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Mellanox ConnectX-4 NATIVE ESXi Driver for VMware vSphere 5.5/6.0 Release Notes

Rev 4.15.5.10/4.5.5.10

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Release Update History

Table 1 - Release Update History

Release	Date	Description
Rev 4.15.5.10/ 4.5.5.10	July, 2016	Initial release of this MLNX-NATIVE-ESXi-ConnectX-4 version

1 Overview

These are the release notes of Mellanox ConnectX-4 NATIVE ESX Driver for VMware vSphere 5.5/6.0. Mellanox ConnectX-4 NATIVE ESX Driver for VMware vSphere 5.5/6.0 supports the following uplinks to servers

Table 2 - Supported Uplinks to Servers

Version	OS	Uplink Speed
4.5.5.10	ESXi 5.5 U1	10/40GbE
4.15.5.10	ESXi 6.0, ESXi 6.0 U1	10/40GbE
	ESXi 6.0 U2	10/25/40/50GbE

1.1 Content of MLNX-NATIVE-ESX-ConnectX-4 Package

The MLNX-NATIVE-ESX-ConnectX-4 driver package is distributed as an offline bundle (.zip file) and contains:

- **ESXi 5.5:**
MLNX-NATIVE-ESX-ConnectX-4-4.5.5.10-10EM-550.0.0.1391871.zip - Hypervisor bundle for ESXi 5.5 contains the following kernel modules:
 - nmlx5_core (Mellanox Technologies Ethernet driver)
- **ESXi 6.0:**
MLNX-NATIVE-ESX-ConnectX-4-4.15.5.10-10EM-600.0.0.2768847.zip - Hypervisor bundle for ESXi 6.0 contains the following kernel modules:
 - nmlx5_core (Mellanox Technologies Ethernet driver)

1.2 Supported HCAs Firmware Versions

MLNX-NATIVE-ESX-ConnectX-4 Rev 4.15.5.10/4.5.5.10 supports the following Mellanox Ethernet HCA:

Table 3 - Supported HCAs Firmware Versions

HCAs	Recommended Firmware Rev.
ConnectX-4	12.16.1006
ConnectX-4 Lx	14.16.1006

Please note that older firmware versions were not tested with this release.

For the latest firmware versions, visit:

- http://www.mellanox.com/page/vmware_matrix
- or
- <http://www.mellanox.com/supportdownloader/>

2 Changes and New Features in Rev 4.15.5.10/4.5.5.10

Table 4 - Changes and New Features

Feature/Change	Description
General	Added support for up to 8 ConnectX-4 Lx ports and up to 16 VFs. For further information, refer to the User Manual
SR-IOV	Added SR-IOV support for ESXi 5.5
Bug Fixes	See Section 4, “Bug Fixes History” , on page 10

3 Known Issues

The following is a list of general limitations and known issues of the various components of this MLNX-NATIVE-ESX-ConnectX-4 release.

Table 5 - Known Issues

Internal Ref.	Description
-	Description: This driver support Ethernet cards only, VPI cards can be configured as Ethernet only mode when burning the firmware. For further information on firmware burning, please refer to the MFT User Manual. (www.mellanox.com > Products > Software > InfiniBand/VPI Drivers > Firmware Tools)
	WA: N/A
	Keywords: Protocols, InfiniBand, Ethernet
-	Description: Multicast and IPv6 traffic might be unstable over SR-IOV.
	WA: N/A
	Keywords: SR-IOV, IPv6, Multicast
656416	Description: Reboot is required after any SR-IOV configuration change.
	WA: N/A
	Keywords: SR-IOV
670046	Description: The maximum number of Virtual Functions currently supported in SR-IOV is 10.
	WA: N/A
	Keywords: SR-IOV, VF
653679	Description: Firmware VF configuration must be N+1 (while N is the required VF number). For example: If your configuration requires 10 VFs, the firmware must be set to support 11 VFs (ESXi 6.0 Limitation).
	WA: N/A
	Keywords: VFs
641252	Description: Driver specific statistics are not supported in ESXi 5.5.
	WA: N/A
	Keywords: ESXi 5.5, Statistics
689573	Description: When SR-IOV is enabled and the <code>max_vfs</code> is not equal to 0, new filters are not applied.
	WA: N/A
	Keywords: SR-IOV, filters

