

printk()

- Print error messages in kernel log.
- `printk(KERN_INFO "a log message.\n");` --> Log buffer --> Kernel log file
- Log buffer is flushed into log file when "\n" is encountered or buffer is full.
- These messages can be monitored using "dmesg" command.
- `cmd> sudo dmesg | tail`

Kernel tainting

- only modules present into `/lib/modules/kversion` (module tree) directory are authorized to load into kernel
- if we insert module out-of-tree then your kernel taints
- when kernel taints, there is no guarantee of proper execution
- Reasons for kernel tainting
 - insert module out of module tree
 - usage of wrong licence
 - error during execution of module

Kernel module programming in Distro kernel

- `sudo apt install linux-headers-$(uname -r)`
 - Download kernel headers into `/usr/src` directory.
 - In `/lib/modules/x.y.z-xxxxx`, a "build" symlink points to `/usr/src/linux-headers-x.y.z-xxxxx`

Load while booting

- Copy module `.ko` into `/lib/modules/kernel-version` and update dependency database.
- Make its entry into `/etc/modules`.

Don't Load while booting

- Make its entry into `/etc/modprobe.d/blacklist.conf`.