Operációs rendszerek

4.Gyakorlat

2025.03.12.

Készítette:

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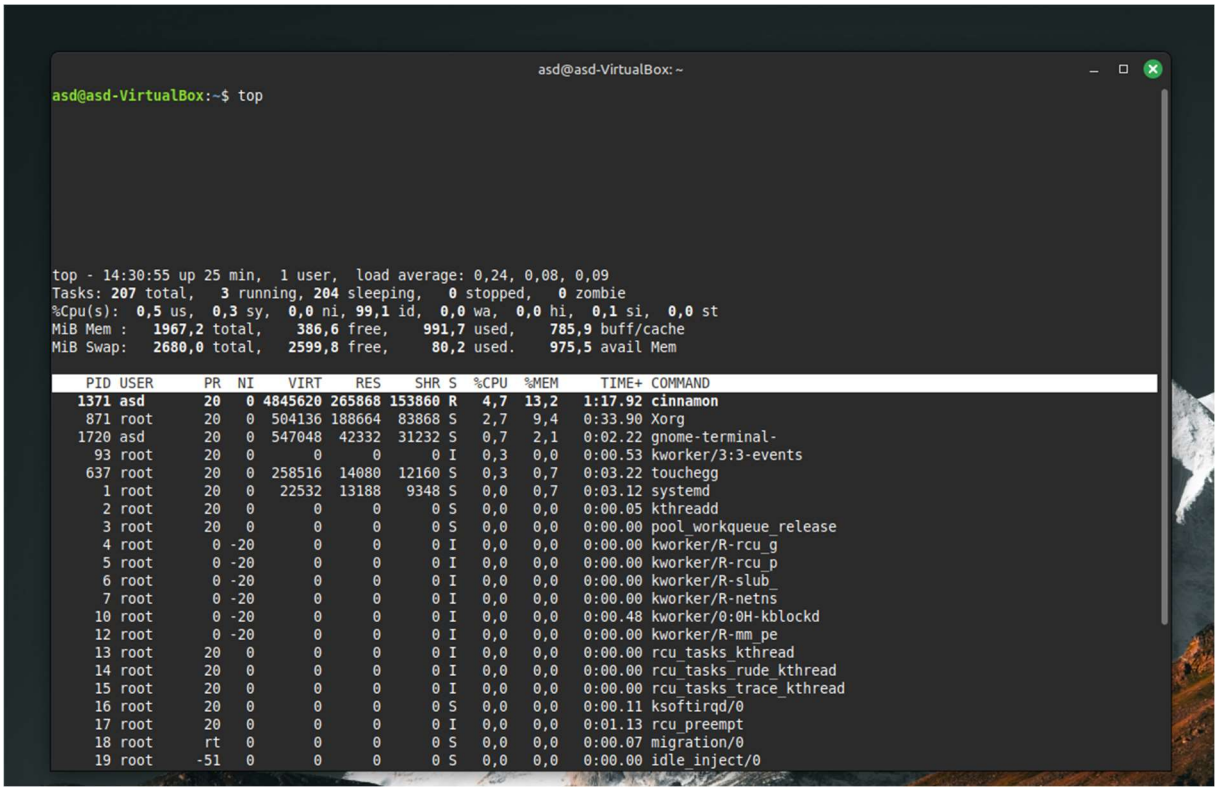
Neptunkód: CV72CL

