

Operációs rendszerek BSc

4. Gyak.

2022. 02. 28.

Készítette:

Pócsi Ákos Bsc
Gazdaságinformatika
ITUCXP

Miskolc, 2022

1. feladat

a.) Jelenítse meg a futó processzek listáját terhelés szerint! Monitorozza a terhelést folyamatosan!

```
mint@mint: ~  
File Edit View Search Terminal Help  
top - 15:17:49 up 11 min, 1 user, load average: 0.01, 0.63, 0.82  
Tasks: 171 total, 1 running, 170 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 0.3 us, 0.2 sy, 0.0 ni, 99.5 id, 0.1 wa, 0.0 hi, 0.0 si, 0.0 st  
MiB Mem : 4937.0 total, 3394.9 free, 584.0 used, 958.0 buff/cache  
MiB Swap: 0.0 total, 0.0 free, 0.0 used, 4009.2 avail Mem  
  
  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND  
1682 mint      20   0 4465156 196412 114528 S   2.7   3.9   0:29.46 cinnamon  
1286 root       20   0 878152 84608 49048 S   1.3   1.7   0:04.87 Xorg  
2088 mint      20   0 466272 39768 30888 S   0.7   0.8   0:00.82 gnome-terminal-  
195 root       20   0 0 0 0 I   0.3   0.0   0:16.01 kworker/2:2-events  
1 root       20   0 167616 11968 8812 S   0.0   0.2   0:04.93 systemd  
2 root       20   0 0 0 0 S   0.0   0.0   0:00.01 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  
6 root       0 -20 0 0 0 I   0.0   0.0   0:00.00 kworker/0:0H-kblockd  
7 root       20   0 0 0 0 I   0.0   0.0   0:00.17 kworker/u8:0-events_power_efficient  
8 root       0 -20 0 0 0 I   0.0   0.0   0:00.00 mm_percpu_wq  
9 root       20   0 0 0 0 S   0.0   0.0   0:00.00 ksoftirqd/0  
10 root      20   0 0 0 0 I   0.0   0.0   0:00.17 rcu_sched  
11 root      rt   0 0 0 0 0 S   0.0   0.0   0:00.03 migration/0  
12 root     -51   0 0 0 0 S   0.0   0.0   0:00.00 idle inject/0  
13 root      20   0 0 0 0 I   0.0   0.0   0:05.39 kworker/0:1-events  
14 root      20   0 0 0 0 S   0.0   0.0   0:00.01 cpuhp/0  
15 root      20   0 0 0 0 S   0.0   0.0   0:00.00 cpuhp/1  
16 root     -51   0 0 0 0 S   0.0   0.0   0:00.00 idle inject/1  
17 root      rt   0 0 0 0 S   0.0   0.0   0:00.59 migration/1  
18 root      20   0 0 0 0 S   0.0   0.0   0:00.03 ksoftirqd/1  
19 root      20   0 0 0 0 I   0.0   0.0   0:05.47 kworker/1:0-mm_percpu_wq  
20 root      0 -20 0 0 0 I   0.0   0.0   0:00.00 kworker/1:0H-kblockd  
21 root      20   0 0 0 0 S   0.0   0.0   0:00.00 cpuhp/2  
22 root     -51   0 0 0 0 S   0.0   0.0   0:00.00 idle inject/2  
23 root      rt   0 0 0 0 S   0.0   0.0   0:00.02 migration/2  
24 root      20   0 0 0 0 S   0.0   0.0   0:00.00 ksoftirqd/2  
26 root      0 -20 0 0 0 I   0.0   0.0   0:00.00 kworker/2:0H-kblockd  
27 root      20   0 0 0 0 S   0.0   0.0   0:00.00 cpuhp/3  
28 root     -51   0 0 0 0 S   0.0   0.0   0:00.00 idle inject/3  
29 root      rt   0 0 0 0 S   0.0   0.0   0:00.60 migration/3  
30 root      20   0 0 0 0 S   0.0   0.0   0:01.37 ksoftirqd/3
```

b.) elenítse meg a rendszer aktivitásról és a hardverről az információkat (a jelentések a folyamatokra, memóriára, blokk input/outputra, CPU tevékenységekre és trap-re vonatkoznak)

```
mint@mint: ~  
File Edit View Search Terminal Help  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
mint@mint:~$ vmstat  
procs-----memory----- --swap-- --io---- -system-- -----cpu-----  
r b swpd free buff cache si so bi bo in cs us sy id wa st  
0 0 0 3507508 162252 817544 0 0 138 0 59 99 1 0 96 3 0  
mint@mint:~$
```

```

mint@mint:~$ vmstat 3
procs -----memory----- ---swap-- -----io----- -system-- -----cpu-----
 r b   swpd   free   buff  cache   si   so    bi    bo    in   cs us sy id wa st
 1 0     0 3496456 162252 819576    0    0   112     0   51   85 0 0 97 2 0
 0 0     0 3496456 162252 819576    0    0    0     0  182  284 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   77  126 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0  103  174 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   74  117 0 0 100 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   78  126 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   87  151 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   96  168 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   83  130 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   91  143 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0  126  244 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   98  164 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   73  132 1 0 99 0 0
 0 0     0 3496456 162252 819576    0    0    0     0   81  152 1 0 99 0 0

