

Operációs rendszerek BSc

3. gyak

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Készítette:

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Programtervező informatikus

1. Linux OS parancsok futtatása:

a. top:

Processzekről részletes adatokat jelenít meg.

```
mint@mint: ~  
File Edit View Search Terminal Help  
top - 18:28:30 up 2:06, 1 user, load average: 0.15, 0.04, 0.01  
Tasks: 165 total, 1 running, 164 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 0.8 us, 0.2 sy, 0.0 ni, 99.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st  
MiB Mem : 3936.2 total, 644.1 free, 557.1 used, 2735.0 buff/cache  
MiB Swap: 923.3 total, 876.5 free, 46.8 used. 2946.6 avail Mem  


| PID   | USER | PR  | NI  | VIRT    | RES    | SHR   | S | %CPU | %MEM | TIME+   | COMMAND  |
|-------|------|-----|-----|---------|--------|-------|---|------|------|---------|----------|
| 1652  | mint | 20  | 0   | 3764884 | 152424 | 77372 | S | 0.7  | 3.8  | 1:32.48 | cinnamon |
| 40412 | mint | 20  | 0   | 13604   | 3840   | 3332  | R | 0.7  | 0.1  | 0:00.07 | top      |
| 1013  | root | 20  | 0   | 578220  | 55232  | 26128 | S | 0.3  | 1.4  | 0:16.11 | Xorg     |
| 40398 | mint | 20  | 0   | 465708  | 39116  | 30504 | S | 0.3  | 1.0  | 0:01.03 | gnome-t+ |
| 1     | root | 20  | 0   | 103128  | 12472  | 8208  | S | 0.0  | 0.3  | 0:07.07 | 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+ |
| 6     | root | 0   | -20 | 0       | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 | kworker+ |
| 9     | root | 0   | -20 | 0       | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 | mm_perc+ |
| 10    | root | 20  | 0   | 0       | 0      | 0     | S | 0.0  | 0.0  | 0:01.36 | ksoftir+ |
| 11    | root | 20  | 0   | 0       | 0      | 0     | I | 0.0  | 0.0  | 0:01.79 | rcu_sch+ |
| 12    | root | rt  | 0   | 0       | 0      | 0     | S | 0.0  | 0.0  | 0:00.07 | migrati+ |
| 13    | root | -51 | 0   | 0       | 0      | 0     | S | 0.0  | 0.0  | 0:00.00 | idle_in+ |
| 14    | root | 20  | 0   | 0       | 0      | 0     | S | 0.0  | 0.0  | 0:00.00 | 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_in+ |


```

b. vmstat:

A hardverről és a rendszerről nyújt információkat.

```
mint@mint: ~  
File Edit View Search Terminal Help  
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  
0  0   47872 659196 1496892 1443216     0    4   316   636   79  171  4   2  92   2  
0  
mint@mint:~$
```

