



NVIDIA Mellanox ConnectX-6 Lx Adapter Cards Firmware Release Notes v26.28.1002

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Release Notes Update History

Revision	Date	Description
26.28.1002	July 30, 2020	Initial release of this Release Notes version, This version introduces Changes and New Features .

Overview

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

Firmware Download

Please visit www.mellanox.com → Support & Education → Firmware Download

Firmware Compatible Products

These are the release notes for the NVIDIA® Mellanox ConnectX®-6 Lx adapters firmware Rev 26.28.1002. This firmware supports the following protocols:

- Ethernet - 1GbE, 10GbE, 25GbE
- 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.

Supported Devices

This firmware supports the devices and protocols listed below:

Device Part Number	PSID	Device Name	Flex Boot	UEFI x86	UEFI ARM	Enable / disable exprom Feature
MCX63110 2AN-ADA	MT_000 000053 1	ConnectX-6 Lx EN adapter card; 25GbE ; Dual-port SFP28; PCIe 4.0 x8; No Crypto	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
MCX63110 2AC-ADA	MT_000 000053 2	ConnectX-6 Lx EN adapter card; 25GbE ; Dual-port SFP28; PCIe 4.0 x8; Crypto and Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
MCX63110 2AE-ADA	MT_000 000054 5	ConnectX-6 Lx EN adapter card; 25GbE; Dual-port SFP28; PCIe 4.0 x8; Crypto; No Secure Boot	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
MCX63143 2AN-ADA	MT_000 000054 6	ConnectX-6 Lx EN adapter card; 25GbE OCP3.0; With Host management ; Dual-port SFP28; PCIe 4.0 x8; No Crypto; Thumbscrew (Pull Tab) Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
MCX63143 2AC-ADA	MT_000 000054 7	ConnectX-6 Lx EN adapter card; 25GbE OCP3.0; With Host management ; Dual-port SFP28; PCIe 4.0 x8; Crypto and Secure Boot; Thumbscrew (Pull Tab) Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
MCX63143 2AS-ADA	MT_000 000055 1	ConnectX-6 Lx EN adapter card; 25GbE OCP3.0; With Host management ; Dual-port SFP28; PCIe 4.0 x8; Secure Boot; No Crypto; Internal Lock Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
MCX63143 2AE-ADA	MT_000 000055 2	ConnectX-6 Lx EN adapter card; 25GbE OCP3.0; With Host management ; Dual-port SFP28; PCIe 4.0 x8; Crypto; No Secure Boot; Thumbscrew (Pull Tab) Bracket	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists
MCX63110 2AS-ADA	MT_000 000057 5	ConnectX-6 Lx EN adapter card; 25GbE; Dual-port SFP28; PCIe 4.0 x8; Secure Boot; No Crypto;	Present (Enabled)	Present (Enabled)	Present (Enabled)	Exists

Supported Mellanox Cables and Modules

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

Validated and Supported 10GbE Cables

Validated and Supported 25GbE Cables

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

Speed	Cable OPN	Description
25GE	MFA2P10-A007	Mellanox® active optical cable 25GbE, SFP28, 7m
25GE	MFA2P10-A010	Mellanox® active optical cable 25GbE, SFP28, 10m
25GE	MFA2P10-A015	Mellanox® active optical cable 25GbE, SFP28, 15m
25GE	MFA2P10-A020	Mellanox® active optical cable 25GbE, SFP28, 20m
25GE	MFA2P10-A030	Mellanox® active optical cable 25GbE, SFP28, 30m
25GE	MFA2P10-A050	Mellanox® active optical cable 25GbE, SFP28, 50m
25GE	MMA2P00-AS	Mellanox® transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m
25GE	MMA2P00-AS-SP	Mellanox® transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m, single package
25GE	MMA2P00-ASHT	Mellanox® transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, 85c, up to 100m
25GE	MMA2P00-AS_FF	Mellanox® transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m
25GE	SFP25G-A0C03M-TG	Mellanox® customized active optical cable 25GbE, SFP28, 3m, Aqua
25GE	SFP25G-A0C05M-TG	Mellanox® customized active optical cable 25GbE, SFP28, 5m, Aqua
25GE	SFP25G-A0C07M-TG	Mellanox® customized active optical cable 25GbE, SFP28, 7m, Aqua
25GE	SFP25G-A0C10M-TG	Mellanox® customized active optical cable 25GbE, SFP28, 10m, Aqua
25GE	SFP25G-A0C20M-TG	Mellanox® customized active optical cable 25GbE, SFP28, 20m, Aqua
25GE	SFP25G-A0C30M-TG	Mellanox® customized active optical cable 25GbE, SFP28, 30m, Aqua

