1 Вывести список всех процессов системы.

```
ubuntu@ubuntu:~$ ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  1.0  0.3 167992 13308 ?        Ss   09:14   0:01 /sbin/init maybe-ubiquity splash ---
root           2  0.0  0.0      0     0 ?        S    09:14   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        I<   09:14   0:00 [rcu_gp]
root           4  0.0  0.0      0     0 ?        I<   09:14   0:00 [rcu_par_gp]
root           5  0.0  0.0      0     0 ?        I<   09:14   0:00 [slub_flushwq]
root           6  0.0  0.0      0     0 ?        I<   09:14   0:00 [netns]
root           7  0.0  0.0      0     0 ?        I    09:14   0:00 [kworker/0:0-events]
root           8  0.0  0.0      0     0 ?        I<   09:14   0:00 [kworker/0:0H-events_highpri]
root           9  0.7  0.0      0     0 ?        I    09:14   0:01 [kworker/u6:0-loop0]
root          10  0.0  0.0      0     0 ?        I<   09:14   0:00 [mm_percpu_wq]
root          11  0.0  0.0      0     0 ?        I    09:14   0:00 [rcu_tasks_kthread]
root          12  0.0  0.0      0     0 ?        I    09:14   0:00 [rcu_tasks_rude_kthread]
root          13  0.0  0.0      0     0 ?        I    09:14   0:00 [rcu_tasks_trace_kthread]
root          14  0.0  0.0      0     0 ?        S    09:14   0:00 [ksoftirqd/0]
root          15  0.0  0.0      0     0 ?        I    09:14   0:00 [rcu_preempt]
root          16  0.0  0.0      0     0 ?        S    09:14   0:00 [migration/0]
root          17  0.0  0.0      0     0 ?        S    09:14   0:00 [idle_inject/0]
root          18  0.0  0.0      0     0 ?        I    09:14   0:00 [kworker/0:1-events]
root          19  0.0  0.0      0     0 ?        S    09:14   0:00 [cpuhp/0]
root          20  0.0  0.0      0     0 ?        S    09:14   0:00 [cpuhp/1]
root          21  0.0  0.0      0     0 ?        S    09:14   0:00 [idle_inject/1]
root          22  0.1  0.0      0     0 ?        S    09:14   0:00 [migration/1]
root          23  0.0  0.0      0     0 ?        S    09:14   0:00 [ksoftirqd/1]
root          24  0.0  0.0      0     0 ?        I    09:14   0:00 [kworker/1:0-cgroup_destroy]
root          25  0.0  0.0      0     0 ?        I<   09:14   0:00 [kworker/1:0H-events_highpri]
root          26  0.0  0.0      0     0 ?        S    09:14   0:00 [cpuhp/2]
root          27  0.0  0.0      0     0 ?        S    09:14   0:00 [idle_inject/2]
root          28  0.1  0.0      0     0 ?        S    09:14   0:00 [migration/2]
root          29  0.0  0.0      0     0 ?        S    09:14   0:00 [ksoftirqd/2]
root          30  0.0  0.0      0     0 ?        I    09:14   0:00 [kworker/2:0-cgroup_destroy]
root          31  0.0  0.0      0     0 ?        I<   09:14   0:00 [kworker/2:0H-events_highpri]
root          32  0.0  0.0      0     0 ?        S    09:14   0:00 [kdevtmpfs]
root          33  0.0  0.0      0     0 ?        I<   09:14   0:00 [inet_frag_wq]
root          34  0.0  0.0      0     0 ?        S    09:14   0:00 [kauditd]
root          35  0.0  0.0      0     0 ?        S    09:14   0:00 [khungtaskd]
root          36  0.1  0.0      0     0 ?             14   0:00 [kworker/u6:1-loop7]
root          37  0.0  0.0      0     0 ?             14   0:00 [oom_reaper]
root          38  0.3  0.0      0     0 ?             14   0:00 [kworker/u6:2-loop0]
```

2 Вывести дерево процессов.

