



Installing MLNX_OFED

Table of contents

Installation Script

Installation Procedure

Installation Results

Installation Logging

Driver Load Upon System Boot

mlnxofedinstall Return Codes

Installation Logging

Driver Load Upon System Boot

mlnxofedinstall Return Codes

Installation on Community Operating Systems

Installing OFED on Community Operating Systems

Proprietary Packages

Download and install MFT and Firmware

Creating Metapackages and Installing OFED on Multiple Servers (RPM-Based Systems)

Creating Metapackages and Installing OFED on Multiple Servers (Deb-Based Systems)

Additional Installation Procedures

Installing MLNX_OFED Using YUM

Installing MLNX_OFED Using apt-get

List of Figures

Figure 0. Procedure Heading Icon Version 1 Modificationdate
1717696675727 Api V2

Figure 1. Procedure Heading Icon Version 1 Modificationdate
1717696675727 Api V2

Note

For installation of MLNX_OFED on Community OSs, please see section "[Installation on Community Operating Systems](#)" below.

Installation Script

The installation script, `mlnxofedinstall`, performs the following:

- Discovers the currently installed kernel
- Uninstalls any software stacks that are part of the standard operating system distribution or another vendor's commercial stack
- Installs the MLNX_OFED_LINUX binary RPMs (if they are available for the current kernel)
- Identifies the currently installed InfiniBand and Ethernet network adapters and automatically upgrades the firmware

Note: To perform a firmware upgrade using customized firmware binaries, a path can be provided to the folder that contains the firmware binary files, by running `--fw-image-dir`. Using this option, the firmware version embedded in the MLNX_OFED package will be ignored.

Example:

```
./mlnxofedinstall --fw-image-dir /tmp/my_fw_bin_files
```

Note

If the driver detects unsupported cards on the system, it will abort the installation procedure. To avoid this, make sure to add `--skip-unsupported-devices-check` flag during installation.

Usage

```
./mnt/mlnxofedinstall [OPTIONS]
```

The installation script removes all previously installed OFED packages and re-installs from scratch. You will be prompted to acknowledge the deletion of the old packages.

Note

Pre-existing configuration files will be saved with the extension “.conf.rpmsave”.

- If you need to install OFED on an entire (homogeneous) cluster, a common strategy is to mount the ISO image on one of the cluster nodes and then copy it to a shared file system such as NFS. To install on all the cluster nodes, use cluster-aware tools (such as `pdsh`).
- If your kernel version does not match with any of the offered pre-built RPMs, you can add your kernel version by using the “`mlnx_add_kernel_support.sh`” script located inside the `MLNX_OFED` package.

Note

On Redhat and SLES distributions with errata kernel installed there is no need to use the `mlnx_add_kernel_support.sh` script. The regular installation can be performed and weak-updates

mechanism will create symbolic links to the MLNX_OFED kernel modules.

Note

If you regenerate kernel modules for a custom kernel (using `--add-kernel-support`), the packages installation will not involve automatic regeneration of the initramfs. In some cases, such as a system with a root filesystem mounted over a ConnectX card, not regenerating the initramfs may even cause the system to fail to reboot.

In such cases, the installer will recommend running the following command to update the initramfs:

```
dracut -f
```

On some OSs, `dracut -f` might result in the following error message which can be safely ignore.

```
libkmod: kmod_module_new_from_path: kmod_module 'mdev' already exists  
with different path
```

The “`mlnx_add_kernel_support.sh`” script can be executed directly from the `mlnxofedinstall` script. For further information, please see '`--add-kernel-support`' option below.

Note

On Ubuntu and Debian distributions drivers installation use Dynamic Kernel Module Support (DKMS) framework. Thus, the drivers' compilation will take place on the host during MLNX_OFED installation. Therefore, using

"mlnx_add_kernel_support.sh" is irrelevant on Ubuntu and Debian distributions.

Example: The following command will create a MLNX_OFED_LINUX ISO image for RedHat 7.3 under the /tmp directory.

```
# ./MLNX_OFED_LINUX-x.x-x-rhel7.3-x86_64/mlnx_add_kernel_support.sh -m
/tmp/MLNX_OFED_LINUX-x.x-x-rhel7.3-x86_64/ --make-tgz
Note: This program will create MLNX_OFED_LINUX TGZ for rhel7.3 under /tmp
directory.
All Mellanox, OEM, OFED, or Distribution IB packages will be removed.
Do you want to continue?[y/N]:y
See log file /tmp/mlnx_ofed_iso.21642.log

Building OFED RPMs. Please wait...
Removing OFED RPMs...
Created /tmp/MLNX_OFED_LINUX-x.x-x-rhel7.3-x86_64-ext.tgz
```

- The script adds the following lines to /etc/security/limits.conf for the userspace components such as MPI:
 - * soft memlock unlimited
 - * hard memlock unlimited
 - These settings set the amount of memory that can be pinned by a userspace application to unlimited. If desired, tune the value unlimited to a specific amount of RAM.

For your machine to be part of the InfiniBand/VPI fabric, a Subnet Manager must be running on one of the fabric nodes. At this point, OFED for Linux has already installed the OpenSM Subnet Manager on your machine.

For the list of installation options, run: ./mlnxofedinstall --h

Installation Procedure

This section describes the installation procedure of MLNX_OFED on NVIDIA adapter cards.

1. Log in to the installation machine as root.
2. Mount the ISO image on your machine.

```
host1# mount -o ro,loop MLNX_OFED_LINUX-<ver>-<OS label>-<CPU arch>.iso /mnt
```

3. Run the installation script.

```
/mnt/mlnxofedinstall  
Logs dir: /tmp/MLNX_OFED_LINUX-x.x-x.logs  
This program will install the MLNX_OFED_LINUX package on your machine.  
Note that all other Mellanox, OEM, OFED, RDMA or Distribution IB packages  
will be removed.  
Those packages are removed due to conflicts with MLNX_OFED_LINUX, do not  
reinstall them.  
Starting MLNX_OFED_LINUX-x.x.x installation ...  
.....  
.....  
Installation finished successfully.  
Attempting to perform Firmware update...  
Querying Mellanox devices firmware ...
```

Note

For unattended installation, use the `--force` installation option while running the MLNX_OFED installation script:
`script:/mnt/mlnxofedinstall --force`

(i) Note

MLNX_OFED for Ubuntu should be installed with the following flags in chroot environment: `./mlnxofedinstall --without-dkms --add-kernel-support --kernel <kernel version in chroot> --without-fw-update --force` For example: `./mlnxofedinstall --without-dkms --add-kernel-support --kernel 3.13.0-85-generic --without-fw-update --force` Note that the path to kernel sources (`-kernel-sources`) should be added if the sources are not in their default location.

