

中国移动现网部署 网迅网卡驱动安装流程

5.10内核

【以下安装教程以5.10内核 安装 驱动txgbe-1.3.6版本为例，后续驱动版本升级，rpm包文件名变化，操作步骤不变】

1、rpm包安装步骤：

```
rpm -ivh kmod-txgbe-1.3.6-BCLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64
```

```
[root@localhost plm]# rpm -ivh kmod-txgbe-1.3.6-BCLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:kmod-txgbe-1.3.6-1.oe2203sp1.bcLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bcLinux.x86_64.rpm [100%]
Working. This may take some time ...
Done.
```

2、rpm包卸载步骤：

```
rpm -e kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64
```

```
[root@localhost src]# rpm -e kmod-txgbe-1.3.6-1.oe2203sp1.bcLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bcLinux.x86_64.rpm
Working. This may take some time ...
Done.
```

3、rpm包安装结果验证：

测试系统：BCLinux-for-Euler-22.10U2-231013

测试内核：5.10.0-153.24.0.100.6.oe2203sp2.bcLinux-for-Euler-22.10U2-231013-5.10.0-153.24.0.100.6.oe2203sp2.bcLinux.x86_64

系统自带驱动版本：

```
[root@localhost src]# grubby --info=ALL
index=0
kernel=/boot/vmlinuz-5.10.0-153.24.0.100.6.oe2203sp2.bcLinux-for-Euler-22.10U2-231013-5.10.0-153.24.0.100.6.oe2203sp2.bcLinux.x86_64
args="ro resume=/dev/mapper/bcLinux-root rd.lvm.lv=bcLinux/swap cgroup_disable=files apparmor=0 crashkernel=1024M smmu.bypassdev=0x1000:0x15 crashkernel=512M rhgb quiet"
root=/dev/mapper/bcLinux-root
initrd=/boot/initramfs-5.10.0-153.24.0.100.6.oe2203sp2.bcLinux-for-Euler-22.10U2-231013-5.10.0-153.24.0.100.6.oe2203sp2.bcLinux.x86_64.img
title=BigCloud Enterprise Linux (5.10.0-153.24.0.100.6.oe2203sp2.bcLinux-for-Euler-22.10U2-231013-5.10.0-153.24.0.100.6.oe2203sp2.bcLinux.x86_64) 22.10U2 LTS
index=1
kernel=/boot/vmlinuz-0-rescue-5567947870d3467dab38c0f45fd91c12
args="ro resume=/dev/mapper/bcLinux-root rd.lvm.lv=bcLinux/swap cgroup_disable=files apparmor=0 crashkernel=1024M smmu.bypassdev=0x1000:0x15 crashkernel=512M rhgb quiet"
root=/dev/mapper/bcLinux-root
initrd=/boot/initramfs-0-rescue-5567947870d3467dab38c0f45fd91c12.img
title=BigCloud Enterprise Linux (0-rescue-5567947870d3467dab38c0f45fd91c12) 22.10U2 LTS
index=2
non linux entry
index=3
non linux entry
index=4
non linux entry
[root@localhost src]# modinfo txgbe
filename:      /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bcLinux-for-Euler-22.10U2-231013-5.10.0-153.24.0.100.6.oe2203sp2.bcLinux.x86_64/kernel/drivers/net/ethernet/netswift/txgbe/txgbe.ko.xz
version:       1.3.2oe
license:       GPL
description:    WangXun(R) 10 Gigabit PCI Express Network Driver
author:        Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:    B7389A4977C3A4CAD7057CC
alias:         pci:v00008080d00002001sv*sd*bc*sc*i*
alias:         pci:v00008080d00001001sv*sd*bc*sc*i*
depends:
retpoline:     Y
```

3.1、只安装kmod-txgbe-1.3.6-xxx.rpm包

1. 优先加载kmod-txgbe-1.3.6-xxx.rpm包

```
[root@localhost ~]# rpm -ivh kmod-txgbe-1.3.6-BCLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64 ##### [100%]
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/weak-updates/txgbe/txgbe.ko
version:        1.3.6
license:        GPL
description:    WangXun(R) 10 Gigabit PCI Express Network Driver
author:         Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:     05292675655E0085377CDDC
alias:          pci:v00008088d00002001sv*sd*bc*sc*i*
alias:          pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:     Y
name:           txgbe
vermagic:       5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64 SMP mod_unload modversions
parm:           FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm:           FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm:           FFE_POST:TX_EQ POST (0 - 40) (array of int)
parm:           FFE_SET:TX_EQ SET must choose to take effect (0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm:           backplane_mode:Backplane Mode Support(0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm:           backplane_auto:Backplane AUTO mode (0 = NO AUTO, 1 = AUTO) (array of int)
```

