

a,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
top - 16:51:52 up 19 min, 1 user, load average: 0.34, 0.39, 0.35
Tasks: 297 total, 1 running, 296 sleeping, 0 stopped, 0 zombie
%Cpu(s): 1.5 us, 0.9 sy, 0.0 ni, 97.5 id, 0.0 wa, 0.1 hi, 0.1 si, 0.0 st
MiB Mem : 7832.8 total, 4927.1 free, 794.2 used, 2111.6 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 6295.0 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
 1804 root        20   0   870160   80784  61176 S   12.6   1.0   0:39.54 Xorg
 4338 manjaro     20   0   325676   48460  37912 S   10.3   0.6   0:01.08 xfce4-screensho
1951 manjaro     20   0 1014532   90992  67192 S    2.3   1.1   0:16.14 xfwm4
 4738 manjaro     20   0   416936   54996  41232 S    2.0   0.7   0:00.50 xfce4-terminal
  216 root         0  -20        0        0        0 I    0.7   0.0   0:02.06 kworker/u25:0-i915_fl+
 3123 root        20   0        0        0        0 I    0.7   0.0   0:01.38 kworker/2:1-events
 4562 manjaro     20   0   283364   60688  42492 S    0.7   0.8   0:01.56 panel-10-xkb
1188 avahi        20   0    7524    3712   3348 S    0.3   0.0   0:00.47 avahi-daemon
1956 manjaro     20   0   320692   52076  39092 S    0.3   0.6   0:04.39 xfce4-panel
1989 manjaro     20   0   335452   65108  40108 S    0.3   0.8   0:03.16 xfdesktop
 4747 manjaro     20   0   10444    4080    3240 R    0.3   0.1   0:00.08 top
   1 root        20   0   171040   10868   8052 S    0.0   0.1   0:01.29 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         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
   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   0:00.13 ksoftirqd/0
  10 root        -2   0        0        0        0 S    0.0   0.0   0:00.00 rcuc/0
  11 root        -2   0        0        0        0 I    0.0   0.0   0:00.72 rcu_preempt
  12 root        -2   0        0        0        0 S    0.0   0.0   0:00.00 rcub/0
  13 root         rt   0        0        0        0 S    0.0   0.0   0:00.00 migration/0
  14 root       -51   0        0        0        0 S    0.0   0.0   0:00.00 idle_inject/0
  15 root        20   0        0        0        0 I    0.0   0.0   0:00.04 kworker/0:1-events
  16 root        20   0        0        0        0 S    0.0   0.0   0:00.00 cpuhp/0
  17 root        20   0        0        0        0 S    0.0   0.0   0:00.00 cpuhp/1
  18 root       -51   0        0        0        0 S    0.0   0.0   0:00.00 idle_inject/1
  19 root         rt   0        0        0        0 S    0.0   0.0   0:00.09 migration/1
  20 root        -2   0        0        0        0 S    0.0   0.0   0:00.00 rcuc/1
  21 root        20   0        0        0        0 S    0.0   0.0   0:00.08 ksoftirqd/1
  23 root         0  -20        0        0        0 I    0.0   0.0   0:00.00 kworker/1:0H-kblockd
  24 root        20   0        0        0        0 S    0.0   0.0   0:00.00 cpuhp/2
  25 root       -51   0        0        0        0 S    0.0   0.0   0:00.00 idle_inject/2
  26 root         rt   0        0        0        0 S    0.0   0.0   0:00.09 migration/2
  27 root        -2   0        0        0        0 S    0.0   0.0   0:00.00 rcuc/2
  28 root        20   0        0        0        0 S    0.0   0.0   0:00.24 ksoftirqd/2
  30 root         0  -20        0        0        0 I    0.0   0.0   0:00.00 kworker/2:0H-kblockd
  31 root        20   0        0        0        0 S    0.0   0.0   0:00.00 cpuhp/3
  32 root       -51   0        0        0        0 S    0.0   0.0   0:00.00 idle_inject/3
  33 root         rt   0        0        0        0 S    0.0   0.0   0:00.09 migration/3
  34 root        -2   0        0        0        0 S    0.0   0.0   0:00.00 rcuc/3
  35 root        20   0        0        0        0 S    0.0   0.0   0:00.05 ksoftirqd/3
  36 root        20   0        0        0        0 I    0.0   0.0   0:00.03 kworker/3:0-events
  37 root         0  -20        0        0        0 I    0.0   0.0   0:00.00 kworker/3:0H-kblockd
```

A top parancs a futó processzeket mutatja meg.

b,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ 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 5063472 10560 2141532 0 0 0 78 0 98 241 1 1 98 0 0
[manjaro@manjaro ~]$ \
```