(i) Note

In case your machine has the latest firmware, no firmware update will occur and the installation script will print at the end of installation a message similar to the following:

```
Device #1:-----  
---Device Type: ConnectX4Part Number: MCX456A-  
ECADescription: ConnectX-4 VPI adapter card; EDR IB (100Gb/s)  
and 100GbE; dual-port QSFP28; PCIe3.0 x16; ROHS R6PSID:  
MT_2190110032PCI Device Name: 0b:00.0Base MAC:  
0000e41d2d5cf810Versions: Current AvailableFW 12.14.0114  
12.14.0114Status: Up to date
```

(i) Note

In case your machine has an unsupported network adapter device, no firmware update will occur and one of the error messages below will be printed. Please contact your hardware vendor for help with firmware updates.

```
Error message #1:Device #1:-----Device Type: ConnectX4Part  
Number: MCX456A-ECADescription: ConnectX-4 VPI adapter  
card; EDR IB (100Gb/s) and 100GbE; dual-port QSFP28; PCIe3.0
```

x16; ROHS R6PSID: MT_2190110032PCI Device Name:
 0b:00.0Base MAC: 0000e41d2d5cf810Versions: Current
 AvailableFW 12.14.0114 N/AStatus: No matching image found

Error message #2:The firmware for this device is not distributed
 inside NVIDIA driver: 0000:01:00.0 (PSID: IBM2150110033)To
 obtain firmware for this device, please contact your HW vendor.

4. **Case A:** If the installation script has performed a firmware update on your network adapter, you need to either restart the driver or reboot your system before the firmware update can take effect. Refer to the table below to find the appropriate action for your specific card.

Action \ Adapter	Driver Restart	Standard Reboot (Soft Reset)	Cold Reboot (Hard Reset)
Standard ConnectX-4/ConnectX-4 Lx or higher	-	+	-
Adapters with Multi-Host Support	-	-	+
Socket Direct Cards	-	-	+

Case B: If the installations script has not performed a firmware upgrade on your network adapter, restart the driver by running: `"/etc/init.d/openibd restart"`.

5. (InfiniBand only) Run the `hca_self_test.ofed` utility to verify whether or not the InfiniBand link is up. The utility also checks for and displays additional information such as:

- HCA firmware version
 - Kernel architecture
 - Driver version
 - Number of active HCA ports along with their states
 - Node GUID
- For more details on `hca_self_test.ofed`, see the file

docs/readme_and_user_manual/hca_self_test.readme.

After installation completion, information about the OFED installation, such as prefix, kernel version, and installation parameters can be retrieved by running the command `/etc/infiniband/info`. Most of the OFED components can be configured or reconfigured after the installation, by modifying the relevant configuration files. See the relevant chapters in this manual for details.

The list of the modules that will be loaded automatically upon boot can be found in the `/etc/infiniband/openib.conf` file.

Note

Installing OFED will replace the RDMA stack and remove existing 3rd party RDMA connectors.

Installation Results

Software	<ul style="list-style-type: none">• Most of MLNX_OFED packages are installed under the <code>"/usr"</code> directory except for the following packages which are installed under the <code>"/opt"</code> directory:<ul style="list-style-type: none">◦ <code>fca</code> and <code>ibutils</code>◦ <code>iproute2</code> (rdma tool) - installed under <code>/opt/Mellanox/iproute2/sbin/rdma</code>• The kernel modules are installed under<ul style="list-style-type: none">◦ <code>/lib/modules/`uname -r`/updates</code> on SLES and Fedora Distributions◦ <code>/lib/modules/`uname -r`/extra/mlnx-ofa_kernel</code> on RHEL and other RedHat like Distributions◦ <code>/lib/modules/`uname -r`/updates/dkms/</code> on Ubuntu
Firmware	<ul style="list-style-type: none">• The firmware of existing network adapter devices will be updated if the following two conditions are fulfilled:<ul style="list-style-type: none">◦ The installation script is run in default mode; that is, without the option <code>'--without-fw-update'</code>◦ The firmware version of the adapter device is older than the firmware version included with the OFED ISO image

Note: If an adapter's Flash was originally programmed with an Expansion ROM image, the automatic firmware update will also burn an Expansion ROM image.

- In case your machine has an unsupported network adapter device, no firmware update will occur and the error message below will be printed.
"The firmware for this device is not distributed inside NVIDIA driver:
0000:01:00.0 (PSID: IBM2150110033)
To obtain firmware for this device, please contact your HW vendor."

Installation Logging

While installing MLNX_OFED, the install log for each selected package will be saved in a separate log file.

The path to the directory containing the log files will be displayed after running the installation script in the following format:

Example:

```
Logs dir: /tmp/MLNX_OFED_LINUX-4.4-1.0.0.0.IBMM2150110033.logs
```

Driver Load Upon System Boot

Upon system boot, the NVIDIA drivers will be loaded automatically.

To prevent the automatic load of the NVIDIA drivers upon system boot:



1. Add the following lines to the "/etc/modprobe.d/mlnx.conf" file.

```
blacklist mlx5_core  
blacklist mlx5_ib
```

2. Set "ONBOOT=no" in the "/etc/infiniband/openib.conf" file.

- If the modules exist in the `initramfs` file, they can automatically be loaded by the kernel. To prevent this behavior, update the `initramfs` using the operating systems' standard tools. **Note:** The process of updating the `initramfs` will add the blacklists from step 1, and will prevent the kernel from loading the modules automatically.

mlnxofedinstall Return Codes

The table below lists the `mlnxofedinstall` script return codes and their meanings.