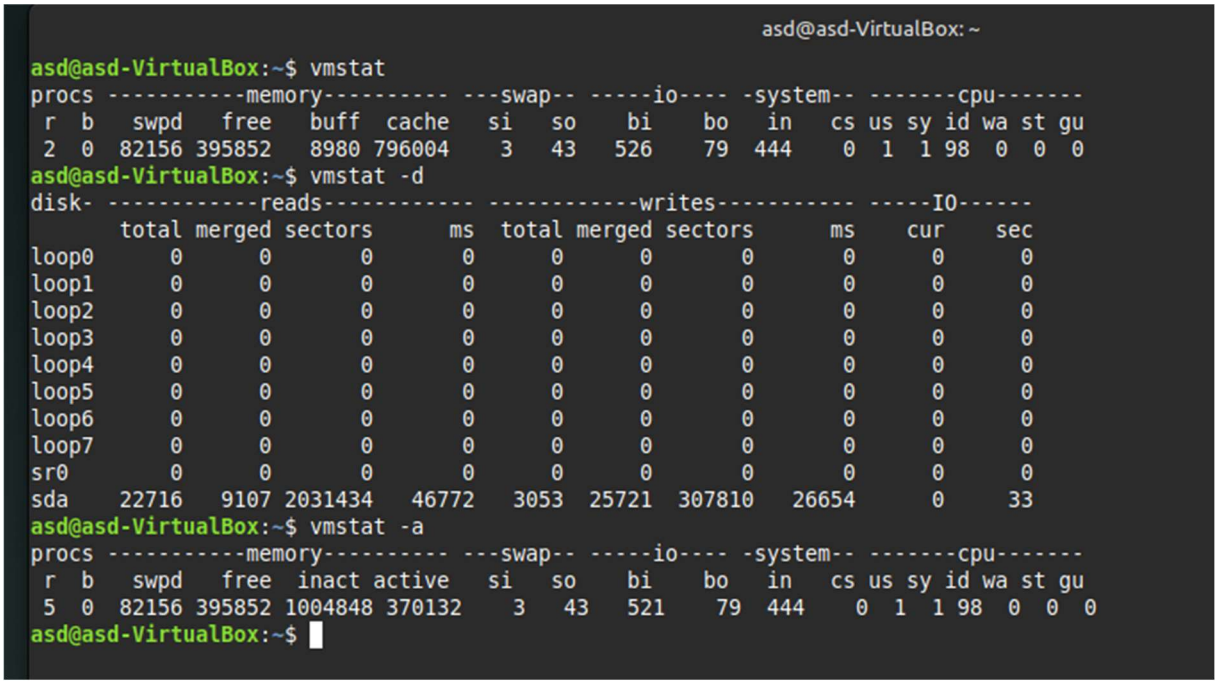
Sárospatak, 2025

1. **Feladat:** Linux OS-n futtassa a következő parancsokat, vizsgálja meg milyen szolgáltatásokat biztosít, írja le egy-egy mondattal. Készítsen egy képernyőképet

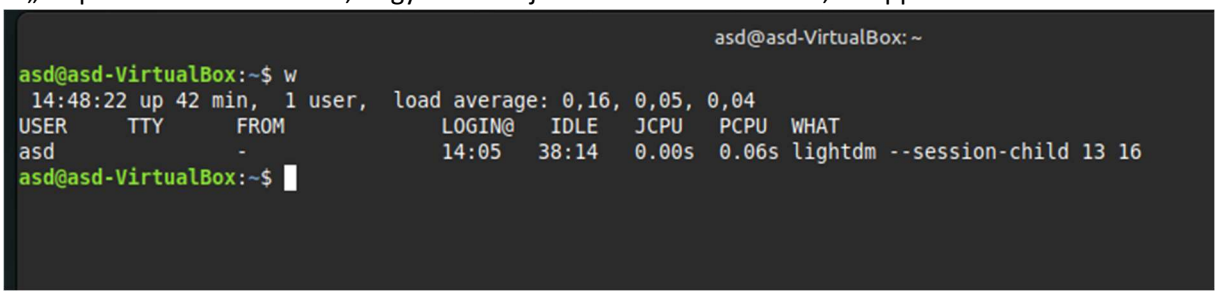


a.) A „top” parancs segítségével lekérdeztem a futó processzeket terhelés szerint

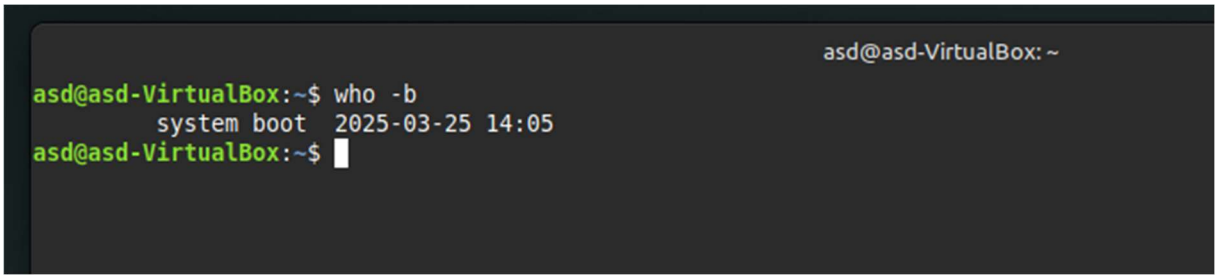
b.) A rendszer aktivitásról és a hardverről az információkat a „vmstat” parancsal kértem le, illetve a „-d” kapcsoló segítségével kiírattam a memóriahasználatot és lemez I/O statisztikákat és a „-a” kapcsoló segítségével kiírattam az aktív és inaktív memória lapokat