2. rpm -e 卸载驱动，modinfo查看自动加载内核自带驱动

```
[root@localhost ~]# rpm -e kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/kernel/drivers/net/ethernet/netswift/txgbe/txgbe.ko.xz
version:        1.3.2oe
license:        GPL
description:    WangXun(R) 10 Gigabit PCI Express Network Driver
author:         Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:     B73B9A4977C3A4CAD7057CC
alias:          pci:v00008088d00002001sv*sd*bc*sc*i*
alias:          pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:     Y
intree:        Y
name:           txgbe
vermagic:       5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64 SMP mod_unload modversions
sig_id:         PKCS#7
signer:         openEuler kernel signing key
sig_key:        74:36:7C:59:E5:4F:EB:0A:67:61:D6:DE:E6:9E:18:0B:02:A4:FC:AE
sig_hashalgo:   sha256
signature:      11:0A:3E:EE:7E:A5:CD:BE:83:E3:07:07:D1:8E:75:62:5B:1B:6A:19:
                26:DC:33:18:5F:2D:A6:E1:78:FC:94:07:39:5A:53:C0:2B:50:01:FC:
                4C:69:CA:B3:BE:43:D6:93:DD:63:28:A4:DE:8B:09:25:6A:B9:F3:56:
                E0:2D:ED:D6:90:B7:68:F4:CF:51:71:5B:1C:8A:6C:AD:90:2C:ED:9F:
                F4:C4:91:5D:D5:62:A5:09:09:61:1D:26:AA:AF:99:25:C5:13:50:F3:
                25:70:FE:9D:E9:2B:1D:D7:F1:C9:45:D0:9A:46:4F:79:F4:7E:25:AD:
                3F:D6:58:0F:87:19:8C:2F:C6:80:40:13:27:12:F0:5C:8F:A4:D5:0E:
```

3.2、源码安装低版本驱动，make modules_install 方式，再安装kmod-txgbe-1.3.6-xxx.rpm包

1. make modules_install安装低版本驱动

```
[root@localhost src]# make CHNOS=EULER modules_install -j
*** The target kernel has CONFIG_MODULE_SIG_ALL enabled, but
*** the signing key cannot be found. Module signing has been
*** disabled for this build.
make[1]: Entering directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
CC [M] /root/txgbe-1.3.5.1/src/txgbe_main.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_dcb.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_ethtool.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_lib.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_mbx.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_sriov.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_param.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_phy.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_procfs.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_hw.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_mtd.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_pcierr.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_bp.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_xsk.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_dcb_nl.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_debugfs.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_fcio.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_ptp.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_sysfs.o
CC [M] /root/txgbe-1.3.5.1/src/kcompat.o
LD [M] /root/txgbe-1.3.5.1/src/txgbe.o
MODPOST /root/txgbe-1.3.5.1/src/Module.symvers
CC [M] /root/txgbe-1.3.5.1/src/txgbe.mod.o
LD [M] /root/txgbe-1.3.5.1/src/txgbe.ko
make[1]: Leaving directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
Installing modules...
*** The target kernel has CONFIG_MODULE_SIG_ALL enabled, but
*** the signing key cannot be found. Module signing has been
*** disabled for this build.
make[1]: Entering directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
INSTALL /root/txgbe-1.3.5.1/src/txgbe.ko
DEPMOD 5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64
make[1]: Leaving directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
Running depmod manually...
/sbin/depmod -e -F /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/source/System.map -a 5.10.0-153.24.0.100.6
[root@localhost src]# modinfo txgbe
filename: /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/updates/drivers/net/ethernet/wangxun/txgbe/txgbe.ko
version: 1.3.5.1e1os
license: GPL
description: WangXun(R) 10 Gigabit PCI Express Network Driver
author: Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion: A0B851571CAE29C33393968
srcversion: A0B851571CAE29C33393968
```

