreset --sync=1") simultaneously is not functioning properly,	**[ConnectX FW Core - Design]** BS #2201468: CLOSED (REJECTED) **[Host FW - 30.1000 GA Release]**
	Workaround: Wait a few seconds until you run "mlxfwreset --sync=0".	
	Keywords: mlxfwreset, reset-sync, reset, sync	
	Discovered in Version: 22.28.1002	
2089277	**Description:** The CRC is being removed despite using the keep_crc flag, and the byte count of the packet are counted without the CRC.	**[ConnectX FW Core - Design]** BS #2089277: WON'T FIX **[28.1000: GA Release]**
	Workaround: N/A	
	Keywords: Decapsulated packets	
	Discovered in Version: 22.27.6008	
2149437	**Description:** When the SLTP configuration is wrongly set, the "Bad status" explanation will not be presented (only error indication) to the user.	**[MFT]** BS #2149437: WON'T FIX **[MFT 4.18 - November 2021 release]**
	Workaround: N/A	

Internal Ref.	Issue	RM Tickets Status
	Keywords: SLTP configuration	
	Discovered in Version: 22.27.6008	
1895917	**Description:** On Dual-Port devices, and only after Rx buffer modification, resetting all Physical Functions over one port (through reboot / driver restart / FLR), while there are active Physical Functions over the second port (which caused the Rx buffer changes), will cause the Rx buffer default values to be restored, although not expected by the active Physical Function on the second port.	**[Check - DCI-D [Griffin]]** (M) #1985917: NEW
	Workaround: • Re-apply the changes • Reset the functions from both ports together (driver restart / FLRs / reboot) • Power cycle or reset the firmware	
	Keywords: VoQ, Shared Buffer, Rx Bufffer, PFCC, PBMC, PPTB, SBCM, SBPM, SBPR, Rx buffer modifications	
	Discovered in Version: 22.27.2008	
2120378	**Description:** Phyless Reset is not supported when using PAM4 mode.	**[ConnectX FW PHY - Design]** (BS) #2120378: WON'T FIX **[Host FW - 31.1000 GA Release]**
	Workaround: N/A	
	Keywords: Phyless, PAM4 mode, 200GbE	
	Discovered in Version: 22.27.2008	
2071210	**Description:** mlxconfig query for the BOOT_INTERRUPT_DIS TLV shows a wrong value in the "current value" field.	**[ConnectX FW System Mng - Design]** (BS) #2071210: CLOSED (REJECTED) **[28.1000: GA Release]**
	Workaround: Use "next boot" indication to see the right value.	
	Keywords: mlxconfig	
	Discovered in Version: 22.27.1016	
2063038	**Description:** PRBS is not functional when using Wedge switch.	**[ConnectX FW PHY - Design]** (BS) #2063038: CLOSED (REJECTED) **[Host FW - 27.6000: MUR Release]**
	Workaround: N/A	
	Keywords: PRBS	
	Discovered in Version: 22.27.1016	
1796936	**Description:** 200GbE Optical cables in Auto-Negotiation mode work only in 200GbE speed.	**[MKT. IB FW - unmanaged switches]** (FR) #1796936: COMMITTED **[2020 - Rel2]**
	Workaround: N/A	
	Keywords: Cables	

Internal Ref.	Issue	RM Tickets Status
	Discovered in Version: 22.27.1016	
2038821	**Description:** When running MH TCP, few packets are dropped every second due to no Receive WQEs.	**[Networking Performance]** BS #2038821: WON'T FIX
	Workaround: Use 4K RX queue size: `ethtool -G <intf> rx 4096`	
	Keywords: Performance, MH, WQE	
	Discovered in Version: 22.27.1016	
-	**Description:** After programing firmware in LF, power-cycle must be recovered.	
	Workaround: N/A	
	Keywords: LF	
	Discovered in Version: 22.27.1016	
2029716	**Description:** Software Reset does not work on ConnectX-6 Dx adapter cards.	**[ConnectX FW PCI - Design]** BS #2029716: WON'T FIX **[Host FW - 29.1000 GA Release]**
	Workaround: N/A	
	Keywords: Software Reset	
	Discovered in Version: 22.27.1016	

7 PreBoot Drivers (FlexBoot/UEFI)

7.1 FlexBoot Changes and New Features

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

7.2 UEFI Changes and Major New Features

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

8 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		
	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

Configuration	mlxconfig Parameter Name	Class	TLV ID
	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		
	KEEP_LINK_UP_ON_STANDBY		
NV_QOS_CONF	NUM_OF_VL		0x192

Configuration	mlxconfig Parameter Name	Class	TLV ID
	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		