A vmstat információkat mutat a rendszerről.

c,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ w
16:54:24 up 21 min, 1 user, load average: 0.21, 0.31, 0.33
USER      TTY      LOGIN@   IDLE   JCPU   PCPU WHAT
manjaro    tty7      16:33   21:34  44.76s  1.32s xfce4-session
[manjaro@manjaro ~]$
```

A w parancs megmutatja, hogy melyik felhasználó(k) van(nak) belépve, mióta fut a gép, stb.

d,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ uname
Linux
[manjaro@manjaro ~]$ uname --help
Usage: uname [OPTION]...
Print certain system information.  With no OPTION, same as -s.

-a, --all                print all information, in the following order,
                        except omit -p and -i if unknown:
-s, --kernel-name        print the kernel name
-n, --nodename            print the network node hostname
-r, --kernel-release     print the kernel release
-v, --kernel-version     print the kernel version
-m, --machine            print the machine hardware name
-p, --processor          print the processor type (non-portable)
-i, --hardware-platform  print the hardware platform (non-portable)
-o, --operating-system   print the operating system
--help                  display this help and exit
--version               output version information and exit

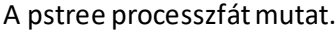
GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Full documentation <https://www.gnu.org/software/coreutils/uname>
or available locally via: info '(coreutils) uname invocation'
[manjaro@manjaro ~]$ uname -a
Linux manjaro 5.9.16-1-MANJARO #1 SMP PREEMPT Mon Dec 21 22:00:46 UTC 2020 x86_64 GNU/Linux
[manjaro@manjaro ~]$ uptime
16:55:58 up 23 min, 1 user, load average: 0.30, 0.34, 0.34
[manjaro@manjaro ~]$ uptime -p
up 23 minutes
[manjaro@manjaro ~]$
```

Az uname -a olyan rendszeradatokat ír ki, mint hogy mikor indult el a gép, milyen operációs rendszer van, stb.