2. 安装kmod-txgbe-1.3.6-xxx.rpm包，优先加载后面安装的kmod-txgbe-1.3.6-xxx的驱动，显示正常

```
[root@localhost ~]# rpm -ivh kmod-txgbe-1.3.6-BCLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64 ##### [100%]
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename: /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/weak-updates/txgbe/txgbe.ko
version: 1.3.6
license: GPL
description: WangXun(R) 10 Gigabit PCI Express Network Driver
author: Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion: 05292675655E0085377CDDC
alias: pci:v00008088d00002001sv*sd*bc*sc*i*
alias: pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline: Y
name: txgbe
vermagic: 5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64 SMP mod_unload modversions
parm: FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm: FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm: FFE_POST:TX_EQ POST (0 - 40) (array of int)
parm: FFE_SET:TX_EQ SET must choose to take effect (0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm: backplane_mode:Backplane Mode Support(0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm: backplane_auto:Backplane AUTO mode (0 = NO AUTO, 1 = AUTO) (array of int)
parm: vf_alloc_mode:Change VF Alloc Mode (0 = 2*64, 1 = 4*32, 2 = 8*16) (array of int)
parm: InterruptType:Change Interrupt Mode (0=Legacy, 1=MSI, 2=MSI-X), default IntMode (deprecated) (array of int)
```

3. 卸载kmod-txgbe-1.3.6-xxx.rpm包，显示正常

```
[root@localhost ~]# rpm -e kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename: /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/updates/drivers/net/ethernet/wangxun/txgbe/txgbe.ko
version: 1.3.5.1e1os
license: GPL
description: WangXun(R) 10 Gigabit PCI Express Network Driver
author: Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion: A0B851571CAE29C33393968
alias: pci:v00008088d00002001sv*sd*bc*sc*i*
alias: pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline: Y
name: txgbe
vermagic: 5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64 SMP mod_unload modversions
parm: FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm: FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm: FFE_POST:TX_EQ POST (0 - 40) (array of int)
parm: FFE_SET:TX_EQ SET must choose to take effect (0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm: backplane_mode:Backplane Mode Support(0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm: backplane_auto:Backplane AUTO mode (0 = NO AUTO, 1 = AUTO) (array of int)
parm: vf_alloc_mode:Change VF Alloc Mode (0 = 2*64, 1 = 4*32, 2 = 8*16) (array of int)
parm: InterruptType:Change Interrupt Mode (0=Legacy, 1=MSI, 2=MSI-X), default IntMode (deprecated) (array of int)
```

3.3、源码安装低版本驱动，make install 方式，再安装kmod-txgbe-1.3.6-xxx.rpm包

1. make install安装

```
[root@localhost src]# make CHNOS=EULER install -j
*** The target kernel has CONFIG_MODULE_SIG_ALL enabled, but
*** the signing key cannot be found. Module signing has been
*** disabled for this build.
make[1]: Entering directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
Copying manpages...
CC [M] /root/txgbe-1.3.5.1/src/txgbe_main.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_dcb.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_ethtool.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_lib.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_mbx.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_sriov.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_param.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_phy.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_procfs.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_hw.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_mtd.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_pcierr.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_bp.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_xsk.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_dcb_nl.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_debugfs.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_fcioe.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_ptp.o
CC [M] /root/txgbe-1.3.5.1/src/txgbe_sysfs.o
CC [M] /root/txgbe-1.3.5.1/src/kcompat.o
LD [M] /root/txgbe-1.3.5.1/src/txgbe.o
MODPOST /root/txgbe-1.3.5.1/src/Module.symvers
CC [M] /root/txgbe-1.3.5.1/src/txgbe.mod.o
LD /root/txgbe-1.3.5.1/src/txgbe.ko
make[1]: Leaving directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
Installing modules...
*** The target kernel has CONFIG_MODULE_SIG_ALL enabled, but
*** the signing key cannot be found. Module signing has been
*** disabled for this build.
make[1]: Entering directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
INSTALL /root/txgbe-1.3.5.1/src/txgbe.ko
DEPMOD 5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64
make[1]: Leaving directory '/usr/src/kernels/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64'
Running depmod manually...
/sbin/depmod -e -F /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/source/System.map -a 5.10.0-153.24.0.100.6.oe22
Updating initramfs...

[root@localhost src]# modinfo txgbe
filename: /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/updates/drivers/net/ethernet/wangxun/txgbe/txgbe.ko
version: 1.3.5.1e1os
license: GPL
description: WangXun(R) 10 Gigabit PCI Express Network Driver
author: Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion: A08B51571CAE29C3339368
alias: pci:v00008088d00002001sv*sd*bc*sc*i*
alias: pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline: Y
name: txgbe
vermagic: 5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64 SMP mod_unload modversions
parm: FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm: FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm: FFE_POST:TX_EQ POST (0 - 40) (array of int)
parm: FFE_SET:TX_EQ SET must choose to take effect (0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm: backplane_mode:Backplane Mode Support(0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm: backplane_auto:Backplane AUTO mode (0 = NO AUTO, 1 = AUTO) (array of int)
parm: vf_alloc_mode:Change VF Alloc Mode (0 = 2*64, 1 = 4*32, 2 = 8*16) (array of int)
parm: InterruptType:Change Interrupt Mode (0=Legacy, 1=MSI, 2=MSI-X), default IntMode (deprecated) (array of int)
parm: IntMode:Change Interrupt Mode (0=Legacy, 1=MSI, 2=MSI-X), default 2 (array of int)
parm: MQ:Disable or enable Multiple Queues, default 1 (array of int)
parm: RSS:Number of Receive-Side Scaling Descriptor Queues, default 0=number of cpus (array of int)
parm: VMDQ:Number of Virtual Machine Device Queues: 0/1 = disable, 2-16 enable (default=8) (array of int)
parm: max_vfs:Number of Virtual Functions: 0 = disable (default), 1-63 = enable this many VFs (array of int)
parm: VEPA:VEPA Bridge Mode: 0 = VEB (default), 1 = VEPA (array of int)
```

