

组网及说明

无

配置步骤

1. 下载驱动

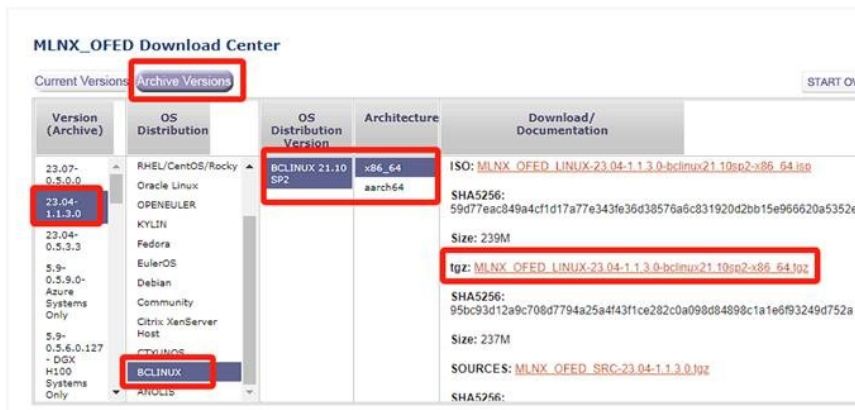
登陆英伟达官网下载驱动，官网链接：

https://network.nvidia.com/products/infiniband-drivers/linux/mlnx_ofed/

登陆到官网后，划到页面底下，选择Archive Versions历史版本中，找我们需要的对应版本号码，目前常用的为23.04以及5.9版本，为EBS云硬盘需求的网卡驱动，阿里SDN的计算节点要求为5.6-1.0.3.3，其余特殊需求根据所需下载；

另外需要注意的是，下载时需注意X86版本系统以及ARM系统，X86选择x86_64，ARM系统选择aarch64；

在下载部分驱动时，以阿里SDN要求的5.6-1.0.3.3版本中，BCLinux21.10SP2仅有ARM版本的，X86系统可以下载OpenEuler20.03SP1的驱动，到系统进行二次编译即可，类似如果驱动没有BCLinux7.6版本，但是需要BCLinux7.6时，可以下载CentOS7.6作为平替，在系统进行二次编译即可，下面截图为下载23.04版本BCLinux21.10 X86系统的示例，注意下载时选择tgz结尾的包



2. 上传驱动

通过4A登陆或者现场同事本地上传驱动包，4A登陆通过sudo rz命令即可上传驱动

```
[root@JXGZ-ZSY-P18F10-MCORE-PM-OS01-VMHOST-01 ~]# sudo rz
rz waiting to receive.
Starting zmodem transfer. Press Ctrl+C to cancel.
Transferring MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64.tgz...
100% 241456 KB 551 KB/sec 00:07:18 0 Errors
```

使用

tar -xvf 驱动包名称.tgz

解压缩

```
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-01 ~]# tar -xvf MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64.tgz
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/.supported_kernels
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/mlnxofedinstall
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/common.pl
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/is_kmp_compat.sh
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/create_mlnx_ofed_installers.pl
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/common_installers.pl
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/mlnx_add_kernel_support.sh
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/RPM-GPG-KEY-Mellanox
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/uninstall.sh
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/mlnx
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/.arch
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/distro
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/Secure_Boot/
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/Secure_Boot/README.txt
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/Secure_Boot/mlnx_signing_key_pub.der
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/Packages_License_info.txt
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/MFT_LICENSE.txt
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/ofed-all.conf
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/ofed-basic.conf
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/ofed-hpc.conf
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/ofed-vmx.conf
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/ofed-vmxeth.conf
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/ofed-vmxapi.conf
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/conf/ofed_net.conf-example
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/readme_and_user_manual/
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/readme_and_user_manual/QoS_architecture.txt
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/readme_and_user_manual/QoS_management_in_OpenSM.txt
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/readme_and_user_manual/MLNX_OFED_configuration_files.txt
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/readme_and_user_manual/hca_self_test.readme
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/readme_and_user_manual/AR_Mgr_UM.txt
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/scripts/
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/scripts/create_Module.symvers.sh
./MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/docs/scripts/generate_mlnx_ofed_supp.sh
```