```
ubuntu@ubuntu:~$ pstree
systemd─┬─ModemManager───2*[{ModemManager}]
        ├─NetworkManager───2*[{NetworkManager}]
        ├─accounts-daemon───2*[{accounts-daemon}]
        ├─acpid
        ├─avahi-daemon───avahi-daemon
        ├─colord───2*[{colord}]
        ├─cron
        ├─cups-browsed───2*[{cups-browsed}]
        ├─cupsd
        ├─dbus-daemon
        ├─gdm3─┬─gdm-session-wor─┬─gdm-x-session─┬─Xorg───{Xorg}
        │      │                 │               ├─gnome-session-b───2*[{gnome-session-b}]
        │      │                 │               └─2*[{gdm-x-session}]
        │      │                 └─2*[{gdm-session-wor}]
        │      └─2*[{gdm3}]
        ├─irqbalance───{irqbalance}
        ├─2*[kerneloops]
        ├─networkd-dispat
        ├─packagekitd───2*[{packagekitd}]
        ├─polkitd───2*[{polkitd}]
        ├─power-profiles-───2*[{power-profiles-}]
        ├─rsyslogd───3*[{rsyslogd}]
        ├─rtkit-daemon───2*[{rtkit-daemon}]
        ├─snapd───14*[{snapd}]
        ├─switcheroo-cont───2*[{switcheroo-cont}]
        ├─systemd─┬─(sd-pam)
        │         ├─at-spi-bus-laun─┬─dbus-daemon
        │         │                 └─3*[{at-spi-bus-laun}]
        │         ├─at-spi2-registr───2*[{at-spi2-registr}]
        │         ├─dbus-daemon
        │         ├─dconf-service───2*[{dconf-service}]
        │         ├─evolution-addre───5*[{evolution-addre}]
        │         ├─evolution-calen───8*[{evolution-calen}]
        │         ├─evolution-sourc───3*[{evolution-sourc}]
        │         ├─2*[gjs───5*[{gjs}]]
        │         ├─gnome-keyring-d───3*[{gnome-keyring-d}]
```

3 С помощью команды top получить список 5 процессов, потребляющих наибольшее количество процессорного времени.

```
top - 09:18:03 up 3 min,  1 user,  load average: 0.98, 0.86, 0.39
Tasks: 211 total,   2 running, 209 sleeping,   0 stopped,   0 zombie
%Cpu(s):  1.3 us,  0.2 sy,  0.0 ni, 98.3 id,  0.0 wa,  0.0 hi,  0.2 si,  0.0 st
MiB Mem :   3907.3 total,    105.8 free,    789.4 used,   3012.1 buff/cache
MiB Swap:      0.0 total,      0.0 free,      0.0 used.   2634.7 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   5156 ubuntu    20   0 4768732 373956 147268 S   3.5   9.3   0:21.45 gnome-shell
   4995 ubuntu    20   0  341252 108960  66184 S   0.6   2.7   0:05.58 Xorg
   5442 ubuntu    20   0  325528  13644   7168 S   0.3   0.3   0:00.31 ibus-daemon
   5868 ubuntu    20   0  898376  53420  40604 S   0.3   1.3   0:01.68 gnome-terminal-
   5964 ubuntu    20   0   21864   4096   3328 R   0.3   0.1   0:00.02 top
```

```
Fields Management for window 1:Def, whose current sort field is TIME+
   Navigate with Up/Dn, Right selects for move then <Enter> or Left commits,
   'd' or <Space> toggles display, 's' sets sort.  Use 'q' or <Esc> to end!