2. 安装kmod-txgbe-1.3.6-xxx.rpm包，优先加载后面安装的kmod-txgbe-1.3.6-xxx的驱动，显示正常

```
[root@localhost ~]# rpm -ivh kmod-txgbe-1.3.6-BCLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:kmod-txgbe-1.3.6-1.oe2203sp1.bcl...##### [100%]
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename: /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/weak-updates/txgbe/txgbe.ko
version: 1.3.6
license: GPL
description: WangXun(R) 10 Gigabit PCI Express Network Driver
author: Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion: 05292675655E0085377CDDC
alias: pci:v00008088d00002001sv*sd*bc*sc*i*
alias: pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline: Y
name: txgbe
vermagic: 5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64 SMP mod_unload modversions
parm: FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm: FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm: FFE_POST:TX_EQ POST (0 - 40) (array of int)
parm: FFE_SET:TX_EQ SET must choose to take effect (0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
```

3. 卸载kmod-txgbe-1.3.6-xxx.rpm包，显示正常

```
[root@localhost ~]# rpm -e kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/updates/drivers/net/ethernet/wangxun/txgbe/txgbe.ko
version:        1.3.5.1elos
license:        GPL
description:     WangXun(R) 10 Gigabit PCI Express Network Driver
author:         Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:     A0BB51571CAE29C33393968
alias:          pci:v00008088d00002001sv*sd*bc*sc*i*
alias:          pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:      Y
name:           txgbe
vermagic:       5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64 SMP mod_unload modversions
parm:           FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm:           FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm:           FFE_POST:TX_EQ POST (0 - 40) (array of int)
```

3.4、安装低版本不带kmod的rpm包，再安装kmod-txgbe-1.3.6-xxx.rpm包

1. 安装不带kmod的低版本rpm包

```
[root@localhost ~]# rpm -ivh txgbe-1.3.5.1-1.oe2203sp2.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:txgbe-1.3.5.1-1.oe2203sp2.bclinux##### [100%]
original pci.ids saved in /usr/local/share/txgbe
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/updates/drivers/net/ethernet/wangxun/txgbe/txgbe.ko
version:        1.3.5.1elos
license:        GPL
description:     WangXun(R) 10 Gigabit PCI Express Network Driver
author:         Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:     A0BB51571CAE29C33393968
alias:          pci:v00008088d00002001sv*sd*bc*sc*i*
alias:          pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:      Y
name:           txgbe
```

