

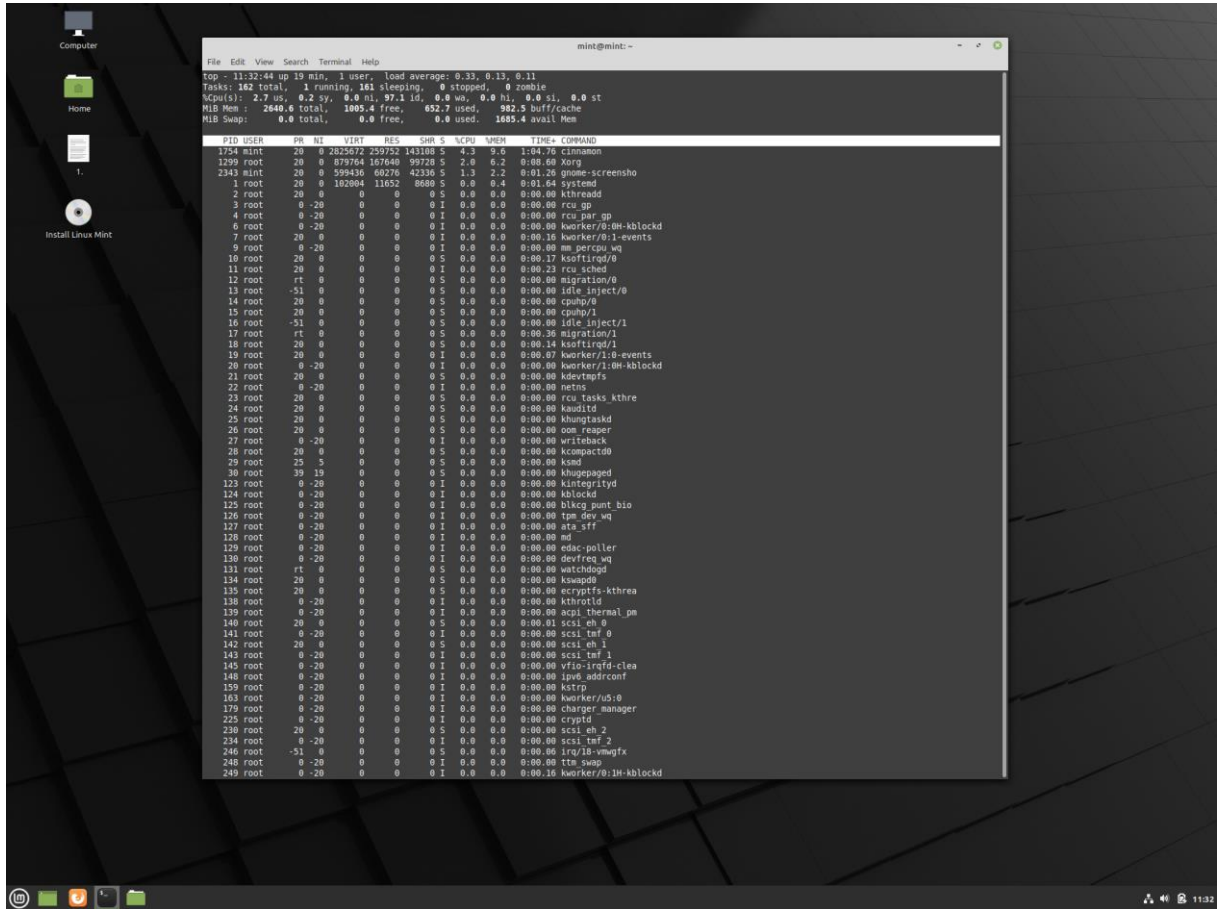
Operációs rendszerek BSc

3.gyak.