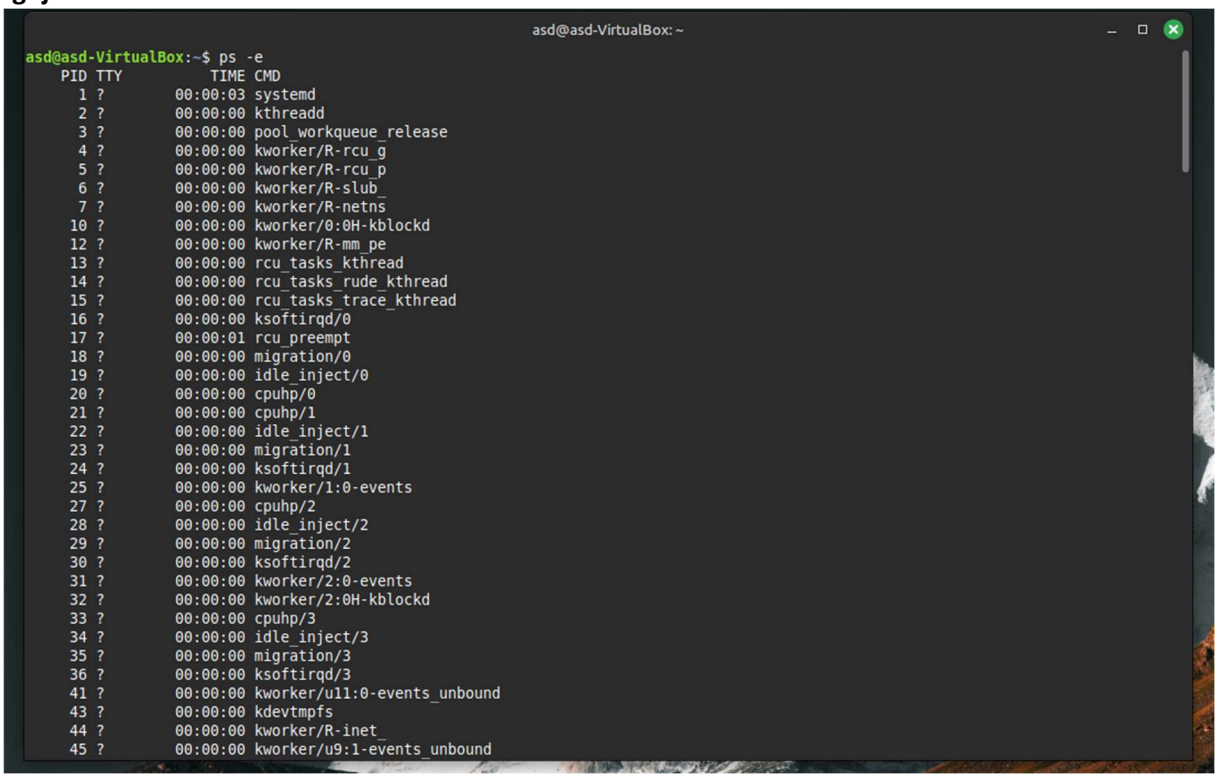
c.) A „w” parancsal lekérdeztem, hogy ki van bejelentkezve a rendszerbe, és éppen mit csinál