Return Code	Meaning
0	The Installation ended successfully
1	The installation failed
2	No firmware was found for the adapter device
22	Invalid parameter
28	Not enough free space
171	Not applicable to this system configuration. This can occur when the required hardware is not present on the system
172	Prerequisites are not met. For example, missing the required software installed or the hardware is not configured correctly
173	Failed to start the mst driver

Soft ware	<ul style="list-style-type: none"> Most of <code>MLNX_OFED</code> packages are installed under the <code>"/usr"</code> directory except for the following packages which are installed under the <code>"/opt"</code> directory: <ul style="list-style-type: none"> <code>fca</code> and <code>ibutils</code> <code>iproute2</code> (rdma tool) - installed under <code>/opt/Mellanox/iproute2/sbin/rdma</code> The kernel modules are installed under <ul style="list-style-type: none"> <code>/lib/modules/`uname -r`/updates</code> on SLES and Fedora Distributions <code>/lib/modules/`uname -r`/extra/mlnx-ofa_kernel</code> on RHEL and other RedHat like Distributions <code>/lib/modules/`uname -r`/updates/dkms/</code> on Ubuntu
-----------	---

Firm ware	<ul style="list-style-type: none"> • The firmware of existing network adapter devices will be updated if the following two conditions are fulfilled: <ul style="list-style-type: none"> ◦ The installation script is run in default mode; that is, without the option '--without- fw-update' ◦ The firmware version of the adapter device is older than the firmware version included with the OFED ISO image <p>Note: If an adapter's Flash was originally programmed with an Expansion ROM image, the automatic firmware update will also burn an Expansion ROM image.</p> • In case your machine has an unsupported network adapter device, no firmware update will occur and the error message below will be printed. "The firmware for this device is not distributed inside NVIDIA driver: 0000:01:00.0 (PSID: IBM2150110033) To obtain firmware for this device, please contact your HW vendor."
--------------	--

Installation Logging

While installing MLNX_OFED, the install log for each selected package will be saved in a separate log file.

The path to the directory containing the log files will be displayed after running the installation script in the following format:

Example:

```
Logs dir: /tmp/MLNX_OFED_LINUX-4.4-1.0.0.0.IBMM2150110033.logs
```

Driver Load Upon System Boot

Upon system boot, the NVIDIA drivers will be loaded automatically.

To prevent the automatic load of the NVIDIA drivers upon system boot:



1. Add the following lines to the "/etc/modprobe.d/mlnx.conf" file.

```
blacklist mlx5_core
```

```
blacklist mlx5_ib
```

2. Set "ONBOOT=no" in the "/etc/infiniband/openib.conf" file.
3. If the modules exist in the initramfs file, they can automatically be loaded by the kernel. To prevent this behavior, update the initramfs using the operating systems' standard tools.**Note:** The process of updating the initramfs will add the blacklists from step 1, and will prevent the kernel from loading the modules automatically.

mlnxofedinstall Return Codes

The table below lists the mlnxofedinstall script return codes and their meanings.

Installation on Community Operating Systems

NVIDIA provides OFED packages to be installed on common operating systems. These packages are provided as binaries, and NVIDIA provided full support for them. This model is now referred to as "Primary support".

Starting OFED 5.6, NVIDIA is introducing a new support model for OFED used on open source community operating systems. The goal of this new support model is to enable customers to use community-maintained variants of the Linux operating system, without being limited to major distributions that NVIDIA provides primary support for.

In the community model, there is shared responsibility between NVIDIA and customers choosing to use community operating systems in their environment. NVIDIA owns basic validation for the operating systems, so that customers know they can expect OFED to work. Customers are responsible for building their own packages and binaries (based on source code and build instructions detailed below), and can also choose to deploy parts of OFED instead of the whole package.

In case of issues, for customers that are entitled for NVIDIA support (e.g. customers who have an applicable support contract), NVIDIA will do the best effort to assist, but may require the customer to work with the community to fix issues that are deemed to be caused by the community breaking OFED, as opposed to NVIDIA owning the fix end to end.

Overall, the following should be noted when running OFED on the community-supported operating systems:

- NVIDIA will perform sanity testing of OFED on community supported OSs
- NVIDIA will declare which kernel versions were tested (min/max), based on mainstream kernel (kernel.org) versions
- NVIDIA will not ship binaries/installation packages for community-supported OSs
- Customers will use source code of OFED and build guidance and will need to build their own binaries & installation packages
- Customers will be able to pick and choose the parts of OFED they deploy (e.g., drivers only, user tools only, and so forth)
- In case of bug reports, customers may be asked to reproduce on a primary-supported distribution (such as RHEL) in order to have support
- If issues are deemed specific to the community OS (e.g., if an OS deviates from mainstream in a way that breaks OFED), it is the customer's responsibility to work with the community to fix it

Below are the instructions how to build OFED from the sources provided by NVIDIA.

Installing OFED on Community Operating Systems

1. Download sources from https://network.nvidia.com/products/infiniband-drivers/linux/mlnx_ofed
 1. Scroll down to the and click the "Download" tab.
 2. Choose the relevant package, depending on the host operating system (the package format is what really matters (rpm/deb)).
 3. Download the desired tgz SOURCE package (e.g., MLNX_OFED_SRC-<debian?>-<ver>.tgz)
2. Unpack the tarball.

```
tar -xzf MLNX_OFED_SRC-<debian?>-<version>.tgz
```


3. Go to the extracted directory.

```
cd MLNX_OFED_SOURCE-5.6-x.x.x.x
```

4. Run the installation script with the relevant options.

```
./install.pl <option 1> <option 2> .
```

Use `./install.pl --help` to see all the options and choose the desired option. For example: `./install.pl --all` should build and install all the default packages.

5. While running `install.pl`, the script may fail on missing dependencies. Those dependencies should be installed manually before running `install.pl` again.

Proprietary Packages

The installation procedure does not install proprietary packages—propriety packages should be installed upon request.

List of closed source proprietary packages:

- Clusterkit
- DPCP
- hcoll
- Sharp
- ibutils2
- opensm

Today the only way to install these packages is by using an already-built rpm/deb from a similar primary operating system.

The following table maps the community OSs that are most similar to Primary OSs based on internal testing:

Community OS	Most Similar Primary OS
BCLINUX7.6	RHEL 7.9
BCLINUX7.7	RHEL 7.9
BCLINUX8.1	RHEL 8.5
Debian9.13	Debian 10.8
EulerOS2.0sp5	EulerOS2.0sp10
EulerOS2.0sp8	EulerOS2.0sp10
RHEL/CentOS7.5	RHEL 7.9
RHEL/CentOS7.5alternate	RHEL 7.9
RHEL/CentOS7.6alternate	RHEL 7.9
RHEL/CentOS7.7	RHEL 7.9
RHEL/CentOS7.8	RHEL 7.9
SLES12SP2	SLES12 SP5
SLES12SP3	SLES12 SP5
SLES12SP4	SLES12 SP5
Ubuntu16.04	Ubuntu22.04
Alma 8.5	RHEL 8.5
Anolis OS 8.4	RHEL 8.5
CentOS Stream 8.5	RHEL 8.5
Fedora 35	RHEL 8.5
OpenEuler OS 22.03 LTS	OpenEuler20 SP3
OpenSUSE 15.3	SLES15 SP3
Photon OS 3.0	RHEL 7.9
Rocky 8.5	RHEL 8.5
Rocky 8.6	RHEL 8.6

