

# project 3

---

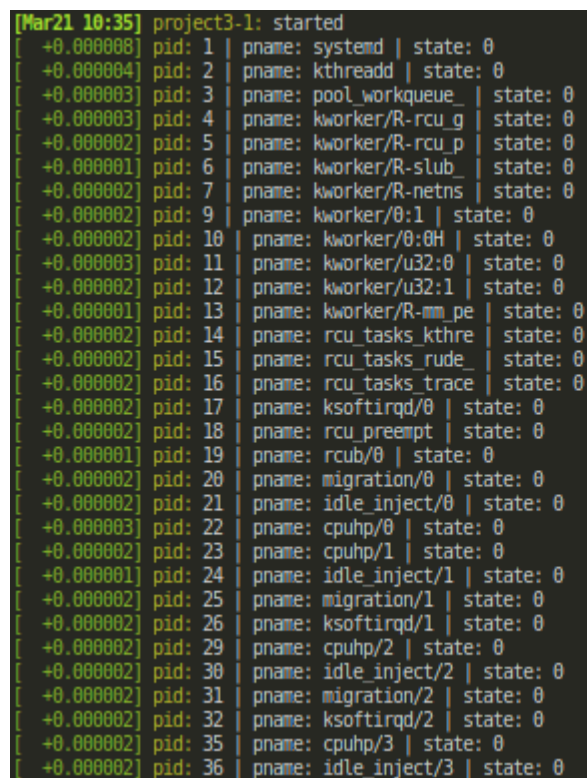
## part 1

install

```
make MODULE_NAME=project3-1
make install MODULE_NAME=project3-1
```

watch log

```
sudo dmesg
```



A terminal window showing the output of the 'dmesg' command. The output lists various kernel threads and their states, all with a state of 0. The threads are organized by their parent process names (pname) and their respective process IDs (pid). The output is as follows:

```
[Mar21 10:35] project3-1: started
[ +0.000008] pid: 1 | pname: systemd | state: 0
[ +0.000004] pid: 2 | pname: kthreadd | state: 0
[ +0.000003] pid: 3 | pname: pool_workqueue_ | state: 0
[ +0.000003] pid: 4 | pname: kworker/R-rcu_g | state: 0
[ +0.000002] pid: 5 | pname: kworker/R-rcu_p | state: 0
[ +0.000001] pid: 6 | pname: kworker/R-slub_ | state: 0
[ +0.000002] pid: 7 | pname: kworker/R-netns | state: 0
[ +0.000002] pid: 9 | pname: kworker/0:1 | state: 0
[ +0.000002] pid: 10 | pname: kworker/0:0H | state: 0
[ +0.000003] pid: 11 | pname: kworker/u32:0 | state: 0
[ +0.000002] pid: 12 | pname: kworker/u32:1 | state: 0
[ +0.000001] pid: 13 | pname: kworker/R-mm_pe | state: 0
[ +0.000002] pid: 14 | pname: rcu_tasks_kthre | state: 0
[ +0.000002] pid: 15 | pname: rcu_tasks_rude_ | state: 0
[ +0.000002] pid: 16 | pname: rcu_tasks_trace | state: 0
[ +0.000002] pid: 17 | pname: ksoftirqd/0 | state: 0
[ +0.000002] pid: 18 | pname: rcu_preempt | state: 0
[ +0.000001] pid: 19 | pname: rcub/0 | state: 0
[ +0.000002] pid: 20 | pname: migration/0 | state: 0
[ +0.000002] pid: 21 | pname: idle_inject/0 | state: 0
[ +0.000003] pid: 22 | pname: cpuhp/0 | state: 0
[ +0.000002] pid: 23 | pname: cpuhp/1 | state: 0
[ +0.000001] pid: 24 | pname: idle_inject/1 | state: 0
[ +0.000002] pid: 25 | pname: migration/1 | state: 0
[ +0.000002] pid: 26 | pname: ksoftirqd/1 | state: 0
[ +0.000002] pid: 29 | pname: cpuhp/2 | state: 0
[ +0.000002] pid: 30 | pname: idle_inject/2 | state: 0
[ +0.000002] pid: 31 | pname: migration/2 | state: 0
[ +0.000002] pid: 32 | pname: ksoftirqd/2 | state: 0
[ +0.000002] pid: 35 | pname: cpuhp/3 | state: 0
[ +0.000002] pid: 36 | pname: idle_inject/3 | state: 0
```