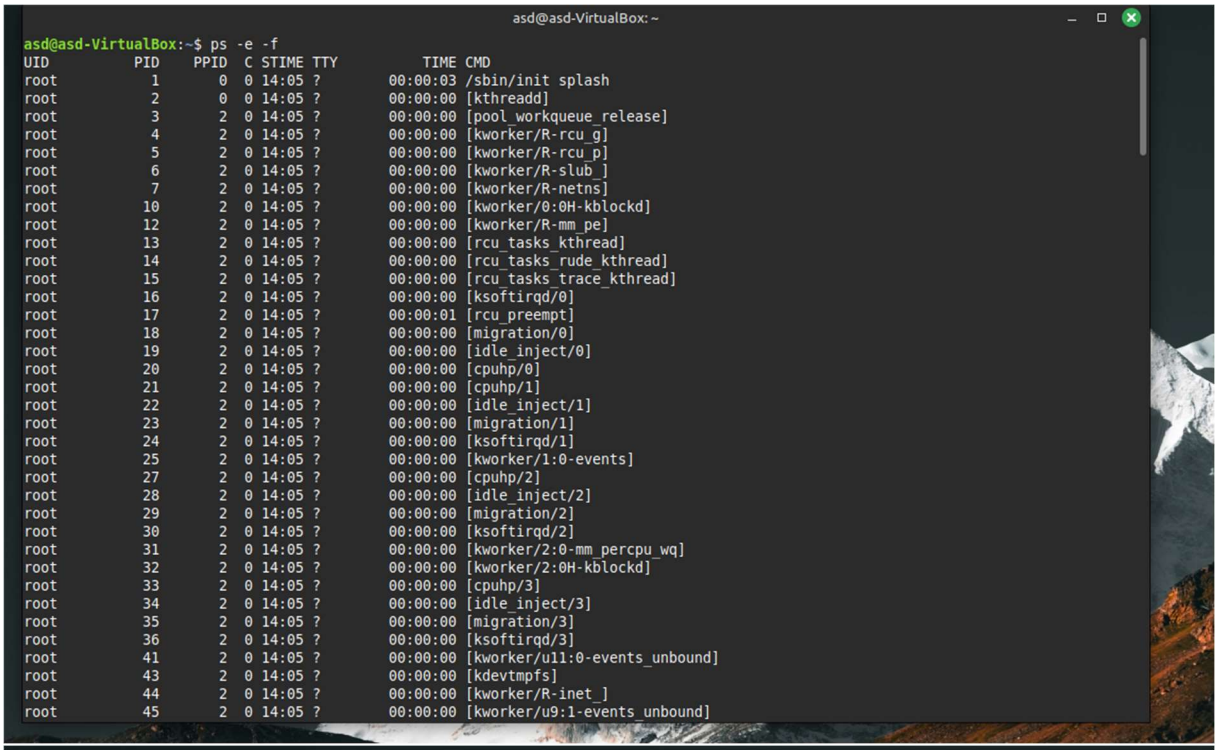


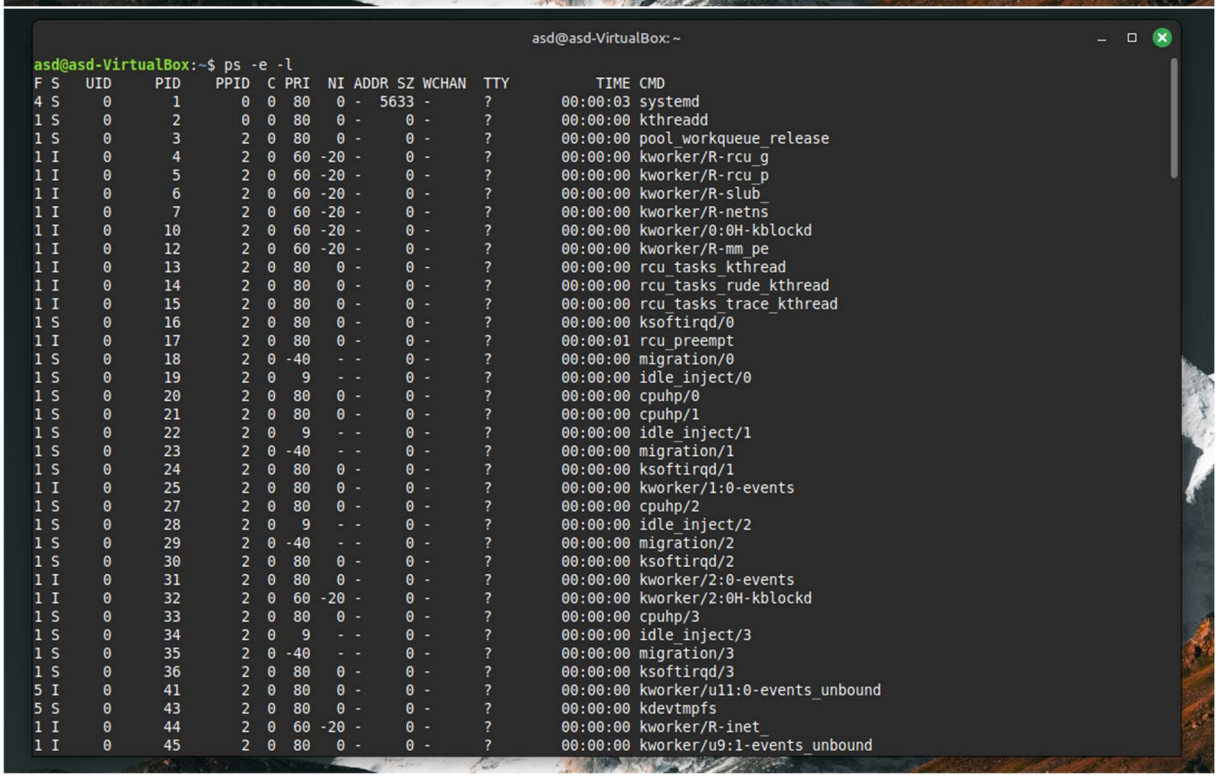
d.) A „who -b” parancsal kiírtam a szerver futásának kezdő idejét