Supported 3rd Party Cables and Modules

Speed	Cable OPN	Description
10GbE	74752-9096	Dell Active DAC SFP+, Cisco PN SFP-H10GB-CU5M, Molex PN 74752-9096
10GbE	74752-9096 (SFP-H10GB-SU5M)	Cisco-Molex INC Active DAC SFP+ 5m
10GbE	74752-9521	CISCO-MOLEX SFP28/SFP+ 10G Passive copper cable
10GbE	74752-9521 (SFP-H10GB-CU5M)	Cisco 10GBASE SFP+ modules
10GbE	BN-QS-SP-CBL-5M	40G QSFP+ to 4xSFP+ DAC Breakout Direct Attach Cable 5m
10GbE	BN-QS-SP-CBL-5M	40G QSFP+ to 4xSFP+ DAC Breakout Direct Attach Cable 5m
10GbE	CAB-SFP-SFP-1M	Arista 10GBASE-CR SFP+ Cable 1 Meter

Speed	Cable OPN	Description
10GbE	CAB-SFP-SFP-1M	Arista Compatible 10G SFP+ Passive Cable 1m
10GbE	CAB-SFP-SFP-3M	Arista 10GBASE-CR SFP+ Cable 3 Meter
10GbE	CAB-SFP-SFP-5M	Arista 10GBASE-CR SFP+ Cable 5 Meter
10GbE	CAB-SFP-SFP-5M	Arista Compatible 10G SFP+ Passive Cable 5m
10GbE	FTLX1471D3BCL-ME	10GBASE-LR SFP+ 1310nm 10km DOM Transceiver Module
10GbE	FTLX1471D3BCL-ME	10GBASE-LR SFP+ 1310nm 10km DOM Transceiver Module
10GbE	FTLX8570D3BCL-C2	Cisco FET-10G 10-2566-02 FTLX8570D3BCL-C2 10Gbps Fabric Extender SFP+ Module
10GbE	FTLX8571D3BCL-ME	10gb SFP 850nm Optic Transceiver
10GbE	L45593-D178-B50	QSFP-4SFP10G-CU5M
10GbE	SFP-10G-SR	Cisco 10GBASE-SR SFP+ transceiver module for MMF, 850-nm wavelength, LC duplex connector
10GbE	SFP-H10GB-CU1M	Cisco 1-m 10G SFP+ Twinax cable assembly, passive
10GbE	SFP-H10GB-CU3M	Cisco 3-m 10G SFP+ Twinax cable assembly, passive
10GbE	SFP-H10GB-CU5M	Cisco 5-m 10G SFP+ Twinax cable assembly, passive
25GbE	FTLF8536P4BCL	TRANSCEIVER 25GBE SFP SR
25GbE	LTF8507-PC07	HISENSE ACTIVE FIBER CABLE, 25GBE
25GbE	SFP-H25G-CU3M	CISCO 25GBASE-CR1 COPPER CABLE 3-METER NDCCGJ-C403

Tested Switches

Tested 10/40GbE Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
10GbE	N/A	5548UP	32x 10GbE SFP+ Switch System	Cisco
10/40GbE	N/A	7050Q	16 x 40GbE QSFP+ Switch System	Arista
10/40GbE	N/A	7050S	48x 10GbE SFP+ and 4 x 40GbE QSFP+ Switch System	Arista
10/40GbE	N/A	G8264	48x 10GbE SFP+ and 4 x 40GbE QSFP+ Switch System	Lenovo
10/40GbE	N/A	QFX3500	48x 10GbE SFP+ and 4 x 40GbE QSFP+ Switch System	Juniper

