



# Mellanox ConnectX-4/ConnectX-5 NATIVE ESXi Driver for VMware vSphere 6.7 Release Notes

Rev. 4.17.70.1

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## Release Notes Update History

Revision	Date	Description
4.17.70.1	April 21, 2020	Initial release of this Release Notes version.

# 1 Overview

These are the release notes of Mellanox ConnectX-4/ConnectX-5 NATIVE ESXi Driver for VMware vSphere 6.7. Mellanox ConnectX-4/ConnectX-5 NATIVE ESXi Driver for VMware vSphere 6.7 supports the following uplinks to servers.

Version	OS	Uplink Speed
4.17.70.1	ESXi 6.7, ESXi 6.7 U1	10/25/40/50/100GbE

## Content of MLNX-NATIVE-ESX Driver Package

### ESXi 6.7:

Mellanox-nmlx5\_4.17.70.1-1OEM.670.0.0.8169922-16089850.zip - Hypervisor bundle for ESXi 6.7 contains the following kernel modules:

- nmlx5\_core
- nmlx5\_rdma

### 1.1 Supported HCAs Firmware Versions

MLNX-NATIVE-ESX Rev 4.17.70.1 supports the following Mellanox Ethernet HCA and their corresponding firmware version:

HCAs	Minimal Recommended Firmware Rev.
ConnectX-4	12.27.1016
ConnectX-4 Lx	14.27.1016
ConnectX-5 / ConnectX-5 Ex	16.27.2008
ConnectX-6	20.27.2008
ConnectX-6 Dx	22.27.2008

For the latest firmware versions, visit: <https://www.mellanox.com/support/firmware/firmware-downloads>

## 1.2 Tested Hypervisors in Paravirtualized and SR-IOV Environments

Tested Hypervisors	HCAs	Guest Operating System
SR-IOV	ConnectX-4	Windows Server 2016 DC
	ConnectX-4 Lx	RedHat 8.0
	ConnectX-5/ConnectX-5 Ex	RedHat 7.5
	ConnectX-6	RedHat 7.3
	ConnectX-6 Dx	RedHat 6.10
		RedHat 6.3
		SLES 12 SP4
SLES 12 SP3		
Paravirtualized <sup>a</sup> (Ethernet Only)	ConnectX-4	Windows Server 2016 DC
	ConnectX-4 Lx	RedHat 8.0
	ConnectX-5/ConnectX-5 Ex	RedHat 7.5
		RedHat 7.3
	ConnectX-6	RedHat 6.10
		RedHat 6.3
SLES 12 SP4		
ConnectX-6 Dx	SLES 12 SP3	

a. Paravirtualized RDMA is supported only in Linux Operating Systems and in this release it was tested for RedHat 7.5 only.

## 2 Changes and New Features

Feature/Change	Description
<b>4.17.70.1</b>	
Power Limitation	Disabled the option of shutting down the link due to power limitation.
Differentiated Services Code Point (DSCP)	Added support for trusting Differentiated Services Code Point (DSCP) and setting default value for RoCE traffic.
SR-IOV VF Counters	Added a new counter that enables the user to query per Virtual Function counters.
RX Counters	Added the RX out-of-buffer counter to indicate any lack of software receive buffers.
RoCE, RDMA	Added a module parameter to enforce specific RoCE version.
SR-IOV	SR-IOV InfiniBand is at beta level.

### 3 Bug Fixes in the Version

The table below lists the bugs fixed in this release. For older issues, please refer to [Bug Fixes History](#).

Internal Ref.	Description
1677627	<p><b>Description:</b> IPv6 as inner packet is not supported by VMWare yet. This capability will be added in next NSX-T release.</p> <p><b>Keywords:</b> ENS, IPv6, Geneve</p> <p><b>Discovered in Version:</b> 4.17.15.16</p> <p><b>Fixed in Release:</b> 4.17.70.1</p>
1668029	<p><b>Description:</b> There is no Geneve traffic on NSX-T 2.3 when DVS is in standard (non- ENS) mode.</p> <p><b>Keywords:</b> ENS, Geneve</p> <p><b>Discovered in Version:</b> 4.17.15.16</p> <p><b>Fixed in Release:</b> 4.17.70.1</p>
781277	<p><b>Description:</b> The "esxcli network sriovnic vf stats" command is not supported.</p> <p>When running this command on a vmknic, a failure message is displayed.</p> <p><b>Keywords:</b> esxcli SR-IOV</p> <p><b>Discovered in Version:</b> 4.17.13.8</p> <p><b>Fixed in Release:</b> 4.17.70.1</p>

## 4 Known Issues

The following is a list of general limitations and known issues of the various components of this MLNX-NATIVE-ESX release.