9 Release Notes History

9.1 Changes and New Feature History

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

Feature/Change	Description
22.35.3502	
PCC Algorithm	Enables the users to collect more information from NP to RP for PCC algorithm. To achieve this, the NP ingress bytes information was added to the RTT response packet sent from the NP side.
HPCC: Support per-IP and per-QP Methods	Enables the user to configure the PCC algorithm shaper coalescing mode using nvconfig to select CC algorithm shaper coalescing for IB and ROCE. The new parameters are `IB_CC_SHAPER_COALESCE` and `ROCE_CC_SHAPER_COALESCE`.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.35.3006	
PCC Algorithm	Enables the users to collect more information from NP to RP for PCC algorithm. To achieve this, the NP ingress bytes information was added to the RTT response packet sent from the NP side.
HPCC: Support per-IP and per-QP Methods	Enables the user to configure the PCC algorithm shaper coalescing mode using nvconfig to select CC algorithm shaper coalescing for IB and ROCE. The new parameters are `IB_CC_SHAPER_COALESCE` and `ROCE_CC_SHAPER_COALESCE`.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.35.2302	
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
22.35.2000	
PCC Algorithm	Enables the users to collect more information from NP to RP for PCC algorithm. To achieve this, the NP ingress bytes information was added to the RTT response packet sent from the NP side.

Feature/Change	Description
22.35.2000	
HPCC: Support per-IP and per-QP Methods	Enables the user to configure the PCC algorithm shaper coalescing mode using nvconfig to select CC algorithm shaper coalescing for IB and ROCE. The new parameters are `IB_CC_SHAPER_COALESCE` and `ROCE_CC_SHAPER_COALESCE`.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/ Change	Description
22.35.1012	
HPCC, Programmable Congestion Control	HPCC related configurations in is now supported via the mlxconfig utility.
UDP	Added support for copy modify header steering action to/from the UDP field.
Range based Lookup	Added support for range based lookup. This new capability is available using the following new PRM command: GENERATE WQE which receives GTA WQE, the command supports "match on range" and num_hash_definer=[1,2] and num_match_ste=[1,2]. For further information, refer to section "RTC Object Format" in the PRM.
RoCE based VM Migration	Added support for RoCE based VM migration.
Resource Dump	Added the following resource dump segments: • SEG_HW_STE_FULL that includes dump to STE and all its dependencies • SEG_FW_STE_FULL that include dump to FW_STE and to HW_STE_FULL in range
Striding WQE - Headroom and Tail-room	As the software requires additional space before and after a packet is scattered for its processing for stridden RQ, the hardware will allocate the required room while scattering packets to spare a copy.
Connections per Second (CPS)	Improved security offload's Connections per Second (CPS) rate using the general object DEK (PSP TLS etc).
VF Migration Flow	Added support for pre-copy commands in VF migration flow in order to reduce the migration downtime.
VF Migration Flow	Optimized performance to support full VF migration flow.
VirtIO vDPA Performance Virtualization	Increased the VirtIO hardware offload message rate to 20/20 MPPS for 256 virtual devices by optimizing the datapath application code.
RoCE: Adaptive Timer	Enabled ADP timer to allow the user to configure RC or DC qp_timeout values lower than 16.
QoS Priority Trust Default State	QoS priority trust default state can now be changed using the new nvconfig below: • QOS_TRUST_STATE_P1 • QOS_TRUST_STATE_P2 The values that can be used to set the default state are: • TRUST_PORT • TRUST_PCP • TRUST_DSCP • TRUST_DSCP_PCP
Bug Fixes	See Bug Fixes section.

