

Build driver

```
kkv@centos:/home/kkv/local/chardev % ./make_cmd.sh
make: Entering directory '/usr/src/kernels/4.18.0-193.14.2.el8_2.x86_64'
CC [M] /home/kkv/local/chardev/chardev.o
Building modules, stage 2.
MODPOST 1 modules
CC      /home/kkv/local/chardev/chardev.mod.o
LD [M] /home/kkv/local/chardev/chardev.ko
make: Leaving directory '/usr/src/kernels/4.18.0-193.14.2.el8_2.x86_64'
```

Check driver info

```
kkv@centos:/home/kkv/local/chardev % modinfo chardev.ko
filename:      /home/kkv/local/chardev/chardev.ko
description:   A simple module
author:        Kuldeep K Verma <kuld.kkv@gmail.com>
license:       GPL
rhelversion:   8.2
srcversion:    5C2DA27EDF68B6C604A9E03
depends:
name:          chardev
vermagic:      4.18.0-193.14.2.el8_2.x86_64 SMP mod_unload modversions
```

Load driver to Kernel

```
kkv@centos:/home/kkv/local/chardev % sudo insmod chardev.ko
[sudo] password for kkv:
```

Output from dmesg

```
[Sat Sep 11 22:36:35 2021] chardev: major device number assigned [242]
[Sat Sep 11 22:36:35 2021] chardev: create device file as: 'mknod /dev/hello c 242 0'
[Sat Sep 11 22:36:35 2021] chardev: try to cat and echo to this device.
[Sat Sep 11 22:36:35 2021] chardev: remove the device and module when done.
```

Create device file

```
kkv@centos:/home/kkv/local/chardev % sudo mknod /dev/hello c 242 0
kkv@centos:/home/kkv/local/chardev %
kkv@centos:/home/kkv/local/chardev % ls -l /dev/hello
crw-r--r--. 1 root root 242, 0 Sep 11 22:37 /dev/hello
kkv@centos:/home/kkv/local/chardev %
kkv@centos:/home/kkv/local/chardev % sudo chmod 666 /dev/hello
kkv@centos:/home/kkv/local/chardev %
kkv@centos:/home/kkv/local/chardev % ls -l /dev/hello
crw-rw-rw-. 1 root root 242, 0 Sep 11 22:37 /dev/hello
```

Read from device file

```
kkv@centos:/home/kkv/local/chardev % cat /dev/hello
device opened 1 times.
kkv@centos:/home/kkv/local/chardev % 
kkv@centos:/home/kkv/local/chardev % cat /dev/hello
device opened 2 times.
kkv@centos:/home/kkv/local/chardev % cat /dev/hello
device opened 3 times.
kkv@centos:/home/kkv/local/chardev % cat /dev/hello
device opened 4 times.
```

Write to device file

```
kkv@centos:/home/kkv/local/chardev % cat >/dev/hello
dksds
cat: write error: Invalid argument
```

Output from dmesg

```
[Sat Sep 11 22:37:47 2021] chardev: sorry, operation not permitted.
```

Remove device driver

```
[root@centos chardev]# rmmod chardev
```

Output from dmesg

```
[Sat Sep 11 22:38:25 2021] chardev: device unregistered and module
```

At last, remove device file

```
[root@centos chardev]# rm -f /dev/hello
```