

# 1 Linux Device Guide

## 1.1 Block Device Drivers

### 1.1.1 Initialization

Initialization of block devices is a bit more complex than initialization of character devices, especially as some “initialization” has to be done at compile time.

There is also a `register_blkdev()` call that corresponds to the character device `register_chrdev()` call, which the driver must call to say that it is present, working, and active.

### 1.1.2 The file `blk.h`

Now you need to edit `blk.h`. Under `#ifdef MAJOR_NR`, there is a section of defines that are conditionally included for certain major numbers, protected by `#elif (MAJOR_NR == DEVICE_MAJOR)`. At the end of this list, you will add another section for your driver. In that section, the following lines are required:

```
#define DEVICE_NAME      "device"
#define DEVICE_REQUEST    do_dev_request
#define DEVICE_ON(device) /* usually blank, see below */
#define DEVICE_OFF(device) /* usually blank, see below */
#define DEVICE_NR(device) (MINOR(device))
```

`DEVICE_NAME` is simply the device name. See the other entries in `blk.h` for examples.

`DEVICE_REQUEST` is your strategy routine, which will do all the I/O on the device. See The Strategy Routine for more details on the strategy routine.

`DEVICE_ON` and `DEVICE_OFF` are for devices that need to be turned on and off, like floppies. In fact, the floppy driver is currently the only device driver which uses these defines.

`DEVICE_NR(device)` is used to determine the number of the physical device from the minor device number. For instance, in the `hd` driver, since the second hard drive starts at minor 64, `DEVICE_NR(device)` is defined to be `(MINOR(device)>>6)`.