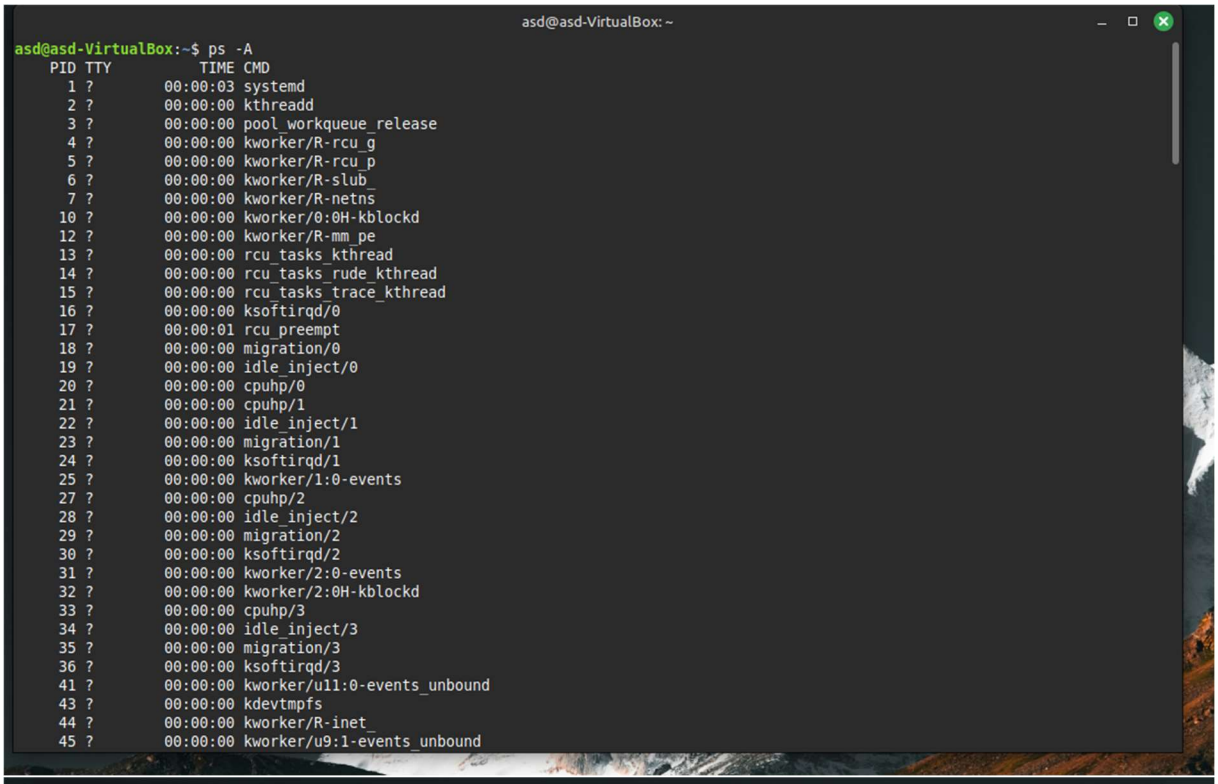


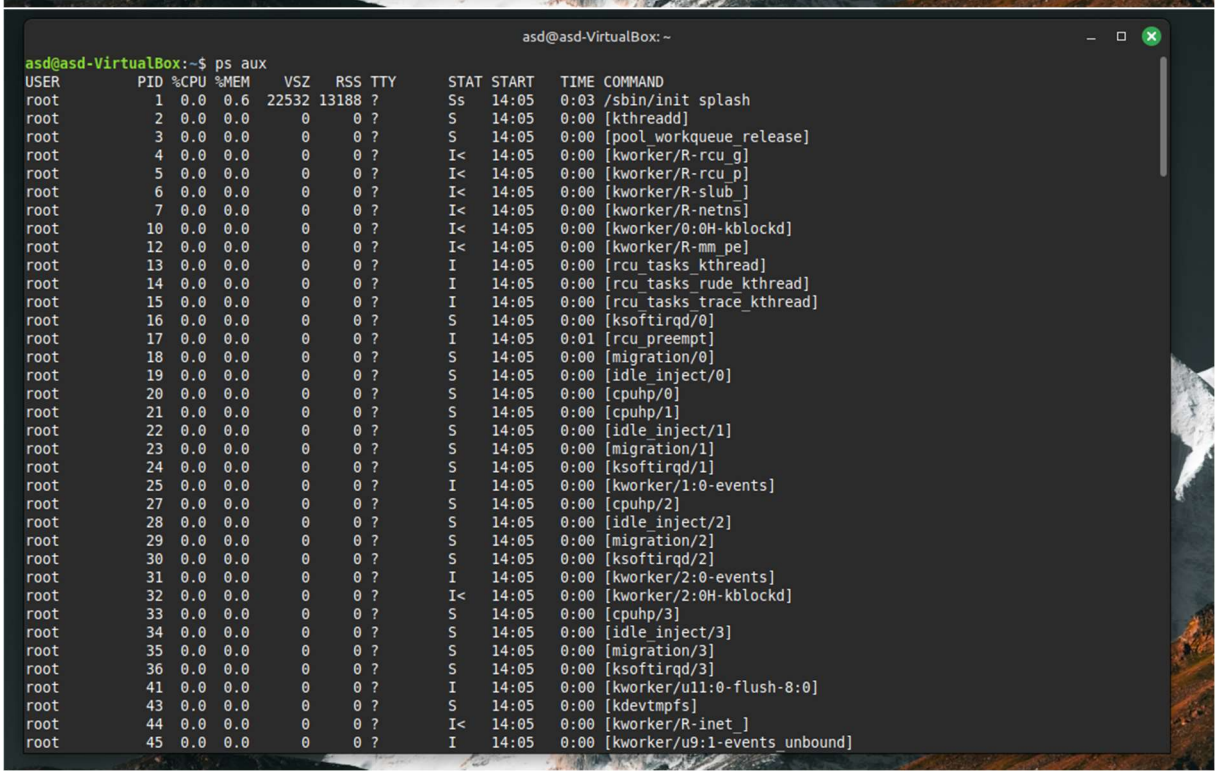
e.) fghjklé

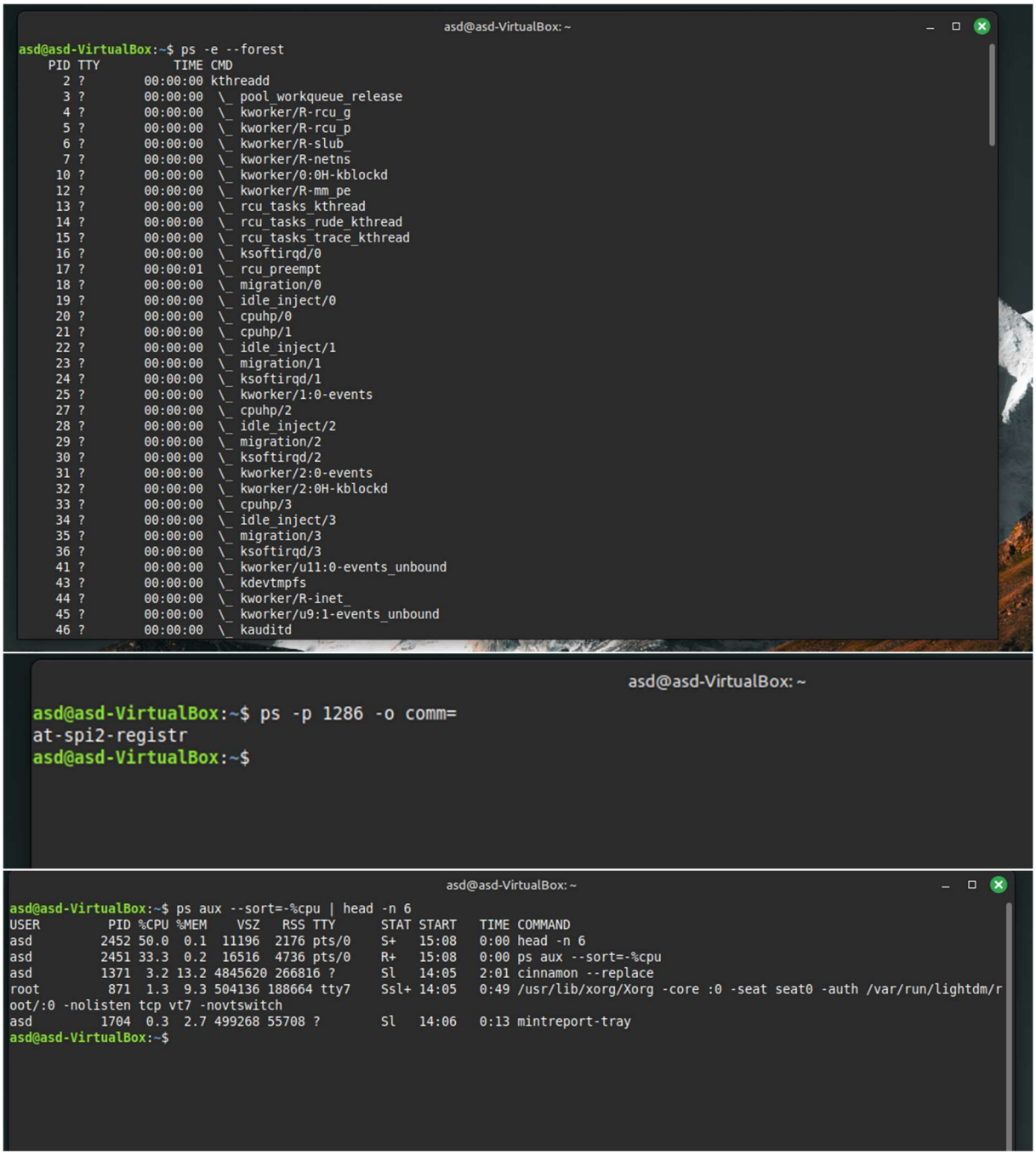



asd@asd-VirtualBox: ~
asd@asd-VirtualBox:~$ ps -e -f
UID PID PPID C STIME TTY TIME CMD
root 1 0 0 14:05 ? 00:00:03 /sbin/init splash
root 2 0 0 14:05 ? 00:00:00 [kthreadd]
root 3 2 0 14:05 ? 00:00:00 [pool_workqueue_release]
root 4 2 0 14:05 ? 00:00:00 [kworker/R-rcu_g]
root 5 2 0 14:05 ? 00:00:00 [kworker/R-rcu_p]
root 6 2 0 14:05 ? 00:00:00 [kworker/R-slub_]
root 7 2 0 14:05 ? 00:00:00 [kworker/R-netns]
root 10 2 0 14:05 ? 00:00:00 [kworker/0:0H-kblockd]
root 12 2 0 14:05 ? 00:00:00 [kworker/R-mm_pe]
root 13 2 0 14:05 ? 00:00:00 [rcu_tasks_kthread]
root 14 2 0 14:05 ? 00:00:00 [rcu_tasks_rude_kthread]
root 15 2 0 14:05 ? 00:00:00 [rcu_tasks_trace_kthread]
root 16 2 0 14:05 ? 00:00:00 [ksoftirqd/0]
root 17 2 0 14:05 ? 00:00:01 [rcu_preempt]
root 18 2 0 14:05 ? 00:00:00 [migration/0]