```

```

mint@mint:~$ vmstat -a
procs -----memory----- ---swap-- -----io----- -system-- -----cpu-----
 r b   swpd   free   inact active   si   so    bi    bo    in   cs us sy id wa st
 3 0     0 3500360 569184 782984    0    0   95     0   49   85 1 0 97 2 0

```

c.) Jelenítse meg ki van bejelentkezve a rendszerbe, és éppen mit csinál.

```

mint@mint:~$ w
15:26:24 up 20 min, 1 user, load average: 0.07, 0.20, 0.50
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
mint      tty7      :0               15:07    19:21  8.75s  5.13s cinnamon-session --session cinnamon

```

d.) Jelenítse meg a szerver futásának kezdő idejét.

```

mint@mint:~$ uname
Linux
mint@mint:~$ uptime
15:30:06 up 23 min, 1 user, load average: 0.07, 0.13, 0.40
mint@mint:~$

```

e.) ps - aktuális processzekről készít jelentést.

```
File Edit View Search Terminal Help
mint@mint: ~
mint@mint:~$ ps ax
  PID TTY          STAT       TIME COMMAND
    1 ?        Ss      0:04 /sbin/init splash
    2 ?        S        0:00 [kthreadd]
    3 ?        I<       0:00 [rcu_gp]
    4 ?        I<       0:00 [rcu_par_gp]
    6 ?        I<       0:00 [kworker/0:0H-kblockd]
    8 ?        I<       0:00 [mm_percpu_wq]
    9 ?        S        0:00 [ksoftirqd/0]
   10 ?        I        0:00 [rcu_sched]
   11 ?        S        0:00 [migration/0]
   12 ?        S        0:00 [idle_inject/0]
   13 ?        I        0:05 [kworker/0:1-events]
   14 ?        S        0:00 [cpuhp/0]
   15 ?        S        0:00 [cpuhp/1]
   16 ?        S        0:00 [idle_inject/1]
   17 ?        S        0:00 [migration/1]
   18 ?        S        0:00 [ksoftirqd/1]
   19 ?        I        0:05 [kworker/1:0-events]
   20 ?        I<       0:00 [kworker/1:0H-kblockd]
   21 ?        S        0:00 [cpuhp/2]
   22 ?        S        0:00 [idle_inject/2]
   23 ?        S        0:00 [migration/2]
   24 ?        S        0:00 [ksoftirqd/2]
   26 ?        I<       0:00 [kworker/2:0H-kblockd]
   27 ?        S        0:00 [cpuhp/3]
   28 ?        S        0:00 [idle_inject/3]
   29 ?        S        0:00 [migration/3]
   30 ?        S        0:01 [ksoftirqd/3]
   32 ?        I<       0:00 [kworker/3:0H-kblockd]
   33 ?        S        0:00 [kdevtmpfs]
   34 ?        I<       0:00 [netns]
   35 ?        S        0:00 [rcu_tasks_kthre]
   36 ?        S        0:00 [kauditd]
   37 ?        S        0:00 [khungtaskd]
   38 ?        S        0:00 [oom_reaper]
   39 ?        I<       0:00 [writeback]
   40 ?        S        0:00 [kcompactd0]
   41 ?        SN       0:00 [ksmd]
   42 ?        SN       0:00 [khunpaged]
```

```
File Edit View Search Terminal Help
mint@mint: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
mint@mint:~$ ps -A
  PID TTY          TIME CMD
    1 ?        00:00:04 systemd
    2 ?        00:00:00 kthreadd
    3 ?        00:00:00 rcu_gp
    4 ?        00:00:00 rcu_par_gp
    6 ?        00:00:00 kworker/0:0H-kblockd
    8 ?        00:00:00 mm_percpu_wq
    9 ?        00:00:00 ksoftirqd/0
   10 ?        00:00:00 rcu_sched
   11 ?        00:00:00 migration/0
   12 ?        00:00:00 idle_inject/0
   13 ?        00:00:05 kworker/0:1-events
   14 ?        00:00:00 cpuhp/0
   15 ?        00:00:00 cpuhp/1
   16 ?        00:00:00 idle_inject/1
   17 ?        00:00:00 migration/1
   18 ?        00:00:00 ksoftirqd/1
   19 ?        00:00:05 kworker/1:0-events
   20 ?        00:00:00 kworker/1:0H-kblockd
   21 ?        00:00:00 cpuhp/2
   22 ?        00:00:00 idle_inject/2
