



## **Installation Related Issues**

# Table of contents

Installation Issues

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Fixing Application Binary Interface (ABI) Incompatibility with  
MLNX\_OFED Kernel Modules

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Overview

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# Installation Issues

Issue	Cause	Solution
<p>Driver installation fails.</p>	<p>The install script may fail for the following reasons:</p> <ul style="list-style-type: none"> <li>• Using an unsupported installation option</li> <li>• Failed to uninstall the previous installation due to dependencies being used</li> <li>• The operating system is not supported</li> <li>• The kernel is not supported. You can run <code>mlnx_add_kernel_support.sh</code> in order to generate a MLNX-OFED package with drivers for the kernel</li> <li>• Required packages for installing the driver are missing</li> <li>• Missing kernel backport support for non supported kernel</li> </ul>	<ul style="list-style-type: none"> <li>• Use only supported installation options. The full list of installation options can be displayed on screen by using: <code>mlnxofedinstall --h</code></li> <li>• Run <code>'rpm -e'</code> to display a list of all RPMs and then manually uninstall them if the preliminary uninstallation failed due to dependencies being used.</li> <li>• Use a supported operating system and kernel</li> <li>• Manually install the missing packages listed on screen by the installation script if the installation failed due to missing prerequisites.</li> </ul>
<p>After driver installation, the <code>openibd</code> service fail to start. This message is logged by the driver: Unknown symbol</p>	<p>The driver was installed on top of an existing In-box driver.</p>	<ol style="list-style-type: none"> <li>1. Uninstall the MLNX_OFED driver. <code>ofed_uninstall.sh</code></li> <li>2. Reboot the server.</li> <li>3. Search for any remaining installed driver. If found, move them to the <code>/tmp</code> directory from the current directory.</li> <li>4. Re-install the MLNX_OFED driver.</li> </ol>

Issue	Cause	Solution
		5. Restart the openibd service.

## Fixing Application Binary Interface (ABI) Incompatibility with MLNX\_OFED Kernel Modules

### Note

This section is relevant for RedHat and SLES distributions only.

## Overview

MLNX\_OFED package for RedHat comes with RPMs that support KMP (weak-modules), meaning that when a new errata kernel is installed, compatibility links will be created under the weak-updates directory for the new kernel. Those links allow using the existing MLNX\_OFED kernel modules without the need for recompilation. However, at times, the ABI of the new kernel may not be compatible with the MLNX\_OFED modules, which will prevent loading them. In this case, the MLNX\_OFED modules must be rebuilt against the new kernel.

### Detecting ABI Incompatibility with MLNX\_OFED Modules

When MLNX\_OFED modules are not compatible with a new kernel from a new OS or errata kernel, no links will be created under the weak-updates directory for the new kernel, causing the driver load to fail. Checking for the existence of needed module links under weak-updates directory can be done by reloading the MLNX\_OFED modules. If one or more modules are missing, the driver reload will fail with an error message.

#### Example:

```
*****
# /etc/init.d/openibd restart
Unloading HCA driver: [ OK ]
Loading HCA driver and Access Layer: [ OK ]
Module rdma_cm belong to kernel which is not a part of MLNX[FAILED]kipping...
Loading rdma_ucm [FAILED]
*****
```

## Resolving ABI Incompatibility with MLNX\_OFED Modules

In order to fix ABI incompatibility with MLNX\_OFED modules, the modules should be recompiled against the new kernel, using the `mlnx_add_kernel_support.sh` script, available in MLNX\_OFED installation image.

There are two ways to recompile the MLNX\_OFED modules:

### 1. Local recompilation and installation on one server.

Run the `mlnxofedinstall` command to recompile the kernel modules and reinstall the whole MLNX\_OFED on the server. Mount MLNX\_OFED ISO image or extract the TGZ file:

```
# cd <MLNX_OFED dir>
# ./mlnxofedinstall --skip-distro-check --add-kernel-support --kmp --force
```

### Notes:

- The `--kmp` flag will enable rebuilding RPMs with KMP (weak-updates) support for the new kernel. Therefore, in the next OS/kernel update, the same modules can be used with the new kernel (assuming that the ABI compatibility was not broken again).