Download and install MFT and Firmware

NVIDIA Firmware Tools (MFT) Download

- <https://network.nvidia.com/products/adapter-software/firmware-tools>

Firmware Downloads

- <https://network.nvidia.com/support/firmware/firmware-downloads>

Creating Metapackages and Installing OFED on Multiple Servers (RPM-Based Systems)

By building the packages using `install.pl`, the RPMs will be created under `/tmp/OFED-internal-5.6-x.x.x/RPMS/<OS>/<arch>/`

1. List the packages that will be installed by running the following:

```
/tmp/OFED-internal-5.6-x.x.x/install.pl--all -p
```

2. Create working directories.

Example:

```
mkdir -p /tmp/OFED_topdir/SOURCES/<rpmname>-<version>  
mkdir -p /tmp/OFED_topdir/SPECS  
mkdir -p /tmp/OFED_topdir/BUILD  
mkdir -p /tmp/OFED_topdir/SRPMS  
mkdir -p /tmp/OFED_topdir/RPMS
```

For `--all` option it used to set `rpmname` as `mlnx-ofed-all`
OFED will be set to the current GA version being used.

3. Create a new XML file under /tmp/OFED_topdir/comp.xml that contains all the required packages.

Example:

```
<?xml version="1.0" encoding="UTF-8"?>
<comps>
<group>

<id>all</id>
<name>MLNX_OFED ALL</name>
<default>>true</default>
<description>Mellanox OpenFabrics Enterprise Distribution for Linux:
MLNX_OFED ALL packages </description>
<uservisibile>>true</uservisibile>
<packagelist>

/* ----- The list below needs to be aligned with the packages listed by "install.pl --all -p" ----- */

<packagereq type="default">mlnx-tools</packagereq>
<packagereq type="default">rdma-core-devel</packagereq>

<packagereq type="default">perftest</packagereq>

<packagereq type="default">Package Example 1</packagereq>

<packagereq type="default">Package Example 2</packagereq>
<packagereq type="default">mlnx-ofed-all</packagereq> // This line is for the Group
name
</packagelist>
</group>
</comps>
```

4. Create tarball with the correct source name:

```
echo <rpmname>-<version> > /tmp/OFED_topdir/SOURCES/<rpmname>-  
<version>/<rpmname>-release  
cd /tmp/OFED_topdir/SOURCES  
tar czf <rpmname>-<version>.tar.gz <rpmname>-<version>
```

5. Create new spec file that requires all the packages in that directory under /tmp/OFED_topdir/SPECS/<rpmname>.spec
6. Build the RPM metapackage from the spec file that was created before. As a result, the RPMs will be created under /tmp/OFED_topdir/RPMS/<arch>/

```
rpmbuild -ba --target noarch --define '_source_filedigest_algorithm md5' --define  
'_binary_filedigest_algorithm md5' --define '_topdir /tmp/OFED_topdir' --define '_sourcedir %  
{_topdir}/SOURCES' --define '_specdir %{_topdir}/SPECS' --define '_srcrpmdir %  
{_topdir}/SRPMS' --define '_rpmdir %{_topdir}/RPMS'  
/tmp/OFED_topdir/SPECS/<rpmname>.spec
```

7. Copy the newly-created RPMs into the RPMS directory that was created before.

```
cp /tmp/OFED_topdir/RPMS/noarch/mlnx-ufed-all-5.6-.rhel8u3.noarch.rpm  
/tmp/OFED-internal-5.6-x.x.x/<arch>/redhat-release-8.3-1.0.el8/x86_64/
```

8. Create repodata.

```
createrepo -q -g /tmp/OFED_topdir/comps.xml /tmp/OFED-internal-5.6-  
x.x.x/RPMS/redhat-release-8.3-1.0.el8/<arch>/
```

9. Copy the generated RPMS to any server and do the following to install OFED:

1. Create new yum repository.

```
cat /etc/yum.repos.d/mlnx_ufed.repo  
[mlnx_ufed]  
name=mlnx_ufed  
baseurl=/tmp/OFED-internal-5.6-x.x.x/RPMS/OS/<arch>/
```

```
enabled=1  
gpgcheck=0
```

2. Refresh repository list.

```
yum repolist
```

3. Install OFED.

```
yum install mlnx-ofed-all
```

Creating Metapackages and Installing OFED on Multiple Servers (Deb-Based Systems)

By building the packages using `install.pl`, the debs will be created under `/tmp/OFED-internal-5.6-x.x.x/DEBS/<OS>/<arch>/`

1. List the packages that will be installed by the following:

```
/tmp/OFED-internal-debian-5.6-x.x.x/install.pl --all -p
```

2. Create working directories.

Example:

```
mkdir -p /tmp/OFED_topdir/<rpmname>-<version>/debian/source  
echo <rpmname>-<version> > /tmp/OFED_topdir/<rpmname>-  
<version>/<rpmname>-release
```

For `--all` option it used to set `rpmname` as `mlnx-ofed-all`

For OFED 5.6, the `version` will be set to 5.6

3. Create rules file under `/tmp/OFED_topdir/<rpmname>-<version>/debian/rules`

```
#!/usr/bin/make -f
# -*- makefile -*-

export DH_OPTIONS
pname:=<rpmname>

%:
dh $@

override_dh_auto_install:
dh_installdirs -p$(pname) usr/share/doc/$(pname)
install -m 0644 $(pname)-release debian/$(pname)/usr/share/doc/$(pname)
```

4. Change rules file mode.

```
chmod 755 /tmp/OFED_topdir/<rpmname>-<version>/debian/rules
```

5. Create rules file under /tmp/OFED_topdir/<rpmname>-<version>/debian/compat

```
echo 9 > /tmp/OFED_topdir/<rpmname>-<version>/debian/compat
```

6. Create source/format file under /tmp/OFED_topdir/<rpmname>-<version>/debian/source/format

```
echo "3.0 (quilt)" > /tmp/OFED_topdir/<rpmname>-<version>/debian/source/format
```

7. Create changelog file under /tmp/OFED_topdir/<rpmname>-<version>/debian/changelog

Exmample:

```
mlnx-ofed-all (5.6-x.x.x.x) unstable; urgency=low
```

```
* Initial release
```

```
-- your username <mail> Sun, 15 May 2022 21:00:00 +0200
```

