

# Linux Device Driver

## LKM – Pass Module Parameters

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<https://community.ruggedboard.com>

## How to pass Parameters to modules?

- We can add parameters using module\_param macro.
- Declared in moduleparam.h file

```
#define module_param(name, type, perm) \
    module_param_named(name, name, type, perm)
```

**name:** name of the variable

**type:** Type of the Variable.

Supported types are **charp**, **bool**, **invbool**, **int**, **long**, **short**, **uint**, **ulong**, **ushort**

**perm:** Permissions for the sysfs entry.

E.g. **S\_IRUGO** : Only read by all users

**0** : No sysfs entry

You can also use numeric values like **0644** for permission entry.

# LKM Pass Module Parameters



parameter.c

```
#include <linux/kernel.h>
#include <linux/module.h>
MODULE_LICENSE("GPL");
char *name = "Embedded";
int loop_count = 1;
module_param(name, charp, S_IRUGO);
//module_param(name, charp, 0);
module_param(loop_count, int, S_IRUGO);
```

```
static int test_arguments_init(void)
```

```
{
    int i;
    printk(KERN_INFO"%s: In init\n", __func__);
    printk(KERN_INFO"%s: Loop Count:%d\n", __func__, loop_count);
    for (i = 0; i < loop_count; i++)
        printk(KERN_INFO"%s: Hi %s\n", __func__, name);
    return 0;
}
```

```
static void test_arguments_exit(void)
```

```
{
    printk(KERN_INFO"%s: In exit\n", __func__);
}
```

```
module_init(test_arguments_init);
```

```
module_exit(test_arguments_exit);
```

```
MODULE_AUTHOR("Module Author");
```

```
MODULE_DESCRIPTION("Argument Passing Example");
```

How to pass parameters?

```
sudo insmod ./parameter.ko name="Phytec" loop_count=5
```

Note:

To pass multiple strings: use single quotes and double quotes ‘ “Rugged Board” ‘

How to find out the values of already loaded modules?

```
$ cat /sys/modules/<module_name>/parameters/<parameter_name>
```

This is only possible, if the permission field in the module\_param macro is not zero.

Makefile:

```
obj-m += parameter.o
```

```
all:
```

```
    make -C /lib/modules/$(shell uname -r)/build M=$(PWD) modules
```

```
clean:
```

```
    make -C /lib/modules/$(shell uname -r)/build M=$(PWD) clean
```

**The command line parameters provides a single linux driver to do multiple things**

Example:

- Instead of fixing to a single I/O address for read/write, it can provide that as command line argument and allow user to read/write any address.
- Enable/disable debug logs/printk



Developer  
Wiki



# Open Discussions



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