1. При помощи ps aux вывожу все процессы системы.

```
dreamchik@ubuntu:~$ ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.3 169344 12904 ?        Ss   04:52   0:03 /sbin/init auto nopr
root           2  0.0  0.0      0     0 ?        S    04:52   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        I<   04:52   0:00 [rcu_gp]
root           4  0.0  0.0      0     0 ?        I<   04:52   0:00 [rcu_par_gp]
root           5  0.0  0.0      0     0 ?        I<   04:52   0:00 [slub_flushwq]
root           6  0.0  0.0      0     0 ?        I<   04:52   0:00 [netns]
root           8  0.0  0.0      0     0 ?        I<   04:52   0:00 [kworker/0:0H-events
root          10  0.0  0.0      0     0 ?        I<   04:52   0:00 [mm_percpu_wq]
root          11  0.0  0.0      0     0 ?        S    04:52   0:00 [rcu_tasks_rude_]
root          12  0.0  0.0      0     0 ?        S    04:52   0:00 [rcu_tasks_trace]
root          13  0.0  0.0      0     0 ?        S    04:52   0:00 [ksoftirqd/0]
root          14  0.0  0.0      0     0 ?        I    04:52   0:00 [rcu_sched]
root          15  0.0  0.0      0     0 ?        S    04:52   0:00 [migration/0]
root          16  0.0  0.0      0     0 ?        S    04:52   0:00 [idle_inject/0]
root          18  0.0  0.0      0     0 ?        S    04:52   0:00 [cpuhp/0]
root          19  0.0  0.0      0     0 ?        S    04:52   0:00 [cpuhp/1]
root          20  0.0  0.0      0     0 ?        S    04:52   0:00 [idle_inject/1]
root          21  0.0  0.0      0     0 ?        S    04:52   0:00 [migration/1]
root          22  0.0  0.0      0     0 ?        S    04:52   0:00 [ksoftirqd/1]
root          24  0.0  0.0      0     0 ?        I<   04:52   0:00 [kworker/1:0H-events
root          25  0.0  0.0      0     0 ?        S    04:52   0:00 [kdevtmpfs]
root          26  0.0  0.0      0     0 ?        I<   04:52   0:00 [inet_frag_wq]
root          27  0.0  0.0      0     0 ?        S    04:52   0:00 [kauditd]
root          29  0.0  0.0      0     0 ?        S    04:52   0:00 [khungtaskd]
```

2. Вывод дерева процессов при помощи pstree

```
dreamchik@ubuntu:~$ pstree
systemd─┬─ModemManager───2*[{ModemManager}]
        ├─NetworkManager───2*[{NetworkManager}]
        ├─VGAuthService
        ├─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─┬─ssh-agent
        │      │                 │               │                 └─2*[{gnome-session-b}]
        │      │                 │               └─2*[{gdm-x-session}]
        │      │                 └─2*[{gdm-session-wor}]
        │      └─2*[{gdm3}]
        ├─gnome-keyring-d───3*[{gnome-keyring-d}]
        ├─irqbalance───{irqbalance}
        ├─2*[kerneloops]
        ├─networkd-dispat
        ├─polkitd───2*[{polkitd}]
        ├─rsyslogd───3*[{rsyslogd}]
        ├─rtkit-daemon───2*[{rtkit-daemon}]
        ├─snapd───13*[{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───10*[{evolution-calen}]
        │         ├─evolution-sourc───3*[{evolution-sourc}]
        │         ├─gjs───4*[{gjs}]
        │         ├─gnome-session-b─┬─evolution-alarm───5*[{evolution-alarm}]
        │         │                 ├─gsd-disk-utilit───2*[{gsd-disk-utilit}]
        │         │                 ├─update-notifier───3*[{update-notifier}]
        │         │                 └─3*[{gnome-session-b}]
```

3. С помощью команды top получаю список всех наиболее затратных для процессора процессов.