Speed	Switch Silicon	OPN # / Name	Description	Vendor
10/40GbE	N/A	S4810P-AC	48x 10GbE SFP+ and 4 x 40GbE QSFP+ Switch System	Force10
10/40GbE	N/A	3064	48x 10GbE SFP+ and 4 x 40GbE QSFP+ Switch System	Cisco
10/40GbE	N/A	8164F	48x 10GbE SFP+ and 2 x 40GbE QSFP+ Switch System	Dell
10/40GbE	N/A	S5000	48x 10GbE SFP+ and 4 x 40GbE QSFP+ Switch System	Dell
10/40GbE	N/A	3132Q	4x 10GbE SFP+ and 32 x 40GbE QSFP+ Switch System	Cisco
40GbE	N/A	7050QX	32x 40GbE QSFP+ Switch System	Arista
40GbE	N/A	G8316	16x 40GbE QSFP+ Switch System	Lenovo
40GbE	N/A	S6000	32x 40GbE QSFP+ Switch System	Dell

Tested 100GbE Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
100GbE	Spectrum-3	MSN4600-XXXX	64-port Non-blocking 100GbE Open Ethernet Switch System	Mellanox
100GbE	Spectrum-2	MSN3700-XXXX	32-port Non-blocking 100GbE Open Ethernet Switch System	Mellanox
100GbE	Spectrum-2	MSN3420-XXXX	48 SFP + 12 QSFP ports Non-blocking 100GbE Open Ethernet Switch System	Mellanox
100GbE	Spectrum	MSN2410-XXXX	48-port 25GbE + 8-port 100GbE Open Ethernet Switch System	Mellanox
100GbE	Spectrum	MSN2700-XXXX	32-port Non-blocking 100GbE Open Ethernet Switch System	Mellanox
100GbE	Spectrum	MSN2740-XXXX	32-port Non-blocking 100GbE Open Ethernet Switch System	Mellanox
100GbE	N/A	QFX5200-32C-32	32-port 100GbE Ethernet Switch System	Juniper
100GbE	N/A	S6820-56HF	48 SFP+ + 8 QSFP Ports 100GbE Switch Ethernet	H3C


Speed	Switch Silicon	OPN # / Name	Description	Vendor
100GbE	N/A	CE6860-1-48S8 CQ-EI	Huawei 100GbE Ethernet switch	Huawei
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	T7032-IX7	32-port 100GbE Ethernet Switch System	Quanta

Tools, Switch Firmware and Driver Software

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
MLNX_OFED	5.1-0.6.6.0
MLNX_EN (MLNX_OFED based code)	5.1-0.6.6.0
WinOF-2	2.50.50000
MFT	4.15.0
MLNX-OS	3.9.0900 onwards
ConnectX-6 Lx Firmware	26.28.1002
Linux Inbox Drivers	<ul style="list-style-type: none"> • RH7.6 • Ubuntu 16.04.05
Windows Inbox Drivers	<ul style="list-style-type: none"> • Windows 2012 • Windows 2012 R2 • Windows 2016

Supported FlexBoot, UEFI

 Please be aware that not all firmware binaries contain FlexBoot or UEFI, support may vary between cards. For further information see [Supported Devices](#).

This firmware version is compiled with the following expansion ROMs and versions:

Expansion ROM	Supported Version
FlexBoot	3.6.101
UEFI	14.21.16



PRM Revision Compatibility

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

- Mellanox Adapters Programmer's Reference Manual (PRM), Rev 0.47 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.

Changes and New Features

Important Notes

-  **Security Hardening Enhancements:** This release contains important reliability improvements and security hardening enhancements. Mellanox recommends upgrading your devices firmware to this release to improve the devices' firmware security and reliability.
-  **SR-IOV - Virtual Functions (VF) per Port -** The maximum Virtual Functions (VF) per port is 127. For further information, see [RoCE Limitations](#).

Changes and New Feature in this Firmware Version

Feature/Change	Description
26.28.1002	
General	This is the initial firmware release of NVIDIA® Mellanox® ConnectX®-6 Lx adapter cards.
PHY-less Reset in PLU	[Beta] Enables the user to reset the firmware without resetting the PHY. The links that were up will stay up, all the other links will be disabled. Note: Currently this capability does not support firmware upgrade and downgrade.
Hardware Tag Matching	Increased the maximum XRQ number to 512.
PTP	Updated the Packet Pacing clock to be in sync with the PTP clock.
PTP	Added support for hardware real time clock by UTC timestamp in PCIE BAR and CQE.
NC-SI 1.2 New Command	Implemented the following new command from NS-SI 1.2 specification: <ul style="list-style-type: none">• Get PF Assignment
Non-Volatile Configurations (NVCONFIG)	Added the following new mlxconfig parameters to the Non-Volatile Configurations section. <ul style="list-style-type: none">• log_max_outstandng_wqe• ece_disable_mask