e,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ ps aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.1 171040 10872 ?        Ss   16:32   0:01 /sbin/init
root         2  0.0  0.0      0      0 ?        S    16:32   0:00 [kthreadd]
root         3  0.0  0.0      0      0 ?        I<   16:32   0:00 [rcu_gp]
root         4  0.0  0.0      0      0 ?        I<   16:32   0:00 [rcu_par_gp]
root         6  0.0  0.0      0      0 ?        I<   16:32   0:00 [kworker/0:0H-kblockd]
root         8  0.0  0.0      0      0 ?        I<   16:32   0:00 [mm_percpu_wq]
root         9  0.0  0.0      0      0 ?        S    16:32   0:00 [ksoftirqd/0]
root        10  0.0  0.0      0      0 ?        S    16:32   0:00 [rcuc/0]
root        11  0.0  0.0      0      0 ?        I    16:32   0:00 [rcu_preempt]
root        12  0.0  0.0      0      0 ?        S    16:32   0:00 [rcub/0]
root        13  0.0  0.0      0      0 ?        S    16:32   0:00 [migration/0]
root        14  0.0  0.0      0      0 ?        S    16:32   0:00 [idle_inject/0]
root        15  0.0  0.0      0      0 ?        I    16:32   0:00 [kworker/0:1-mm_percpu_wq]
root        16  0.0  0.0      0      0 ?        S    16:32   0:00 [cpuhp/0]
root        17  0.0  0.0      0      0 ?        S    16:32   0:00 [cpuhp/1]
root        18  0.0  0.0      0      0 ?        S    16:32   0:00 [idle_inject/1]
root        19  0.0  0.0      0      0 ?        S    16:32   0:00 [migration/1]
root        20  0.0  0.0      0      0 ?        S    16:32   0:00 [rcuc/1]
root        21  0.0  0.0      0      0 ?        S    16:32   0:00 [ksoftirqd/1]
root        23  0.0  0.0      0      0 ?        I<   16:32   0:00 [kworker/1:0H-kblockd]
root        24  0.0  0.0      0      0 ?        S    16:32   0:00 [cpuhp/2]
root        25  0.0  0.0      0      0 ?        S    16:32   0:00 [idle_inject/2]
root        26  0.0  0.0      0      0 ?        S    16:32   0:00 [migration/2]
root        27  0.0  0.0      0      0 ?        S    16:32   0:00 [rcuc/2]
root        28  0.0  0.0      0      0 ?        S    16:32   0:00 [ksoftirqd/2]
root        30  0.0  0.0      0      0 ?        I<   16:32   0:00 [kworker/2:0H-kblockd]
root        31  0.0  0.0      0      0 ?        S    16:32   0:00 [cpuhp/3]
root        32  0.0  0.0      0      0 ?        S    16:32   0:00 [idle_inject/3]
root        33  0.0  0.0      0      0 ?        S    16:32   0:00 [migration/3]
root        34  0.0  0.0      0      0 ?        S    16:32   0:00 [rcuc/3]
root        35  0.0  0.0      0      0 ?        S    16:32   0:00 [ksoftirqd/3]
root        36  0.0  0.0      0      0 ?        I    16:32   0:00 [kworker/3:0-events]
root        37  0.0  0.0      0      0 ?        I<   16:32   0:00 [kworker/3:0H-kblockd]
root        38  0.0  0.0      0      0 ?        S    16:32   0:00 [cpuhp/4]
root        39  0.0  0.0      0      0 ?        S    16:32   0:00 [idle_inject/4]
root        40  0.0  0.0      0      0 ?        S    16:32   0:00 [migration/4]
root        41  0.0  0.0      0      0 ?        S    16:32   0:00 [rcuc/4]
root        42  0.0  0.0      0      0 ?        S    16:32   0:00 [ksoftirqd/4]
root        43  0.0  0.0      0      0 ?        I    16:32   0:00 [kworker/4:0-cgroup_destroy]
root        44  0.0  0.0      0      0 ?        I<   16:32   0:00 [kworker/4:0H-events_highpr]
root        45  0.0  0.0      0      0 ?        S    16:32   0:00 [cpuhp/5]
root        46  0.0  0.0      0      0 ?        S    16:32   0:00 [idle_inject/5]
root        47  0.0  0.0      0      0 ?        S    16:32   0:00 [migration/5]
root        48  0.0  0.0      0      0 ?        S    16:32   0:00 [rcuc/5]
root        49  0.0  0.0      0      0 ?        S    16:32   0:00 [ksoftirqd/5]
root        51  0.0  0.0      0      0 ?        I<   16:32   0:00 [kworker/5:0H-kblockd]
root        52  0.0  0.0      0      0 ?        S    16:32   0:00 [cpuhp/6]
root        53  0.0  0.0      0      0 ?        S    16:32   0:00 [idle_inject/6]
root        54  0.0  0.0      0      0 ?        S    16:32   0:00 [migration/6]
```

Ezzel a paranccsal processzeket lehet listázni különböző paraméterek szerint.



A pstree processzfát mutat.

f,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ free
              total        used        free      shared  buff/cache   available
Mem:           7832         795        4916         485         2121        6290
Swap:              0              0              0
[manjaro@manjaro ~]$ free -h
              total        used        free      shared  buff/cache   available
Mem:           7.6Gi         795Mi        4.8Gi         481Mi        2.1Gi        6.1Gi
Swap:              0B              0B              0B
[manjaro@manjaro ~]$
```

A free parancs megmutatja, mennyi a szabad memória.

g,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ iostat
Linux 5.9.16-1-MANJARO (manjaro)      03/06/2021      _x86_64_      (12 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0.91    0.00    0.59    0.30    0.00   98.20

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
dm-0                5.54         314.51         0.00         0.00      534793         0         0
loop0               1.25          12.64         0.00         0.00       21487         0         0
loop1               0.10          10.24         0.00         0.00       17414         0         0
loop2              16.60         217.62         0.00         0.00      370045         0         0
loop3               5.01          91.71         0.00         0.00      155940         0         0
loop4               0.01           0.01         0.00         0.00         18         0         0
nvme0n1             2.65          23.02         0.62         0.00       39141       1052         0
sda                 1.72          19.86         0.00         0.00       33771         0         0
sdb                12.10         319.49         0.00         0.00      543262         0         0