3.安装驱动

解压缩完成后，会在当前目录生成一个驱动的目的录

```
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-01 ~]# ll
total 237M
-rw-r--r-- 1 root root 7.1K Oct 13 19:30 anaconda-ks.cfg
-rwxr-xr-x 1 root root 22K Oct 22 14:24 bond.sh
-rw-r--r-- 1 root root 57 Oct 26 14:54 host
-rw-r--r-- 1 root root 282K Oct 26 15:06 iperf3.log
-rw-r--r-- 1 root root 91 Oct 26 14:48 ip.txt
-rw-r--r-- 1 root root 3.1K Oct 23 19:07 lldpinf.sh
-rw-r--r-- 1 root root 309 Oct 23 19:06 lldp.sh
-rw-r--r-- 1 root root 2.1K Oct 26 17:29 mac.sh
drwxr-xr-x 5 root root 334 May 30 20:52 MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64
-rw-r--r-- 1 root root 236M Oct 27 17:04 MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64.tgz
-rw-r--r-- 1 root root 6.6K Oct 13 19:30 original-ks.cfg
-rw-r--r-- 1 root root 4.5K Oct 24 21:34 pingGW.sh
-rw-r--r-- 1 root root 9.6K Oct 22 14:24 server.txt
-rw-r--r-- 1 root root 3.1K Oct 26 17:28 source
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-01 ~]# cd MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64/
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-01 MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64]# ll
total 364K
-rwxr-xr-x 1 root root 3.1K May 30 20:49 common_installers.pl
-rwxr-xr-x 1 root root 25K May 30 20:49 common.pl
-rwxr-xr-x 1 root root 27K May 30 20:49 create_mlnx_ofed_installers.pl
-rw-r--r-- 1 root root 16 May 30 20:49 distro
drwxr-xr-x 6 root root 153 May 30 20:50 docs
-rwxr-xr-x 1 root root 4.9K May 30 20:49 is_kmp_compat.sh
-rw-r--r-- 1 root root 956 May 30 20:50 LICENSE
-rwxr-xr-x 1 root root 22K May 30 20:49 mlnx_add_kernel_support.sh
-rwxr-xr-x 1 root root 229K May 30 20:49 mlnxofedinstall
-rw-r--r-- 1 root root 2.7K May 30 20:49 RPM-GPG-KEY-Mellanox
drwxr-xr-x 3 root root 8.0K May 30 20:52 RPMs
drwxr-xr-x 2 root root 45 May 30 20:49 src
-rwxr-xr-x 1 root root 16K May 30 20:49 uninstall.sh
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-01 MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64]#
```

在更新前，要先安装createrepo包，使用命令yum install createrepo -y即可

运行mlnxofedinstall这个脚本可以自动安装升级驱动，需要补充--add-kernel-support参数实现现在系统内核的编译支持，另外第一次安装一般会报错，更新期间需要依赖各种软件包，需要服务器的YUM源环境初始化完成，初步具备YUM功能后再升级驱动；

在我们不知道当前版本会依赖哪些软件包时，可以直接运行"./mlnxofedinstall --add-kernel-support"命令直接安装，安装过程会提示缺少的软件包，根据提示内容补充安装对应的软件包即可

```
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64]# ./mlnxofedinstall --add-kernel-support
Note: this program will create MLNX_OFED_LINUX.tgz for bclinux21.10sp2 under /tmp/MLNX_OFED_LINUX-23.04-1.1.3.0-4.19.90-2197.6.0.0192.8.0el.bclinux.x86_64 directory.
See log file /tmp/MLNX_OFED_LINUX-23.04-1.1.3.0-4.19.90-2197.6.0.0192.8.0el.bclinux.x86_64/mlnx_iso.128389_logs/mlnx_ofed_iso.128389.log

Checking if all needed packages are installed...

Error: One or more required packages for installing OFED-internal are missing.
Please install the missing packages using your Linux distribution Package Management tool.
Run:
yum install python3-devel libtool elfutils-devel
Failed to build MLNX_OFED_LINUX for 4.19.90-2197.6.0.0192.8.0el.bclinux.x86_64
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bclinux21.10sp2-x86_64]#
```

提示运行"yum install python3-devel libtool elfutils-devel"我们根据提示安装对应依赖包即可，一般来说，会报错2次，本次依赖包安装完成之后，还有一些依赖包待安装，重新安装看提示缺失什么安装什么就可以了；