root 19 2 0 14:05 ? 00:00:00 [idle_inject/0]
root 20 2 0 14:05 ? 00:00:00 [cpuhp/0]
root 21 2 0 14:05 ? 00:00:00 [cpuhp/1]
root 22 2 0 14:05 ? 00:00:00 [idle_inject/1]
root 23 2 0 14:05 ? 00:00:00 [migration/1]
root 24 2 0 14:05 ? 00:00:00 [ksoftirqd/1]
root 25 2 0 14:05 ? 00:00:00 [kworker/1:0-events]
root 27 2 0 14:05 ? 00:00:00 [cpuhp/2]
root 28 2 0 14:05 ? 00:00:00 [idle_inject/2]
root 29 2 0 14:05 ? 00:00:00 [migration/2]
root 30 2 0 14:05 ? 00:00:00 [ksoftirqd/2]
root 31 2 0 14:05 ? 00:00:00 [kworker/2:0-mm_percpu_wq]
root 32 2 0 14:05 ? 00:00:00 [kworker/2:0H-kblockd]
root 33 2 0 14:05 ? 00:00:00 [cpuhp/3]
root 34 2 0 14:05 ? 00:00:00 [idle_inject/3]
root 35 2 0 14:05 ? 00:00:00 [migration/3]
root 36 2 0 14:05 ? 00:00:00 [ksoftirqd/3]
root 41 2 0 14:05 ? 00:00:00 [kworker/u11:0-events_unbound]
root 43 2 0 14:05 ? 00:00:00 [kdevtmpfs]
root 44 2 0 14:05 ? 00:00:00 [kworker/R-inet_]
root 45 2 0 14:05 ? 00:00:00 [kworker/u9:1-events_unbound]