* PID     = Process Id             SUPGIDS = Supp Groups IDs
* USER    = Effective User Name    SUPGRPS = Supp Groups Names
* PR      = Priority               TGID    = Thread Group Id
* NI      = Nice Value             OOMa    = OOMEM Adjustment
* VIRT    = Virtual Image (KiB)    OOMs    = OOMEM Score current
* RES     = Resident Size (KiB)    ENVIRON = Environment vars
* SHR     = Shared Memory (KiB)    vMj     = Major Faults delta
* S       = Process Status         vMn     = Minor Faults delta
* %CPU    = CPU Usage              USED    = Res+Swap Size (KiB)
* %MEM    = Memory Usage (RES)     nsIPC   = IPC namespace Inode
* TIME+   = CPU Time, hundredths   nsMNT   = MNT namespace Inode
* COMMAND = Command Name/Line      nsNET   = NET namespace Inode
  PPID    = Parent Process pid     nsPID   = PID namespace Inode
  UID     = Effective User Id      nsUSER  = USER namespace Inode
  RUID    = Real User Id           nsUTS   = UTS namespace Inode
  RUSER   = Real User Name         LXC     = LXC container name
  SUID    = Saved User Id          RSan    = RES Anonymous (KiB)
  SUSER   = Saved User Name        RSfd    = RES File-based (KiB)
  GID     = Group Id               RSlk    = RES Locked (KiB)
  GROUP   = Group Name             RSsh    = RES Shared (KiB)
  PGRP    = Process Group Id       CGNAME  = Control Group name
  TTY     = Controlling Tty        NU      = Last Used NUMA node
  TPGID   = Tty Process Grp Id
  SID     = Session Id
  nTH     = Number of Threads
  P       = Last Used Cpu (SMP)
  TIME    = CPU Time
  SWAP    = Swapped Size (KiB)
  CODE    = Code Size (KiB)
  DATA    = Data+Stack (KiB)
  nMaj    = Major Page Faults
  nMin    = Minor Page Faults
  nDRT    = Dirty Pages Count
  WCHAN   = Sleeping in Function
  Flags   = Task Flags <sched.h>
  CGROUPS = Control Groups
```

4 Найти 2 процесса, имеющих более ДВУХ потоков. Использовать состояние процесса.

```
    0[|                                          0.7%]   Tasks: 110, 269 thr; 1 running
    1[||                                         1.4%]   Load average: 0.33 0.67 0.37
    2[                                           0.0%]   Uptime: 00:05:38
  Mem[|||||||||||||||||||||||||||||||||||1.06G/3.82G]
  Swp[                                        0K/0K]

    PID USER      PRI  NI  VIRT   RES   SHR S CPU%▽MEM%   TIME+  Command
   5156 ubuntu     20   0 4680M  373M  143M S  0.7  9.6  0:27.61 /usr/bin/gnome-shell
   5164 ubuntu     20   0 4680M  373M  143M S  0.7  9.6  0:03.90 /usr/bin/gnome-shell
   5165 ubuntu     20   0 4680M  373M  143M S  0.7  9.6  0:03.91 /usr/bin/gnome-shell
   6158 ubuntu     20   0 20024  4608  3328 R  0.7  0.1  0:00.18 htop
      1 root       20   0  164M 13308  8316 S  0.0  0.3  0:01.79 /sbin/init maybe-ubiquity splash ---
    838 root       19  -1 31748 11052  9644 S  0.0  0.3  0:00.33 /lib/systemd/systemd-journald
    873 root       20   0 26792  6468  4292 S  0.0  0.2  0:00.44 /lib/systemd/systemd-udevd
   1090 systemd-o  20   0 14824  7040  6272 S  0.0  0.2  0:00.35 /lib/systemd/systemd-oomd
   1091 systemd-r  20   0 25532 13928  9728 S  0.0  0.3  0:00.18 /lib/systemd/systemd-resolved
   1093 systemd-t  20   0 89376  7424  6656 S  0.0  0.2  0:00.10 /lib/systemd/systemd-timesyncd
   1099 systemd-t  20   0 89376  7424  6656 S  0.0  0.2  0:00.00 /lib/systemd/systemd-timesyncd
   1295 root       20   0  2812  1920  1792 S  0.0  0.0  0:00.02 /usr/sbin/acpid
   1298 avahi      20   0  7680  3968  3712 S  0.0  0.1  0:00.03 avahi-daemon: running [ubuntu.local]
   1299 messagebu  20   0 10936  6272  4224 S  0.0  0.2  0:00.67 @dbus-daemon --system --address=systemd: --nofork --nopidfile --sys
   1300 root       20   0  263M 18384 15696 S  0.0  0.5  0:00.23 /usr/sbin/NetworkManager --no-daemon
   1306 root       20   0 82696  3840  3584 S  0.0  0.1  0:00.02 /usr/sbin/irqbalance --foreground
   1307 root       20   0 50024 20736 11520 S  0.0  0.5  0:00.24 /usr/bin/python3 /usr/bin/networkd-dispatcher --run-startup-trigger
   1308 root       20   0  231M  9964  7124 S  0.0  0.2  0:00.28 /usr/libexec/polkitd --no-debug
