



# Mellanox UEFI for ConnectX<sup>®</sup>-4 / ConnectX<sup>®</sup>-4 Lx / ConnectX<sup>®</sup>-5 Release Notes

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Rev 14.15.19

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## Release Update History

*Table 1 - Release Update History*

Release	Date	Description
Rev 14.15.19	March 11, 2018	Initial release of this UEFI version for ConnectX-4/ConnectX-4 Lx/ConnectX-5 adapter cards.

# 1 Overview

Mellanox UEFI Network driver is compliant to UEFI specification version 2.5 and allows boot over network via PXE (Preboot eXecution Enviroment). This network driver allows remote boot over Infiniband or Ethernet, or Boot over iSCSI (Bo-iSCSI) in UEFI mode, together with supporting SecureBoot standard.

## 1.1 Supported Adapter Cards and Firmware

*Table 2 - Supported Adapter Cards and Firmware*

Adapter Cards	Firmware Version
ConnectX-5 Ex	16.22.1002
ConnectX-5	16.22.1002
ConnectX-4 Lx	14.22.1002
ConnectX-4	12.22.1002

## 1.2 Supported Tools (MFT)

*Table 3 - Supported Tools (MFT)*

Tools	Version
MFT (Mellanox Firmware Tools)	4.9.0

## 1.3 Package Contents

UEFI packages contain UEFI rom files per device type.

## 2 Changes and New Features in Rev 14.15.19

**Table 4 - Changes and New Features**

Category	Description
<b>Enable/Disable UEFI in EXPROM via mlxconfig</b>	<p>Added UEFI support to additional ConnectX-4/ConnectX-4 Lx/ConnectX-5 adapter cards.</p> <ul style="list-style-type: none"> <li>• ConnectX-4 adapter cards are compiled with x86-UEFI and Arm-UEFI<sup>a</sup></li> <li>• ConnectX-4 Lx adapter cards are compiled with x86-UEFI and Arm-UEFI<sup>a</sup></li> <li>• ConnectX-5 adapter cards are compiled with x86-UEFI<sup>a</sup></li> </ul> <p>Enabling/Disabling UEFI in ConnectX-4/ConnectX-4 Lx/ConnectX-5 in EXPROM is done via mlxconfig. The default values are:</p> <ul style="list-style-type: none"> <li>• UEFI_X86 disabled</li> <li>• UEFI_AARCH64 disabled</li> </ul> <p><b>Note:</b> The values above can be set only in adapter cards that support this capability. For further information on how to enable/disable UEFI, refer to section <i>Enabling/Disabling FlexBoot/UEFI in EXPROM via mlxconfig</i> in the Mellanox PreBoot Drivers (FlexBoot &amp; UEFI) User Manual.</p>

a. Please note, not all cards are compiled with UEFI. For the full list of the OPNs compiled with the new UEFI capability, please refer to the firmware Release Notes

### 2.1 Installed UEFI APIs (Protocols)

The following are the lists of UEFI APIs (protocols) installed over UEFI:

- Driver handle:
  - EFI Component name Protocol
  - EFI Component name 2 Protocol
  - EFI Diagnostics Protocol
  - EFI Diagnostics 2 Protocol
  - EFI Driver Health Protocol
- PCI controller handle:
  - EFI Driver binding protocol (driver start, stop, supported) installed by system UEFI on handle
- Port handle (child handle to PCI controller handle, one handle per port):
  - EFI Device Path Protocol
  - EFI Network Interface Identifier Protocol (UNDI)

### 3 Known Issues

The following is a list of general limitations and known issues of the various components of this UEFI release.