2021. 02. 24.
Készítette:
Bolgár Dominik Bsc
Mérnökinformatikus
AAH5X1

1. feladat –

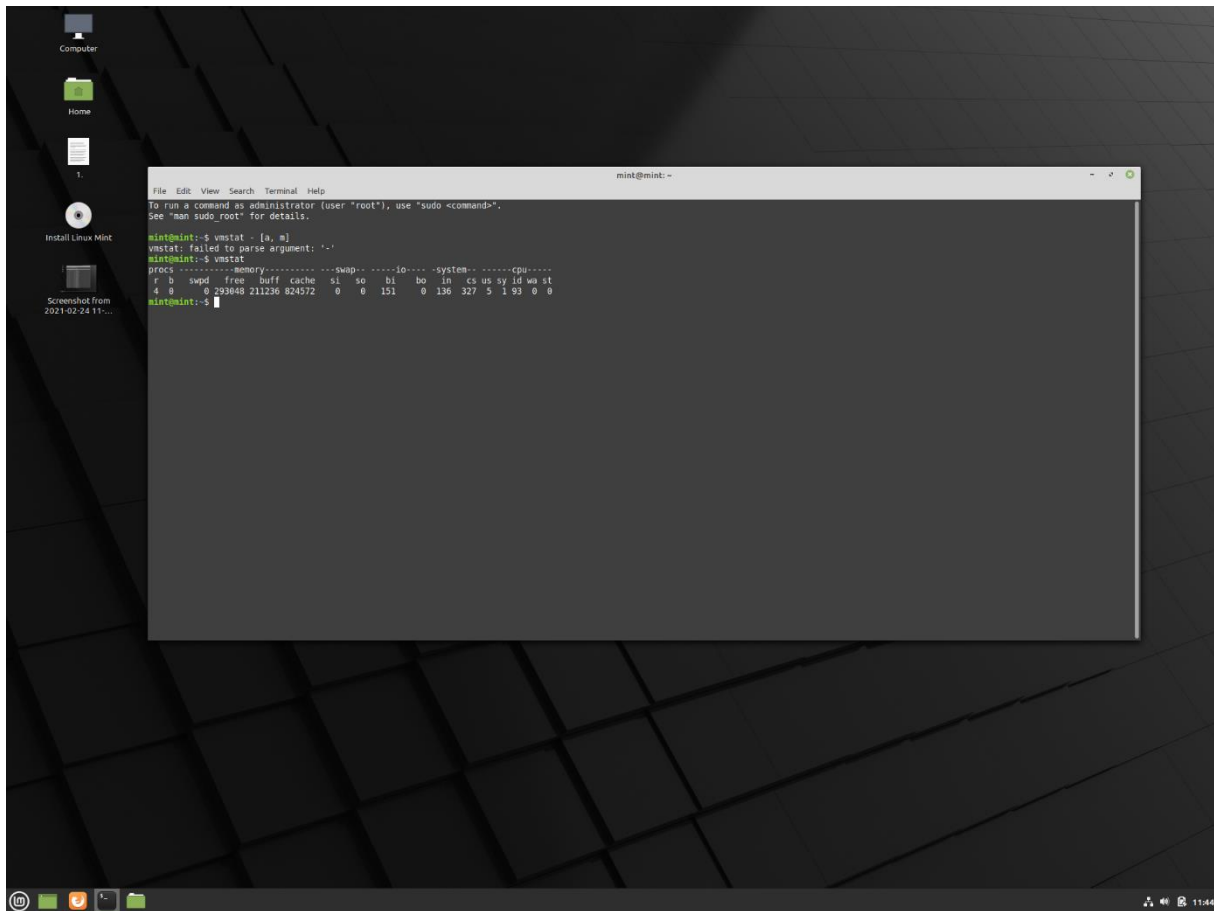
a.) top - processz aktivitást mutató parancs, valós idejű módban készít jelentést a futó rendszerről.



The screenshot shows a Linux Mint desktop environment. A terminal window is open, displaying the output of the 'top' command. The terminal title is 'mint@mint: ~'. The output shows system statistics and a list of running processes. The system statistics at the top indicate: 11:32:44 up 19 min, 1 user, load average: 0.33, 0.13, 0.11. Tasks: 162 total, 1 running, 161 sleeping, 0 stopped, 0 zombie. %cpu(s): 2.7 us, 0.2 sy, 0.0 ni, 97.1 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st. MiB Mem: 2640.6 total, 1005.4 free, 652.7 used, 982.5 buff/cache. MiB Swap: 0.0 total, 0.0 free, 0.0 used, 1685.4 avail Mem.

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1734	mint	20	0	2025972	229752	143180	S	4.3	9.6	1:04.70	cinnamon
1299	root	20	0	873704	167440	99720	S	2.0	6.2	0:00.00	xorg
2343	mint	20	0	599436	60276	42336	S	1.3	2.2	0:01.26	gnome-screensho
1	root	20	0	102904	11652	8688	S	0.0	0.4	0:01.04	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	hwkworker/0:0H-kblockd
7	root	20	0	0	0	0	I	0.0	0.0	0:00.16	hwkworker/0:1-events
9	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	mm_percpu_wq
10	root	20	0	0	0	0	S	0.0	0.0	0:00.17	ksoftirqd/0
11	root	20	0	0	0	0	I	0.0	0.0	0:00.23	rcu sched
12	root	rt	0	0	0	0	S	0.0	0.0	0:00.00	migration/0
13	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_inject/0
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_inject/1
17	root	rt	0	0	0	0	S	0.0	0.0	0:00.36	migration/1
18	root	20	0	0	0	0	I	0.0	0.0	0:00.14	ksoftirqd/1
19	root	20	0	0	0	0	I	0.0	0.0	0:00.07	hwkworker/1:0-events
20	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	hwkworker/1:0H-kblockd
21	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kdevtmpfs
22	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	netns
23	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_tasks_kthre
24	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kauditd
25	root	20	0	0	0	0	S	0.0	0.0	0:00.00	khubdtaskd
26	root	20	0	0	0	0	S	0.0	0.0	0:00.00	oom_reaper
27	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	writeback
28	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kcompactd
29	root	25	5	0	0	0	S	0.0	0.0	0:00.00	ksmd
30	root	39	19	0	0	0	S	0.0	0.0	0:00.00	khugepaged
123	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kintegrityd
124	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kblockd
125	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	blkcg_punt_bio
126	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	tpm_dev_wq
127	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	ata_sff
128	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	md
129	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	edac-poller
130	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	devfreq_wq
131	root	rt	0	0	0	0	S	0.0	0.0	0:00.00	watchdogd
134	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kswapd0
135	root	20	0	0	0	0	S	0.0	0.0	0:00.00	ecryptfs-kthrea
138	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kthrotld
139	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	xhci_thermal_pm
140	root	20	0	0	0	0	S	0.0	0.0	0:00.01	scsi_eh_0
141	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	scsi_tmf_0
142	root	20	0	0	0	0	S	0.0	0.0	0:00.00	scsi_eh_1
143	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	scsi_tmf_1
145	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	vfiio-irqfd-clea
148	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	ipve_addrconf
159	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kstrp
163	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	hwkworker/u5:0
179	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	charger_manager
225	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	cryptd
230	root	20	0	0	0	0	S	0.0	0.0	0:00.00	scsi_eh_2
234	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	scsi_tmf_2
246	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	irq/18-vmmgfx
248	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	ttm_swap
249	root	0	-20	0	0	0	I	0.0	0.0	0:00.16	hwkworker/0:1H-kblockd

b.) `vmstat - [a, m]` rendszer aktivitásról, a hardverről és a rendszerről nyújt információkat.