Table 5 - Known Issues

Internal Ref.	Description
676293	Description: After the initial driver installation, the driver may fail to load the first PCI device.
	WA: Cold boot the machine.
	Keywords: PCI device, initial driver installation
745415	Description: On ESXi5.5 – when using a server with many ConnectX-4 / ConnectX-4 Lx ports, some of the interfaces do not show up in the <code>esxcfg-nics -l</code> list. This can occur if no MSI-X resources are available to enable loading all interfaces.
	WA: Reduce the MSI-X resources consumed by each ConnectX-4 / ConnectX-4 Lx interface as follows: <ul style="list-style-type: none"> • After installing MFT on the server, run: <code>/opt/mellanox/bin/mlxconfig -d mt411Y_pciconfX set NUM_PF_M-SIX=16</code> • Cold boot the machine Note: To print a list of Mellanox devices in the format of <code>mt411Y_pciconfX</code> , please run: <code>/opt/mellanox/bin/mst status</code>
	Keywords: ESXi5.5, port interfaces, MSI-X
	778371
WA: N/A	
Keywords: WoL	
778572	Description: Nested ESXi might not function properly.
	WA: N/A
	Keywords: Nested ESXi
765008	Description: Device RSS fails to hash traffic to sufficient RX rings with Broadcast traffic.
	WA: N/A
	Keywords: RSS, RX rings

4 Bug Fixes History

Table 6 lists the bugs fixed in this release.

Table 6 - Fixed Bugs List

Internal Ref.	Issue
781255	Description: Added a new module parameter to nmlx5_core "supported_num_ports" to support up to "8" ConnectX-4 Lx ports.
	Keywords: Ports, module param
	Discovered in Release: 4.15.4.1000/4.5.2.1000
	Fixed in Release: 4.15.5.10/4.5.5.10
745415/760021	Description: Fixed an issue which prevented the driver to load on machines with 64 or more CPU cores.
	Keywords: MSI-X
	Discovered in Release: 4.15.4.1000/4.5.2.1000
	Fixed in Release: 4.15.4.1100/4.5.4.1100
-	Description: Fixed an issue which caused duplicate speed display in esxcli.
	Keywords: Speed, esxcli
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000
-	Description: Fixed a cable type prompt in esxcli and management interface.
	Keywords: Cable type, esxcli and management interface
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000
670523	Description: Fixed an issues which prevented setting a VLAN range in a portgroup in NICs with SR-IOV enabled.
	Keywords: SR-IOV
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000
684908	Description: Fixed an issue which caused traffic loss between PV and SR-IOV interfaces.
	Keywords: SR-IOV
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000

Table 6 - Fixed Bugs List

Internal Ref.	Issue
628562	Description: Fixed an issue which caused traffic loss over SR-IOV interfaces after number of iterations.
	Keywords: SR-IOV
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000
688287	Description: Fixed an issue which caused multicast IPv6 traffic loss over PV interfaces.
	Keywords: SR-IOV
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000
688181	Description: Fixed an issue which caused the VF to use the PF ACL tables instead of its own ACL tables.
	Keywords: SR-IOV
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000
689462	Description: Fixed speeds issues in the Management Interface.
	Keywords: Management Interface
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000
-	Description: Fixed media types issues in the Management Interface.
	Keywords: Management Interface
	Discovered in Release: 4.15.3.1008/4.5.1.1008
	Fixed in Release: 4.15.4.1000/4.5.2.1000

5 Change Log History

Table 7 - Change Log History

Release	Category	Description
4.15.4.1100/ 4.5.2.1100	Bug Fixes	See Section 4, “Bug Fixes History” , on page 10
4.15.4.1000/ 4.5.2.1000	RX/TX Ring Resize	<ul style="list-style-type: none"> • RX/TX Ring Resize: Allows the network administrator to set new RX\TX ring buffer size.
4.15.3.1008/ 4.5.1.1008	Virtualization	<ul style="list-style-type: none"> • VXLAN Hardware Stateless Offloads for ConnectX®-4: VXLAN hardware offload enables the traditional offloads to be performed on the encapsulated traffic. • SR-IOV (Beta level): Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus. Note: SR-IOV is currently supported in ESXi 6.0 only. • NetDump: Enables a host to transmit diagnostic information via the network to a remote netdump service, which stores it on disk. Network-based coredump collection can be configured in addition to or instead of disk-based coredump collection. • NetQueue: NetQueue is a performance technology in VMware ESXi that significantly improves performance in 10 Gigabit Ethernet virtualized environments.
	Host Management	<ul style="list-style-type: none"> • Bad cable reporting: Note: Bad cable reporting is currently supported in ESXi 6.0 only. • Driver version reporting: Note: Driver version reporting is currently supported in ESXi 6.0 only. • WoL: Allows a network administrator to remotely power on a system or to wake it up from sleep mode
	Management Interface	<ul style="list-style-type: none"> • Management Interface: Note: Management is currently supported in ESXi 6.0 only.