22.34.4000	
Bug Fixes	See Bug Fixes section.
22.34.1002	
LLDP Properties Implementation on RDE	Added LLDPEnable, LLDPTransmit and LLDPReceive properties to the RDE Port schema implementation.
PPS Offset	Added a 22 nanosecond of propagation delay to the cable delay of the PPS signal when using PPS out.
Programmable CC, PPCC, MAD, IBCC	Added support for PPCC register with bulk operations, MAD for algorithm configuration and tunable parameters.
Programmable Counters	Added support for programmable counters for PCC via PPCC register and MAD.
RX Rate-limit in Multi-Host	Added support for RX multi-host rate limit using an enabler script.
Queue Counters Allocation	This new capability allows privileged users to allocate queue counters. In this new feature the get_max_qp_cnt_cur_cap() returns a valid value when the UID is with UCTX_CAP_INTERNAL_DEVICE_RESOURCES, otherwise it returns 0.
Bug Fixes	See Bug Fixes section.
22.33.1048	
200Gb/s Throughput on Crypto Capable Devices	Enabled 200Gb/s out-of-the-box throughput on crypto capable devices. **Note:** If any crypto offloads is in use, 200Gb/s throughput can be achieved only after the next firmware reset
VF Migration	Added support for VF migration. The hypervisor can now suspend its VF, meaning from that point the VF cannot perform action such as send/receive traffic or run any command. In this firmware version only the suspend resume mode is supported (on the same VM).
MADs	Added a new MAD of class SMP that has the attributes `hierarchy_Info` as defined in the IB Specification and is used to query the hierarchy information stored on the node and the physical port.
NV Configurations via the Relevant Reset Flow	Added `pci_rescan_needed` field to the MFRL access register to indicate whether a PCI rescan is needed based on the NV configurations issued by the software. **Note:** If the Keep Link Up NV configuration is changed, phyless reset will be blocked.
Precision Time Protocol (PTP)	Added Precision Time Protocol (PTP) support. In this version, the support includes: • 16 PTP SQs only • only 2 ports • only RT clock mode In this version, the following are not supported: • PTP packet drop • PTP SQ on VF **Note:** All PTP SQs must be closed before operating LFWP (life fw patch).
Resource Dump Support for HW Steering	Added support for HW Steering objects dump via resource dump interface. This support includes: STC, RTC, STE, modify argument, and modify pattern.
VF Migration	Added support for VF migration.

ICM Pages	Added a new register (`vhca_icm_ctrl access_reg`) to enable querying and limiting the ICM pages in use.
Steering Definer	Added support for creating a steering definer with a dword selector using `create_match_definer_object` and the `"SELECT"` format.
XRQ QP Errors Enhancements	Enhanced the XRQ QP error information provided to the user in case QP goes into an error state. In such case, QUERY_QP will provide information on the syndrome type and which side caused the error.
HW Steering: WQE Insertion Rules	**[Beta]** Added HW Steering support for the following: • set, add and copy inline STC action • set and copy actions for several fields using modify_pattern object and inline stc modify action • FDB mode in HW steering using FDB_RX and FDB_TX flow table types • ASO flow meter action via STC • flow counter query using ASO WQE • allocation of large bulks for the objects: STE, ASO flow meter and modify argument • jumbo match RTC • count action in STC
Holdover Mode	Added support for holdover mode to comply to SyncE specifications (EEC compliance) to limit the maximum phase transient response upon link loss.
SyncE Enhancements	Added support for noise filtering to comply to the SyncE specifications requirements.
vDPA: Performance	Optimized the performance of virtio including: throughput, QoS, and accuracy of min/ max bandwidth when virtio works with the QoS settings.
vDPA: virtio-net Full Emulation	This new capability reduces the switchover time of creating a virtq from scratch during live migration, by creating the virtq beforehand on the target server. When swithover happens, the pre-created virtq will be used and modified with necessary parameters.
ibstat	Updated the ibstat status reported when the phy link is down. Now `QUERY_VPORT_STATE.max_tx_speed` of UPLINK will not be reported as 0 anymore.
NetworkPort Schema Replacement	Replaced the deprecated NetworkPort schema with Port schema in NIC RDE implementation.
Firmware Steering	Enabled the option to modify the `ip_ecn` field in the packet header in firmware steering.
ZTRCC	Added support for advanced ZTR_RTTCC algorithm based on the Programmable CC platform to achieve better congestion control without dependency on the switch ECN marking.
Dynamic Completion Event Moderation for vDPA	DIM is used to tune moderation parameter dynamically using an mlxreg command. To disable this capability, run: `mlxreg -d /dev/mst/mt41686_pciconf0 --reg_id 0xc00d --reg_len 0x8 -s "0x4.1:1=0x0"`
SW Steering Cache	Modified the TX or RX cache invalidation behavior. TX or RX cache invalidation now does not occur automatically but only when the software performs the sync operation using the using sync_steering command.
Mega Allocations in Bulk Allocator Mechanism	Modified the maximum bulk size per single allocation from `"log_table_size - log_num_unisizes",` to allocate any range size, to remove limitations that HWS objects such as counters and modify arguments might encounter.