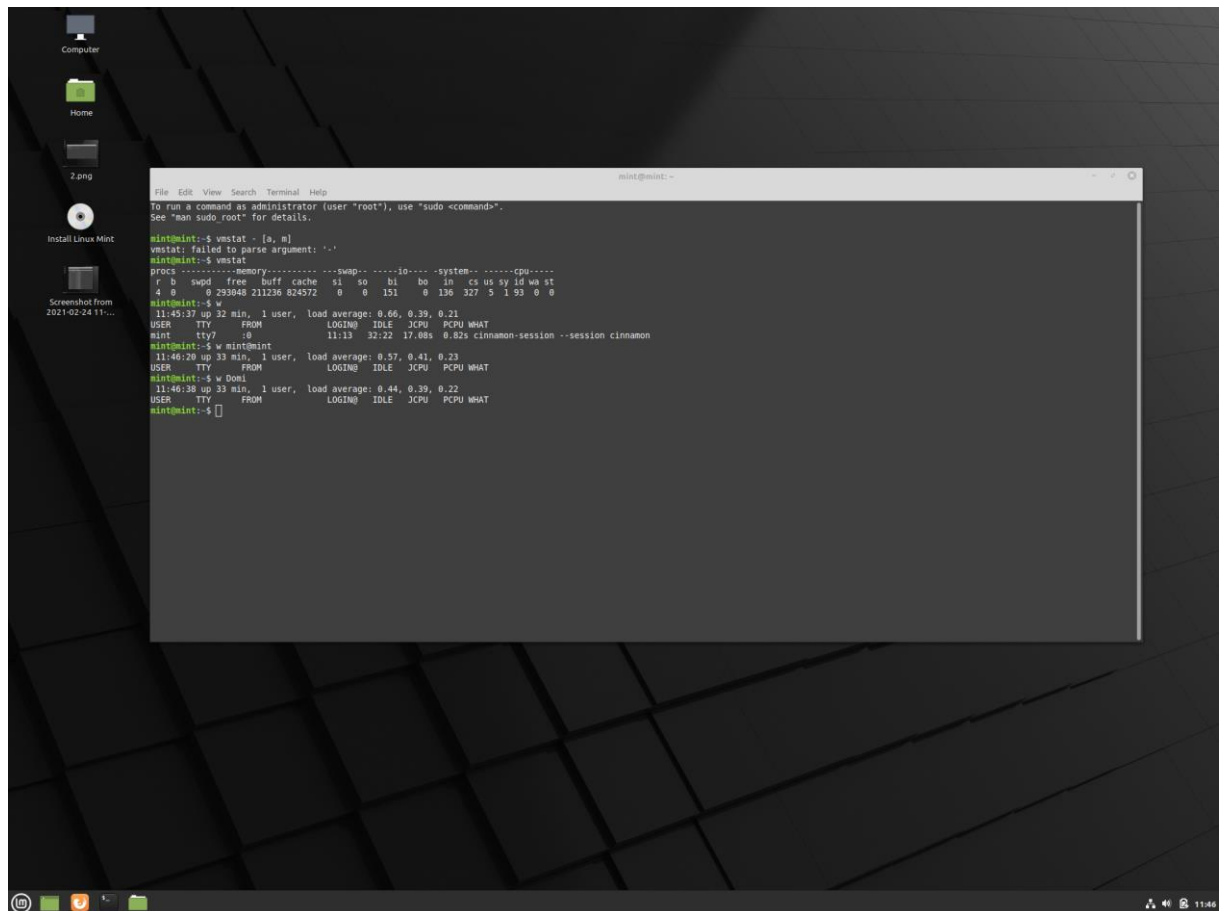


c.) w - ki van bejelentkezve a rendszerbe, és éppen mit csinál.