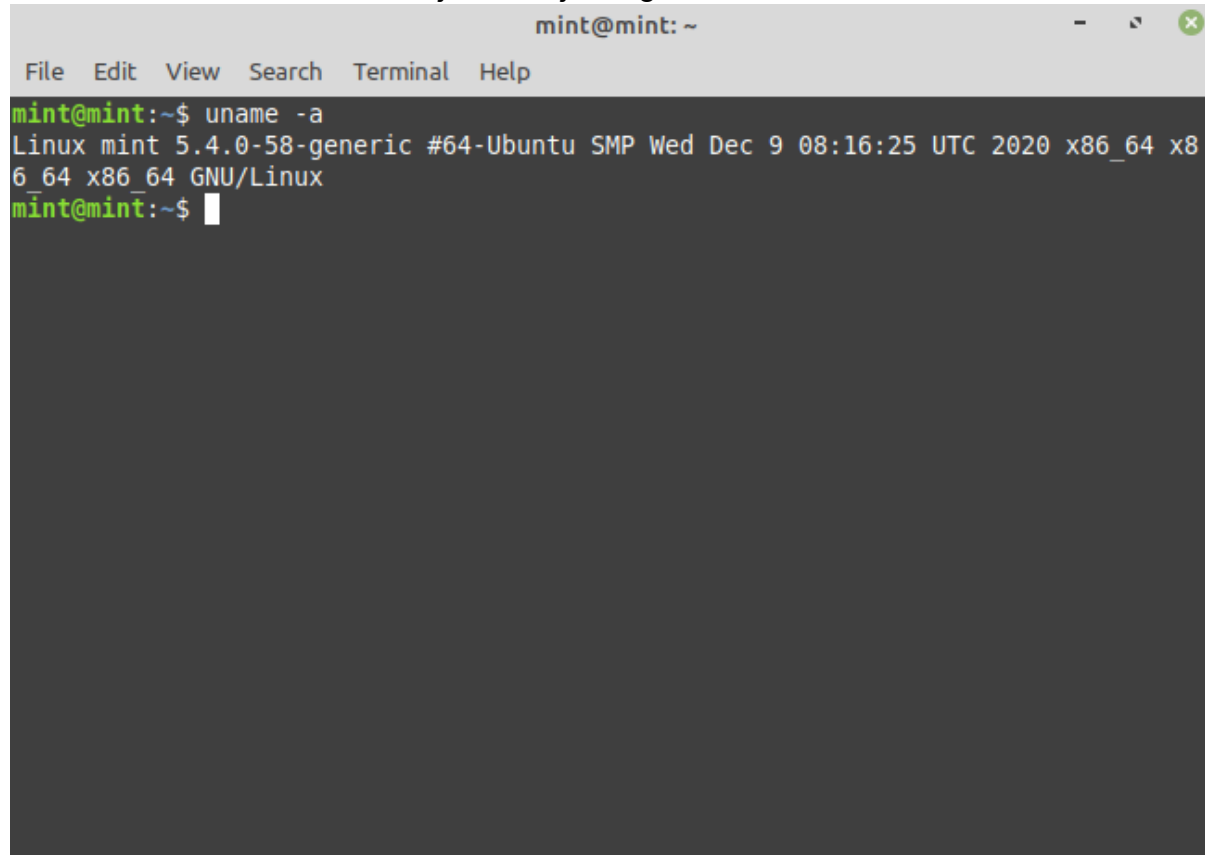
C. W:

A bejelentkezett felhasználókat és adataikat jeleníti meg.

```
mint@mint: ~  
File Edit View Search Terminal Help  
mint@mint:~$ w  
18:40:57 up 2:19, 1 user, load average: 0.01, 0.10, 0.08  
USER      TTY      FROM          LOGIN@      IDLE   JCPU   PCPU WHAT  
mint      tty7      :0            16:22      2:18m 23.32s 1.01s cinnamon-sessio  
mint@mint:~$
```

d. uname:

A szerver futásának kezdő idejét mutatja meg.

A screenshot of a terminal window titled 'mint@mint: ~'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal shows the command 'uname -a' being executed, resulting in the output: 'Linux mint 5.4.0-58-generic #64-Ubuntu SMP Wed Dec 9 08:16:25 UTC 2020 x86_64 x86_64 GNU/Linux'. The prompt 'mint@mint:~\$' is visible at the end of the output line.

```
mint@mint:~$ uname -a
Linux mint 5.4.0-58-generic #64-Ubuntu SMP Wed Dec 9 08:16:25 UTC 2020 x86_64 x86_64 GNU/Linux
mint@mint:~$
```