Unsupported Features and Commands

Unsupported Features


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

- The following service types:
 - SyncUMR
 - Mellanox transport
 - RAW IPv6
- INT-A not supported for EQs only MSI-X
- PCI VPD write flow (RO flow supported)
- Streaming Receive Queue (STRQ) and collapsed CQ
- Subnet Manager (SM) on VFs
- RoCE LAG in Multi-Host/Socket-Direct

Unsupported Commands

- QUERY_MAD_DEMUX
- SET_MAD_DEMUX
- CREATE_RQ - MEMORY_RQ_RMP
- MODIFY_LAG_ASYNC_EVENT

Known Issues

 For a list of older versions' Known Issues that are not listed in this chapter, please refer to the relevant firmware versions Release Notes in <https://docs.mellanox.com/category/adapterfw>.

Ethernet Rate Limit per VF in RoCE Mode Limitations

Dual Port Device				Single Port Device	
w/o LAG (TOTAL_VFS>32)		With LAG (TOTAL_VFS<32)		w/o LAG	
w/o QoS	Full QoS	w/o QoS	Full QoS	w/o QoS	Full QoS
127	45	32	20	127	100

Ethernet Rate Limit per VF in InfiniBand Mode Limitations

Dual Port Device		Single Port Device	
w/o LAG		w/o LAG	
w/o QoS	Full QoS	w/o QoS	Full QoS
127	26	127	55

Known Issues

Internal Ref.	Issue
2245422	Description: When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
	Workaround: N/A
	Keywords: SR-IOV
	Discovered in Version: 26.28.1002
1898198	Description: IPsec offload is not supported in firmware version 26.28.1002.
	Workaround: N/A
	Keywords: IPsec offload
	Discovered in Version: 26.28.1002
2245427	Description: ConnectX-6 Lx does not support Advanced Error Reporting (AER) and Error message sending.
	Workaround: N/A
	Keywords: AER
	Discovered in Version: 26.28.1002

Internal Ref.	Issue
2244412	Description: ConnectX-6 Lx does not support phyless reset.
	Workaround: N/A
	Keywords: Phyless reset
	Discovered in Version: 26.28.1002
2199939	Description: ConnectX-6 Lx supports up to 2w transceivers.
	Workaround: N/A
	Keywords: Transceivers
	Discovered in Version: 26.28.1002
2199939	Description: High linkup time may be experienced when connecting to an H3C switch using 25GbE\50GbE\100GbE link speeds.
	Workaround: N/A
	Keywords: Linkup time, switch
	Discovered in Version: 26.28.1002
2200443	Description: On very rare occasions, a raw BER of 10e-12 might be experienced.
	Workaround: N/A
	Keywords: Raw BER
	Discovered in Version: 26.28.1002
2201468	Description: Running multiple resets ("mlxfwreset --sync=1") simultaneously is not functioning properly,
	Workaround: Wait a few seconds until you run "mlxfwreset --sync=0".
	Keywords: mlxfwreset, reset-sync, reset, sync
	Discovered in Version: 26.28.1002
2245038	Description: TCP/IP traffic received by the guest kernel with version higher than 4.10 is unstable because of corrupted GSO header. The following message can be seen from dmegs: "bad gso: type: xx, size: xxxx".
	Workaround: N/A
	Keywords: vDPA offload, GSO header
	Discovered in Version: 26.28.1002
2224993	Description: The timestamp in CQE of LRO timeout packets will use free running clock even when the UTC is configured.

Internal Ref.	Issue
	Workaround: N/A
	Keywords: PTP
	Discovered in Version: 26.28.1002
2224507	Description: mstflint is currently not in ConnectX-6 Lx adapter cards.
	Workaround: N/A
	Keywords: mstflint
	Discovered in Version: 26.28.1002

PreBoot Drivers (FlexBoot/UEFI)

FlexBoot Changes and New Features

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

UEFI Changes and Major New Features

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

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_DESCRIPTOR_S		
	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_DESCRIPTOR_S		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

Configuration	mlxconfig Parameter Name	Class	TLV ID
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
	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		

Configuration	mlxconfig Parameter Name	Class	TLV ID
	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
	NUM_OF_TC		
	NUM_OF_PFC		
NV_MPF5_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		

Configuration	mlxconfig Parameter Name	Class	TLV ID
	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		

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