   1310 root       20   0  243M  7552  6912 S  0.0  0.2  0:00.03 /usr/libexec/power-profiles-daemon
   1312 syslog     20   0  217M  5760  4480 S  0.0  0.1  0:00.10 /usr/sbin/rsyslogd -n -iNONE
   1314 root       20   0  231M  9964  7124 S  0.0  0.2  0:00.00 /usr/libexec/polkitd --no-debug
   1317 root       20   0 1143M 49024 21376 S  0.0  1.2  0:04.59 /usr/lib/snapd/snapd
   1322 root       20   0  243M  7332  6564 S  0.0  0.2  0:00.12 /usr/libexec/accounts-daemon
   1326 root       20   0 82696  3840  3584 S  0.0  0.1  0:00.00 /usr/sbin/irqbalance --foreground
   1327 root       20   0 18540  2560  2432 S  0.0  0.1  0:00.00 /usr/sbin/cron -f -P
   1330 root       20   0  243M  7552  6912 S  0.0  0.2  0:00.00 /usr/libexec/power-profiles-daemon
   1331 root       20   0  239M  6656  6016 S  0.0  0.2  0:00.04 /usr/libexec/switcheroo-control
   1332 root       20   0 40172  7680  6784 S  0.0  0.2  0:00.17 /lib/systemd/systemd-logind
   1334 root       20   0  383M 13256 10824 S  0.0  0.3  0:00.19 /usr/libexec/udisks2/udisksd
   1335 root       20   0 16492  6400  5760 S  0.0  0.2  0:00.03 /sbin/wpa_supplicant -u -s -O /run/wpa_supplicant
   1337 root       20   0  162M  5632  4608 S  0.0  0.1  0:00.03 /usr/sbin/zed -F
F1Help  F2Setup F3SearchF4FilterF5Tree  F6SortByF7Nice -F8Nice +F9Kill  F10Quit
```

```
ubuntu@ubuntu:~$ htop
ubuntu@ubuntu:~$ ps -o thcount 5156
THCNT
   16
ubuntu@ubuntu:~$ ps -o thcount 4995
THCNT
    2
```

5 Используя команду top, изменить приоритеты 2 процессов.

```
top - 09:23:24 up 9 min,  1 user,  load average: 0.17, 0.46, 0.34
Tasks: 200 total,   1 running, 199 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.6 us,  0.1 sy,  0.0 ni, 99.2 id,  0.0 wa,  0.0 hi,  0.1 si,  0.0 st
MiB Mem :   3907.3 total,    127.9 free,    843.6 used,   2935.9 buff/cache
MiB Swap:      0.0 total,      0.0 free,      0.0 used.   2562.2 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   5156 ubuntu    30  10 4798740 396368 150212 S   1.0   9.9   0:41.35 gnome-shell
   4995 ubuntu    20   0  386324 121512  73228 S   0.6   3.0   0:12.61 Xorg
   5868 ubuntu    20   0  900032  54260  41060 S   0.3   1.4   0:04.60 gnome-terminal-
    874 root      20   0       0      0      0 I   0.1   0.0   0:00.08 kworker/2:4-events
   1306 root      20   0   82696   3840   3584 S   0.1   0.1   0:00.03 irqbalance
   5442 ubuntu    30  10  325528  13644   7168 S   0.1   0.3   0:00.76 ibus-daemon
   6238 ubuntu    20   0   21760   4096   3328 R   0.1   0.1   0:00.05 top
      1 root      20   0  167992  13308   8316 S   0.0   0.3   0:01.80 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 slub_flushwq
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
      9 root      20   0       0      0      0 I   0.0   0.0   0:01.24 kworker/u6:0-events_unbound
     10 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
     11 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
     12 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
     13 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
     14 root      20   0       0      0      0 S   0.0   0.0   0:00.13 ksoftirqd/0
     15 root      20   0       0      0      0 I   0.0   0.0   0:00.24 rcu_preempt
     16 root      rt   0       0      0      0 S   0.0   0.0   0:00.00 migration/0
     17 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
     19 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     20 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/1
     21 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/1
     22 root      rt   0       0      0      0 S   0.0   0.0   0:00.17 migration/1
     23 root      20   0       0      0      0 S   0.0   0.0   0:00.10 ksoftirqd/1
     24 root      20   0       0      0      0 I   0.0   0.0   0:00.03 kworker/1:0-inet_frag_wq
     25 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri
     26 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/2
     27 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/2
     28 root      rt   0       0      0      0 S   0.0   0.0   0:00.17 migration/2
```

6 Получить список открытых файлов пользователя.