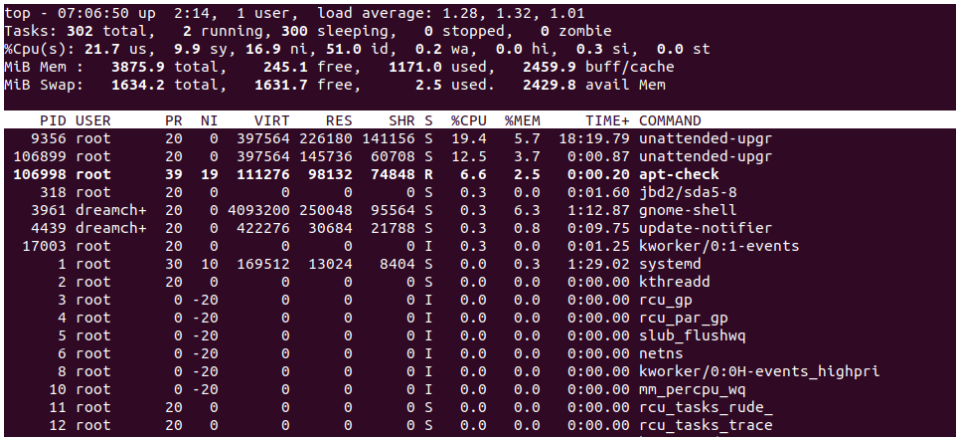
```
top - 06:39:50 up  1:47,  1 user,  load average: 0.08, 0.06, 0.01
Tasks: 279 total,   1 running, 278 sleeping,   0 stopped,   0 zombie
%Cpu(s):  1.0 us,  2.7 sy,  0.0 ni, 96.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3875.9 total,   1133.1 free,   1092.5 used,   1650.3 buff/cache
MiB Swap:   1634.2 total,   1634.2 free,      0.0 used.   2547.1 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   3961 dreamch+  20   0 4087852 258172 104684 S   3.0   6.5   1:01.92 gnome-shell
   3777 dreamch+  20   0  310540  83580  41572 S   2.7   2.1   0:39.51 Xorg
   8478 dreamch+  20   0  815520  51528  39604 S   1.7   1.3   0:08.06 gnome-terminal-
   9299 dreamch+  20   0   12024   4076   3280 R   0.7   0.1   0:00.06 top
   4616 dreamch+  20   0  494760  29728  21000 S   0.3   0.7   0:00.29 xdg-desktop-por
      1 root      20   0  169344  12904   8484 S   0.0   0.3   0:49.24 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
     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 S   0.0   0.0   0:00.00 rcu_tasks_rude_
     12 root      20   0       0      0      0 S   0.0   0.0   0:00.00 rcu_tasks_trace
     13 root      20   0       0      0      0 S   0.0   0.0   0:00.14 ksoftirqd/0
     14 root      20   0       0      0      0 I   0.0   0.0   0:00.62 rcu_sched
     15 root      rt   0       0      0      0 S   0.0   0.0   0:00.02 migration/0
     16 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
     18 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     19 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/1
     20 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/1
     21 root      rt   0       0      0      0 S   0.0   0.0   0:00.12 migration/1
     22 root      20   0       0      0      0 S   0.0   0.0   0:00.14 ksoftirqd/1
     24 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri
     25 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kdevtmpfs
     26 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 inet_frag_wq
     27 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kauditd
     29 root      20   0       0      0      0 S   0.0   0.0   0:00.00 khungtaskd
     30 root      20   0       0      0      0 S   0.0   0.0   0:00.00 oom_reaper
     31 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 writeback
     32 root      20   0       0      0      0 S   0.0   0.0   0:00.14 kcompactd0
     33 root      25   5       0      0      0 S   0.0   0.0   0:00.00 ksmd
     34 root      39  19       0      0      0 S   0.0   0.0   0:00.00 khugepaged
```

Сортирую по времени, перехотя в режим выбора по нажатии кнопки F. По нажатии N выбираю кол-во отображаемых процессов - 5

