



# SUSE Linux Enterprise Server (SLES) 12 SP3 Driver

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SLES 12 SP3

# Release Notes

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# 1 Overview

These are the release notes of SUSE Linux Enterprise Server (SLES) 12 SP3 Driver. This document provides instructions on drivers for Mellanox Technologies ConnectX® based adapter cards with SUSE Linux Enterprise Server (SLES) 12 SP3 Driver Inbox Driver environment.

This version supports the following uplinks to servers:

**Table 1 - Supported Uplinks to Servers**

HCA	Uplink Speed	Supported Driver
ConnectX®-5	<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 <sup>b</sup>
ConnectX®-4	<ul style="list-style-type: none"> <li>Ethernet: 1GigE, 10GigE, 25GigE, 40GigE, 50GigE, 56GigE, 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.

b. SLES12 SP3 supports ConnectX-5 Ethernet only.

## 1.1 Supported HCAs Firmware Versions

SUSE Linux Enterprise Server (SLES) 12 SP3 Driver SLES 12 SP3 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	16.20.1010	N/A
ConnectX®-4 Lx	14.20.1010	N/A
ConnectX®-4	12.20.1010	N/A
ConnectX®-3 Pro	2.40.7000	N/A
ConnectX®-3	2.40.7000	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	Yes

## 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
Adapter Cards	Added support for ConnectX-5 HCA (Ethernet only).
RDMA User-space	Replaced the old RDMA user-space packages with rdma-core package.
Bug Fixes	Made general bug fixes from SLES SP2.

### 3 Known Issues

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

**Table 7 - Known Issues**

Internal Ref.	Description
806186	<p><b>Description:</b> ConnectX-4 100GbE Multi-thread TCP throughput has degraded.</p> <p><b>Workaround:</b> N/A</p> <p><b>Keywords:</b> TCP throughput</p>
1079486	<p><b>Description:</b> Due to a wrong PCI ID, the description of ConnectX-5 Virtual Function in lspci is incomplete.</p> <p><b>Workaround:</b></p> <ol style="list-style-type: none"> <li>Go to <code>/usr/share/pci.ids</code>, and manually update the description from “1018 MT28800 Family [ConnectX-5 Virtual Function]” to “1018 MT27800 Family [ConnectX-5 Virtual Function]”.</li> <li>Update the <code>pci.ids</code> file in <code>pciutils-ids</code> package from upstream.</li> </ol> <p><b>Keywords:</b> ConnectX-5 VF, pciutils-ids</p>



## 4 Change Log History

**Table 8 - Change Log History**

Feature/Change	Description
<b>SLES SP2</b>	
mlx5	<ul style="list-style-type: none"> <li>• RoCE v1/v2</li> <li>• Ethernet SR-IOV</li> <li>• QoS DCBNL IEE ETS/PFC/ETS rate limit</li> <li>• QoS TC/UP mapping support</li> <li>• WoL support via ethtool</li> <li>• VXLAN support without RSS</li> <li>• Checksum complete</li> <li>• TC offloads (Flower support)</li> <li>• Flow steering</li> <li>• Raw QP</li> <li>• IPoIB offloads with ConnectX-4</li> <li>• memory windows allocation</li> <li>• Re-registration of MRs</li> <li>• Arbitrary sg list support</li> <li>• Do not trap rule</li> <li>• Offload arithmetic hardware capabilities</li> <li>• RoCE SR-IOV</li> </ul>
mlx4	<ul style="list-style-type: none"> <li>• Do not trap rule</li> </ul>