2. 安装kmod-txgbe-1.3.6-xxx.rpm包，优先加载后面安装的kmod-txgbe-1.3.6-xxx的驱动，显示正常

```
[root@localhost ~]# rpm -ivh kmod-txgbe-1.3.6-BCLinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:kmod-txgbe-1.3.6-1.oe2203sp1.bcl##### [100%]
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/weak-updates/txgbe/txgbe.ko
version:        1.3.6
license:        GPL
description:     WangXun(R) 10 Gigabit PCI Express Network Driver
author:         Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:     05292675655E0085377CDDC
alias:          pci:v00008088d00002001sv*sd*bc*sc*i*
alias:          pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:      Y
name:           txgbe
vermagic:       5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64 SMP mod_unload modversions
parm:           FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm:           FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
```

3. 卸载kmod-txgbe-1.3.6-xxx.rpm包，显示正常

```
[root@localhost ~]# rpm -e kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/updates/drivers/net/ethernet/wangxun/txgbe/txgbe.ko
version:        1.3.5.1elos
license:        GPL
description:     WangXun(R) 10 Gigabit PCI Express Network Driver
author:         Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:     A0BB51571CAE29C33393968
alias:          pci:v00008088d00002001sv*sd*bc*sc*i*
alias:          pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:      Y
name:           txgbe
vermagic:       5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64 SMP mod_unload modversions
parm:           FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm:           FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
```


3.5、安装低版本带kmod的rpm包，再安装kmod-txgbe-1.3.6-xxx.rpm包

1. 安装带kmod的低版本rpm包

```
[root@localhost ~]# rpm -ivh kmod-txgbe-1.3.5.1-5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:kmod-txgbe-1.3.5.1-1.oe2203sp2.bc##### [100%]
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/extra/txgbe/txgbe.ko
version:       1.3.5.1elos
license:       GPL
description:    WangXun(R) 10 Gigabit PCI Express Network Driver
author:        Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:    A0BB51571CAE29C33393968
alias:         pci:v00008088d00002001sv*sd*bc*sc*i*
alias:         pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:     Y
name:          txgbe
vermagic:      5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64 SMP mod_unload modversions
parm:          FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm:          FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm:          FFE_POST:TX_EQ POST (0 - 40) (array of int)
```

2. 安装kmod-txgbe-1.3.6-xxx.rpm包，优先加载后面安装的kmod-txgbe-1.3.6-xxx的驱动，显示正常

```
[root@localhost ~]# rpm -ivh kmod-txgbe-1.3.6-BClinux-for-Euler-22.10U1-230628-5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:kmod-txgbe-1.3.6-1.oe2203sp1.bcli##### [100%]
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/weak-updates/txgbe/txgbe.ko
version:       1.3.6
license:       GPL
description:    WangXun(R) 10 Gigabit PCI Express Network Driver
author:        Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:    05292675655E0085377CDDC
alias:         pci:v00008088d00002001sv*sd*bc*sc*i*
alias:         pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:     Y
name:          txgbe
vermagic:      5.10.0-136.30.0.106.6.oe2203sp1.bclinux.x86_64 SMP mod_unload modversions
parm:          FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
```

3. 卸载kmod-txgbe-1.3.6-xxx.rpm包，显示正常

```
[root@localhost ~]# rpm -e kmod-txgbe-1.3.6-1.oe2203sp1.bclinux.x86_64
Working. This may take some time ...
Done.
[root@localhost ~]# modinfo txgbe
filename:       /lib/modules/5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64/extra/txgbe/txgbe.ko
version:       1.3.5.1elos
license:       GPL
description:    WangXun(R) 10 Gigabit PCI Express Network Driver
author:        Beijing WangXun Technology Co., Ltd, <linux.nic@trustnetic.com>
srcversion:    A0BB51571CAE29C33393968
alias:         pci:v00008088d00002001sv*sd*bc*sc*i*
alias:         pci:v00008088d00001001sv*sd*bc*sc*i*
depends:
retpoline:     Y
name:          txgbe
vermagic:      5.10.0-153.24.0.100.6.oe2203sp2.bclinux.x86_64 SMP mod_unload modversions
parm:          FFE_MAIN:TX_EQ MAIN (0 - 40) (array of int)
parm:          FFE_PRE:TX_EQ PRE (0 - 40) (array of int)
parm:          FFE_POST:TX_EQ POST (0 - 40) (array of int)
parm:          FFE_SET:TX_EQ SET must choose to take effect (0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm:          backplane_mode:Backplane Mode Support(0 = NULL, 1 = sfi, 2 = kr, 3 = kx4, 4 = kx) (array of int)
parm:          backplane_auto:Backplane AUTO mode (0 = NO AUTO, 1 = AUTO) (array of int)
```