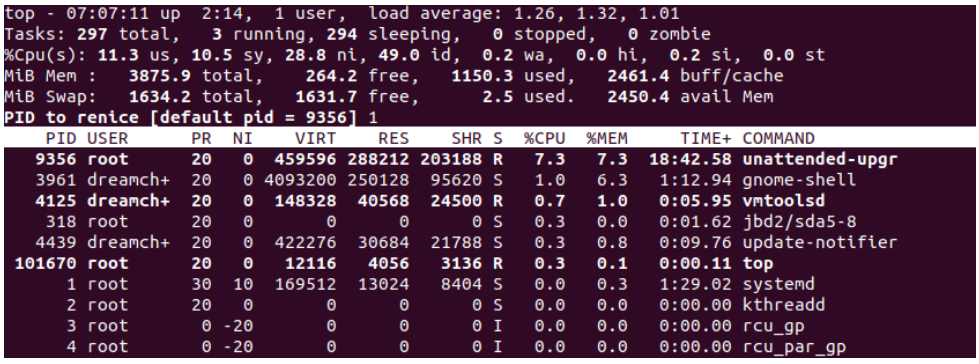
```
top - 06:42:20 up  1:50,  1 user,  load average: 0.03, 0.05, 0.00
Tasks: 279 total,   2 running, 277 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.5 us,  0.8 sy,  0.0 ni, 98.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3875.9 total,   1133.1 free,   1092.4 used,   1650.4 buff/cache
MiB Swap:   1634.2 total,   1634.2 free,      0.0 used.   2547.2 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   3694 dreamch+  20   0   19764  10372   8080 S   0.0   0.3   1:52.91 systemd
   3961 dreamch+  20   0 4087948 258232 104684 R   1.7   6.5   1:02.65 gnome-shell
      1 root      20   0  169344  12904   8484 S   0.0   0.3   0:49.24 systemd
   3777 dreamch+  20   0  310540  83820  41812 S   0.3   2.1   0:40.27 Xorg
   8478 dreamch+  20   0  815520  51736  39660 S   0.0   1.3   0:08.43 gnome-terminal-
```

5. Использую sudo top для отображения процессов. Sudo пишу для дальнейшей возможности изменить приоритет. Выбираю процесс pid1 и меняю приоритет на -15. Скрины пронумерованы по порядку действий(1-4)

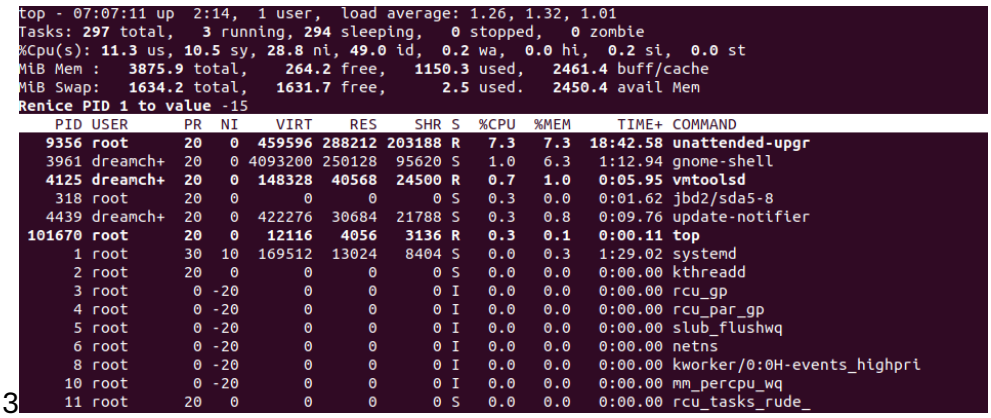
1



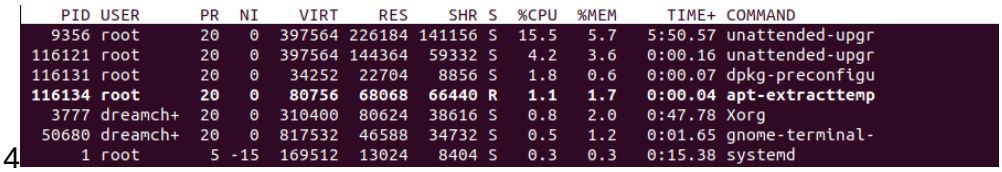
2



3



4



Аналогично повышаю процессу pid4 приоритет на 50.

```
   PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
103945 root      20   0       0      0      0 I   1.7   0.0   0:00.26 kworker/u256:1-writeback
  3961 dreamch+  20   0 4094292 250928  96252 S   0.3   6.3   1:13.78 gnome-shell
  4125 dreamch+  20   0  149012  41456  25228 S   0.3   1.0   0:06.10 vmtoolsd
 54149 root      20   0       0      0      0 I   0.3   0.0   0:01.12 kworker/u256:4-ext4-rsv-conversion
101670 root      20   0   12116   4056   3136 R   0.3   0.1   0:00.19 top
     1 root       5 -15  169512  13024   8404 S   0.0   0.3  22:09.29 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      39  19       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
```