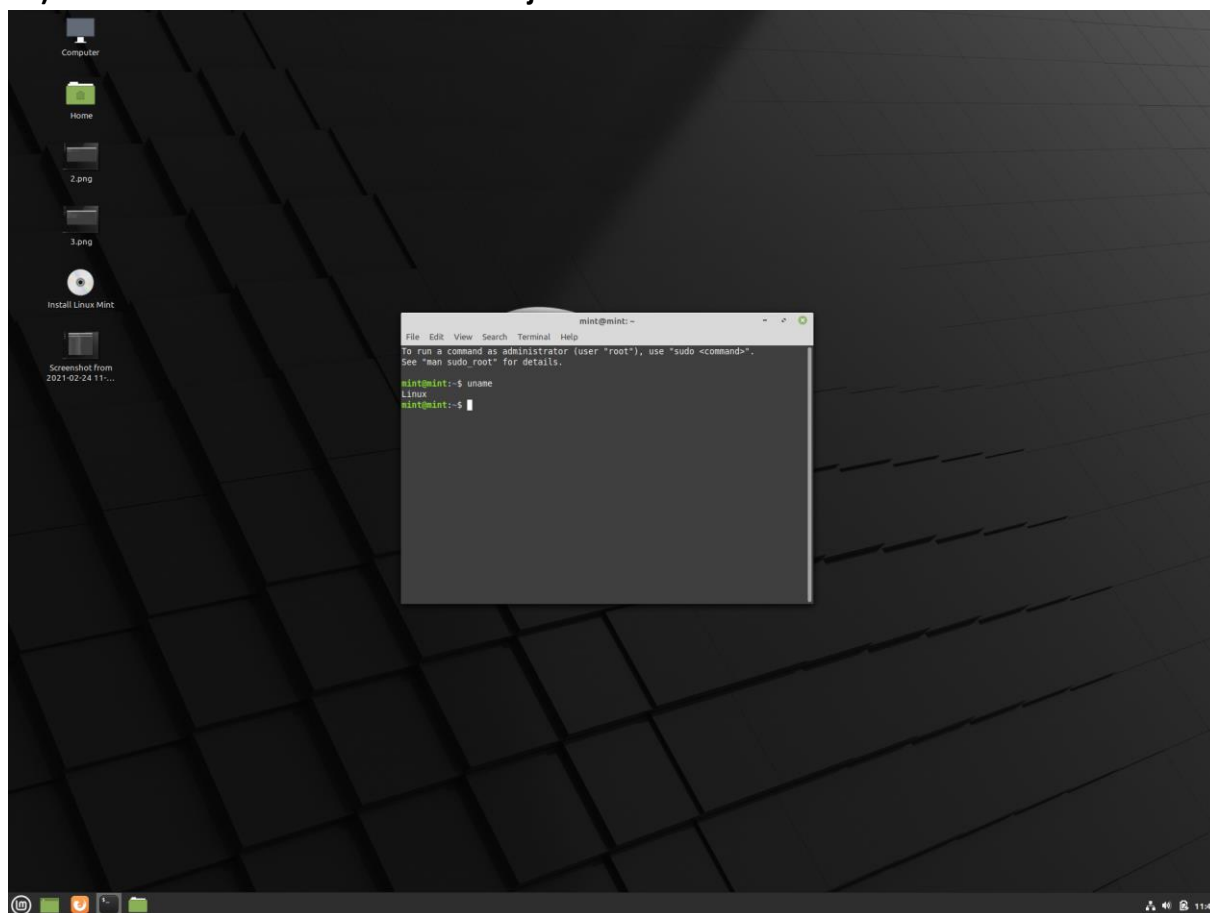
w felhasználó-név

w xyz

Használatos parancs: who és whoami – ki van bejelentkezve, mikortól stb.



d.) uname – szerver futásának kezdő ideje.



