MLNX-OFED-ESX Driver for VMware ESXi 5.5 & 6.0
Release Notes
Rev 1.9.10.5
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1 Overview

These are the Release Notes of MLNX-OFED-ESX Driver for ESXi 5.5 and 6.0. This document provides instructions on drivers for Mellanox Technologies ConnectX® based adapter cards with VMware ESXi Server environment.

1.1 Contents of Mellanox OFED ESXi Package

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

- ESXi 6.0:
  - MLNX-OFED-ESX-1.9.10.5-10EM-600.0.0.2494585.zip - Hypervisor bundle For ESXi 6.0
- ESXi 5.5:
  - MLNX-OFED-ESX-1.9.10.5-10EM-550.0.0.1331820.zip - Hypervisor bundle For ESXi 5.5

Each bundle contains the following kernel modules:

- mlx4_en (ConnectX family Ethernet driver)
- mlx4_core (ConnectX family low-level PCI driver)
- ib-addr (IB Address Translation)
- ib-cm (InfiniBand Connection Manager support)
- ib-core (Core kernel InfiniBand API)
- ib-mad (Kernel IB MAD API)
- ib-sa (InfiniBand subnet administration query support)
- ib-umad (InfiniBand userspace MAD packet access)
- mlx4-ib (Mellanox Technologies ConnectX core driver)
- rdma-cm (DMA Connection Manager support)
- ib-iser (Mellanox Technologies iSER driver)

1.2 Supported HCAs Firmware Versions

MLNX-OFED-ESX Rev 1.9.10.5 supports the following Mellanox Ethernet HCA:

**Table 1 - Supported HCAs Firmware Versions**

<table>
<thead>
<tr>
<th>HCAs</th>
<th>Recommended Firmware Rev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ConnectX-3 Pro</td>
<td>2.35.5100</td>
</tr>
<tr>
<td>ConnectX-3</td>
<td>2.35.5100</td>
</tr>
</tbody>
</table>

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 1.9.10.5

Table 2 - Changes and New Features in Rev 1.9.10.5

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Added support for ESXi 6.0</td>
</tr>
<tr>
<td>RoCE over VLAN</td>
<td>Enabled RoCE traffic when VLAN is configured on the portgroup.</td>
</tr>
</tbody>
</table>
| Storage  | iSER:  
|          |   • Implemented LUN reset error handling  
|          |   • Implemented abort error handling |
| Bug Fixes | See “Bug Fixes History” on page 8. |

2.1 Unsupported Functionality/Features

The following are the unsupported functionalities/features:

• ConnectX®-2 adapter cards
3 Known Issues

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

Table 3 - Known Issues

<table>
<thead>
<tr>
<th>Index</th>
<th>Issue</th>
<th>Description</th>
<th>Workaround</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Driver update</td>
<td>Updating the driver from the last certified driver is not supported.</td>
<td>Uninstall any previous drive prior to installing the new driver manually.</td>
</tr>
<tr>
<td>2.</td>
<td>vSwitch</td>
<td>Frequent vSwitch MTU changes or link/unlink operations during background heavy stress traffic might cause traffic loss.</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>WoL</td>
<td>WoL is not supported in 40Gb mode.</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Ring Size</td>
<td>Frequent changes of ring size during background heavy stress traffic is not supported.</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>RoCE</td>
<td>RoCE does not work against MLNX_OFED_LINUX-2.1-x.x.x version.</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>iSER</td>
<td>Manually unloading and reloading mlx4 low-level drivers may stop iSER from working.</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>ESXi stops trying to reconnect a target that is lost for a long period of time. For further information, please refer to: <a href="http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&amp;cmd=displayKC&amp;externalId=2004684">http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&amp;cmd=displayKC&amp;externalId=2004684</a></td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>Rescanning vmhbas while creating and deleting targets may freeze the scan.</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>On rare occasions, port fail-over during stress traffic may cause a PSOD event.</td>
<td>-</td>
</tr>
</tbody>
</table>
4 Bug Fixes History

Table 4 lists the bugs fixed in this release.

**Table 4 - Fixed Bugs List**

<table>
<thead>
<tr>
<th>#</th>
<th>Issue</th>
<th>Description</th>
<th>Discovered in Release</th>
<th>Fixed in Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>iSER</td>
<td>Fixed a PSOD during IO stress</td>
<td>1.9.10.0</td>
<td>1.9.10.5</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Fixed queue command failures during IO stress</td>
<td>1.9.10.0</td>
<td>1.9.10.5</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>Fixed a stress R/W pattern on an RDM device formatted with FileSystem which caused the device to abort and reconnect afterwards.</td>
<td>1.9.10.0</td>
<td>1.9.10.5</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Enabled TX CQ draining before RX CQ, to avoid disconnection hanging</td>
<td>1.9.10.0</td>
<td>1.9.10.5</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>Fixed a PSOD event during an error flow.</td>
<td>1.9.10.0</td>
<td>1.9.10.5</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>Removed max sessions transport limit.</td>
<td>1.9.10.0</td>
<td>1.9.10.5</td>
</tr>
<tr>
<td>7.</td>
<td>High Memory</td>
<td>Enabled module heap to expand into high memory</td>
<td>1.9.10.0</td>
<td>1.9.10.5</td>
</tr>
</tbody>
</table>
## 5 Change Log History

### Table 5 - Change Log History

<table>
<thead>
<tr>
<th>Release</th>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9.10.0</td>
<td>Hardware Performance</td>
<td>• 1G</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 10G</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 40G (Only for ESXi5.5Ux)</td>
</tr>
<tr>
<td></td>
<td>Hardware Offload</td>
<td>• Large Send Offload (TCP Segmentation Offload)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WoL (only on supported hardware)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• RSS Queues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• HW Tx/Rx checksum offload</td>
</tr>
<tr>
<td></td>
<td>Hardware Capabilities</td>
<td>• Multiple Tx/Rx rings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NetQueue support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fixed Pass-Through</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Single/Dual port</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MSI-X/Int-X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Auto moderation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• RoCE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Network Controller Sideband Interface (NC-SI)</td>
</tr>
<tr>
<td></td>
<td>Ethernet Network</td>
<td>• Ethtool support</td>
</tr>
<tr>
<td></td>
<td>Accelerations</td>
<td>• NAPI support</td>
</tr>
<tr>
<td></td>
<td>Debug</td>
<td>• Net dump (Only for ESXi5.5Ux)</td>
</tr>
</tbody>
</table>