

Operációs rendszerek BSc

3. gyak

2021.02.24.

Készítette:

Ferencsik Márk BSc

Programtervező informatika

UJTWLL

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:~$
```

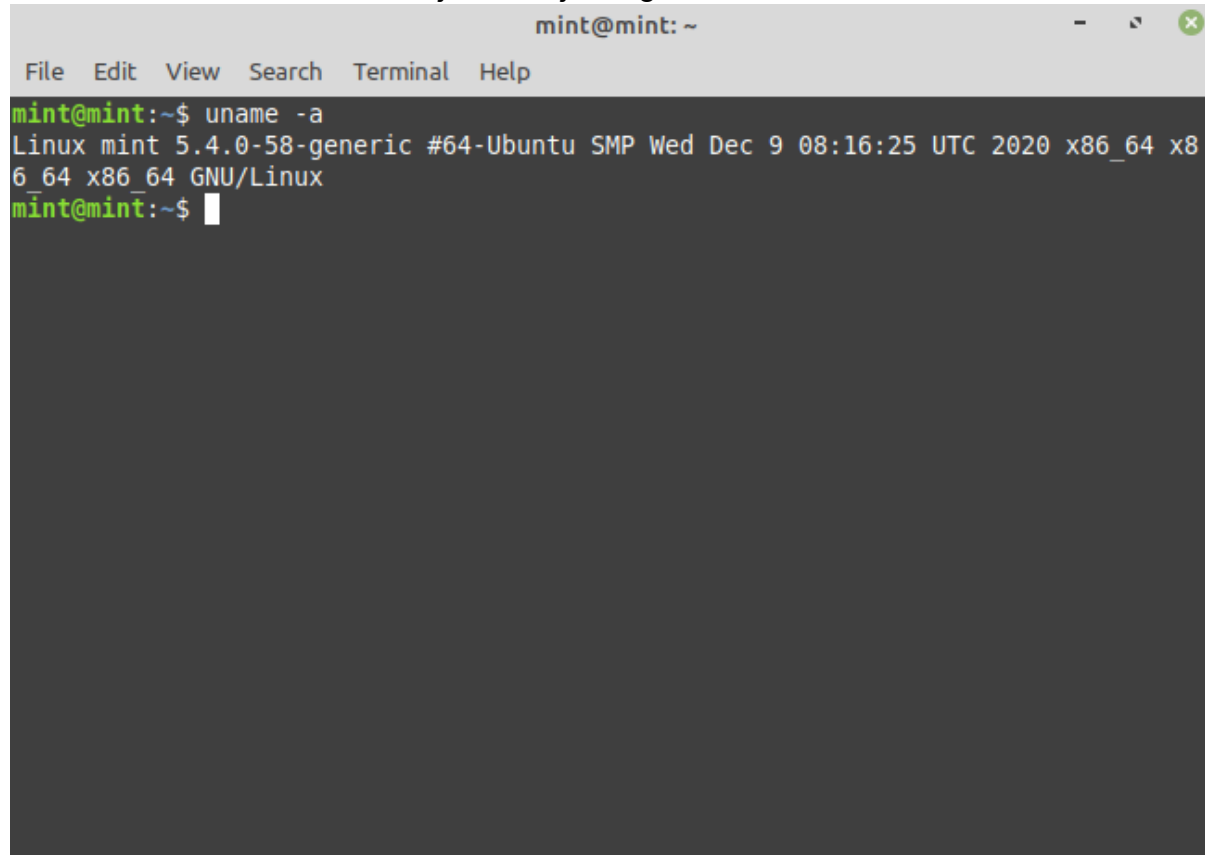
C. W:

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 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:~$
```

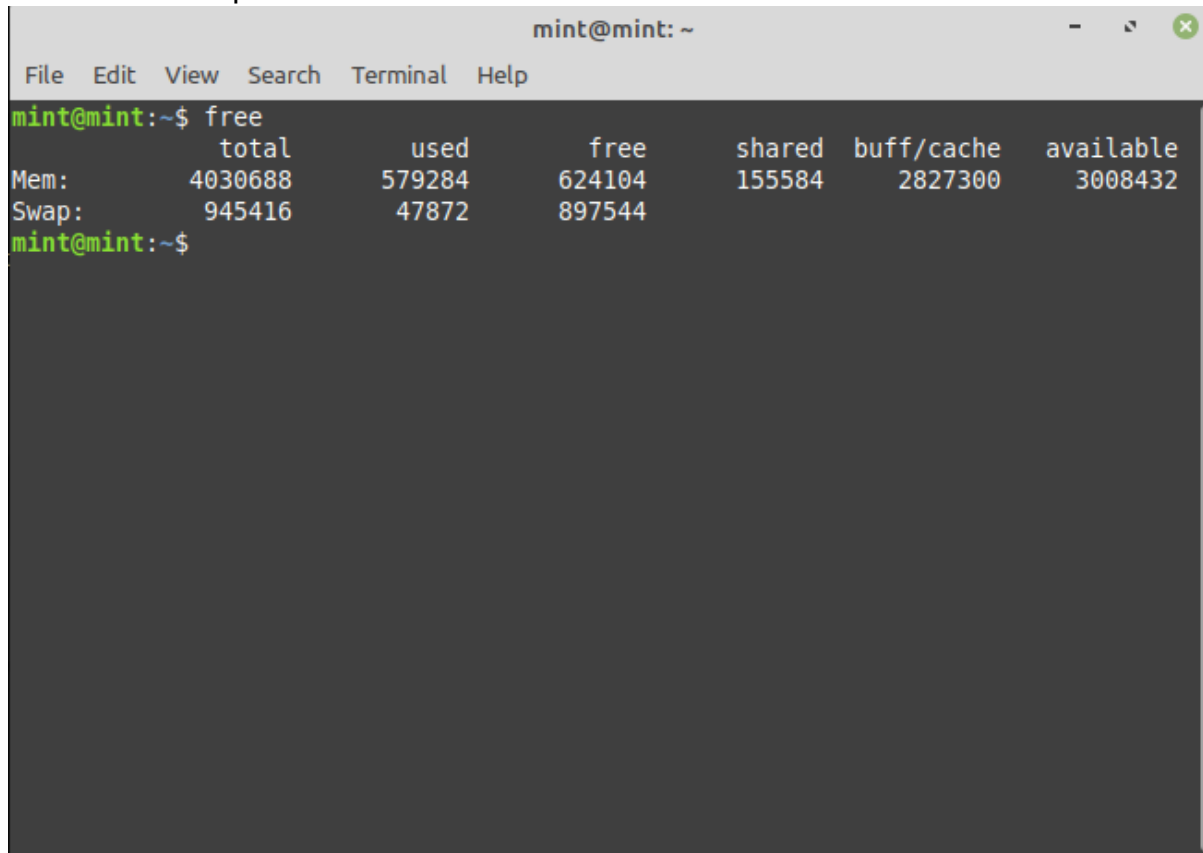
e. ps:

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 terminal shows the command 'free' being executed, which outputs a table of memory usage statistics. The prompt 'mint@mint:~\$' is shown before and after the command.

	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

```

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                  0
sda                 8.09        69.57       1133.17         0.00      602693    9817
065                 0
scd0                3.61       259.37         0.00         0.00     2247002
 0                  0

mint@mint:~$

```

Aktivítási 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:~$
```

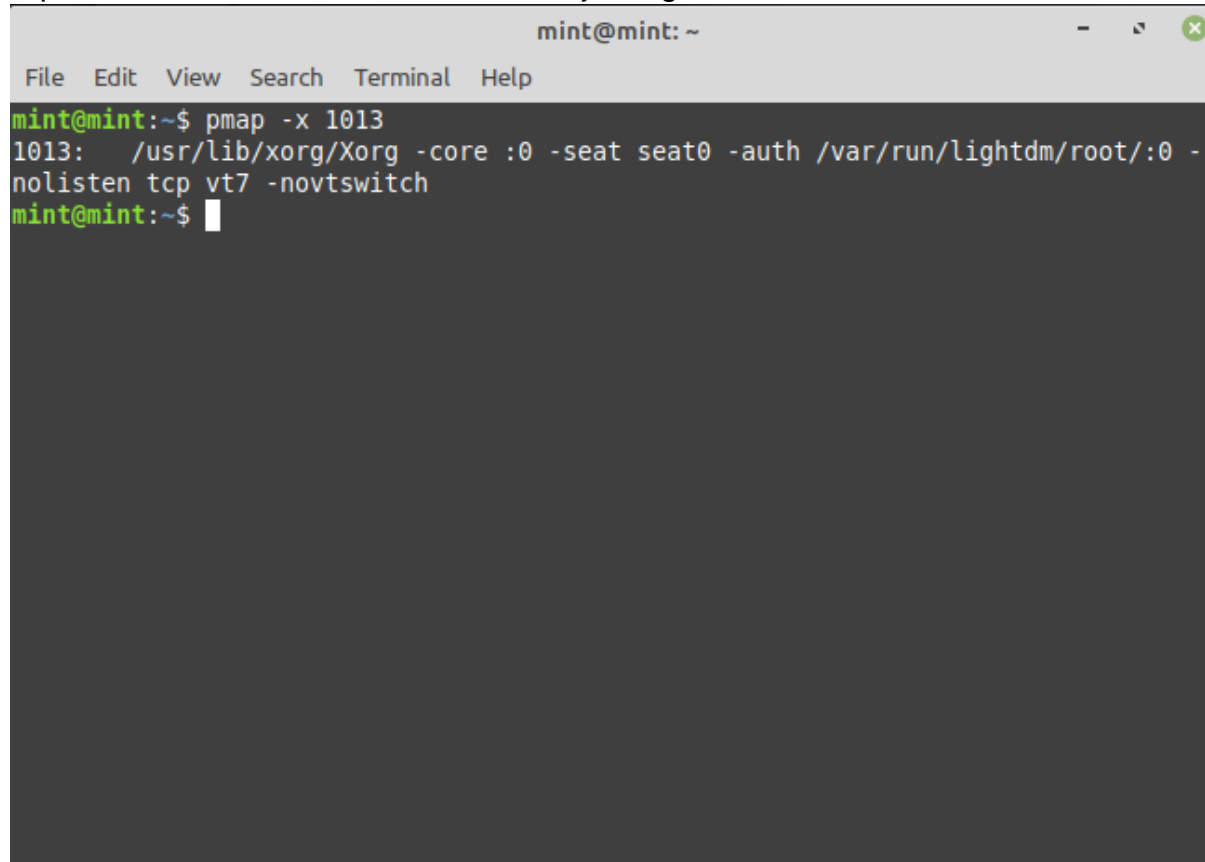

i. mpstat:

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 (File, Edit, View, Search, Terminal, Help). The terminal shows the command 'pmap -x 1013' being executed. The output shows the memory map for process 1013, which is /usr/lib/xorg/Xorg. The output includes details about the core, seat, authentication, and listening status. The terminal prompt is 'mint@mint:~\$' followed by a cursor.

```
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:~$
```