asd@asd-VirtualBox: ~
asd@asd-VirtualBox:~$ ps -e -l
F S UID PID PPID C PRI NI ADDR SZ WCHAN TTY TIME CMD
4 S 0 1 0 0 80 0 - 5633 - ? 00:00:03 systemd
1 S 0 2 0 0 80 0 - 0 - ? 00:00:00 kthreadd
1 S 0 3 2 0 80 0 - 0 - ? 00:00:00 pool_workqueue_release
1 I 0 4 2 0 60 -20 - 0 - ? 00:00:00 kworker/R-rcu_g
1 I 0 5 2 0 60 -20 - 0 - ? 00:00:00 kworker/R-rcu_p
1 I 0 6 2 0 60 -20 - 0 - ? 00:00:00 kworker/R-slub_
1 I 0 7 2 0 60 -20 - 0 - ? 00:00:00 kworker/R-netns
1 I 0 10 2 0 60 -20 - 0 - ? 00:00:00 kworker/0:0H-kblockd
1 I 0 12 2 0 60 -20 - 0 - ? 00:00:00 kworker/R-mm_pe
1 I 0 13 2 0 80 0 - 0 - ? 00:00:00 rcu_tasks_kthread
1 I 0 14 2 0 80 0 - 0 - ? 00:00:00 rcu_tasks_rude_kthread
1 I 0 15 2 0 80 0 - 0 - ? 00:00:00 rcu_tasks_trace_kthread
1 S 0 16 2 0 80 0 - 0 - ? 00:00:00 ksoftirqd/0
1 I 0 17 2 0 80 0 - 0 - ? 00:00:01 rcu_preempt
1 S 0 18 2 0 -40 - - 0 - ? 00:00:00 migration/0
1 S 0 19 2 0 9 - - 0 - ? 00:00:00 idle_inject/0
1 S 0 20 2 0 80 0 - 0 - ? 00:00:00 cpuhp/0
1 S 0 21 2 0 80 0 - 0 - ? 00:00:00 cpuhp/1
1 S 0 22 2 0 9 - - 0 - ? 00:00:00 idle_inject/1
1 S 0 23 2 0 -40 - - 0 - ? 00:00:00 migration/1
1 S 0 24 2 0 80 0 - 0 - ? 00:00:00 ksoftirqd/1
1 I 0 25 2 0 80 0 - 0 - ? 00:00:00 kworker/1:0-events
1 S 0 27 2 0 80 0 - 0 - ? 00:00:00 cpuhp/2
1 S 0 28 2 0 9 - - 0 - ? 00:00:00 idle_inject/2
1 S 0 29 2 0 -40 - - 0 - ? 00:00:00 migration/2
1 S 0 30 2 0 80 0 - 0 - ? 00:00:00 ksoftirqd/2
1 I 0 31 2 0 80 0 - 0 - ? 00:00:00 kworker/2:0-events
1 I 0 32 2 0 60 -20 - 0 - ? 00:00:00 kworker/2:0H-kblockd
1 S 0 33 2 0 80 0 - 0 - ? 00:00:00 cpuhp/3
1 S 0 34 2 0 9 - - 0 - ? 00:00:00 idle_inject/3
1 S 0 35 2 0 -40 - - 0 - ? 00:00:00 migration/3
1 S 0 36 2 0 80 0 - 0 - ? 00:00:00 ksoftirqd/3
5 I 0 41 2 0 80 0 - 0 - ? 00:00:00 kworker/u11:0-events_unbound
5 S 0 43 2 0 80 0 - 0 - ? 00:00:00 kdevtmpfs
1 I 0 44 2 0 60 -20 - 0 - ? 00:00:00 kworker/R-inet_
1 I 0 45 2 0 80 0 - 0 - ? 00:00:00 kworker/u9:1-events_unbound