e.) ps - aktuális processzekről készít jelentést. Opciói:
ps -A - összes processz kiválasztása

```
File Edit View Search Terminal Help
mint@mint: ~
1457 ? 00:00:00 cinnamon-sessio
1492 ? 00:00:00 rtkit-daemon
1498 ? 00:00:00 dbus-daemon
1551 ? 00:00:00 ssh-agent
1567 ? 00:00:00 at-spi-bus-laun
1572 ? 00:00:00 dbus-daemon
1575 ? 00:00:00 at-spi2-registr
1582 ? 00:00:00 gnome-keyring-d
1591 ? 00:00:00 csd-print-notif
1593 ? 00:00:00 csd-xrandr
1596 ? 00:00:01 csd-background
1597 ? 00:00:00 csd-keyboard
1603 ? 00:00:00 csd-screensaver
1606 ? 00:00:00 upowerd
1607 ? 00:00:00 csd-xsettings
1614 ? 00:00:00 csd-clipboard
1615 ? 00:00:00 csd-media-keys
1619 ? 00:00:00 csd-color
1620 ? 00:00:00 csd-mouse
1624 ? 00:00:00 csd-ally-keyboa
1625 ? 00:00:00 gvfsd
1626 ? 00:00:00 csd-sound
1638 ? 00:00:00 gvfsd-fuse
1641 ? 00:00:00 csd-cursor
1642 ? 00:00:00 csd-orientation
1648 ? 00:00:00 csd-ally-settin
1649 ? 00:00:00 csd-wacom
1657 ? 00:00:00 csd-housekeepin
1659 ? 00:00:00 csd-power
1663 ? 00:00:00 csd-automount
1687 ? 00:00:00 csd-printer
1696 ? 00:00:00 dconf-service
1702 ? 00:00:00 colord
1722 ? 00:00:00 gvfs-udisks2-vo
1740 ? 00:00:00 gvfs-mtp-volume
1743 ? 00:00:00 cinnamon-launch
1745 ? 00:00:00 gvfs-snapshot2-vo
1749 ? 00:00:00 gvfs-goa-volume
1753 ? 00:00:00 goa-daemon
1754 ? 00:00:00 cinnamon
1762 ? 00:00:00 goa-identity-se
1764 ? 00:00:00 gvfs-afc-volume
1766 ? 00:00:00 xapp-sn-watcher
1800 ? 00:00:00 evolution-alarm
1812 ? 00:00:00 polkit-gnome-au
1812 ? 00:00:00 blueberry-dex-
1817 ? 00:00:03 nemo-desktop
1818 ? 00:00:00 agent
1820 ? 00:00:00 nm-applet
1827 ? 00:00:00 cinnamon-killer
1856 ? 00:00:00 evolution-sourc
1870 ? 00:00:00 oled
1876 ? 00:00:00 evolution-calen
1891 ? 00:00:00 evolution-adre
1898 ? 00:00:00 gvfsd-metadata
1928 ? 00:00:00 gvfsd-trash
2071 ? 00:00:00 applet.py
2217 ? 00:00:00 kworker/u4:0-events
2292 ? 00:00:00 gvfsd-network
2307 ? 00:00:00 kworker/u4:1-events_power_efficient
2317 ? 00:00:00 kworker/u4:1-events
2369 ? 00:00:00 gvfsd-dnssd
2536 ? 00:00:00 kworker/u4:2-events_unbound
2538 ? 00:00:00 Firefox
2832 ? 00:00:00 WebExtensions
2911 ? 00:01:12 Web Content
2918 ? 00:00:01 Privileged Cont
3048 ? 00:00:00 Web Content
3216 ? 00:00:00 kworker/B:1-events
3221 ? 00:00:00 kworker/u4:2-cgroup_destroy
3259 ? 00:00:00 kworker/u4:0-events_unbound
3308 ? 00:00:00 kworker/u4:3-cgroup_destroy
3309 ? 00:00:00 kworker/u4:4-cgroup_destroy
3373 ? 00:00:00 kworker/B:2-mm_percpu_wq
3381 ? 00:00:00 kworker/B:3-cgroup_destroy
3591 ? 00:00:00 gnome-terminal
3599 pts/0 00:00:00 ps
3608 pts/0 00:00:00 ps
mint@mint: ~
```

```
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
  PID TTY          TIME CMD
 3599 pts/0    00:00:00 bash
 3607 pts/0    00:00:00 ps

mint@mint:~$ ps -A
  PID TTY          TIME CMD
    1 ?        00:00:01 systemd
    2 ?        00:00:00 kthreadd
    3 ?        00:00:00 rcu_gp
    4 ?        00:00:00 rcu_par_gp
    6 ?        00:00:00 kworker/B:0m-kblockd
    9 ?        00:00:00 mm_percpu_wq
   10 ?        00:00:00 ksoftirqd/0
   11 ?        00:00:00 rcu_sched
   12 ?        00:00:00 migration/0
   13 ?        00:00:00 idle_inject/0
   14 ?        00:00:00 cpuphp/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 ?        00:00:00 kworker/l:0-events
   20 ?        00:00:00 kworker/l:0m-kblockd
   21 ?        00:00:00 kdevtmpfs
   22 ?        00:00:00 netns
   23 ?        00:00:00 rcu_tasks_kthre
   24 ?        00:00:00 kauditd
   25 ?        00:00:00 khungtaskd
   26 ?        00:00:00 oom_reaper
   27 ?        00:00:00 writeback
   28 ?        00:00:00 kcompactd0
   29 ?        00:00:00 ksmd
   30 ?        00:00:00 khugepaged
  123 ?        00:00:00 kintegrityd
  124 ?        00:00:00 kblockd
  125 ?        00:00:00 blkcg_punt_bio
  126 ?        00:00:00 tpm_dev_wq
  127 ?        00:00:00 ata_sff
  128 ?        00:00:00 md
  129 ?        00:00:00 edac-poller
  130 ?        00:00:00 devfreq_wq
  131 ?        00:00:00 watchdogd
  134 ?        00:00:00 kswapd0
  135 ?        00:00:00 ecryptfs-kthrea
  138 ?        00:00:00 ktirpcd
  139 ?        00:00:00 acpi_thermal_pm
  140 ?        00:00:00 scsi_eh_0
  141 ?        00:00:00 scsi_tmf_0
  142 ?        00:00:00 scsi_eh_1
  143 ?        00:00:00 scsi_tmf_1
  145 ?        00:00:00 vfiio-irqfd-clea
  148 ?        00:00:00 ipvs_addrconf
  159 ?        00:00:00 kstrp
  163 ?        00:00:00 kworker/u5:0
  179 ?        00:00:00 charger_manager
  225 ?        00:00:00 cryptd
  230 ?        00:00:00 scsi_eh_2
  234 ?        00:00:00 scsi_tmf_2
  240 ?        00:00:00 irq/16-vmmgfx
  240 ?        00:00:00 tta_swp
  249 ?        00:00:00 kworker/B:1m-kblockd
  337 ?        00:00:00 kworker/l:1m-events_highpri
  360 ?        00:00:01 loopd
  816 ?        00:00:00 systemd-journal
  839 ?        00:00:00 systemd-udev
  952 ?        00:00:00 systemd-resolve
  953 ?        00:00:00 systemd-timesyn
  955 ?        00:00:00 accounts-daemon
  956 ?        00:00:00 acpid
  958 ?        00:00:00 avahi-daemon
  960 ?        00:00:00 cron
  961 ?        00:00:00 cupsd
  962 ?        00:00:00 dbus-daemon
  963 ?        00:00:00 NetworkManager
  973 ?        00:00:00 irqbalance
  977 ?        00:00:00 networkd-dispat
```