```
     31 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/2:0H-events_highpri
ubuntu@ubuntu:~$ lsof -u ubuntu
```

7 Получить текущее состояние системной памяти.

```
ubuntu@ubuntu:~$ free
               total        used        free      shared  buff/cache   available
Mem:         4001104      873396      118232      284116     3009476     2612580
Swap:              0           0           0
```

8 Получить справку об использовании дискового пространства.

```
ubuntu@ubuntu:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           391M  1.6M  390M   1% /run
/dev/sr0        4.7G  4.7G     0 100% /cdrom
/cow            2.0G  254M  1.7G  13% /
tmpfs           2.0G     0  2.0G   0% /dev/shm
tmpfs           5.0M  8.0K  5.0M   1% /run/lock
tmpfs           2.0G  148K  2.0G   1% /tmp
tmpfs           391M  152K  391M   1% /run/user/999
```

9 Вывести информацию о каком-либо процессе, используя содержимое каталога /proc

```
ubuntu@ubuntu:~$ ls -l /proc/6
ls: cannot read symbolic link '/proc/6/cwd': Permission denied
ls: cannot read symbolic link '/proc/6/root': Permission denied
ls: cannot read symbolic link '/proc/6/exe': Permission denied
total 0
-r--r--r--  1 root root 0 Jun 10 09:25 arch_status
dr-xr-xr-x  2 root root 0 Jun 10 09:25 attr
-rw-r--r--  1 root root 0 Jun 10 09:25 autogroup
-r--------  1 root root 0 Jun 10 09:25 auxv
-r--r--r--  1 root root 0 Jun 10 09:25 cgroup
--w-------  1 root root 0 Jun 10 09:25 clear_refs
-r--r--r--  1 root root 0 Jun 10 09:14 cmdline
-rw-r--r--  1 root root 0 Jun 10 09:25 comm
-rw-r--r--  1 root root 0 Jun 10 09:25 coredump_filter
-r--r--r--  1 root root 0 Jun 10 09:25 cpu_resctrl_groups
-r--r--r--  1 root root 0 Jun 10 09:25 cpuset
lrwxrwxrwx  1 root root 0 Jun 10 09:25 cwd
-r--------  1 root root 0 Jun 10 09:25 environ
lrwxrwxrwx  1 root root 0 Jun 10 09:14 exe
dr-x------  2 root root 0 Jun 10 09:25 fd
dr-xr-xr-x  2 root root 0 Jun 10 09:25 fdinfo
-rw-r--r--  1 root root 0 Jun 10 09:25 gid_map
-r--------  1 root root 0 Jun 10 09:25 io
-r--------  1 root root 0 Jun 10 09:25 ksm_merging_pages
-r--------  1 root root 0 Jun 10 09:25 ksm_stat
-r--r--r--  1 root root 0 Jun 10 09:25 limits
-rw-r--r--  1 root root 0 Jun 10 09:25 loginuid
dr-x------  2 root root 0 Jun 10 09:25 map_files
-r--r--r--  1 root root 0 Jun 10 09:25 maps
-rw-------  1 root root 0 Jun 10 09:25 mem
-r--r--r--  1 root root 0 Jun 10 09:25 mountinfo
-r--r--r--  1 root root 0 Jun 10 09:25 mounts
-r--------  1 root root 0 Jun 10 09:25 mountstats
dr-xr-xr-x 55 root root 0 Jun 10 09:25 net
dr-x--x--x  2 root root 0 Jun 10 09:25 ns
-r--r--r--  1 root root 0 Jun 10 09:25 numa_maps
-rw-r--r--  1 root root 0 Jun 10 09:25 oom_adj
-r--r--r--  1 root root 0 Jun 10 09:25 oom_score
```

10 Вывести информацию о процессоре ПК, используя содержимое каталога /proc

```
ubuntu@ubuntu:~$ cat /proc/cpuinfo
processor       : 0
vendor_id       : GenuineIntel
cpu family      : 6
model           : 158
model name      : Intel(R) Core(TM) i5-7400 CPU @ 3.00GHz
stepping        : 9
cpu MHz         : 3000.002
cache size      : 6144 KB
physical id     : 0
siblings        : 3
core id         : 0
cpu cores       : 3
apicid          : 0
initial apicid  : 0
fpu             : yes
fpu_exception   : yes
cpuid level     : 22
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx rd
tscp lm constant_tsc rep_good nopl xtopology nonstop_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 cx16 pcid sse4_1 sse4_2 x2apic mov
be popcnt aes xsave avx rdrand hypervisor lahf_lm abm 3dnowprefetch invpcid_single pti fsgsbase avx2 invpcid rdseed clflushopt md_cl
ear flush_l1d
bugs            : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbds mmio_stale_data retbleed
bogomips        : 6000.00
clflush size    : 64
cache_alignment : 64
address sizes   : 39 bits physical, 48 bits virtual
power management:

processor       : 1
vendor_id       : GenuineIntel
cpu family      : 6
model           : 158
model name      : Intel(R) Core(TM) i5-7400 CPU @ 3.00GHz
stepping        : 9
cpu MHz         : 3000.002
```

11 Вывести список модулей, используемых в настоящий момент ядром ОС.