   23 ?        00:00:00 migration/2
   24 ?        00:00:00 ksoftirqd/2
   26 ?        00:00:00 kworker/2:0H-kblockd
   27 ?        00:00:00 cpuhp/3
   28 ?        00:00:00 idle_inject/3
   29 ?        00:00:00 migration/3
   30 ?        00:00:01 ksoftirqd/3
   32 ?        00:00:00 kworker/3:0H-kblockd
   33 ?        00:00:00 kdevtmpfs
   34 ?        00:00:00 netns
   35 ?        00:00:00 rcu_tasks_kthre
   36 ?        00:00:00 kauditd
   37 ?        00:00:00 hungtaskd
   38 ?        00:00:00 oom_reaper
   39 ?        00:00:00 writeback
```



```
File Edit View Search Terminal Help
mint@mint:~
For more details see ps(1).
mint@mint:~$ ps -Al
F S UID PID PPID C PRI NI ADDR SZ WCHAN TTY TIME CMD
4 S 0 1 0 0 80 0 - 41904 - ? 00:00:04 systemd
1 S 0 2 0 0 80 0 - 0 - ? 00:00:00 kthreadd
1 I 0 3 2 0 60 -20 - 0 - ? 00:00:00 rcu_gp
1 I 0 4 2 0 60 -20 - 0 - ? 00:00:00 rcu_par_gp
1 I 0 6 2 0 60 -20 - 0 - ? 00:00:00 kworker/0:0H-kblockd
1 I 0 8 2 0 60 -20 - 0 - ? 00:00:00 mm_percpu_wq
1 S 0 9 2 0 80 0 - 0 - ? 00:00:00 ksoftirqd/0
1 I 0 10 2 0 80 0 - 0 - ? 00:00:00 rcu_sched
1 S 0 11 2 0 -40 - - 0 - ? 00:00:00 migration/0
5 S 0 12 2 0 9 - - 0 - ? 00:00:00 idle_inject/0
1 I 0 13 2 0 80 0 - 0 - ? 00:00:05 kworker/0:1-events
1 S 0 14 2 0 80 0 - 0 - ? 00:00:00 cpuhp/0
1 S 0 15 2 0 80 0 - 0 - ? 00:00:00 cpuhp/1
5 S 0 16 2 0 9 - - 0 - ? 00:00:00 idle_inject/1
1 S 0 17 2 0 -40 - - 0 - ? 00:00:00 migration/1
1 S 0 18 2 0 80 0 - 0 - ? 00:00:00 ksoftirqd/1
1 I 0 19 2 0 80 0 - 0 - ? 00:00:05 kworker/1:0-events
1 I 0 20 2 0 60 -20 - 0 - ? 00:00:00 kworker/1:0H-kblockd
1 S 0 21 2 0 80 0 - 0 - ? 00:00:00 cpuhp/2
5 S 0 22 2 0 9 - - 0 - ? 00:00:00 idle_inject/2
1 S 0 23 2 0 -40 - - 0 - ? 00:00:00 migration/2
1 S 0 24 2 0 80 0 - 0 - ? 00:00:00 ksoftirqd/2
1 I 0 26 2 0 60 -20 - 0 - ? 00:00:00 kworker/2:0H-kblockd
1 S 0 27 2 0 80 0 - 0 - ? 00:00:00 cpuhp/3
5 S 0 28 2 0 9 - - 0 - ? 00:00:00 idle_inject/3
1 S 0 29 2 0 -40 - - 0 - ? 00:00:00 migration/3
1 S 0 30 2 0 80 0 - 0 - ? 00:00:01 ksoftirqd/3
1 I 0 32 2 0 60 -20 - 0 - ? 00:00:00 kworker/3:0H-kblockd
5 S 0 33 2 0 80 0 - 0 - ? 00:00:00 kdevtmpfs
1 I 0 34 2 0 60 -20 - 0 - ? 00:00:00 netns
1 S 0 35 2 0 80 0 - 0 - ? 00:00:00 rcu_tasks_kthre
1 S 0 36 2 0 80 0 - 0 - ? 00:00:00 kauditd
1 S 0 37 2 0 80 0 - 0 - ? 00:00:00 khungtaskd
1 S 0 38 2 0 80 0 - 0 - ? 00:00:00 oom_reaper
1 I 0 39 2 0 60 -20 - 0 - ? 00:00:00 writeback
1 S 0 40 2 0 80 0 - 0 - ? 00:00:00 kcompactd0
```

```
File Edit View Search Terminal Help
mint@mint:~
mint@mint:~$ ps -AlF
F S UID PID PPID C PRI NI ADDR SZ WCHAN TTY TIME CMD
4 S root 1 0 0 80 0 - 41904 - 11976 3 15:06 ? 00:00:04 /sbin/init splash
1 S root 2 0 0 80 0 - 0 - 0 0 15:06 ? 00:00:00 [kthreadd]
1 I root 3 2 0 60 -20 - 0 - 0 0 15:06 ? 00:00:00 [rcu_gp]
1 I root 4 2 0 60 -20 - 0 - 0 0 15:06 ? 00:00:00 [rcu_par_gp]
1 I root 6 2 0 60 -20 - 0 - 0 0 15:06 ? 00:00:00 [kworker/0:0H-kblockd]
1 I root 8 2 0 60 -20 - 0 - 0 0 15:06 ? 00:00:00 [mm_percpu_wq]
1 S root 9 2 0 80 0 - 0 - 0 0 15:06 ? 00:00:00 [ksoftirqd/0]
1 I root 10 2 0 80 0 - 0 - 0 0 15:06 ? 00:00:00 [rcu_sched]
1 S root 11 2 0 -40 - - 0 - 0 0 15:06 ? 00:00:00 [migration/0]
5 S root 12 2 0 9 - - 0 - 0 0 15:06 ? 00:00:00 [idle_inject/0]
1 I root 13 2 0 80 0 - 0 - 0 0 15:06 ? 00:00:05 [kworker/0:1-events]
1 S root 14 2 0 80 0 - 0 - 0 0 15:06 ? 00:00:00 [cpuhp/0]
1 S root 15 2 0 80 0 - 0 - 0 1 15:06 ? 00:00:00 [cpuhp/1]
5 S root 16 2 0 9 - - 0 - 0 1 15:06 ? 00:00:00 [idle_inject/1]