比如我已经安装好了刚才提示的，如今重新提示需要安装" gcc-gfortran fuse-devel"，反正报错让安装什么就安装就可以了

```
Running scriptlet: python3-7.9-19-ol_x86_64
Verifying...
Verifying : elfutils-devel-0.180-1-ol_x86_64
Verifying : libtool-2.4.6-33-ol_x86_64
Verifying : python-devel-1.7.5-19-ol_x86_64
Verifying : python3-7.9-19-ol_x86_64
Verifying : python3-7.9-19-ol_x86_64

Upgraded:
python3-7.9-19-ol_x86_64

Installed:
elfutils-devel-0.180-1-ol_x86_64 libtool-2.4.6-33-ol_x86_64 python-devel-1.7.5-19-ol_x86_64

Complete!
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64] # ./bin/install --add-kernel-support
Note: This program will create MLNX_OFED_LINUX.log for MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64
See log file /tmp/MLNX_OFED_LINUX-23.04-1.1.3.0-19-00-2107.6.8.0302.1-ol_bcLinux_x86_64/MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64
Checking if all needed packages are installed...
Installing MLNX_OFED_LINUX (PM) : Please wait...

Creating metadata: rpm for 4.19.10-1107.6.8.0302.1-ol_bcLinux_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.
Removed /tmp/MLNX_OFED_LINUX-23.04-1.1.3.0-19-00-2107.6.8.0302.1-ol_bcLinux_x86_64/MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64
Installing /tmp/MLNX_OFED_LINUX-23.04-1.1.3.0-19-00-2107.6.8.0302.1-ol_bcLinux_x86_64/MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64
/tmp/MLNX_OFED_LINUX-23.04-1.1.3.0-19-00-2107.6.8.0302.1-ol_bcLinux_x86_64/MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64/bin/install --force
Log dir: /tmp/MLNX_OFED_LINUX_673197.log
General log file: /tmp/MLNX_OFED_LINUX_673197.log/general.log
Note: There are more required packages for installing MLNX_OFED_LINUX are missing.
Please install the missing packages using your Linux Distribution Package Management tool.
Run:
rpm -i $(cat /etc/alternatives/alternatives)
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64] #
```

```
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
1:mlnx-fw-updater-23.04-1.1.3.0 ##### [100%]

Added 'RUN_FW_UPDATER_ONBOOT=no' to /etc/infiniband/openib.conf

Initializing...
Attempting to perform Firmware update...

The firmware for this device is not distributed inside Mellanox driver: 18:00.0 (PSID: H3C0000000007)
To obtain firmware for this device, please contact your HW vendor.

The firmware for this device is not distributed inside Mellanox driver: 3b:00.0 (PSID: H3C0000000007)
To obtain firmware for this device, please contact your HW vendor.

Failed to update Firmware.
See /tmp/MLNX_OFED_LINUX_673197.logs/fw_update.log
You may need to update your initramfs before next boot. To do that, run:

    dracut -f
To load the new driver, run:
/etc/init.d/openibd restart
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-01 MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64] #
```

其中最关键会出现让你运行dracut -f以及/etc/init.d/openibd restart命令就是基本安装成功了；
在出现这个后，切记要修改网卡的配置文件，一般升级驱动后，网卡的名称会从ensXfX改成ensXfXnpX，例如ens2f0会变成ens2f0np0，ens2f1变成ens2f1np1，依次类推，所以我们需要先修改网卡的ifcfg配置文件（注意，只有Mellanox网卡才会修改，如果是英特尔的网卡名称是不会修改的，例如部分服务器采用英特尔X722网卡作为管理网，名称为ens8f0、ens8f1等，这种更新后网卡是不会受影响，只有Mellanox网卡名称会修改）