ps -Al - kimenet hosszú formátumban

```
File Edit View Search Terminal Help
mint@mint:~$ ps -al
2911 ? 00:01:12 Web Content
2919 ? 00:00:01 Privileged Cont
3048 ? 00:00:00 Web Content
3216 ? 00:00:00 kworker/0:1-events
3231 ? 00:00:00 kworker/1:2-cgroup_destroy
3259 ? 00:00:00 kworker/u4:8-events_unbound
3308 ? 00:00:00 kworker/1:3-cgroup_destroy
3309 ? 00:00:00 kworker/1:4-cgroup_destroy
3373 ? 00:00:00 kworker/0:2-mm_percpu_wq
3381 ? 00:00:00 kworker/0:3-cgroup_destroy
3591 ? 00:00:00 gnome-terminal
3599 pts/0 00:00:00 bash
3608 pts/0 00:00:00 ps
mint@mint:~$ ps -al
  PID TID          PPID C PRI  NI ADDR SZ WCHAN TTY          TIME CMD
 1.0 0 1 0 0 88 0 - 0 - 0 00:00:00 systemd
 1.0 2 0 0 88 0 - 0 - 0 00:00:00 kthreadd
 1.0 3 2 0 60 -20 - 0 - 0 00:00:00 rcu_gp
 1.0 4 2 0 60 -20 - 0 - 0 00:00:00 rcu_par_gp
 1.0 6 2 0 60 -20 - 0 - 0 00:00:00 kworker/0:
 1.0 9 2 0 60 -20 - 0 - 0 00:00:00 mm_percpu
 1.0 10 2 0 80 0 - 0 - 0 00:00:00 ksftirqd/
 1.0 11 2 0 80 0 - 0 - 0 00:00:00 rcu_sched
 1.0 12 2 0 -40 - - 0 - 0 00:00:00 migration/
 1.0 13 2 0 9 - 0 - 0 00:00:00 idle_injec
 1.0 14 2 0 80 0 - 0 - 0 00:00:00 cpuhp/0
 1.0 15 2 0 80 0 - 0 - 0 00:00:00 cpuhp/1
 1.0 16 2 0 9 - 0 - 0 00:00:00 idle_injec
 1.0 17 2 0 -40 - - 0 - 0 00:00:00 migration/
 1.0 18 2 0 80 0 - 0 - 0 00:00:00 ksftirqd/
 1.0 19 2 0 80 0 - 0 - 0 00:00:00 kworker/1:
 1.0 20 2 0 60 -20 - 0 - 0 00:00:00 kworker/1:
 1.0 21 2 0 80 0 - 0 - 0 00:00:00 kdevtmpfs
 1.0 22 2 0 60 -20 - 0 - 0 00:00:00 netns
 1.0 23 2 0 80 0 - 0 - 0 00:00:00 rcu_tasks_
 1.0 24 2 0 80 0 - 0 - 0 00:00:00 kauditd
 1.0 25 2 0 80 0 - 0 - 0 00:00:00 khungtaskd
 1.0 26 2 0 80 0 - 0 - 0 00:00:00 oom_reaper
 1.0 27 2 0 60 -20 - 0 - 0 00:00:00 writeback
 1.0 28 2 0 80 0 - 0 - 0 00:00:00 kcompactd0
 1.0 29 2 0 85 5 - 0 - 0 00:00:00 ksmd
 1.0 30 2 0 99 19 - 0 - 0 00:00:00 khugepaged
 1.0 123 2 0 60 -20 - 0 - 0 00:00:00 kintegrity
 1.0 124 2 0 60 -20 - 0 - 0 00:00:00 kblockd
 1.0 125 2 0 60 -20 - 0 - 0 00:00:00 blkcg_punt
 1.0 126 2 0 60 -20 - 0 - 0 00:00:00 tpm_dev_wq
 1.0 127 2 0 60 -20 - 0 - 0 00:00:00 ata_sff
 1.0 128 2 0 60 -20 - 0 - 0 00:00:00 md
 1.0 129 2 0 60 -20 - 0 - 0 00:00:00 edac-polle
 1.0 130 2 0 60 -20 - 0 - 0 00:00:00 devfreq_wq
 1.0 131 2 0 -40 - - 0 - 0 00:00:00 watchdogd
 1.0 134 2 0 80 0 - 0 - 0 00:00:00 kswapd0
 1.0 135 2 0 80 0 - 0 - 0 00:00:00 ecryptfs-k
 1.0 138 2 0 60 -20 - 0 - 0 00:00:00 kthrottld
 1.0 139 2 0 60 -20 - 0 - 0 00:00:00 acpi_therm
 1.0 140 2 0 80 0 - 0 - 0 00:00:00 scsi_eh_0
 1.0 141 2 0 60 -20 - 0 - 0 00:00:00 scsi_tmf_0
 1.0 142 2 0 80 0 - 0 - 0 00:00:00 scsi_eh_1
 1.0 143 2 0 60 -20 - 0 - 0 00:00:00 scsi_tmf_1
 1.0 145 2 0 60 -20 - 0 - 0 00:00:00 vfio-irqfd
 1.0 148 2 0 60 -20 - 0 - 0 00:00:00 ipmi_addr
 1.0 159 2 0 60 -20 - 0 - 0 00:00:00 kstrp
 1.0 163 2 0 60 -20 - 0 - 0 00:00:00 kworker/u5
 1.0 170 2 0 60 -20 - 0 - 0 00:00:00 charger_ma
 1.0 225 2 0 60 -20 - 0 - 0 00:00:00 cryptd
 1.0 230 2 0 80 0 - 0 - 0 00:00:00 scsi_eh_2
 1.0 234 2 0 60 -20 - 0 - 0 00:00:00 scsi_tmf_2
 1.0 246 2 0 9 - - 0 - 0 00:00:00 irq/16-vmw
 1.0 248 2 0 60 -20 - 0 - 0 00:00:00 ttm_swap
 1.0 249 2 0 60 -20 - 0 - 0 00:00:00 kworker/0:
 1.0 337 2 0 60 -20 - 0 - 0 00:00:00 kworker/1:
 1.0 360 2 0 60 -20 - 0 - 0 00:00:01 loop0
 816 0 816 1 0 79 -1 8812 - 0 00:00:00 systemd-j
 839 0 839 1 0 88 0 - 5819 - 0 00:00:00 systemd-ud
 101 952 1 0 80 0 - 6046 - 0 00:00:00 systemd-re
 102 953 1 0 80 0 - 22629 - 0 00:00:00 systemd-ti
 955 0 955 1 0 80 0 - 59975 - 0 00:00:00 accounts-d
 956 0 956 1 0 80 0 - 635 - 0 00:00:00 acpid
 110 958 1 0 80 0 - 2125 - 0 00:00:00 avahi-daem
```