1 S root 17 2 0 -40 - - 0 - 0 1 15:06 ? 00:00:00 [migration/1]
1 S root 18 2 0 80 0 - 0 - 0 1 15:06 ? 00:00:00 [ksoftirqd/1]
1 I root 19 2 0 80 0 - 0 - 0 1 15:06 ? 00:00:05 [kworker/1:0-events]
1 I root 20 2 0 60 -20 - 0 - 0 1 15:06 ? 00:00:00 [kworker/1:0H-kblockd]
1 S root 21 2 0 80 0 - 0 - 0 2 15:06 ? 00:00:00 [cpuhp/2]
5 S root 22 2 0 9 - - 0 - 0 2 15:06 ? 00:00:00 [idle_inject/2]
1 S root 23 2 0 -40 - - 0 - 0 2 15:06 ? 00:00:00 [migration/2]
1 S root 24 2 0 80 0 - 0 - 0 2 15:06 ? 00:00:00 [ksoftirqd/2]
1 I root 26 2 0 60 -20 - 0 - 0 2 15:06 ? 00:00:00 [kworker/2:0H-kblockd]
1 S root 27 2 0 80 0 - 0 - 0 3 15:06 ? 00:00:00 [cpuhp/3]
5 S root 28 2 0 9 - - 0 - 0 3 15:06 ? 00:00:00 [idle_inject/3]
1 S root 29 2 0 -40 - - 0 - 0 3 15:06 ? 00:00:00 [migration/3]
1 S root 30 2 0 80 0 - 0 - 0 3 15:06 ? 00:00:01 [ksoftirqd/3]
1 I root 32 2 0 60 -20 - 0 - 0 3 15:06 ? 00:00:00 [kworker/3:0H-kblockd]
5 S root 33 2 0 80 0 - 0 - 0 0 15:06 ? 00:00:00 [kdevtmpfs]
1 I root 34 2 0 60 -20 - 0 - 0 1 15:06 ? 00:00:00 [netns]
1 S root 35 2 0 80 0 - 0 - 0 3 15:06 ? 00:00:00 [rcu_tasks_kthre]
1 S root 36 2 0 80 0 - 0 - 0 3 15:06 ? 00:00:00 [kauditd]
1 S root 37 2 0 80 0 - 0 - 0 2 15:06 ? 00:00:00 [khungtaskd]
1 S root 38 2 0 80 0 - 0 - 0 2 15:06 ? 00:00:00 [oom_reaper]
1 I root 39 2 0 60 -20 - 0 - 0 2 15:06 ? 00:00:00 [writeback]
1 S root 40 2 0 80 0 - 0 - 0 1 15:06 ? 00:00:00 [kcompactd0]
1 S root 41 2 0 85 5 - 0 - 0 1 15:06 ? 00:00:00 [ksmd]
```

```
File Edit View Search Terminal Help
mint@mint:~$ ps -ALFH
F S UID      PID     PPID C  PRI  NI ADDR SZ WCHAN  RSS PSR STIME TTY      TIME CMD
1 S root        2         0  0  80   0 -   0 -   0 -    0  0 15:06 ?    00:00:00 [kthreadd]
1 I root        3         2  0  60  -20 -   0 -   0 -    0  0 15:06 ?    00:00:00 [rcu_gp]
1 I root        4         2  0  60  -20 -   0 -   0 -    0  0 15:06 ?    00:00:00 [rcu_par_gp]
1 I root        6         2  0  60  -20 -   0 -   0 -    0  0 15:06 ?    00:00:00 [kworker/0:0H-kblockd]
1 I root        8         2  0  60  -20 -   0 -   0 -    0  0 15:06 ?    00:00:00 [mm_percpu_wq]
1 S root        9         2  0  80   0 -   0 -   0 -    0  0 15:06 ?    00:00:00 [ksoftirqd/0]
1 I root       10         2  0  80   0 -   0 -   0 -    0  0 15:06 ?    00:00:00 [rcu_sched]
1 S root       11         2  0 -40   - -   0 -   0 -    0  0 15:06 ?    00:00:00 [migration/0]
5 S root       12         2  0  9    - -   0 -   0 -    0  0 15:06 ?    00:00:00 [idle_inject/0]
1 I root       13         2  0  80   0 -   0 -   0 -    0  0 15:06 ?    00:00:05 [kworker/0:1-events]
1 S root       14         2  0  80   0 -   0 -   0 -    0  0 15:06 ?    00:00:00 [cpuhp/0]
1 S root       15         2  0  80   0 -   0 -   0 -    1 15:06 ?    00:00:00 [cpuhp/1]
5 S root       16         2  0  9    - -   0 -   0 -    0  1 15:06 ?    00:00:00 [idle_inject/1]
1 S root       17         2  0 -40   - -   0 -   0 -    0  1 15:06 ?    00:00:00 [migration/1]
1 S root       18         2  0  80   0 -   0 -   0 -    0  1 15:06 ?    00:00:00 [ksoftirqd/1]
1 I root       19         2  0  80   0 -   0 -   0 -    0  1 15:06 ?    00:00:05 [kworker/1:0-events]
1 I root       20         2  0  60  -20 -   0 -   0 -    0  1 15:06 ?    00:00:00 [kworker/1:0H-kblockd]
1 S root       21         2  0  80   0 -   0 -   0 -    0  2 15:06 ?    00:00:00 [cpuhp/2]
5 S root       22         2  0  9    - -   0 -   0 -    0  2 15:06 ?    00:00:00 [idle_inject/2]
1 S root       23         2  0 -40   - -   0 -   0 -    0  2 15:06 ?    00:00:00 [migration/2]