8. Create postinst script (if needed) under `/tmp/OFED_topdir/<rpmname>-<version>/debian/<rpmname>.postinst`

```
#!/bin/bash
cd /lib/modules
for dd in `bin/lis`
do
/sbin/depmod $dd >/dev/null 2>&1
done

if [ -f /usr/bin/ofed_info ]; then
sed -i -r -e "s/^(OFED)(.*)(-[0-9]*.*-[0-9]*.*)/MLNX_OFED_LINUX-5.6-x.x.x.x (\1\3):\n/"
/usr/bin/ofed_info
sed -i -r -e "s/(.*then echo) (.*):(.*)\^1 MLNX_OFED_LINUX-5.6-x.x.x.x: \3/"
/usr/bin/ofed_info
sed -i -r -e "s/(.*X-n\" ); then echo) (.*)(: exit.*)\^1 5.6-x.x.x.x \3/" /usr/bin/ofed_info
sed -i -e "s/OFED-internal/MLNX_OFED_LINUX/g" /usr/bin/ofed_info
fi

# Switch off opensmd service
/sbin/chkconfig --set opensmd off > /dev/null 2>&1 || true
/sbin/chkconfig opensmd off > /dev/null 2>&1 || true
if [ -f "/etc/init.d/opensmd" ]; then
if [ -e /sbin/chkconfig ]; then
/sbin/chkconfig --del opensmd > /dev/null 2>&1 || true
elif [ -e /usr/sbin/update-rc.d ]; then
/usr/sbin/update-rc.d -f opensmd remove > /dev/null 2>&1 || true
else
/usr/lib/lsb/remove_initd /etc/init.d/opensmd > /dev/null 2>&1 || true
```



```

fi
fi

# Disable ibacm daemon by default
chkconfig --del ibacm > /dev/null 2>&1 || true

# disable SDP and QIB loading by default
if [ -e /etc/infiniband/openib.conf ]; then
sed -i -r -e "s/^SDP_LOAD=.*SDP_LOAD=no/" /etc/infiniband/openib.conf
sed -i -r -e "s/^QIB_LOAD=.*QIB_LOAD=no/" /etc/infiniband/openib.conf
fi

/sbin/ldconfig > /dev/null 2>&1 || true

```

9. Create control file under /tmp/OFED_topdir/<rpmname>-<version>/debian/control

```

Source: mlnx-ofed-all
Section: utils
Priority: extra
Maintainer: your username <mail>
Build-Depends: debhelper (>= 9.0.0)
Standards-Version: 3.9.2
Homepage: http://www.mellanox.com

Package:mlnx-ofed-all // PACKAGE NAME
Architecture: all

// list of the packages we need to install in this group (see the list of packages to install we
created at first)

Depends: ${shlibs:Depends}, ${misc:Depends}, dpcp (>=1.1.25-1.56076), mstflint
(>=4.16.0-1.56076), rdmacm-utils (>=56mlnx40-1.56076), mlnx-tools (>=5.2.0-
0.56076), mlnx-iproute2 (>=5.16.0-1.56076), opensm
(>=5.11.0.MLNX20220418.fd3d650-0.1.56076), ibutils2 (>=2.1.1-

```

0.148.MLNX20220418.g60b8156.56076), ofed-scripts (>=5.6-OFED.5.6.0.7.6), dump-pr (>=1.0-5.11.0.MLNX20220418.g7e9d922.56076), mlnx-ethtool (>=5.15-1.56076), perftest (>=4.5-0.14.gd962d8c.56076), libibverbs-dev (>=56mlnx40-1.56076), ucx (>=1.13.0-1.56076), ibsim-doc (>=0.10-1.56076), srp-dkms (>=5.6-OFED.5.6.0.7.6.1), ibacm (>=56mlnx40-1.56076), sharp (>=2.7.0.MLNX20220331.8d57397a-1.56076), libibmad5 (>=56mlnx40-1.56076), mlnx-ofed-kernel-utils (>=5.6-OFED.5.6.0.7.6.1), srptools (>=56mlnx40-1.56076), ibsim (>=0.10-1.56076), libibmad-dev (>=56mlnx40-1.56076), libibumad3 (>=56mlnx40-1.56076), ibverbs-utils (>=56mlnx40-1.56076), rdma-core (>=56mlnx40-1.56076), libibverbs1 (>=56mlnx40-1.56076), isert-dkms (>=5.6-OFED.5.6.0.7.6.1), libibumad-dev (>=56mlnx40-1.56076), iser-dkms (>=5.6-OFED.5.6.0.7.6.1), ibdump (>=6.0.0-1.56076), libopensm-devel (>=5.11.0.MLNX20220418.fd3d650-0.1.56076), libopensm (>=5.11.0.MLNX20220418.fd3d650-0.1.56076), kernel-mft-dkms (>=4.20.0-29), libibnetdisc5 (>=56mlnx40-1.56076), librdmacm1 (>=56mlnx40-1.56076), opensm-doc (>=5.11.0.MLNX20220418.fd3d650-0.1.56076), mlnx-ofed-kernel-dkms (>=5.6-OFED.5.6.0.7.6.1), infiniband-diags (>=56mlnx40-1.56076), mft (>=4.15.1-9), librdmacm-dev (>=56mlnx40-1.56076), ibverbs-providers (>=56mlnx40-1.56076)
Description: MLNX_OFED all installer [package](#) (with DKMS support)

Package:mlnx-ofed-all-exact

Architecture: all

10. Create copyright file under `/tmp/OFED_topdir/<rpmname>-<version>/debian/copyright`
On Debian systems, a copy of the General Public License version 2 could be found under `/usr/share/common-licenses/GPL-2`

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0>

Files: *

Copyright: 2022, NVIDIA Corporation

License: GPLv2-and-2BSD

- * This software is available to you under a choice of one of two
- * licenses. You may choose to be licensed under the terms of the GNU
- * General Public License (GPL) Version 2, available from the file
- * COPYING in the main directory of [this](#) source tree, or the
- * BSD license below:

- *
 - * Redistribution and use in source and binary forms, with or
 - * without modification, are permitted provided that the following
 - * conditions are met:
 - *
 - * - Redistributions of source code must retain the above
 - * copyright notice, [this](#) list of conditions and the following
 - * disclaimer.
 - *
 - * - Redistributions in binary form must reproduce the above
 - * copyright notice, [this](#) list of conditions and the following
 - * disclaimer in the documentation and/or other materials
 - * provided with the distribution.
 - * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
 - * EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
 - OF
 - * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
 - * NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
 - HOLDERS
 - * BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN
 - * ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
 - * CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
 - THE
 - * SOFTWARE.