以下命令仅供参考：

```
mv /etc/sysconfig/network-scripts/ifcfg-ens1f0 /etc/sysconfig/network-scripts/ifcfg-ens1f0np0
mv /etc/sysconfig/network-scripts/ifcfg-ens1f1 /etc/sysconfig/network-scripts/ifcfg-ens1f1np1
mv /etc/sysconfig/network-scripts/ifcfg-ens2f0 /etc/sysconfig/network-scripts/ifcfg-ens2f0np0
mv /etc/sysconfig/network-scripts/ifcfg-ens2f1 /etc/sysconfig/network-scripts/ifcfg-ens2f1np1
sed -i 's/ens1f0/ens1f0np0/g' /etc/sysconfig/network-scripts/ifcfg-ens1f0np0
sed -i 's/ens1f1/ens1f1np1/g' /etc/sysconfig/network-scripts/ifcfg-ens1f1np1
sed -i 's/ens2f0/ens2f0np0/g' /etc/sysconfig/network-scripts/ifcfg-ens2f0np0
sed -i 's/ens2f1/ens2f1np1/g' /etc/sysconfig/network-scripts/ifcfg-ens2f1np1
```

在修改完网卡脚本后，执行dracut -f命令后执行/etc/init.d/openibd restart命令

```
See /tmp/MLNX_OFED_LINUX_673197.logs/fw_update.log
You may need to update your initramfs before next boot. To do that, run:

    dracut -f
To load the new driver, run:
/etc/init.d/openibd restart
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64] #
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64] #
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64] #
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02 MLNX_OFED_LINUX-23.04-1.1.3.0-bcLinux21.10sp2-x86_64] #
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # mv /etc/sysconfig/network-scripts/ifcfg-ens1f0 /etc/sysconfig/network-scripts/ifcfg-ens1f0np0
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # mv /etc/sysconfig/network-scripts/ifcfg-ens1f1 /etc/sysconfig/network-scripts/ifcfg-ens1f1np1
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # mv /etc/sysconfig/network-scripts/ifcfg-ens2f0 /etc/sysconfig/network-scripts/ifcfg-ens2f0np0
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # mv /etc/sysconfig/network-scripts/ifcfg-ens2f1 /etc/sysconfig/network-scripts/ifcfg-ens2f1np1
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] #
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # sed -i 's/ens1f0/ens1f0np0/g' /etc/sysconfig/network-scripts/ifcfg-ens1f0np0
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # sed -i 's/ens1f1/ens1f1np1/g' /etc/sysconfig/network-scripts/ifcfg-ens1f1np1
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # sed -i 's/ens2f0/ens2f0np0/g' /etc/sysconfig/network-scripts/ifcfg-ens2f0np0
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # sed -i 's/ens2f1/ens2f1np1/g' /etc/sysconfig/network-scripts/ifcfg-ens2f1np1
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] #
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # dracut -f
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # /etc/init.d/openibd restart
unloading HCA driver: [ OK ]
Loading HCA driver and Access Layer: [ OK ]
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # ip a | grep bond1
14: bond1: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
15: bond1.3704(bond1): <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
inet 100.64.3.272 brd 100.64.3.255 scope global noprefixroute bond1.3704
18: ens2f0np0: <BROADCAST,MULTICAST,SLAVE,UP,LOWER_UP> mtu 1500 qdisc mq master bond1 state UP group default qlen 1000
20: ens1f0np0: <BROADCAST,MULTICAST,SLAVE,UP,LOWER_UP> mtu 1500 qdisc mq master bond1 state UP group default qlen 1000
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] # ip a | grep bond2
12: bond2: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
13: bond2.3704(bond2): <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
inet 100.64.3.273 brd 100.64.3.255 scope global noprefixroute bond2.3704
19: ens2f1np1: <BROADCAST,MULTICAST,SLAVE,UP,LOWER_UP> mtu 1500 qdisc mq master bond2 state UP group default qlen 1000
21: ens1f1np1: <BROADCAST,MULTICAST,SLAVE,UP,LOWER_UP> mtu 1500 qdisc mq master bond2 state UP group default qlen 1000
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCCEBS-02] #
```

使用ethtool -i 网卡名称检查驱动版本：

```
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-01 ~]# ethtool -i ens1f0np0
driver: mlx5_core
version: 23.04-1.1.3
firmware-version: 14.32.1010 (H3C0000000007)
expansion-rom-version:
bus-info: 0000:3b:00.0
supports-statistics: yes
supports-test: yes
supports-eeprom-access: no
supports-register-dump: no
supports-priv-flags: yes
[root@JXGZ-ZSY-P18F10-SPOD1-PM-OS01-BCEBS-01 ~]#
```

配置关键点

BCLinux升级Mellanox网卡驱动指导