ps -AlF – egyes processzek paraméterei

```
mint@mint: ~  
File Edit View Search Terminal Help  
1 0 3381 2 0 88 0 - 0 - 7 00:00:00 kworker/0:  
4 S root 3591 1402 0 88 0 - 134346 poll s ? 00:00:00 gnome-term  
4 S root 3599 3591 0 88 0 - 3084 do_wal pts/0 00:00:00 bash  
4 S 0 3618 1 0 88 0 - 4104 - 7 00:00:00 systemd-ho  
4 R root 3744 3599 0 88 0 - 3280 - pts/0 00:00:00 ps  
mint@mint:~$ ps -AlF  
F S UID PID PPID C PRI NI ADDR SZ WCHAN RSS PSR STIME TTY TIME CMD  
1 S root 1 0 0 88 0 - 25501 - 11852 0 11:13 ? 00:00:01 /sbin/init splash  
1 S root 2 0 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [kthreadd]  
1 I root 3 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [rcu gp]  
1 I root 4 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [rcu par gp]  
1 I root 6 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kworker/0:0-kblockd]  
1 I root 9 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [mm_percpu_wq]  
1 S root 10 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [ksoftirqd/0]  
1 I root 11 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [rcu sched]  
1 S root 12 2 0 -40 - - 0 - 0 0 11:13 ? 00:00:00 [migration/0]  
5 S root 13 2 0 9 - - 0 - 0 0 11:13 ? 00:00:00 [idle_inject/0]  
1 S root 14 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [cpuhp/0]  
1 S root 15 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [cpuhp/1]  
5 S root 16 2 0 9 - - 0 - 0 0 11:13 ? 00:00:00 [idle_inject/1]  
1 S root 17 2 0 -40 - - 0 - 0 0 11:13 ? 00:00:00 [migration/1]  
1 S root 18 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [ksoftirqd/1]  
1 I root 19 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [kworker/1:0-events]  
1 S root 20 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kworker/1:0-kblockd]  
5 S root 21 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [kdevtmpfs]  
1 I root 22 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [netns]  
1 S root 23 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [rcu tasks_kthre]  
1 S root 24 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [kauditd]  
1 S root 25 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [khungtaskd]  
1 S root 26 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [oom reaper]  
1 I root 27 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [writeback]  
1 S root 28 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [kcompactd0]  
1 S root 29 2 0 85 3 - 0 - 0 0 11:13 ? 00:00:00 [kmem]  
1 S root 30 2 0 99 19 - 0 - 0 0 11:13 ? 00:00:00 [khugepaged]  
1 I root 123 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kintegrityd]  
1 I root 124 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kblockd]  
1 I root 125 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [blkcg_punt bio]  
1 I root 126 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [tpm_dev_wq]  
1 I root 127 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kfs-sftr]  
1 I root 128 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [md]  
1 I root 129 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [edac-poller]  
1 I root 130 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [defrag_wq]  
1 S root 131 2 0 -40 - - 0 - 0 0 11:13 ? 00:00:00 [watchdog]  
1 S root 134 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [kswapd0]  
1 S root 135 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [cryptfs-kthrea]  
1 I root 138 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kthrotld]  
1 I root 139 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [acpi_thermal_pm]  
1 S root 140 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [scsi eh 0]  
1 I root 141 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [scsi tmf 0]  
1 S root 142 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [scsi eh 1]  
1 I root 143 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [scsi tmf 1]  
1 I root 145 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [vio-irqfd-clea]  
1 I root 148 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [ip66_addrconf]  
1 I root 150 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kstrp]  
1 I root 163 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kworker/u5:0]  
1 I root 179 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [charger manager]  
1 I root 225 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [cryptd]  
1 S root 238 2 0 88 0 - 0 - 0 0 11:13 ? 00:00:00 [scsi eh 2]  
1 I root 234 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [scsi tmf 2]  
1 S root 246 2 0 9 - - 0 - 0 0 11:13 ? 00:00:00 [irq/18-vmmgfx]  
1 I root 248 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [ttni swap]  
1 I root 249 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kworker/0:0-kblockd]  
1 I root 337 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:00 [kworker/1:0-events-highpri]  
1 S root 360 2 0 60 -20 - 0 - 0 0 11:13 ? 00:00:01 [leapd]  
4 S root 816 1 0 79 -1 - 8812 - 9604 0 11:13 ? 00:00:00 /lib/systemd/systemd-journald  
4 S root 839 1 0 88 0 - 5819 - 7812 0 11:13 ? 00:00:00 /lib/systemd/systemd-udev  
4 S systemd+ 932 1 0 88 0 - 6046 - 13426 0 11:13 ? 00:00:00 /lib/systemd/systemd-resolved  
4 S systemd+ 953 1 0 88 0 - 22629 - 6468 0 11:13 ? 00:00:00 /lib/systemd/systemd-timesyncd  
4 S root 955 1 0 88 0 - 59975 - 7492 0 11:13 ? 00:00:00 /usr/lib/accounts-service/accounts-daemon  
4 S root 956 1 0 88 0 - 635 - 725 0 11:13 ? 00:00:00 /usr/sbin/acpid  
4 S avahi 958 1 0 88 0 - 2125 - 3632 0 11:13 ? 00:00:00 avahi-daemon: running [mint-2.local]  
4 S root 960 1 0 88 0 - 2784 - 2552 0 11:13 ? 00:00:00 /usr/sbin/cron -f  
4 S root 961 1 0 88 0 - 7121 - 8364 0 11:13 ? 00:00:00 /usr/sbin/cupsd -l  
4 S message+ 962 1 0 88 0 - 2162 - 5584 0 11:13 ? 00:00:00 /usr/bin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only  
4 S root 965 1 0 88 0 - 121277 - 19696 0 11:13 ? 00:00:00 /usr/sbin/NetworkManager --no-daemon  
4 S root 973 1 0 88 0 - 20653 - 3780 0 11:13 ? 00:00:00 /usr/sbin/irqbalance --foreground  
4 S root 977 1 0 88 0 - 9866 - 17468 0 11:13 ? 00:00:00 /usr/bin/python3 /usr/bin/networkd-dispatcher --run-startup-triggers  
4 S root 978 1 0 88 0 - 58769 - 9296 0 11:13 ? 00:00:00 /usr/lib/policykit-1/polkitd --no-debug  
4 S syslog 980 1 0 88 0 - 56081 - 4572 0 11:13 ? 00:00:00 /usr/sbin/rsyslogd -n -iNONE
```