6. Получаю список открытых файлов путём написания lsof, ключа -u и имени пользователя:

```
dreamchik@ubuntu:~$ lsof -u dreamchik
```

```
card-restore.so
pulseaudi   3701 dreamchik  mem       REG               8,5    81120    2108712 /usr/lib/pulse-13.99.1/modules/module-
stream-restore.so
pulseaudi   3701 dreamchik  mem       REG               8,5   162024    2108653 /usr/lib/pulse-13.99.1/modules/libprot
ocol-native.so
pulseaudi   3701 dreamchik  mem       REG               8,5    47336    2108679 /usr/lib/pulse-13.99.1/modules/module-
d Ubuntu Software so
pulseaudi   3701 dreamchik  mem       REG               8,5  5708416    1966542 /usr/lib/locale/locale-archive
pulseaudi   3701 dreamchik  mem       REG               8,5    96728    1973331 /usr/lib/x86_64-linux-gnu/libbsd.so.0.
10.0
pulseaudi   3701 dreamchik  DEL       REG               8,5             1974304 /usr/lib/x86_64-linux-gnu/libresolv-2.
31.so
pulseaudi   3701 dreamchik  DEL       REG               8,5             1974107 /usr/lib/x86_64-linux-gnu/libnsl-2.31.
so
pulseaudi   3701 dreamchik  mem       REG               8,5    26800    1973173 /usr/lib/x86_64-linux-gnu/libXdmcp.so.
6.0.0
pulseaudi   3701 dreamchik  mem       REG               8,5    18688    1973162 /usr/lib/x86_64-linux-gnu/libXau.so.6.
0.0
pulseaudi   3701 dreamchik  DEL       REG               8,5             1973719 /usr/lib/x86_64-linux-gnu/libgomp.so.1
```

7. С помощью free получаю данные о памяти

```
dreamchik@ubuntu:~$ free
              total        used        free      shared  buff/cache   available
Mem:        3968964     1093284      531268        2848     2344412     2594436
Swap:       1673428        2584     1670844
dreamchik@ubuntu:~$
```

8. Использую df и получаю информацию о памяти на диске. -h прописано для отображения единиц измерения информации

```
dreamchik@ubuntu:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G     0  1.9G   0% /dev
tmpfs           388M  1.9M  386M   1% /run
/dev/sda5        34G  8.9G   24G  28% /
tmpfs           1.9G     0  1.9G   0% /dev/shm
tmpfs           5.0M  4.0K  5.0M   1% /run/lock
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/loop0      128K  128K     0 100% /snap/bare/5
/dev/loop1       46M   46M     0 100% /snap/snap-store/638
/dev/loop2       64M   64M     0 100% /snap/core20/1828
/dev/loop3       92M   92M     0 100% /snap/gtk-common-themes/1535
/dev/loop5       50M   50M     0 100% /snap/snapd/18357
/dev/loop4      347M  347M     0 100% /snap/gnome-3-38-2004/119
/dev/sda1       511M  4.0K  511M   1% /boot/efi
tmpfs           388M  100K  388M   1% /run/user/1000
/dev/loop6       64M   64M     0 100% /snap/core20/2682
/dev/loop7      350M  350M     0 100% /snap/gnome-3-38-2004/143
```