Internal Ref.	Description
2139652	<b>Description:</b> SRI-OV is not supported while ENS is enabled.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> SRI-OV, ENS
	<b>Discovered in Version:</b> 4.17.70.1
2120216	<b>Description:</b> The maximum number of established active RDMA connections (QPs) is currently 5000.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> QPs, RDMA
	<b>Discovered in Version:</b> 4.17.70.1
2125202	<b>Description:</b> ENS is currently not supported in ConnectX-6 Dx adapter cards.
	<b>Workaround:</b> Use non ENS DVS for ConnectX-6 Dx cards.
	<b>Keywords:</b> ENS
	<b>Discovered in Version:</b> 4.17.70.1
2130911	<b>Description:</b> Setting ETS value to 0 may cause WQE timeout.
	<b>Workaround:</b> Set ETS value of 1 instead of 0.
	<b>Keywords:</b> ETS, QOS
	<b>Discovered in Version:</b> 4.17.70.1

Internal Ref.	Description
1671303	<p><b>Description:</b> A PSOD may occur during vMotion over ENS VMK. This issue is pending VMWare investigation.</p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> ENS, vMotion</p> <p><b>Discovered in Version:</b> 4.17.15.16</p>
1682956	<p><b>Description:</b> During ENS uplink detachment from the ENS DVS, the below error message regarding the queue still being allocated or that the requested queue is not in use may appear.</p> <p><i>“Driver covers for OS issue and the messages are for information only.”</i></p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> ENS, queue</p> <p><b>Discovered in Version:</b> 4.17.15.16</p>
1712298	<p><b>Description:</b> Live unload of the driver is not supported. Doing so may cause a PSOD if the max_vfs parameter is set.</p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> Driver load</p> <p><b>Discovered in Version:</b> 4.17.15.16</p>
1446060	<p><b>Description:</b> Although the max_vfs module parameter range is "0-128", due to firmware limitations, the following are the supported VFs per single port devices:</p> <ul style="list-style-type: none"> <li>• ConnectX-4 / ConnectX-5: up to 127</li> </ul> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> SR-IOV, VFs per port</p>

Internal Ref.	Description
	<b>Discovered in Version:</b> 4.17.14.2
1340275	<p><b>Description:</b> ECN tunable parameter initialAlphaValue for the Reaction Point protocol cannot be modified.</p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> nmlx5 ecn nmlxcli</p> <p><b>Discovered in Version:</b> 4.17.13.8</p>
1340255	<p><b>Description:</b> ECN statistic counters accumulatorsPeriod and ecnMarkedRocePackets display wrong values and cannot be cleared.</p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> nmlx5 ecn nmlxcli</p> <p><b>Discovered in Version:</b> 4.17.13.8</p>
-	<p><b>Description:</b> The hardware can offload only up to 256B of headers.</p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> Hardware offload</p> <p><b>Discovered in Version:</b> 4.17.13.8</p>
858972	<p><b>Description:</b> Setting the "Allow Guest MTU Change" option in vSphere Client is currently not functional. Although guest MTU changes in SR-IOV are allowed, they do not affect the port's MTU and the guest's MTU remains the same as the PF MTU.</p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> MTU, SR-IOV</p>

Internal Ref.	Description
746100	<b>Description:</b> The 'esxcli mellanox uplink link info -u <vmnic_name>' command reports the 'Auto negotiation' capability always as 'true'.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> 'Auto negotiation' capability
1068621	<b>Description:</b> SMP MADs (ibnetdiscover, sminfo, iblinkinfo, smpdump, ibqueryerr, ibdiagnet and smpquery) are not supported on the VFs.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> SMP MADs
778371	<b>Description:</b> Wake-on-LAN does not notify when invalid parameters are provided.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> WoL
778572	<b>Description:</b> Nested ESXi might not function properly.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> Nested ESXi
765008	<b>Description:</b> Device RSS fails to hash traffic to sufficient RX rings with Broadcast traffic.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> RSS, RX rings
852883	<b>Description:</b> In stress condition 'Watchdog' may appear, leading to uplink going up and down.
	<b>Workaround:</b> N/A

Internal Ref.	Description
	<b>Keywords:</b> uplink, watchdog

## 5 Bug Fixes History

The table below lists the bugs fixed in this release.

Internal Ref.	Description
1358381	<b>Description:</b> Fixed an issue that prevented ESXi from being discovered via the CDP protocol on ConnectX-4 Lx adapter cards.
	<b>Keywords:</b> CDP protocol, ConnectX-4 Lx
	<b>Discovered in Release:</b> 4.17.13.8
	<b>Fixed in Release:</b> 4.17.14.2