



# Ubuntu 17.04 Inbox Driver Release Notes

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Ubuntu 17.04

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Mellanox Technologies  
350 Oakmead Parkway Suite 100  
Sunnyvale, CA 94085  
U.S.A.  
[www.mellanox.com](http://www.mellanox.com)  
Tel: (408) 970-3400  
Fax: (408) 970-3403

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# 1 Overview

These are the release notes of Ubuntu 17.04 Inbox Driver. This document provides instructions on drivers for Mellanox Technologies ConnectX® based adapter cards with Ubuntu 17.04 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, FDR10, FDR, 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>InfiniBand: SDR, QDR, FDR10, FDR, 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 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

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

Ubuntu 17.04 Inbox Driver Ubuntu 17.04 supports the following Mellanox network adapter cards firmware versions:

**Table 2 - Supported HCAs Firmware Versions**

HCA	Recommended Firmware Rev.	Additional Firmware Rev. Supported
ConnectX®-5	16.19.1200	N/A
ConnectX®-4 Lx	14.18.2000	N/A
ConnectX®-4	12.18.2000	N/A
ConnectX®-3 Pro	2.40.7000	N/A
ConnectX®-3	2.40.7000	N/A
ConnectX®-2	2.9.1000	N/A
Connect-IB®	10.16.1020	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 <sup>a</sup>	Yes

a. RoCEv2: UD is not supported. The rdma-core package (not included in Ubuntu 17.04) will support it.

## 1.4 VXLAN Support

**Table 5 - VXLAN Support**

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

## 2 Changes and New Features

**Table 6 - Changes and New Features**

Feature/Change	Description
mlx5	<ul style="list-style-type: none"> <li>• Ethtool aRFS support</li> <li>• SR-IOV QoS Rate limit</li> <li>• Ethtool flow steering</li> <li>• Ethtool auto negotiation</li> <li>• Ethtool diagnostic counters</li> <li>• Ethtool self-test</li> <li>• CQE compression</li> <li>• Interrupt frequency moderation</li> <li>• Minimum inline header</li> <li>• eSwitch offload</li> <li>• TC forward counters</li> <li>• TC hardware offload</li> <li>• Added ConnectX-5 PCI IDs</li> </ul>
mlx5_ib	<ul style="list-style-type: none"> <li>• Support RSS QP</li> <li>• Support of NVMe Over Fabrics</li> <li>• RoCE LAG</li> <li>• DCBX CEE API support</li> <li>• VXLAN steering</li> </ul>
mlx4	<ul style="list-style-type: none"> <li>• Added support for BPF</li> <li>• DCB PFC support through CEE API</li> </ul>
OVS	<ul style="list-style-type: none"> <li>• Added kernel support for OVS offload as part of Mellanox' ASAP<sup>2</sup> Direct product (requires OVS userspace as well).</li> <li>• Introduced HW offload and VXLAN capabilities to TC Now it is possible to configure HW rules through TC and enjoy HW offload for any application on top of TC.</li> </ul>

### 3 Known Issues

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

**Table 7 - Known Issues**

Internal Ref.	Description
1024724	<b>Description:</b> ConnectX-4 100GbE Multi-thread TCP throughput degradation.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> TCP throughput
1024636	<b>Description:</b> ConnectX-3 40GbE Multi-thread TCP throughput degradation.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> TCP throughput
1023105	<b>Description:</b> Multiple allocation related stack traces when shutting down OVS related interfaces after VXLAN IPv6 LNST test.
	<b>Workaround:</b> N/A
	<b>Keywords:</b> OVS, VXLAN
1006704	<b>Description:</b> TSO is not function properly in mlx4/mlx5.
	<b>Workaround:</b> Disable GSO and enable TSO
	<b>Keywords:</b> TSO
997720	<b>Description:</b> On rare occasions, ConnectX-3 linkup takes longer than expected, 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