1 S root       24         2  0  80   0 -   0 -   0 -    0  2 15:06 ?    00:00:00 [ksoftirqd/2]
1 I root       26         2  0  60  -20 -   0 -   0 -    0  2 15:06 ?    00:00:00 [kworker/2:0H-kblockd]
1 S root       27         2  0  80   0 -   0 -   0 -    0  3 15:06 ?    00:00:00 [cpuhp/3]
5 S root       28         2  0  9    - -   0 -   0 -    0  3 15:06 ?    00:00:00 [idle_inject/3]
1 S root       29         2  0 -40   - -   0 -   0 -    0  3 15:06 ?    00:00:00 [migration/3]
1 S root       30         2  0  80   0 -   0 -   0 -    0  3 15:06 ?    00:00:01 [ksoftirqd/3]
1 I root       32         2  0  60  -20 -   0 -   0 -    0  3 15:06 ?    00:00:00 [kworker/3:0H-kblockd]
5 S root       33         2  0  80   0 -   0 -   0 -    0  0 15:06 ?    00:00:00 [kdevtmpfs]
1 I root       34         2  0  60  -20 -   0 -   0 -    0  1 15:06 ?    00:00:00 [netns]
1 S root       35         2  0  80   0 -   0 -   0 -    0  3 15:06 ?    00:00:00 [rcu_tasks_kthre]
1 S root       36         2  0  80   0 -   0 -   0 -    0  3 15:06 ?    00:00:00 [kauditd]
1 S root       37         2  0  80   0 -   0 -   0 -    0  2 15:06 ?    00:00:00 [khungtaskd]
1 S root       38         2  0  80   0 -   0 -   0 -    0  2 15:06 ?    00:00:00 [oom_reaper]
1 I root       39         2  0  60  -20 -   0 -   0 -    0  2 15:06 ?    00:00:00 [writeback]
1 S root       40         2  0  80   0 -   0 -   0 -    0  1 15:06 ?    00:00:00 [kcompactd0]
1 S root       41         2  0  85   5 -   0 -   0 -    0  1 15:06 ?    00:00:00 [ksmd]
1 S root       42         2  0  99  19 -   0 -   0 -    0  1 15:06 ?    00:00:00 [khugepaged]
1 S root       43         2  0  60  -20 -   0 -   0 -    0  2 15:06 ?    00:00:00 [kcompactd1]
```

```
File Edit View Search Terminal Help
4 S colord    1624         1  0  80   0 - 61994 - 14440  2 15:07 ?    00:00:00 /usr/libexec/colord
mint@mint:~$ ps ax
PID TTY      STAT TIME COMMAND
  1 ?        Ss    0:04 /sbin/init splash
  2 ?        S      0:00 [kthreadd]
  3 ?        I<    0:00 [rcu_gp]
  4 ?        I<    0:00 [rcu_par_gp]
  6 ?        I<    0:00 [kworker/0:0H-kblockd]
  8 ?        I<    0:00 [mm_percpu_wq]
  9 ?        S      0:00 [ksoftirqd/0]
 10 ?        I      0:00 [rcu_sched]
 11 ?        S      0:00 [migration/0]
 12 ?        S      0:00 [idle_inject/0]
 13 ?        I      0:05 [kworker/0:1-events]
 14 ?        S      0:00 [cpuhp/0]
 15 ?        S      0:00 [cpuhp/1]
 16 ?        S      0:00 [idle_inject/1]
 17 ?        S      0:00 [migration/1]
 18 ?        S      0:00 [ksoftirqd/1]
 19 ?        I      0:06 [kworker/1:0-events]
 20 ?        I<    0:00 [kworker/1:0H-kblockd]
 21 ?        S      0:00 [cpuhp/2]
 22 ?        S      0:00 [idle_inject/2]
 23 ?        S      0:00 [migration/2]
 24 ?        S      0:00 [ksoftirqd/2]
 26 ?        I<    0:00 [kworker/2:0H-kblockd]
 27 ?        S      0:00 [cpuhp/3]
 28 ?        S      0:00 [idle_inject/3]
 29 ?        S      0:00 [migration/3]
 30 ?        S      0:01 [ksoftirqd/3]
 32 ?        I<    0:00 [kworker/3:0H-kblockd]
 33 ?        S      0:00 [kdevtmpfs]
 34 ?        I<    0:00 [netns]
 35 ?        S      0:00 [rcu_tasks_kthre]
 36 ?        S      0:00 [kauditd]
 37 ?        S      0:00 [khungtaskd]
 38 ?        S      0:00 [oom_reaper]
 39 ?        I<    0:00 [writeback]
 40 ?        S      0:00 [kcompactd0]
 41 ?        S      0:00 [kcompactd1]
```

```

mint@mint:~$ ps -p 2411 -o comm=
kworker/u8:0-events_unbound
mint@mint:~$