uninstall

```
make uninstall MODULE_NAME=project3-1
```

## part 2

install

```
make MODULE_NAME=project3-2
make install MODULE_NAME=project3-2
```

watch log

```
sudo dmesg
```

```
[ +5.770661] project3-2: started
[ +0.000011] 🐼 pid: 0 | name: swapper/0 | state: 0
[ +0.000004] 🐼 pid: 1 | name: systemd | state: 0
[ +0.000003] 🐼 pid: 245 | name: systemd-journal | state: 0
[ +0.000003] 🐼 pid: 287 | name: systemd-udevd | state: 0
[ +0.000003] 🐼 pid: 292 | name: systemd-network | state: 0
[ +0.000002] 🐼 pid: 428 | name: systemd-resolve | state: 0
[ +0.000003] 🐼 pid: 434 | name: systemd-timesyn | state: 0
[ +0.000002] 🐼 pid: 507 | name: dbus-broker-lau | state: 0
[ +0.000002] 🐼 pid: 508 | name: dbus-broker | state: 0
[ +0.000003] 🐼 pid: 510 | name: bluetoothd | state: 0
[ +0.000002] 🐼 pid: 511 | name: iwd | state: 0
[ +0.000002] 🐼 pid: 512 | name: systemd-logind | state: 0
[ +0.000002] 🐼 pid: 573 | name: espeakup | state: 0
[ +0.000003] 🐼 pid: 619 | name: login | state: 0
[ +0.000002] 🐼 pid: 1154 | name: zsh | state: 0
[ +0.000002] 🐼 pid: 1233 | name: sway | state: 0
[ +0.000002] 🐼 pid: 617 | name: ntpd | state: 0
[ +0.000002] 🐼 pid: 626 | name: auto-cpufreq | state: 0
[ +0.000002] 🐼 pid: 627 | name: zerotier-one | state: 0
[ +0.000002] 🐼 pid: 1141 | name: systemd | state: 0
[ +0.000003] 🐼 pid: 1143 | name: (sd-pam) | state: 0
[ +0.000002] 🐼 pid: 1293 | name: dbus-broker-lau | state: 0
[ +0.000002] 🐼 pid: 1301 | name: dbus-broker | state: 0
[ +0.000003] 🐼 pid: 1313 | name: at-spi-bus-laun | state: 0
[ +0.000002] 🐼 pid: 1319 | name: dbus-broker-lau | state: 0
[ +0.000002] 🐼 pid: 1320 | name: dbus-broker | state: 0
[ +0.000002] 🐼 pid: 1321 | name: gvfsd | state: 0
[ +0.000003] 🐼 pid: 8118 | name: gvfsd-trash | state: 0
[ +0.000002] 🐼 pid: 8133 | name: gvfsd-network | state: 0
[ +0.000002] 🐼 pid: 8139 | name: gvfsd-dnssd | state: 0
[ +0.000002] 🐼 pid: 1327 | name: gvfsd-fuse | state: 0
[ +0.000002] 🐼 pid: 1340 | name: at-spi2-registr | state: 0
[ +0.000002] 🐼 pid: 1360 | name: pipewire | state: 0
[ +0.000002] 🐼 pid: 1363 | name: wireplumber | state: 0
[ +0.000002] 🐼 pid: 1364 | name: pipewire-pulse | state: 0
[ +0.000003] 🐼 pid: 8105 | name: gvfs-udisks2-vo | state: 0
```

uninstall

```
make uninstall MODULE_NAME=project3-2
```