



# Ubuntu 17.10 Driver Release Notes

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Ubuntu 17.10

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# 1 Overview

These are the release notes of Ubuntu 17.10 Driver Release Notes. This document provides instructions on drivers for Mellanox Technologies ConnectX® based adapter cards with Ubuntu 17.4 Inbox Driver environment.

This version supports the following uplinks to servers:

**Table 1 - Supported Uplinks to Servers**

Uplink/HCAs	Uplink Speed	Supported Driver
ConnectX®-5	<ul style="list-style-type: none"> <li>InfiniBand: SDR, QDR, FDR, FDR10, EDR</li> <li>Ethernet: 1GigE, 10GigE, 25GigE, 40GigE, 50GigE, 56GigE<sup>a</sup>, and 100GigE</li> </ul>	mlx5_core (includes the ETH functionality as well), mlx5_ib
ConnectX®-4	<ul style="list-style-type: none"> <li>Ethernet: 1GigE, 10GigE, 25GigE, 40GigE, 50GigE, 56GigE<sup>a</sup>, and 100GigE</li> </ul>	mlx5_core (includes the ETH functionality as well), mlx5_ib
ConnectX®-4 Lx	<ul style="list-style-type: none"> <li>Ethernet: 1GigE, 10GigE, 25GigE, 40GigE, and 50GigE</li> </ul>	mlx5_core (includes the ETH functionality as well)
Connect-IB®	<ul style="list-style-type: none"> <li>InfiniBand: SDR, QDR, FDR10, FDR</li> </ul>	mlx5_core, mlx5_ib
ConnectX®-3/ ConnectX®-3 Pro	<ul style="list-style-type: none"> <li>InfiniBand: SDR, QDR, FDR10, FDR</li> <li>Ethernet: 10GigE, 40GigE and 56GigE<sup>a</sup></li> </ul>	mlx4_core, mlx4_en, mlx4_ib
ConnectX®-2	<ul style="list-style-type: none"> <li>InfiniBand: SDR, DDR</li> <li>Ethernet: 10GigE, 20GigE</li> </ul>	mlx4_core, mlx4_en, mlx4_ib

a. 56GbE is a Mellanox propriety link speed and can be achieved while connecting a Mellanox adapter cards to Mellanox SX10XX switch series or connecting a Mellanox adapter card to another Mellanox adapter card.

## 1.1 Supported HCAs Firmware Versions

Driver Ubuntu 17.10 supports the following Mellanox network adapter cards firmware versions:

**Table 2 - Supported HCAs Firmware Versions**

HCA	Recommended Firmware Rev.	Additional Firmware Rev. Supported
Connect-IB®	10.16.1020	N/A
ConnectX®-5	16.21.1000	N/A
ConnectX®-4 Lx	14.21.1000	N/A
ConnectX®-4	12.21.1000	N/A
ConnectX®-3 Pro	2.42.5000	N/A
ConnectX®-3	2.42.5000	N/A
ConnectX®-2	2.9.1000	N/A

## 1.2 SR-IOV Support

**Table 3 - SR-IOV Support**

Driver	Support
mlx4_core, mlx4_en, mlx4_ib	Technical Preview <sup>a</sup>
mlx5_core (includes ETH functionality), mlx5_ib	Technical Preview <sup>a</sup>

a. Technical Preview is not fully supported production feature.

## 1.3 RoCE Support

**Table 4 - RoCE Support**

Driver	Support
mlx4 - RoCE v1/v2	Yes
mlx5 - RoCE v1/v2	Yes

## 1.4 VXLAN Support

**Table 5 - VXLAN Support**

Driver	Support
mlx4 - VXLAN offload	Yes
mlx5 - VXLAN offload	Yes (without RSS)

## 1.5 Open vSwitch Hardware Offloads Support

**Table 6 - Open vSwitch Hardware Offloads Support**

Driver	Support
mlx4	No
mlx5	Technical Preview <sup>a</sup>

a. Technical Preview is not fully supported production feature.

## 2 Changes and New Features

**Table 7 - Changes and New Features**

Feature/ Change	Description	
mlx5	On Demand Paging	Added On-Demand-Paging (ODP), a technique to alleviate much of the shortcomings of memory registration.
	Multiprotocol Label Switching (MPLS) Tagged Packets Classification	Enabled packet flow steering rules with IPv4/IPv6 classification (for raw packet QP (DPDK) only) to work on IPv4/IPv6 over MPLS (Ethertype 0x8847 and 0x8848) encapsulated packets.
	RoCE Diagnostics and ECN Counters	Added support for additional RoCE diagnostics and ECN congestion counters under the <code>/sys/class/infiniband/mlx5_0/ports/1/hw_counters/</code> directory. For further information, refer to the Understanding mlx5 Linux Counters and Status Parameters Community post.
	Support 4K User Access Regions (UAR)	Allows a more efficient use of device memory mapped I/O as UAR (User Access Region) Each process requires an area from the device memory in order to trigger operations on the device such as sending a message to the wire. This area is taken from the memory covered by BAR0-1 of the device. This kind of memory is called UAR. This feature will make more efficient use of this area allowing more processes to run concurrently. The effect is especially significant on PPC machines since they use 64KB for a system page.
	SR-IOV Bandwidth Share for Ethernet/RoCE	Added the ability to guarantee the minimum rate of a certain VF in SR-IOV mode.

### 3 Known Issues

The following table describes known issues in this release and possible workarounds..

**Table 8 - Known Issues**

Internal Ref.	Description
1166481	<b>Description:</b> TSO is not working as expected in mlx4/mlx5 drivers.
	<b>Workaround:</b> Disable GSO and then enable TSO
	<b>Keywords:</b> TSO
1166489	<b>Description:</b> On rare occasions, ConnectX-3 linkup takes longer than expected, thus resulting in delay of link-local address generation and DHCP client failure.
	<b>Workaround:</b> Add ll-attempts 120 to the network interface configuration file.
	<b>Keywords:</b> IPv6 address, VLAN, ifdown/ifup interface
868039	<b>Description:</b> ConnectX®-4 100GbE Multi-thread TCP throughput performance degradation might occur.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> ConnectX®-4, performance, TCP throughput