9. Вывожу данные о процесс pid1 через папку proc

```
dreamchik@ubuntu:~$ ls -l /proc/1
ls: cannot read symbolic link '/proc/1/cwd': Permission denied
ls: cannot read symbolic link '/proc/1/root': Permission denied
ls: cannot read symbolic link '/proc/1/exe': Permission denied
total 0
-r--r--r--  1 root root 0 Nov 11 07:15 arch_status
dr-xr-xr-x  2 root root 0 Nov 11 04:52 attr
-rw-r--r--  1 root root 0 Nov 11 07:15 autogroup
-r--------  1 root root 0 Nov 11 07:15 auxv
-r--r--r--  1 root root 0 Nov 11 04:52 cgroup
--w-------  1 root root 0 Nov 11 07:15 clear_refs
-r--r--r--  1 root root 0 Nov 11 04:52 cmdline
-rw-r--r--  1 root root 0 Nov 11 04:52 comm
-rw-r--r--  1 root root 0 Nov 11 07:15 coredump_filter
-r--r--r--  1 root root 0 Nov 11 07:15 cpu_resctrl_groups
-r--r--r--  1 root root 0 Nov 11 07:15 cpuset
lrwxrwxrwx  1 root root 0 Nov 11 07:15 cwd
-r--------  1 root root 0 Nov 11 04:52 environ
lrwxrwxrwx  1 root root 0 Nov 11 04:52 exe
dr-x------  2 root root 0 Nov 11 04:52 fd
dr-xr-xr-x  2 root root 0 Nov 11 04:52 fdinfo
-rw-r--r--  1 root root 0 Nov 11 04:52 gid_map
-r--------  1 root root 0 Nov 11 07:15 io
```

10. Получаю информацию о процессоре с помощью cpuinfo, так же через proc

```
dreamchik@ubuntu:~$ cat /proc/cpuinfo
processor       : 0
vendor_id       : GenuineIntel
cpu family      : 6
model           : 158
model name      : Intel(R) Core(TM) i5-9400F CPU @ 2.90GHz
stepping        : 10
microcode       : 0xde
cpu MHz         : 2904.004
cache size      : 9216 KB
physical id     : 0
siblings        : 1
core id         : 0
cpu cores       : 1
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 cm
ov pat pse36 clflush mmx fxsr sse sse2 ss syscall nx pdpe1gb rdtscp lm consta
```

11. Получаю информацию о загруженных модулях ядра через proc

```
dreamchik@ubuntu:~$ cat /proc/modules
vsock_loopback 16384 0 - Live 0x0000000000000000
vmw_vsock_virtio_transport_common 40960 1 vsock_loopback, Live 0x000000000000
0000
vmw_vsock_vmci_transport 32768 2 - Live 0x0000000000000000
vsock 45056 7 vsock_loopback,vmw_vsock_virtio_transport_common,vmw_vsock_vmci
_transport, Live 0x0000000000000000
nls_iso8859_1 16384 1 - Live 0x0000000000000000
snd_ens1371 32768 2 - Live 0x0000000000000000
snd_ac97_codec 155648 1 snd_ens1371, Live 0x0000000000000000
gameport 24576 1 snd_ens1371, Live 0x0000000000000000
ac97_bus 16384 1 snd_ac97_codec, Live 0x0000000000000000
intel_rapl_msr 20480 0 - Live 0x0000000000000000
intel_rapl_common 40960 1 intel_rapl_msr, Live 0x0000000000000000
snd_pcm 135168 2 snd_ens1371,snd_ac97_codec, Live 0x0000000000000000
crct10dif_pclmul 16384 1 - Live 0x0000000000000000
ghash_clmulni_intel 16384 0 - Live 0x0000000000000000
snd_seq_midi 20480 0 - Live 0x0000000000000000
snd_seq_midi_event 16384 1 snd_seq_midi, Live 0x0000000000000000
sha256_ssse3 32768 0 - Live 0x0000000000000000
sha1_ssse3 32768 0 - Live 0x0000000000000000
snd_rawmidi 49152 2 snd_ens1371,snd_seq_midi, Live 0x0000000000000000
aesni_intel 376832 0 - Live 0x0000000000000000
crypto_simd 16384 1 aesni_intel, Live 0x0000000000000000
vmw_balloon 24576 0 - Live 0x0000000000000000
cryptd 24576 2 ghash_clmulni_intel,crypto_simd, Live 0x0000000000000000
```