asd@asd-VirtualBox: ~
asd@asd-VirtualBox:~$ ps -A
PID TTY TIME CMD
1 ? 00:00:03 systemd
2 ? 00:00:00 kthreadd
3 ? 00:00:00 pool_workqueue_release
4 ? 00:00:00 kworker/R-rcu_g
5 ? 00:00:00 kworker/R-rcu_p
6 ? 00:00:00 kworker/R-slub_
7 ? 00:00:00 kworker/R-netns
10 ? 00:00:00 kworker/0:0H-kblockd
12 ? 00:00:00 kworker/R-mm_pe
13 ? 00:00:00 rcu_tasks_kthread
14 ? 00:00:00 rcu_tasks_rude_kthread
15 ? 00:00:00 rcu_tasks_trace_kthread
16 ? 00:00:00 ksoftirqd/0
17 ? 00:00:01 rcu_preempt
18 ? 00:00:00 migration/0
19 ? 00:00:00 idle_inject/0
20 ? 00:00:00 cpuhp/0
21 ? 00:00:00 cpuhp/1
22 ? 00:00:00 idle_inject/1
23 ? 00:00:00 migration/1
24 ? 00:00:00 ksoftirqd/1
25 ? 00:00:00 kworker/1:0-events
27 ? 00:00:00 cpuhp/2
28 ? 00:00:00 idle_inject/2
29 ? 00:00:00 migration/2
30 ? 00:00:00 ksoftirqd/2
31 ? 00:00:00 kworker/2:0-events
32 ? 00:00:00 kworker/2:0H-kblockd
33 ? 00:00:00 cpuhp/3
34 ? 00:00:00 idle_inject/3
35 ? 00:00:00 migration/3
36 ? 00:00:00 ksoftirqd/3
41 ? 00:00:00 kworker/u11:0-events_unbound
43 ? 00:00:00 kdevtmpfs
44 ? 00:00:00 kworker/R-inet_
45 ? 00:00:00 kworker/u9:1-events_unbound


asd@asd-VirtualBox: ~
asd@asd-VirtualBox:~$ ps aux
USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND
root 1 0.0 0.6 22532 13188 ? Ss 14:05 0:03 /sbin/init splash
root 2 0.0 0.0 0 0 ? S 14:05 0:00 [kthreadd]
root 3 0.0 0.0 0 0 ? S 14:05 0:00 [pool_workqueue_release]
root 4 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/R-rcu_g]
root 5 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/R-rcu_p]
root 6 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/R-slub_]
root 7 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/R-netns]
root 10 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/0:0H-kblockd]
root 12 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/R-mm_pe]
root 13 0.0 0.0 0 0 ? I 14:05 0:00 [rcu_tasks_kthread]
root 14 0.0 0.0 0 0 ? I 14:05 0:00 [rcu_tasks_rude_kthread]
root 15 0.0 0.0 0 0 ? I 14:05 0:00 [rcu_tasks_trace_kthread]
root 16 0.0 0.0 0 0 ? S 14:05 0:00 [ksoftirqd/0]
root 17 0.0 0.0 0 0 ? I 14:05 0:01 [rcu_preempt]
root 18 0.0 0.0 0 0 ? S 14:05 0:00 [migration/0]
root 19 0.0 0.0 0 0 ? S 14:05 0:00 [idle_inject/0]
root 20 0.0 0.0 0 0 ? S 14:05 0:00 [cpuhp/0]
root 21 0.0 0.0 0 0 ? S 14:05 0:00 [cpuhp/1]
root 22 0.0 0.0 0 0 ? S 14:05 0:00 [idle_inject/1]
root 23 0.0 0.0 0 0 ? S 14:05 0:00 [migration/1]
root 24 0.0 0.0 0 0 ? S 14:05 0:00 [ksoftirqd/1]
root 25 0.0 0.0 0 0 ? I 14:05 0:00 [kworker/1:0-events]
root 27 0.0 0.0 0 0 ? S 14:05 0:00 [cpuhp/2]
root 28 0.0 0.0 0 0 ? S 14:05 0:00 [idle_inject/2]
root 29 0.0 0.0 0 0 ? S 14:05 0:00 [migration/2]
root 30 0.0 0.0 0 0 ? S 14:05 0:00 [ksoftirqd/2]
root 31 0.0 0.0 0 0 ? I 14:05 0:00 [kworker/2:0-events]
root 32 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/2:0H-kblockd]
root 33 0.0 0.0 0 0 ? S 14:05 0:00 [cpuhp/3]
root 34 0.0 0.0 0 0 ? S 14:05 0:00 [idle_inject/3]
root 35 0.0 0.0 0 0 ? S 14:05 0:00 [migration/3]
root 36 0.0 0.0 0 0 ? S 14:05 0:00 [ksoftirqd/3]
root 41 0.0 0.0 0 0 ? I 14:05 0:00 [kworker/u11:0-flush-8:0]
root 43 0.0 0.0 0 0 ? S 14:05 0:00 [kdevtmpfs]
root 44 0.0 0.0 0 0 ? I< 14:05 0:00 [kworker/R-inet_]
root 45 0.0 0.0 0 0 ? I 14:05 0:00 [kworker/u9:1-events_unbound]



f.) A „free" parancsnak sok kapcsoloja van:

`-b`: Memória használat **byte-ban**.

`-k`: Memória használat **kilobájtban** (alapértelmezett).

`-m`: Memória használat **megabájtban**.

`-g`: Memória használat **gigabájtban**.

`-t`: RAM és swap terület **összegzett kijelzése**.

`-o`: "Régi formátum", pufferek és cache nélkül.

`-s`: Folyamatos monitorozás adott időközönként.

`-v`: Csak a **`free` verzióját** mutatja.