11. Creating tarball.

```
cd /tmp/OFED_topdir
tar czf <rpmname>_<version>.orig.tar.gz <rpmname>-<version>
cd <rpmname>-<version>
dpkg-buildpackage -us -uc
cp -af *.deb /tmp/OFED-internal-5.6-x.x.x/DEBS/OS/arch/
```

12. Create new yum repository under /etc/yum.repos.d/mlnx_ofed.repo

```
[mlnx_ofed]
deb [trusted=yes] file:/tmp/OFED-internal-5.6-0.7.6/DEBS/debian10.8/x86_64/ ./
```

13. Refresh repository list.

```
apt update
```

14. Install OFED.

```
apt install mlnx-ofed-all
```

Note

mpitests package is disabled on Fedora 35 and Photon due to building issues. mpitests package is disabled on Fedora 35 and Photon due to building issues.

Additional Installation Procedures

Installing MLNX_OFED Using YUM

This type of installation is applicable to RedHat/OL and Fedora operating systems.

Setting up MLNX_OFED YUM Repository

1. Log into the installation machine as root.

2. Mount the ISO image on your machine and copy its content to a shared location in your network.

```
# mount -o ro,loop MLNX_OFED_LINUX-<ver>-<OS label>-<CPU arch>.iso /mnt
```

3. Download and install NVIDIA's GPG-KEY:

The key can be downloaded via the following link:

<http://www.mellanox.com/downloads/ofed/RPM-GPG-KEY-Mellanox-SHA256>

```
# wget http://www.mellanox.com/downloads/ofed/RPM-GPG-KEY-Mellanox-SHA256
--2018-01-25 13:52:30-- http://www.mellanox.com/downloads/ofed/RPM-GPG-KEY-Mellanox-
SHA256
Resolving www.mellanox.com... 72.3.194.0
Connecting to www.mellanox.com | 72.3.194.0 |:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1354 (1.3K) [text/plain]
Saving to: ?RPM-GPG-KEY-Mellanox-SHA256?

100%[=====>] 1,354 --.-
K/s in 0s

2018-01-25 13:52:30 (247 MB/s) - ?RPM-GPG-KEY-Mellanox-SHA256? saved
[1354/1354]
```

4. Install the key.

```
# sudo rpm --import RPM-GPG-KEY-Mellanox-SHA256
warning: rpmts_HdrFromFdno: Header V3 DSA/SHA1 Signature, key ID
6224c050: NOKEY
Retrieving key from file:///repos/MLNX_OFED/<MLNX_OFED file>/RPM-GPG-KEY-Mellanox-
SHA256
Importing GPG key 0x6224C050:
Userid: "Mellanox Technologies (Mellanox Technologies - Signing Key v2)
<support@mellanox.com>"
From : /repos/MLNX_OFED/<MLNX_OFED file>/RPM-GPG-KEY-Mellanox-
SHA256
```

Is [this](#) ok [y/N]:

5. Check that the key was successfully imported.

```
# rpm -q gpg-pubkey --qf '%{NAME}-%{VERSION}-%{RELEASE}\t%{SUMMARY}\n' | grep
Mellanox
gpg-pubkey-a9e4b643-520791ba gpg(Mellanox Technologies
<support@mellanox.com>)
```

6. Create a yum repository configuration file called "/etc/yum.repos.d/mlnx_ofed.repo" with the following content:

```
[mlnx_ofed]
name=MLNX_OFED Repository
baseurl=file:///<path to extracted MLNX_OFED package>/RPMS
enabled=1
gpgkey=file:///<path to the downloaded key RPM-GPG-KEY-Mellanox-SHA256>
gpgcheck=1
```

7. Check that the repository was successfully added.

```
# yum repolist
Loaded plugins: product-id, security, subscription-manager
This system is not registered to Red Hat Subscription Management. You can
use subscription-manager to register.
repo id repo name status
mlnx_ofed MLNX_OFED Repository 108
rpmforge RHEL 6Server - RPMforge.net - dag 4,597

repolist: 8,351
```

Setting up MLNX_OFED YUM Repository Using --add-kernel-support

1. Log into the installation machine as root.

2. Mount the ISO image on your machine and copy its content to a shared location in your network.

```
# mount -o ro,loop MLNX_OFED_LINUX-<ver>-<OS label>-<CPU arch>.iso /mnt
```

3. Build the packages with kernel support and create the tarball.

```
# /mnt/mlnx_add_kernel_support.sh --make-tgz <optional --kmp> -k $(uname -r) -m /mnt/
```

Note: This program will create MLNX_OFED_LINUX TGZ for rhel7.6 under /tmp directory.

Do you want to [continue?](#)[y/N]:y

See log file /tmp/mlnx_iso.4120_logs/mlnx_ofed_iso.4120.log

Checking if all needed packages are installed...

Building MLNX_OFED_LINUX RPMS . Please wait...

Creating metadata-rpms for 3.10.0-957.21.3.el7.x86_64 ...

WARNING: If you are going to configure [this package](#) as a repository, then please note

WARNING: that it contains unsigned rpms, therefore, you need to disable the gpgcheck

WARNING: by setting 'gpgcheck=0' in the repository conf file.

Created /tmp/MLNX_OFED_LINUX-5.2-0.5.5.0-rhel7.6-x86_64-ext.tgz

4. Open the tarball.

```
# cd /tmp/
```

```
# tar -xvf /tmp/MLNX_OFED_LINUX-5.2-0.5.5.0-rhel7.6-x86_64-ext.tgz
```

5. Create a YUM repository configuration file called "/etc/yum.repos.d/mlnx_ofed.repo" with the following content:

```
[mlnx_ofed]
```

```
name=MLNX_OFED Repository
```

```
baseurl=file:///<path to extracted MLNX_OFED package>/RPMS
```

```
enabled=1
gpgcheck=0
```

6. Check that the repository was successfully added.

```
# yum repolist
Loaded plugins: product-id, security, subscription-manager
This system is not registered to Red Hat Subscription Management. You can
use subscription-manager to register.
repo id repo name status
mlnx_ofed MLNX_OFED Repository 108
rpmforge RHEL 6Server - RPMforge.net - dag 4,597

repolist: 8,351
```

Installing MLNX_OFED Using the YUM Tool

After setting up the YUM repository for MLNX_OFED package, perform the following:

1. View the available package groups by invoking:

```
# yum search mlnx-ofed-
mlnx-ofed-all.noarch : MLNX_OFED all installer package (with KMP support)
mlnx-ofed-all-user-only.noarch : MLNX_OFED all-user-only installer package
(User Space packages only)
mlnx-ofed-basic.noarch : MLNX_OFED basic installer package (with KMP
support)
mlnx-ofed-basic-user-only.noarch : MLNX_OFED basic-user-only installer
package (User Space packages only)
mlnx-ofed-bluefield.noarch : MLNX_OFED bluefield installer package (with KMP
support)
mlnx-ofed-bluefield-user-only.noarch : MLNX_OFED bluefield-user-only
installer package (User Space packages only)
```


mlnx-ofed-dpdk.noarch : MLNX_OFED dpdk installer [package](#) (with KMP support)

mlnx-ofed-dpdk-upstream-libs.noarch : MLNX_OFED dpdk-upstream-libs installer [package](#) (with KMP support)

mlnx-ofed-dpdk-upstream-libs-user-only.noarch : MLNX_OFED dpdk-upstream-libs-user-only installer [package](#) (User Space packages only)

mlnx-ofed-dpdk-user-only.noarch : MLNX_OFED dpdk-user-only installer [package](#) (User Space packages only)

mlnx-ofed-eth-only-user-only.noarch : MLNX_OFED eth-only-user-only installer [package](#) (User Space packages only)

mlnx-ofed-guest.noarch : MLNX_OFED guest installer [package](#) (with KMP support)

mlnx-ofed-guest-user-only.noarch : MLNX_OFED guest-user-only installer [package](#) (User Space packages only)

mlnx-ofed-hpc.noarch : MLNX_OFED hpc installer [package](#) (with KMP support)

mlnx-ofed-hpc-user-only.noarch : MLNX_OFED hpc-user-only installer [package](#) (User Space packages only)

mlnx-ofed-hypervisor.noarch : MLNX_OFED hypervisor installer [package](#) (with KMP support)

mlnx-ofed-hypervisor-user-only.noarch : MLNX_OFED hypervisor-user-only installer [package](#) (User Space packages only)

mlnx-ofed-kernel-only.noarch : MLNX_OFED kernel-only installer [package](#) (with KMP support)

mlnx-ofed-vma.noarch : MLNX_OFED vma installer [package](#) (with KMP support)

mlnx-ofed-vma-eth.noarch : MLNX_OFED vma-eth installer [package](#) (with KMP support)

mlnx-ofed-vma-eth-user-only.noarch : MLNX_OFED vma-eth-user-only installer [package](#) (User Space packages only)

mlnx-ofed-vma-user-only.noarch : MLNX_OFED vma-user-only installer [package](#) (User Space packages only)

mlnx-ofed-vma-vpi.noarch : MLNX_OFED vma-vpi installer [package](#) (with KMP support)

mlnx-ofed-vma-vpi-user-only.noarch : MLNX_OFED vma-vpi-user-only installer [package](#) (User Space packages only)

where:

mlnx-ofed-all	Installs all available packages in MLNX_OFED
mlnx-ofed-basic	Installs basic packages required for running NVIDIA cards
mlnx-ofed-guest	Installs packages required by guest OS
mlnx-ofed-hpc	Installs packages required for HPC
mlnx-ofed-hypervisor	Installs packages required by hypervisor OS
mlnx-ofed-vma	Installs packages required by VMA
mlnx-ofed-vma-eth	Installs packages required by VMA to work over Ethernet
mlnx-ofed-vma-vpi	Installs packages required by VMA to support VPI
bluefield	Installs packages required for BlueField
dpdk	Installs packages required for DPDK
dpdk-upstream-libs	Installs packages required for DPDK using RDMA-Core
kernel-only	Installs packages required for a non-default kernel

Note: MLNX_OFED provides kernel module RPM packages with KMP support for RHEL and SLES. For other operating systems, kernel module RPM packages are provided only for the operating system's default kernel. In this case, the group RPM packages have the supported kernel version in their package's name.

Example:

```
mlnx-ofed-all-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED all installer package for
kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-basic-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED basic installer
package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-guest-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED guest installer
package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-hpc-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED hpc installer
package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-hypervisor-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED hypervisor
installer package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-vma-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED vma installer
package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
```

```
mlnx-ofed-vma-eth-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED vma-eth
installer package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-vma-vpi-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED vma-vpi
installer package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-hypervisor-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED hypervisor
installer package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-vma-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED vma installer
package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-vma-eth-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED vma-eth
installer package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
mlnx-ofed-vma-vpi-3.17.4-301.fc21.x86_64.noarch : MLNX_OFED vma-vpi
installer package for kernel 3.17.4-301.fc21.x86_64 (without KMP support)
```

When using an operating system different than RHEL or SLES, or you have installed a kernel that is not supported by default in MLNX_OFED, you can use the `mlnx_add_kernel_support.sh` script to build MLNX_OFED for your kernel. The script will automatically build the matching group RPM packages for your kernel so that you can still install MLNX_OFED via yum. Please note that the resulting MLNX_OFED repository will contain unsigned RPMs, therefore, you should set `'gpgcheck=0'` in the repository configuration file.

2. Install the desired group.

```
# yum install mlnx-ofed-all
Loaded plugins: langpacks, product-id, subscription-manager
Resolving Dependencies
--> Running transaction check
---> Package mlnx-ofed-all.noarch 0:3.1-0.1.2 will be installed
--> Processing Dependency: kmod-iser = 1.0-OFED.3.1.0.1.2.1.g832a737.rhel7u1
for package: mlnx-ofed-all-3.1-0.1.2.noarch
.....
.....
qperf.x86_64 0:0.4.9-9
rds-devel.x86_64 0:2.0.7-1.12
rds-tools.x86_64 0:2.0.7-1.12
sdpnetstat.x86_64 0:1.60-26
```

```
srptools.x86_64 0:1.0.2-12
```

Complete!

Note

Installing MLNX_OFED using the “YUM” tool does not automatically update the firmware. To update the firmware to the version included in MLNX_OFED package, run: `# yum install mlnx-fw-updater` OR: Update the firmware to the latest version available on NVIDIA's website as described in “[Updating Firmware After Installation](#)” section.

Installing MLNX_OFED Using apt-get

This type of installation is applicable to Debian and Ubuntu operating systems.