- The command above will rebuild only the kernel RPMs (using `mlnx_add_kernel_support.sh`), and will save the resulting MLNX\_OFED package under `/tmp` and start installing it automatically. This package can be used for installation on other servers using regular `mlnxofedinstall` command or `yum`.

### 2. Preparing a new image on one server and deploying it on the cluster.

1. Use the `mlnx_add_kernel_support.sh` script directly only to rebuild the kernel RPMs (without running any installations) on one server. Mount MLNX\_OFED ISO image or extract the TGZ file:

```
# cd <MLNX_OFED dir>
# ./mlnx_add_kernel_support.sh -m $PWD --kmp -y
```

**Note:** This command will save the resulting MLNX\_OFED package under `/tmp`.

**Example:**

```
*****
# cd /tmp/MLNX_OFED_LINUX-3.3-1.0.0.0-DB-rhel7.0-x86_64
# ./mlnx_add_kernel_support.sh -m $PWD --kmp -y
Note: This program will create MLNX_OFED_LINUX TGZ for rhel7.1 under
/tmp directory.
See log file /tmp/mlnx_ofed_iso.23852.log

Building OFED RPMS . Please wait...
Creating metadata-rpms for 3.10.0-229.14.1.el7.x86_64 ...
WARNING: Please note that this MLNX_OFED repository contains an
unsigned rpms,
WARNING: therefore, you should set 'gpgcheck=0' in the repo conf file.
Created /tmp/MLNX_OFED_LINUX-3.3-1.0.0.0-rhel7.1-x86_64-ext.tgz
*****
```

2. Install the newly created MLNX\_OFED package on the cluster:

**Option 1:** Copy the package to the servers and install it using the `mlnxofedinstall` script.

**Option 2:** Deploy the MLNX\_OFED package using YUM (for YUM installation instructions, refer to [Installing MLNX\\_OFED Using YUM](#) section):

- i. Extract the resulting MLNX\_OFED image and copy it to a shared NFS location.
- ii. Create a YUM repository configuration.

iii. Install the new MLNX\_OFED kernel RPMs on the servers: # yum update

**Example:**

```
*****
...
...
=====
Package Arch Version Repository Size
=====
Updating:
epel-release noarch 7-7 epel 14 k
kmod-iser x86_64 1.8.0-OFED.3.3.1.0.0.1.gf583963.201606210906.rhel7u1
mlnx_ofed 35 k
kmod-isert x86_64 1.0-OFED.3.3.1.0.0.1.gf583963.201606210906.rhel7u1
mlnx_ofed 32 k
kmod-kernel-mft-mlnx x86_64 4.4.0-1.201606210906.rhel7u1 mlnx_ofed 10 k
kmod-knem-mlnx x86_64 1.1.2.90mlnx1-
OFED.3.3.0.0.1.0.3.1.ga04469b.201606210906.rhel7u1 mlnx_ofed 22 k
kmod-mlnx-ofa_kernel x86_64 3.3-
OFED.3.3.1.0.0.1.gf583963.201606210906.rhel7u1 mlnx_ofed 1.4 M
kmod-srp x86_64 1.6.0-OFED.3.3.1.0.0.1.gf583963.201606210906.rhel7u1
mlnx_ofed 39 k

Transaction Summary
=====
Upgrade 7 Packages
...
...
*****
```

**Note:** The MLNX\_OFED user-space packages will not change; only the kernel RPMs will be updated. However, “YUM update” can also update other inbox packages (not related to OFED). In order to install the MLNX\_OFED kernel RPMs only, make sure to run:

```
# yum install mlnx-ofed-kernel-only
```

**Note:** mlnx-ofed-kernel-only is a metadata RPM that requires the MLNX\_OFED kernel RPMs only.

3. Verify that the driver can be reloaded:

```
# /etc/init.d/openibd restart
```

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