Dynamic Flex Parser over a VF	Added support for creating a dynamic flex parser on untrusted function, and changed the flex parser cap for untrusted function to the following: • maximum flex parser node = 2 • maximum dw sample = 4
SNAPI: Comm-Channel	Added support for SNAPI (comm-channel) connection while running on raw ETH link.
Changing all the Crypto Features to Wrapped or Cleartext	Crypto features can be in either wrapped or unwrapped mode. Meaning, the key can be wrapped or in plaintext when running the CREATE_DEK PRM command. To comply with the requirements specified in FIPS publication, all the created DEKs must be wrapped. This feature adds new `NV_CONFIG` per device to control this mode, and enables the user to change all the crypto features to wrapped or cleartext.
ICM Direct Access by the Software to write/modify the DEK Objects	**[Beta]** This new capability enables the software to directly access ICM and write/modify the DEK objects. Such change improves the DEK object update rate by re-using DEK object instead of creating a new one. In addition, added the following: • New for DEK object: `bulk allocation, modify_dek cmd`, and new mode `-sw_wrapped`. • New general object `INT_KEK`
Bug Fixes	See Bug Fixes section.

9.2 Bug Fixes History

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

Internal Ref.	Issue
3650735	**Description:** Fixed a wrong configuration for speed application in DSFP modules.
	Keywords: DSFP modules
	Discovered in Version: 22.35.2000
	Fixed in Release: 22.35.3502
3498482	**Description:** Fixed a single QP performance issue over Socket-Direct setups.
	Keywords: Socket-Direct
	Discovered in Version: 22.35.2000
	Fixed in Release: 22.35.3502
3673153	**Description:** Modified the TCP IPv4 flows so that the steering TIR rx_hash_symmetric field is now valid only when both the SRC and DST fields are not set to zero.
	Keywords: TCP IPv4 flows

Internal Ref.	Issue
	Discovered in Version: 22.35.2000
	Fixed in Release: 22.35.3502

Internal Ref.	Issue
3308132	**Description:** Improved physical layer performance by modifying transmitter parameters that caused link up time issues when connected to few optical cable vendors.
	Keywords: Optical cables, performance
	Discovered in Version: 22.35.1012
	Fixed in Release: 22.35.2302

Internal Ref.	Issue
3217896	**Description:** Fixed RDE PATCH operation status code reported in case the property is "read-only".
	Keywords: RDE
	Discovered in Version: 22.35.1012
	Fixed in Release: 22.35.2000
3241357	**Description:** Fixed an issue in MCTP-over-PCIe, where the VDM message with the type Route-to-Root Complex, the target ID was not set as 0x0.
	Keywords: MCTP-over-PCIe, VDM message
	Discovered in Version: 22.35.1012
	Fixed in Release: 22.35.2000
3215393	**Description:** Fixed an issue that caused the virtual QoS mechanism to stop traffic from reaching the full line rate of 200GbE on each direction when LAG was enabled.
	Keywords: Virtual QoS mechanism, 200GbE, LAG
	Discovered in Version: 22.35.1012
	Fixed in Release: 22.35.2000
3218394	**Description:** Fixed pre-copy issues that occurred when in live migration.
	Keywords: Live migration, pre-copy
	Discovered in Version: 22.35.1012
	Fixed in Release: 22.35.2000

Internal Ref.	Issue
3177699	**Description:** Improved both TP1a compliance and Physical-layer performance. TX and PLL settings were changed to comply with IEEE 802.3bs TP1a and improved link margins.
	Keywords: Performance

Internal Ref.	Issue
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012
3227873	**Description:** Fixed an issue that caused RDE (Redfish) PATCH operation to `LLDPTransmit` properties `"ManagementAddressIPv4", "ManagementAddressIPv6"` and `"ManagementAddressMAC"` to be applied only in the first attempt but failed in the next.
	Keywords: RDE (Redfish) PATCH operation
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012
3172302	**Description:** Fixed an issue that caused the commands sent by the MLNX_OFED driver to the NIC to fail when loading the VirtIO driver.
	Keywords: vDPA, virtio-net full emulation
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012
3180138	**Description:** Enabled the firmware to distribute loopback QPs/SQs between all LAG ports during the initial distribution in steering LAG.
	Keywords: Loopback QPs/SQs
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012
3056546	**Description:** Fixed an issue that due to a firmware limitation, enabling tx_port_ts resulted in syndrome 0x5d2974.
	Keywords: tx_port_ts
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012
3184625	**Description:** Fixed an issue that caused PLDM AEN event receiver media to be changed unexpectedly and destination BDF to be overridden with garbage when some PLDM packet were received from the SMBus layer.
	Keywords: PLDM AEN event receiver media
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012
3194359	**Description:** Fixed PCIe SKP OS generation interval for Gen1 and Gen2.
	Keywords: PCIe SKP
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012
3110378	**Description:** CPU handling synchronization requires separation (run ptp4l with taskset -c [cpu #] prefix) while running heavy traffic.
	Keywords: CPU allocation, PTP synchronization
	Discovered in Version: 22.34.1002
	Fixed in Release: 22.35.1012