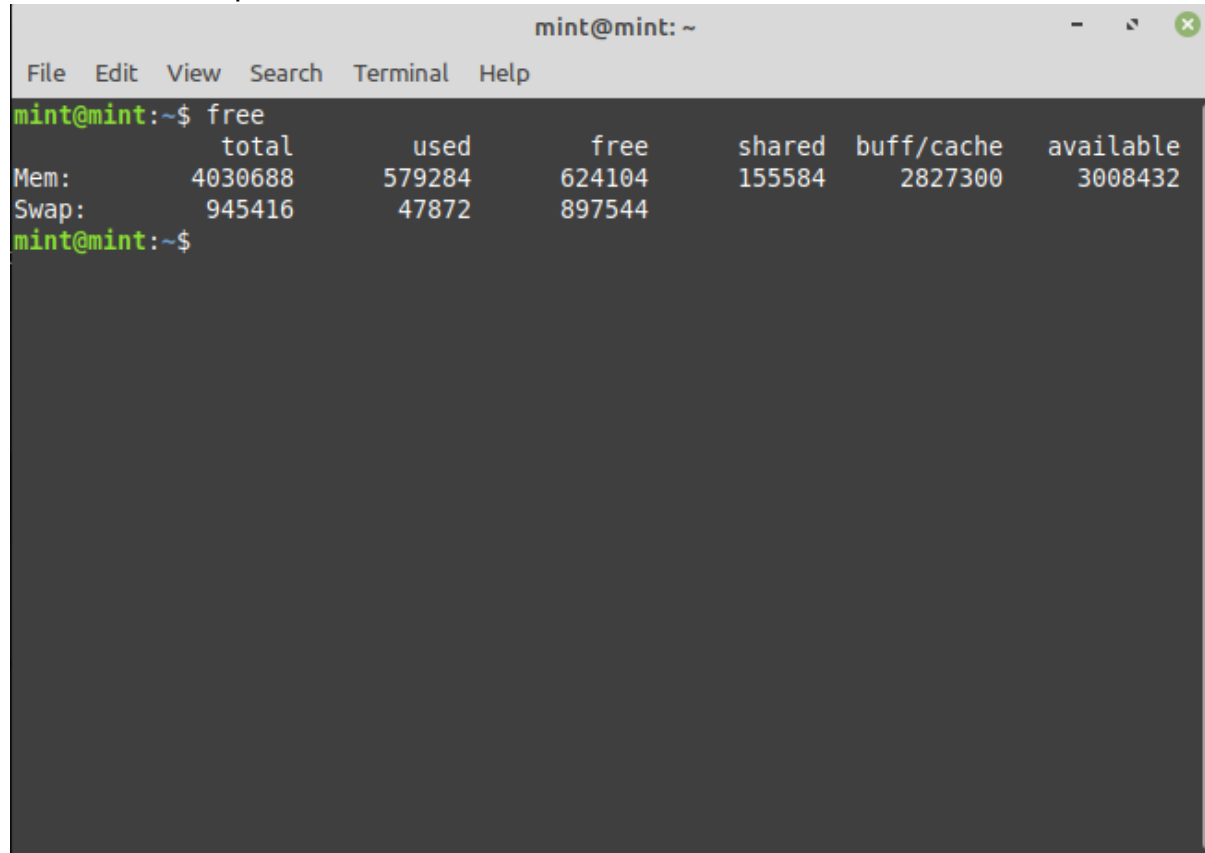
e. ps:

Aktív processzekről gyűjt ki adatokat.

```
mint@mint: ~  
File Edit View Search Terminal Help  
mint@mint:~$ ps -al  
F S  UID      PID      PPID  C  PRI  NI ADDR SZ WCHAN  TTY      TIME CMD  
0 R   999    40828    40430  0   80   0 -  3284 -      pts/0    00:00:00 ps  
mint@mint:~$
```

f. free:

Tárterületről és pufferekről ad információt.

A terminal window titled 'mint@mint: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The command 'free' has been executed, displaying memory usage statistics. The output shows memory (Mem) and swap space (Swap) with columns for total, used, free, shared, buff/cache, and available space.

```
mint@mint:~$ free
              total        used        free      shared  buff/cache   available
Mem:      4030688       579284       624104       155584       2827300       3008432
Swap:      945416         47872       897544
```

g. iostat:

A processzorról, az I/O eszközökről, valamint a tárhelyről nyújt

információt.

```
mint@mint: ~  
File Edit View Search Terminal Help  
mint@mint:~$ iostat  
Linux 5.4.0-58-generic (mint) 03/02/21 _x86_64_ (2 CPU)  
  
avg-cpu:  %user   %nice %system %iowait  %steal   %idle  
           4.01    0.00    1.90    1.49    0.00   92.61  
  
Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn  
loop0              235.29         235.72          0.00          0.00    2042094         0  
sda                 8.09          69.57        1133.17          0.00     602693     9817  
sdc                 3.61         259.37          0.00          0.00    2247002         0  
sdd                 0.00          0.00          0.00          0.00         0         0  
  
mint@mint:~$
```

h. sar:

Aktivitási adatokról nyújt(ana) adatokat.

```
mint@mint: ~  
File Edit View Search Terminal Help  
mint@mint:~$ sar  
Cannot open /var/log/sysstat/sa02: No such file or directory  
Please check if data collecting is enabled  
mint@mint:~$
```