**Table 5 - Known Issues**

Internal Ref.	Description
1323188	<b>Description:</b> In ConnectX-4 Lx adapter cards, the Virtual LAN Mode and the Virtual LAN ID settings are missing from the HII menu.
	<b>Workaround:</b> Configure the Virtual LAN Mode and the Virtual LAN ID via the mlx-config tool
	<b>Keywords:</b> Virtual LAN Mode, Virtual LAN ID, HII
	<b>Discovered in Version:</b> 14.15.19
1295727	<b>Description:</b> In Secure Host mode, the Hii protocol will be “read only”, changes will not be applied and it may cause unknown behavior.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> Secure Host mode, Hii protocol
	<b>Discovered in Version:</b> 14.15.19
798073	<b>Description:</b> UEFI driver is not supported on Supermicro X9DEW (BIOS version 3.0c).
	<b>Workaround:</b> N/A
	<b>Keywords:</b> BIOS, Supermicro X9DEW
-	<b>Description:</b> Burning the UEFI driver will remove the Flexboot driver (Legacy BIOS driver) from the firmware.
	<b>Workaround:</b> As of firmware ConnecX-4/Lx/5 v12/14/16.22.1002, UEFI is pre compiled for various adapter cards and can be enabled using mlxconfig. For the full list of OPNs supporting this new capability, see firmware Release Notes.
	<b>Keywords:</b> UEFI burning, Flexboot



## 4 Bug Fixes History

*Table 6 - Fixed Bugs List*

Internal Ref.	Description
-	<b>Description:</b> Fixed an issue which limited the Number of Virtual Functions Supported to 126 after restore to default.
	<b>Keywords:</b> Number of Virtual Functions Supported
	<b>Discovered in Release:</b> 14.11.28
	<b>Fixed in Release:</b> 14.12.20
-	<b>Description:</b> Fixed Hii ExtractConfig to handle <ConfigHdr> without <BlockName>
	<b>Keywords:</b> Hii ExtractConfig
	<b>Discovered in Release:</b> 14.10.16
	<b>Fixed in Release:</b> 14.11.28
827564	<b>Description:</b> Enabled a persistent virtual MAC reboot.
	<b>Keywords:</b> MAC reboot
	<b>Discovered in Release:</b> 14.10.16
	<b>Fixed in Release:</b> 14.11.28

## 5 Changes and New Feature History

**Table 7 - Changes and Fixes History**

Category	Description
<b>Rev. 14.14.22</b>	
<b>Client Identifier</b>	Added support for client_identifier option (option 61) in InfiniBand mode.
<b>HII menu</b>	Added the option to Enable/Disable HII Configuration via mlxconfig.
<b>Rev. 14.13.24</b>	
<b>Secure Firmware Update</b>	Integrated the MFT package to support Secure Firmware Update image.
<b>HII menu</b>	Added HII Power Configuration menu.
<b>Rev. 14.12.24</b>	
<b>Networking</b>	Ethernet only: The MTU value is set to 1500 upon driver bring up.
<b>General</b>	Updated the supported EFI version to 2.6.
<b>Rev. 14.12.20</b>	
<b>Adapter Cards</b>	<b>[Beta]</b> Added support for ConnectX-5/ConnectX-5 Ex adapter cards.
<b>Boot performance</b>	Boot performance improvements. Enabled post Tx doorbell using UAR.
<b>Rev. 14.11.28</b>	
<b>Boot</b>	Enabled booting with non default pkey in InfiniBand mode
	Added boot to target configuration
<b>Platform to driver protocol</b>	Added the option to return EfiPlatformConfigurationActionUnsupportedGuid in case the GUID is not supported
<b>Driver Health</b>	Updated the DriverHealth behavior to comply with the UEFI spec
<b>Diagnostics protocol</b>	Deprecated Extented Diagnostics (return unsupported)
<b>Rev. 14.10.16</b>	
<b>Boot over IPv4 and IPv6</b>	Enabled network boot via PXE over IPv4 and IPv6
<b>Device Diagnosis</b>	Enables the driver to run self diagnostics tests via Diagnostics protocol
<b>Firmware Management</b>	Enables the driver to manage firmware using Firmware Management Protocol (FMP)
<b>Secure Boot</b>	The UEFI driver is signed and complied with SecureBoot standard

## 6 Verification

This version of the UEFI passed UEFI SCT version 2.4B.

### 6.1 SCT Known Issues

- DriverModelTest\AdapterInformationProtocolTest 5.5.11.1.2
- DriverModelTest\AdapterInformationProtocolTest 5.5.11.3.2
- NetworkSupportTest\SimpleNetworkProtocolTest 5.11.1.8.3