```

```

mint@mint:~$ ps -auxf | sort -nr -k 3 | head -5
mint 1682 4.0 3.7 4460748 192068 ? Sl 15:07 2:11 | \_ cinnamon --replace
root 1286 0.6 1.7 881972 88180 tty7 Ssl+ 15:07 0:21 \_ /usr/lib/xorg/Xorg -core :0 -seat seat0 -auth /var/run/
lightdm/root/:0 -nolisten tcp vt7 -novtswitch
root 766 0.6 0.2 27276 11056 ? Ss 15:06 0:22 /lib/systemd/systemd-udevd
root 195 0.5 0.0 0 0 ? I 15:06 0:16 \_ [kworker/2:2-mm_percpu_wq]
mint 2362 0.2 0.8 467100 40900 ? Ssl 15:34 0:03 \_ /usr/libexec/gnome-terminal-server
mint@mint:~$

```

f.) free - fizikai memória és a swap által használt és szabad terület, ezek összege, pufferek, szabad pufferek száma.

```

mint@mint:~$ free
              total        used        free      shared  buff/cache   available
Mem:      5056304       587276      3458852       105004       1010176       4115644
Swap:              0              0              0
mint@mint:~$

```

g.) iostat – jelenítse meg átlagos CPU terhelést vagy lemez aktivitást.

```

mint@mint:~$ iostat
Linux 5.4.0-58-generic (mint) 02/28/22      _x86_64_      (4 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
            0.40    0.00    0.17    0.59    0.00   98.85

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0             53.77        54.10         0.00         0.00     203296         0         0
sda                0.05         1.16         0.00         0.00         4364         0         0
scd0               1.87        78.58         0.00         0.00     295278         0         0