[manjaro@manjaro ~]$
```

Az iostat parancs CPU és adattároló adatokat mutat.

i,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ mpstat
Linux 5.9.16-1-MANJARO (manjaro)      03/06/2021      _x86_64_      (12 CPU)

05:01:50 PM  CPU    %usr   %nice    %sys %iowait    %irq   %soft  %steal  %guest  %gnice   %idle
05:01:50 PM  all    0.89    0.00    0.42    0.29    0.10    0.06    0.00    0.00    0.00   98.24
[manjaro@manjaro ~]$
```

Az mpstat parancs CPU adatokat mutat, több processzoros számítógép esetén használják.

j,

```
Terminal - manjaro@manjaro:~
File Edit View Terminal Tabs Help
[manjaro@manjaro ~]$ ps aux | grep pdf
manjaro 2598 0.3 1.5 845620 120772 ? Sl 16:34 0:05 qpdfview --unique /run/medi
a/manjaro/Rendszer/Users/arvaidora/Desktop/OS/3B. Gyak.pdf
manjaro 5049 0.0 0.0 6384 2320 pts/0 S+ 17:02 0:00 grep --colour=auto pdf
[manjaro@manjaro ~]$ pmap 2598
2598: qpdfview --unique /run/media/manjaro/Rendszer/Users/arvaidora/Desktop/OS/3B. Gyak.pdf
00005593d7001000 192K r---- qpdfview
00005593d7031000 476K r-x-- qpdfview
00005593d70a8000 296K r---- qpdfview
00005593d70f3000 36K r---- qpdfview
00005593d70fc000 4K rw--- qpdfview
00005593d8f4e000 9236K rw--- [ anon ]
00007f1c9f6ef000 9284K rw--- [ anon ]
00007f1ca0000000 8468K rw--- [ anon ]
00007f1ca0845000 57068K ----- [ anon ]
00007f1ca4000000 3416K rw--- [ anon ]
00007f1ca4356000 62120K ----- [ anon ]
00007f1ca8000000 132K rw--- [ anon ]
00007f1ca8021000 65404K ----- [ anon ]
00007f1cac000000 132K rw--- [ anon ]
00007f1cac021000 65404K ----- [ anon ]
00007f1cb0000000 132K rw--- [ anon ]
00007f1cb0021000 65404K ----- [ anon ]
00007f1cb4000000 132K rw--- [ anon ]
00007f1cb4021000 65404K ----- [ anon ]
00007f1cb82ee000 3784K rw-s- memfd:xorg (deleted)
00007f1cb86a0000 3484K rw--- [ anon ]
00007f1cb8a07000 4K ----- [ anon ]
00007f1cb8a08000 8192K rw--- [ anon ]
00007f1cb9208000 4K ----- [ anon ]
00007f1cb9209000 8192K rw--- [ anon ]
00007f1cb9b89000 152K rw-s- memfd:xorg (deleted)
00007f1cb9baf000 36K r---- KF5WindowSystemX11Plugin.so
00007f1cb9bb8000 52K r-x-- KF5WindowSystemX11Plugin.so
00007f1cb9bc5000 16K r---- KF5WindowSystemX11Plugin.so
00007f1cb9bc9000 4K ----- KF5WindowSystemX11Plugin.so
00007f1cb9bca000 8K r---- KF5WindowSystemX11Plugin.so
00007f1cb9bcc000 4K rw--- KF5WindowSystemX11Plugin.so
00007f1cb9bcd000 260K rw--- [ anon ]
00007f1cb9c0e000 52K r---- libnssutil3.so
00007f1cb9c1b000 68K r-x-- libnssutil3.so
00007f1cb9c2c000 48K r---- libnssutil3.so
00007f1cb9c38000 4K ----- libnssutil3.so
00007f1cb9c39000 28K r---- libnssutil3.so
00007f1cb9c40000 4K rw--- libnssutil3.so
00007f1cb9c41000 472K r---- libcrypto.so.1.1
00007f1cb9cb7000 1684K r-x-- libcrypto.so.1.1
00007f1cb9e5c000 580K r---- libcrypto.so.1.1
00007f1cb9eed000 176K r---- libcrypto.so.1.1
00007f1cb9f19000 8K rw--- libcrypto.so.1.1
00007f1cb9f1b000 16K rw--- [ anon ]
```

A pmap megmutatja, hogy egy megadott processznek milyen függőségei vannak.