```
ubuntu@ubuntu:~$ cat /proc/modules
tls 147456 0 - Live 0x0000000000000000
binfmt_misc 24576 1 - Live 0x0000000000000000
zfs 4603904 6 - Live 0x0000000000000000 (PO)
zunicode 352256 1 zfs, Live 0x0000000000000000 (PO)
zzstd 589824 1 zfs, Live 0x0000000000000000 (O)
zlua 229376 1 zfs, Live 0x0000000000000000 (O)
zavl 24576 1 zfs, Live 0x0000000000000000 (PO)
icp 368640 1 zfs, Live 0x0000000000000000 (PO)
zcommon 131072 2 zfs,icp, Live 0x0000000000000000 (PO)
znvpair 135168 2 zfs,zcommon, Live 0x0000000000000000 (PO)
spl 163840 6 zfs,zzstd,zavl,icp,zcommon,znvpair, Live 0x0000000000000000 (O)
snd_intel8x0 53248 2 - Live 0x0000000000000000
snd_ac97_codec 200704 1 snd_intel8x0, Live 0x0000000000000000
ac97_bus 16384 1 snd_ac97_codec, Live 0x0000000000000000
snd_pcm 192512 2 snd_intel8x0,snd_ac97_codec, Live 0x0000000000000000
intel_rapl_msr 20480 0 - Live 0x0000000000000000
snd_seq_midi 20480 0 - Live 0x0000000000000000
snd_seq_midi_event 16384 1 snd_seq_midi, Live 0x0000000000000000
snd_rawmidi 53248 1 snd_seq_midi, Live 0x0000000000000000
intel_rapl_common 40960 1 intel_rapl_msr, Live 0x0000000000000000
snd_seq 94208 2 snd_seq_midi,snd_seq_midi_event, Live 0x0000000000000000
rapl 20480 0 - Live 0x0000000000000000
joydev 32768 0 - Live 0x0000000000000000
snd_seq_device 16384 3 snd_seq_midi,snd_rawmidi,snd_seq, Live 0x0000000000000000
snd_timer 49152 2 snd_pcm,snd_seq, Live 0x0000000000000000
snd 135168 11 snd_intel8x0,snd_ac97_codec,snd_pcm,snd_rawmidi,snd_seq,snd_seq_device,snd_timer, Live 0x0000000000000000
input_leds 16384 0 - Live 0x0000000000000000
serio_raw 20480 0 - Live 0x0000000000000000
soundcore 16384 1 snd, Live 0x0000000000000000
vboxguest 57344 0 - Live 0x0000000000000000
mac_hid 16384 0 - Live 0x0000000000000000
sch_fq_codel 24576 2 - Live 0x0000000000000000
msr 16384 0 - Live 0x0000000000000000
parport_pc 53248 0 - Live 0x0000000000000000
ppdev 24576 0 - Live 0x0000000000000000
lp 28672 0 - Live 0x0000000000000000
parport 73728 3 parport_pc,ppdev,lp, Live 0x0000000000000000
pstore_blk 16384 0 - Live 0x0000000000000000
ramoops 36864 0 - Live 0x0000000000000000
```