```

h.) sar - aktivitási adatok jelzése és összegyűjtése, mentés.

```

mint@mint:~$ sar 4 5
Linux 5.4.0-58-generic (mint) 02/28/22      _x86_64_      (4 CPU)

16:15:43      CPU    %user   %nice   %system   %iowait   %steal   %idle
16:15:47    all     0.51    0.00    0.13    0.00    0.00   99.36
16:15:51    all     0.77    0.00    0.13    0.00    0.00   99.10
16:15:55    all     0.38    0.00    0.00    0.00    0.00   99.62
16:15:59    all     5.16    0.00    1.43    0.00    0.00   93.40

```

i.) mpstat - több processzoros sz.gép esetén használják.

```

mint@mint:~$ mpstat
Linux 5.4.0-58-generic (mint) 02/28/22      _x86_64_      (4 CPU)

16:09:50      CPU    %usr   %nice    %sys %iowait    %irq    %soft  %steal  %guest  %gnice   %idle
16:09:50    all     0.40    0.00    0.16    0.58    0.00    0.00    0.00    0.00    0.00   98.86
mint@mint:~$

```

j.) pmap - processz memória használatát jelzi.

```

mint@mint:~$ pmap -p 2411
2411:  [kworker/u8:0-events_power_efficient]
total                                0K

```


2. FELADAT

1. Kérdezze le a PowerShellVerzió!

```
PS C:\Users\pocsi> $PSVersionTable
```

Name	Value
PSVersion	5.1.19041.1320
PSEdition	Desktop
PSCompatibleVersions	{1.0, 2.0, 3.0, 4.0...}
BuildVersion	10.0.19041.1320
CLRVersion	4.0.30319.42000
WSManStackVersion	3.0
PSRemotingProtocolVersion	2.3
SerializationVersion	1.1.0.1

2. Kérdezze le a mai dátumot?

```
PS C:\Users\pocsi> Get-Date
```

2022. február 28., hétfő 17:23:42

3. Kérdezze le a szolgáltatásokat?

Kijelölés Windows PowerShell

```
PS C:\Users\pocsi> Get-Service
```

Status	Name	DisplayName
Running	AarSvc_64cea	Agent Activation Runtime_64cea
Running	AGMSvc	Adobe Genuine Monitor Service
Running	AGSSvc	Adobe Genuine Software Integrity Se...
Stopped	AJRouter	AllJoyn-útválasztó szolgáltatás
Stopped	ALG	Alkalmazási réteg átjárószolgáltatása
Stopped	AppIDSvc	Alkalmazásidentitás
Running	Appinfo	Alkalmazásinformációk
Stopped	AppMgmt	Alkalmazásvezérlés
Stopped	AppReadiness	Alkalmazás-előkészítő
Stopped	AppVClient	Microsoft App-V Client
Running	AppXSvc	AppX Deployment Service (AppXSVC)
Stopped	AssignedAccessM...	AssignedAccessManager szolgáltatás
Running	AudioEndpointBu...	Windows-hangvégpontépítő
Running	Audiosrv	Windows audio
Stopped	autotimesvc	Mobilhálózati idő
Stopped	AxInstSV	ActiveX Telepítő (AxInstSV)
Stopped	BcastDVRUserSer...	Játékvideó-rögzítő és Közvetítés fe...
Stopped	BDESVC	BitLocker meghajtótitkosítási szolg...
Running	BFE	Alap szűrőprogram
Stopped	BITS	Háttérben futó intelligens átviteli...
Running	BluetoothUserSe...	Felhasználói Bluetooth-támogatási s...
Running	BrokerInfrastru...	Háttérfeladatok infrastruktúra-szol...
Running	BTAGService	Bluetooth-hangátjáró szolgáltatás
Running	BthAvctpSvc	AVCTP-szolgáltatás
Running	bthserv	Bluetooth-támogatási szolgáltatás
Running	camsvc	Képesség hozzáférés-kezelési szolgá...
Stopped	CaptureService_...	CaptureService_64cea
Running	cbdhsvc_64cea	Vágólap felhasználói szolgáltatás_6...
Running	CDPSvc	Csatlakoztatott eszközök platformja...
Running	CDUserSvc_64cea	Csatlakoztatott eszközök platformja...
Stopped	CertPropSvc	Tanúsítvány-terjesztés
Running	ClickToRunSvc	Microsoft Office Click-to-Run Service
Stopped	ClipSvc	Ügyfél-licenclési szolgáltatás (Cl...
Stopped	cloudidsvc	Microsoft felhőalapú identitásszolg...
Stopped	COMSysApp	COM+ System Application
Stopped	ConsentUxUserSv...	ConsentUX_64cea
Running	CoreMessagingRe...	CoreMessaging
Running	cplspcon	Intel(R) Content Protection HDCP Se...
Stopped	CredentialEnrol...	CredentialEnrollmentManagerUserSvc_...
Running	CryptSvc	Kriptográfiai szolgáltatások
Stopped	CscService	Offline fájlok
Running	DCOMLaunch	DCOM-kiszolgáló folyamatindítás