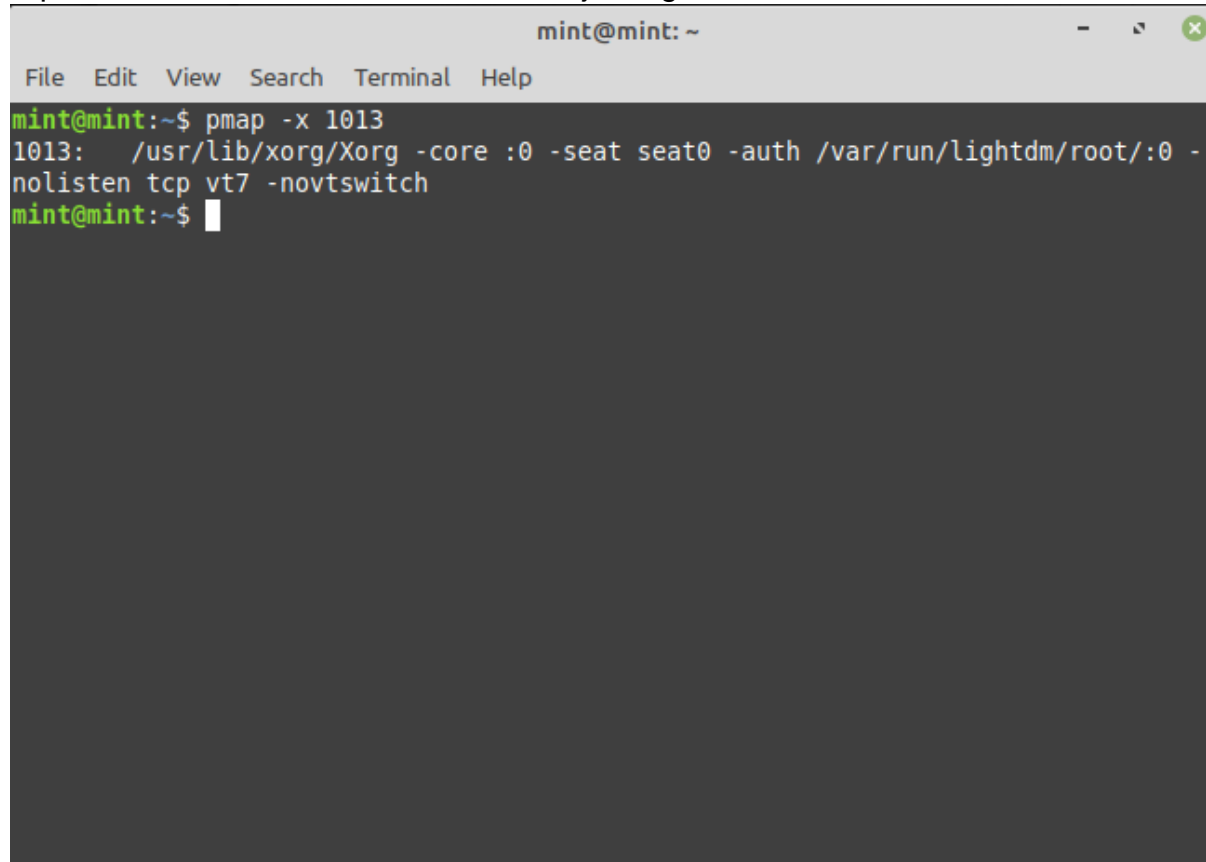

i. mpstat:

A processzorról biztosít átfogó információt, magokra lebontva.

```
mint@mint: ~  
File Edit View Search Terminal Help  
mint@mint:~$ mpstat  
Linux 5.4.0-58-generic (mint) 03/02/21 _x86_64_ (2 CPU)  
20:30:39 CPU %usr %nice %sys %iowait %irq %soft %steal %guest  
%gnice %idle  
20:30:39 all 4.00 0.00 1.80 1.47 0.00 0.08 0.00 0.00  
0.00 92.65  
mint@mint:~$
```

j. pmap:

A processzor memóriahasználatát mutatja meg.

A terminal window titled 'mint@mint: ~' with a menu bar containing 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal shows the command 'pmap -x 1013' being executed. The output is: '1013: /usr/lib/xorg/Xorg -core :0 -seat seat0 -auth /var/run/lightdm/root/:0 - nolisten tcp vt7 -novtswitch'. The prompt 'mint@mint:~\$' is shown at the end of the output line.

```
mint@mint:~$ pmap -x 1013
1013: /usr/lib/xorg/Xorg -core :0 -seat seat0 -auth /var/run/lightdm/root/:0 -
nolisten tcp vt7 -novtswitch
mint@mint:~$
```