Setting up MLNX_OFED apt-get Repository

1. Log into the installation machine as root.
2. Extract the MLNX_OFED package on a shared location in your network. It can be downloaded from <https://www.nvidia.com/en-us/networking/ProductsSoftware/InfiniBandDrivers>.
3. Create an apt-get repository configuration file called `"/etc/apt/sources.list.d/mlnx_ofed.list"` with the following content:

```
deb file:/<path to extracted MLNX_OFED package>/DEBS ./
```

4. Download and install NVIDIA's Technologies GPG-KEY.

```
# wget -qO - http://www.mellanox.com/downloads/ofed/RPM-GPG-KEY-Mellanox-SHA256-SHA256 | sudo apt-key add -
```

5. Verify that the key was successfully imported.

```
# apt-key list
pub 1024D/A9E4B643 2013-08-11
uid Mellanox Technologies <support@mellanox.com>
sub 1024g/09FCC269 2013-08-11
```

6. Update the apt-get cache.

```
# sudo apt-get update
```

Setting up MLNX_OFED apt-get Repository Using --add-kernel-support

1. Log into the installation machine as root.
2. Mount the ISO image on your machine and copy its content to a shared location in your network.

```
# mount -o ro,loop MLNX_OFED_LINUX-<ver>-<OS label>-<CPU arch>.iso /mnt
```

3. Build the packages with kernel support and create the tarball.

```
# /mnt/mlnx_add_kernel_support.sh --make-tgz <optional --kmp> -k $(uname -r) -m /mnt/
Note: This program will create MLNX_OFED_LINUX TGZ for rhel7.6 under /tmp directory.
Do you want to continue?[y/N]:y
```

```
See log file /tmp/mlnx_iso.4120_logs/mlnx_ofed_iso.4120.log
```

```
Checking if all needed packages are installed...
```

```
Building MLNX_OFED_LINUX RPMs . Please wait...
```

```
Creating metadata-rpms for 3.10.0-957.21.3.el7.x86_64 ...
```

```
WARNING: If you are going to configure this package as a repository, then please note
```

```
WARNING: that it contains unsigned rpms, therefore, you need to disable the gpgcheck
```

```
WARNING: by setting 'gpgcheck=0' in the repository conf file.
```

```
Created /tmp/MLNX_OFED_LINUX-5.2-0.5.5.0-rhel7.6-x86_64-ext.tgz
```

4. Open the tarball.

```
# cd /tmp/  
# tar -xvf /tmp/MLNX_OFED_LINUX-5.2-0.5.5.0-rhel7.6-x86_64-ext.tgz
```

5. Create an apt-get repository configuration file called "/etc/apt/sources.list.d/mlnx_ofed.list" with the following content:

```
deb [trusted=yes] file:/<path to extracted MLNX_OFED package>/DEBS ./
```

6. Update the apt-get cache.

```
# sudo apt-get update
```

Installing MLNX_OFED Using the apt-get Tool

After setting up the apt-get repository for MLNX_OFED package, perform the following:

1. View the available package groups by invoking:

```
# apt-cache search mlnx-ofed-
```

apt-cache search mlnx-ofed

knem-dkms - DKMS support [for](#) mlnx-ofed kernel modules

mlnx-ofed-kernel-dkms - DKMS support [for](#) mlnx-ofed kernel modules

mlnx-ofed-kernel-utils - Userspace tools to restart and tune mlnx-ofed kernel modules

mlnx-ofed-vma-vpi - MLNX_OFED vma-vpi installer [package](#) (with DKMS support)

mlnx-ofed-kernel-only - MLNX_OFED kernel-only installer [package](#) (with DKMS support)

mlnx-ofed-bluefield - MLNX_OFED bluefield installer [package](#) (with DKMS support)

mlnx-ofed-hpc-user-only - MLNX_OFED hpc-user-only installer [package](#) (User Space packages only)

mlnx-ofed-dpdk-user-only - MLNX_OFED dpdk-user-only installer [package](#) (User Space packages only)

mlnx-ofed-all-exact - MLNX_OFED all installer [package](#) (with DKMS support) (exact)

mlnx-ofed-all - MLNX_OFED all installer [package](#) (with DKMS support)

mlnx-ofed-vma-vpi-user-only - MLNX_OFED vma-vpi-user-only installer [package](#) (User Space packages only)

mlnx-ofed-eth-only-user-only - MLNX_OFED eth-only-user-only installer [package](#) (User Space packages only)

mlnx-ofed-vma-user-only - MLNX_OFED vma-user-only installer [package](#) (User Space packages only)

mlnx-ofed-hpc - MLNX_OFED hpc installer [package](#) (with DKMS support)

mlnx-ofed-bluefield-user-only - MLNX_OFED bluefield-user-only installer [package](#) (User Space packages only)

mlnx-ofed-dpdk - MLNX_OFED dpdk installer [package](#) (with DKMS support)

mlnx-ofed-vma-eth-user-only - MLNX_OFED vma-eth-user-only installer [package](#) (User Space packages only)

mlnx-ofed-all-user-only - MLNX_OFED all-user-only installer [package](#) (User Space packages only)

mlnx-ofed-vma-eth - MLNX_OFED vma-eth installer [package](#) (with DKMS support)

mlnx-ofed-vma - MLNX_OFED vma installer [package](#) (with DKMS support)

mlnx-ofed-dpdk-upstream-libs-user-only - MLNX_OFED dpdk-upstream-libs-user-only installer [package](#) (User Space packages only)

mlnx-ofed-basic-user-only - MLNX_OFED basic-user-only installer [package](#) (User Space packages only)

mlnx-ofed-basic-exact - MLNX_OFED basic installer [package](#) (with DKMS support) (exact)

mlnx-ofed-basic - MLNX_OFED basic installer [package](#) (with DKMS support)

mlnx-ofed-dpdk-upstream-libs - MLNX_OFED dpdk-upstream-libs installer [package](#) (with DKMS support)

where:

mlnx-ofed-all	MLNX_OFED all installer package
mlnx-ofed-basic	MLNX_OFED basic installer package
mlnx-ofed-vma	MLNX_OFED vma installer package
mlnx-ofed-hpc	MLNX_OFED HPC installer package
mlnx-ofed-vma-eth	MLNX_OFED vma-eth installer package
mlnx-ofed-vma-vpi	MLNX_OFED vma-vpi installer package
knem-dkms	MLNX_OFED DKMS support for mlnx-ofed kernel modules
kernel-dkms	MLNX_OFED kernel-dkms installer package
kernel-only	MLNX_OFED kernel-only installer package
bluefield	MLNX_OFED bluefield installer package
mlnx-ofed-all-exact	MLNX_OFED mlnx-ofed-all-exact installer package
dpdk	MLNX_OFED dpdk installer package
mlnx-ofed-basic-exact	MLNX_OFED mlnx-ofed-basic-exact installer package
dpdk-upstream-libs	MLNX_OFED dpdk-upstream-libs installer package

2. Install the desired group.

```
apt-get install '<group name>'
```

Example:


```
apt-get install mlnx-ofed-all
```

Note

Installing MLNX_OFED using the “apt-get” tool does not automatically update the firmware. To update the firmware to the version included in MLNX_OFED package, run: `# apt-get install mlnx-fw-updater` OR: Update the firmware to the latest version available on NVIDIA's website as described in “[Updating Firmware After Installation](#)” section.

© Copyright 2024, NVIDIA. PDF Generated on 06/06/2024