5. Kérdezze a parancsok rövidített neveit? (alias)

```
Windows PowerShell
PS C:\Users\pocsi> Get-Alias

CommandType      Name                                     Version      Source
-----
Alias             % -> ForEach-Object
Alias             ? -> Where-Object
Alias             ac -> Add-Content
Alias             asnp -> Add-PSnapin
Alias             cat -> Get-Content
Alias             cd -> Set-Location
Alias             CFS -> ConvertFrom-String                3.1.0.0      Microsoft.PowerShell.Utility
Alias             chdir -> Set-Location
Alias             clc -> Clear-Content
Alias             clear -> Clear-Host
Alias             clhy -> Clear-History
Alias             cli -> Clear-Item
Alias             clp -> Clear-ItemProperty
Alias             cls -> Clear-Host
Alias             clv -> Clear-Variable
Alias             cnsn -> Connect-PSession
Alias             compare -> Compare-Object
Alias             copy -> Copy-Item
Alias             cp -> Copy-Item
Alias             cpi -> Copy-Item
Alias             cpp -> Copy-ItemProperty
Alias             curl -> Invoke-WebRequest
Alias             cvpa -> Convert-Path
Alias             dbp -> Disable-PSBreakpoint
Alias             del -> Remove-Item
Alias             diff -> Compare-Object
Alias             dir -> Get-ChildItem
Alias             dsn -> Disconnect-PSession
Alias             ebp -> Enable-PSBreakpoint
Alias             echo -> Write-Output
Alias             epal -> Export-Alias
Alias             epsv -> Export-Csv
Alias             epsn -> Export-PSession
Alias             erase -> Remove-Item
Alias             etn -> Enter-PSession
Alias             exsn -> Exit-PSession
Alias             fc -> Format-Custom
Alias             fhx -> Format-Hex                        3.1.0.0      Microsoft.PowerShell.Utility
Alias             fl -> Format-List
Alias             foreach -> ForEach-Object
Alias             ft -> Format-Table
Alias             fw -> Format-Wide
Alias             gal -> Get-Alias
Alias             gbp -> Get-PSBreakpoint
Alias             gc -> Get-Content
Alias             gci -> Get-ChildItem
```

6. Készítsen egy „processz” nevű Alias, majd futtassa és kérdezze le?!

```
PS C:\Users\pocsi> New-Alias "processz" Get-Process
PS C:\Users\pocsi> processz

Handles  NPM(K)  PM(K)  WS(K)  CPU(s)  Id  SI ProcessName
-----
996      153     264108 210656 149,69  5592 1 Acrobat
773      43      29400  60924  29,75  14964 1 Acrobat
341      34      54340  44780  2,16   3984 1 AcroCEF
325      33      53336  44516  1,86   11856 1 AcroCEF
590      30      15824  32420  1,03   14996 1 AcroCEF
160      12      2872   8488   0,06   12656 1 acrotray
367      16      5896   15080  4564   0 AGMService
227      13      3048   10688  4556   0 AGSService
467      26      21860  29632  1,25   5548 1 ApplicationFrameHost
249      10      2156   7268   0,06   1892 1 chrome
237      14      19544  51200  0,23   2028 1 chrome
311      15      23880  51636  0,53   4012 1 chrome
338      23      20988  42520  8,42   6184 1 chrome
238      14      15436  33840  0,13   6740 1 chrome
236      16      7036   18680  0,08   6944 1 chrome
480      17      60668  98192  31,48  7032 1 chrome
256      15      21636  54056  0,56   8672 1 chrome
1337     42      256756 232332 69,22  9108 1 chrome
940      20      132456 181120 14,28  9264 1 chrome
252      15      21292  54380  0,30   10644 1 chrome
346      19      56992  69840  9,08   10804 1 chrome
222      14      12300  27256  0,05   11508 1 chrome
344      18      125784 190944 24,27  12404 1 chrome
```

```
PS C:\Users\pocsi> Get-Alias processz

CommandType      Name                                     Version      Source
-----
Alias             processz -> Get-Process
```

7. Listázza ki az adott meghajtón lévő szolgáltatásokat - formázott lista/tábla?