Internal Ref.	Issue
3177570	**Description:** Changed the Tx setting for optics HDR to improve compliance margins.
	Keywords: Tx setting, HDR, compliance margins
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.35.1012

Internal Ref.	Issue
3143683	**Description:** Fixed a race over a context which resulted in performance degradation when configured the virtual QoS before bringing the VMs up.
	Keywords: Performance, QoS, VMs, race
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.34.4000
3102126	**Description:** Fixed an issue that caused the NIC to access the host memory when in idle mode.
	Keywords: Idle mode, memory access
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.34.4000
3145335	**Description:** Fixed an issue that caused a fatal assert when the hypervisor was configured with more than 128 VFs per PF when the VF_NODNIC_ENABLE=true.
	Keywords: Hypervisor, VFs, PF, assert
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.34.4000

Internal Ref.	Issue
3021669	**Description:** Added a new NVconfig parameter `“MULTI_PCI_RESOURCE_SHARE”` to support modes that allow choosing the utilization of the card's resources on each host in Socket-Direct / Multi host setup.
	Keywords: Performance
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.34.1002
3059379	**Description:** Added "Command Unsupported" response code in cases when running the MCTP control command "Get Vendor Defined Messages Supported", and there were no supported VDMs.
	Keywords: MCTP control command
	Discovered in Version: 22.30.1004
	Fixed in Release: 22.34.1002
2665773	**Description:** Added 50 Usec delay during PML1 exit to avoid any PCIe replay timer timeout.
	Keywords: PCIe. PML1
	Discovered in Version: 22.33.1048

Internal Ref.	Issue
	Fixed in Release: 22.34.1002
3113812	**Description:** Fixed an issue that caused the `destroy_match_definer` object command to fail after dumping it using `resource_dump`.
	Keywords: Match definer, Resource dump
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.34.1002
3134894	**Description:** Fixed an issue where `set_flow_table_entry` failed when `aso_flow_meter` action was used.
	Keywords: ASO Flow Meter, FW Steering
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.34.1002
3039007	**Description:** Enabled Multi-Host RX Rate-limiter configuration via the QEEC mlxreg and the max_shaper_rate field.
	Keywords: RX Rate-Limiter, Multi-host
	Discovered in Version: 22.33.1048
	Fixed in Release: 22.34.1002

Internal Ref.	Issue
2785026	**Description:** Fixed a rare case that caused the QP not to receive a completion.
	Keywords: QP
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2899540	**Description:** Resolved vDPA traffic unbalance issue in active-backup VF LAG mode.
	Keywords: VDPA, LAG
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2802943	**Description:** Implemented SLD detection code. Surprise Down Error Reporting Capable value was changed from 1 to 0 in boards where the downstream perst was not controlled thus causing SLD detection not to function properly.
	Keywords: SLD detection, Surprise Down Error Reporting Capable
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2900228	**Description:** Fixed an issue that occured after powering off DC in Multi-Host system which resulted in OOB connection to the BMC getting lost (and fatal error appeared) due to a firmware bug in the PCIe flush flow. The issue was fixed by increasing the flush time and not waiting for PCIe credits to return to default values.
	Keywords: PCIe LTSSM, surprise power down

Internal Ref.	Issue
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2373274	**Description:** Fixed a rare HW/FW timing race of serdes' power-up sequence.
	Keywords: Power consumption
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2513453	**Description:** Fixed rare lanes skew issue that caused CPU to timeout in Rec.idle.
	Keywords: PCIe
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2903895	**Description:** Fixed an issue that resulted in temporary packet drops while changing PTP/FCS configuration when the links were up.
	Keywords: PTP/FCS configuration, packet drops
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2932436	**Description:** Optimized the virtio data path to reach line speed for Tx bandwidth.
	Keywords: VDPA, virtio full emulation
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2979683	**Description:** Fixed an issue that resulted in notification indicator mistakenly being reported as FATAL thus, raising false indication.
	Keywords: FATAL error indication
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2951894	**Description:** Fixed bad cache invalidations of destroyed QPs.
	Keywords: destroy_qp
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2907707	**Description:** Fixed a configuration issue which flipped the MSB of Partition Key field in CNP packets and led to P_KEY mismatch between CNP packets and regular packets.
	Keywords: Partition Key, PKEY, CNP, ECN
	Discovered in Version: 22.32.1010
	Fixed in Release: 22.33.1048
2788388	**Description:** Fixed an issue that resulted in wrong port calibration due to incorrect mapping of the port during initialization stage.
	Keywords: Port mapping
	Discovered in Version: 22.32.1010

Internal Ref.	Issue
	Fixed in Release: 22.33.1048

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