



# Red Hat Enterprise Linux (RHEL) 7.6-ALT Driver Release Notes

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RHEL 7.6-ALT

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# 1 Overview

These are the release notes of Red Hat Enterprise Linux (RHEL) 7.6-ALT Driver Release Notes. This document provides instructions on drivers for Mellanox Technologies ConnectX® based adapter cards with Red Hat Enterprise Linux (RHEL) 7.6-ALT 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>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 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

Red Hat Enterprise Linux (RHEL) 7.6-ALT Driver supports the following Mellanox network adapter cards firmware versions:

**Table 2 - Supported HCAs Firmware Versions**

HCA	Recommended Firmware Rev.
Connect-IB®	10.16.1200
ConnectX®-5	16.24.1000
ConnectX®-4 Lx	14.24.1000
ConnectX®-4	12.24.1000
ConnectX®-3 Pro	2.42.5000
ConnectX®-3	2.42.5000
ConnectX®-2	2.9.1000

## 1.2 SR-IOV Support

**Table 3 - SR-IOV Support**

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

**Table 6 - DPDK Support**

Driver	Support
mlx4	Yes
mlx5	Yes

## 1.6 ASAP<sup>2</sup> Open vSwitch Hardware Offloads Support

**Table 7 - ASAP<sup>2</sup> Open vSwitch Hardware Offloads Support**

Driver	Support
mlx4	No
mlx5	Yes <sup>a</sup>

a. Technical Preview is not fully supported production feature.

## 2 Changes and New Features

**Table 8 - Changes and New Features**

Driver/Component	Feature/Change	Description
mlx5	Striding RQ/CQE Zipping User Controlled	A Multi-Packet receive WQ comes to improve performance and memory footprint. It reduces memory footprint by allowing each packet to consume a different number of strides instead of the whole WR.
	Support CQ Moderation	Enhances performance by moderating the number of cookies needed to create an event instead of application having to suffer from event per cookie.
	OVS Enhancements	<b>[ConnectX-5 and above]</b> Offloads TC VLAN push/pop using them as a hardware action during Flow Steering.
mlx4	Support CQ Moderation	Enhances performance by moderating the number of cookies needed to create an event instead of application having to suffer from event per cookie.
rdma-core	Version Update	Updated to version rdma-core-17.2-3.el7
mstflint	Version Update	Updated to version mstflint-4.9.0-3.el7
VMA	Version Update	Update to version libvma-8.6.10-1.el7

### 3 Known Issues

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

**Table 9 - Known Issues**

Internal Ref.	RedHat Ref.	Description
1336723	-	<b>Description:</b> NVMe IO may fail due to a block layer merge BIOS that does not comply to the virtual boundary.
		<b>Workaround:</b> Disable all merge tries, run "echo 2 > /sys/block/<dev>/queue/nomerges".
		<b>Keywords:</b> mlx5, NVMe
1336728	1468598	<b>Description:</b> When using a large block size (over 1G) iSER, memreg may fail and cause an IO error.
		<b>Workaround:</b> N/A
		<b>Keywords:</b> mlx5, iSER