

Linux Kernel Module- Report

RollNo: 2022201009

Name: Jeet Shah

AOS-Assignment-4

STEPS PERFORMED TO MAKE THE ASSIGNMENT:-

Ques 1: Compile, Install and test a Linux Kernel Module

Steps to be performed:

1. Compiling Kernel Module:
Command: make
2. Load Module into kernel:
Command: sudo insmod helloModule.ko
3. Display the logs written to the kernel log file ie. the last 10 lines
Command: tail -n 10 /var/log/syslog
4. Unload the module and check the logs
Command: sudo rmmod helloModule.ko

```
jeet@jeet-VirtualBox: ~/Desktop/a4/hello_module
jeet@jeet-VirtualBox:~/Desktop/a4/hello_module$ make
make -C /lib/modules/4.19.210/build M=/home/jeet/Desktop/a4/hello_module modules
make[1]: Entering directory '/usr/src/linux-4.19.210'
  CC [M] /home/jeet/Desktop/a4/hello_module/helloModule.o
  Building modules, stage 2.
  MODPOST 1 modules
  CC /home/jeet/Desktop/a4/hello_module/helloModule.mod.o
  LD [M] /home/jeet/Desktop/a4/hello_module/helloModule.ko
make[1]: Leaving directory '/usr/src/linux-4.19.210'
jeet@jeet-VirtualBox:~/Desktop/a4/hello_module$ sudo insmod helloModule.ko
[sudo] password for jeet:
jeet@jeet-VirtualBox:~/Desktop/a4/hello_module$ tail -n 10 /var/log/syslog
Nov  9 17:03:57 jeet-VirtualBox anacron[716]: Job 'cron.daily' terminated
Nov  9 17:09:38 jeet-VirtualBox systemd[1]: Starting Cleanup of Temporary Directories...
Nov  9 17:09:38 jeet-VirtualBox systemd-tmpfiles[3331]: [/usr/lib/tmpfiles.d/var.conf:14] Duplicate line for path "/var/log", ignoring.
Nov  9 17:09:38 jeet-VirtualBox systemd[1]: Started Cleanup of Temporary Directories.
Nov  9 17:09:47 jeet-VirtualBox kernel: [ 929.209389] helloModule: loading out-of-tree module taints kernel.
Nov  9 17:09:47 jeet-VirtualBox kernel: [ 929.210086] helloModule: module verification failed: signature and/or required key missing - tainti
ng kernel
Nov  9 17:09:47 jeet-VirtualBox kernel: [ 929.216530] helloModule: kernel module initialized
Nov  9 17:09:47 jeet-VirtualBox kernel: [ 929.216584] There are 1 running processes.
Nov  9 17:09:47 jeet-VirtualBox kernel: [ 929.216586] There are 124 interruptible processes.
Nov  9 17:09:47 jeet-VirtualBox kernel: [ 929.216586] There are 0 uninterruptible processes.
jeet@jeet-VirtualBox:~/Desktop/a4/hello_module$ sudo rmmod helloModule
jeet@jeet-VirtualBox:~/Desktop/a4/hello_module$ tail -n 10 /var/log/syslog
Nov  9 17:10:34 jeet-VirtualBox anacron[716]: Normal exit (2 jobs run)
Nov  9 17:10:51 jeet-VirtualBox dbus[658]: [system] Activating via systemd: service name='org.freedesktop.hostname1' unit='dbus-org.freedesktop
p.hostname1.service'
Nov  9 17:10:51 jeet-VirtualBox systemd[1]: Starting Hostname Service...
Nov  9 17:10:51 jeet-VirtualBox dbus[658]: [system] Successfully activated service 'org.freedesktop.hostname1'
Nov  9 17:10:51 jeet-VirtualBox systemd[1]: Started Hostname Service.
Nov  9 17:11:05 jeet-VirtualBox AptDaemon: INFO: Quitting due to inactivity
Nov  9 17:11:05 jeet-VirtualBox org.debian.apt[658]: 17:11:05 AptDaemon [INFO]: Quitting due to inactivity
Nov  9 17:11:05 jeet-VirtualBox org.debian.apt[658]: 17:11:05 AptDaemon [INFO]: Quitting was requested
Nov  9 17:11:05 jeet-VirtualBox AptDaemon: INFO: Quitting was requested
Nov  9 17:11:41 jeet-VirtualBox kernel: [ 1042.935413] helloModule: performing cleanup of module
jeet@jeet-VirtualBox:~/Desktop/a4/hello_module$
```

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Ques 2: Count the number of running linux tasks

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