ps ax – a szerver összes processze

```
File Edit View Search Terminal Help
mint@mint: ~$ ps ax
  PID TTY          STAT       TIME COMMAND
    1 ?        Ss          0:01 /sbin/init splash
    2 ?        S           0:00 [kthreadd]
    3 ?        Ic          0:00 [rcu_gp]
    4 ?        Ic          0:00 [rcu_par_gp]
    6 ?        Ic          0:00 [worker/0:0H-kblockd]
    9 ?        Ic          0:00 [mm_percpu_wq]
   10 ?        S           0:00 [ksoftirqd/0]
   11 ?        I           0:00 [rcu_sched]
   12 ?        S           0:00 [migration/0]
   13 ?        S           0:00 [idle_inject/0]
   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           0:00 [worker/1:0H-kblockd]
   20 ?        Ic          0:00 [kdevtmpfs]
   21 ?        S           0:00 [netns]
   22 ?        Ic          0:00 [rcu_tasks_kthre]
   23 ?        S           0:00 [kauditd]
   24 ?        S           0:00 [khungtaskd]
   25 ?        S           0:00 [oom_reaper]
   26 ?        Ic          0:00 [writeback]
   27 ?        S           0:00 [kcompactd0]
   28 ?        S           0:00 [ksmd]
   29 ?        Ss          0:00 [khugepaged]
   30 ?        Ic          0:00 [kintegrityd]
   32 ?        Ic          0:00 [kblockd]
   34 ?        Ic          0:00 [blkcg_punt_bio]
   36 ?        Ic          0:00 [tm_dev_wq]
   37 ?        Ic          0:00 [ata_sff]
   38 ?        Ic          0:00 [md]
   39 ?        Ic          0:00 [edac-poller]
   40 ?        Ic          0:00 [devfreq_wq]
   41 ?        S           0:00 [watchdogd]
   42 ?        S           0:00 [kswapd0]
   43 ?        S           0:00 [ecryptfs-kthrea]
   44 ?        Ic          0:00 [kthrotld]
   45 ?        Ic          0:00 [eql thermal_pm]
   46 ?        S           0:00 [scsi eh 0]
   47 ?        Ic          0:00 [scsi tmf 0]
   48 ?        S           0:00 [scsi eh 1]
   49 ?        Ic          0:00 [scsi tmf 1]
   50 ?        Ic          0:00 [vfiio-irqfd-clea]
   51 ?        Ic          0:00 [ipwv_addrconf]
   52 ?        Ic          0:00 [khttp]
   53 ?        Ic          0:00 [worker/u5:0]
   54 ?        Ic          0:00 [charger manager]
   55 ?        Ic          0:00 [cryptd]
   56 ?        S           0:00 [scsi eh 2]
   57 ?        Ic          0:00 [scsi tmf 2]
   58 ?        S           0:00 [irq/10-vmgfx]
   59 ?        Ic          0:00 [ttm_swap]
   60 ?        Ic          0:00 [worker/0:1H-kblockd]
   61 ?        Ic          0:00 [worker/1:1H-kblockd]
   62 ?        Ss          0:01 [loop0]
   63 ?        Ss          0:00 /lib/systemd/systemd-journald
   64 ?        Ss          0:00 /lib/systemd/systemd-udev
   65 ?        Ss          0:00 /lib/systemd/systemd-resolved
   66 ?        Ss          0:00 /lib/systemd/systemd-timesyncd
   67 ?        Ss          0:00 /usr/lib/AccountsService/accounts-daemon
   68 ?        Ss          0:00 /usr/sbin/acpid
   69 ?        Ss          0:00 avahi-daemon: running [mint-2.local]
   70 ?        Ss          0:00 /usr/sbin/cron -f
   71 ?        Ss          0:00 /usr/sbin/cupsd -l
   72 ?        Ss          0:00 /usr/bin/ibus-daemon --system --address=systemd: --
   73 ?        Ss          0:00 /usr/sbin/NetworkManager --no-daemon
   74 ?        Ss          0:00 /usr/sbin/irqbalance --foreground
   75 ?        Ss          0:00 /usr/bin/python3 /usr/bin/networkd-dispatcher --run
   76 ?        Ss          0:00 /usr/lib/policykit-1/polkitd --no-debug
   77 ?        Ss          0:00 /usr/sbin/rsyslogd -n -iNONE
   78 ?        Ss          0:00 /lib/systemd/systemd-logind
   79 ?        Ss          0:00 /usr/lib/udisks2/udisksd
   80 ?        Ss          0:00 /sbin/wpa_supplicant -u -s -O /run/wpa_supplicant
   81 ?        I           0:00 [worker/0:4-events]
   82 ?        S           0:00 avahi-daemon: chroot helper
```

ps axu-processzor foglaltságot commandokat, elérhetőségét, futási idejét mutatja

```
File Edit View Search Terminal Help
mint@mint:~$ ps axu
3259 ? I 0:00 [kworker/u4:0-events_unbound]
3309 ? I 0:00 [kworker/1:4-cgroup_destroy]
3381 ? I 0:00 [kworker/0:3-cgroup_destroy]
3591 ? Ssl 0:01 /usr/libexec/gnome-terminal-server
3599 pts/0 Ss 0:00 bash
3902 ? I 0:00 [kworker/u4:1-events_unbound]
3924 pts/0 R- 0:00 ps ax
mint@mint:~$ ps axu
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.4 102084 11632 ?        Ss   11:13   0:01 /sbin/init sp
root         2  0.0  0.0      0     0 ?        S    11:13   0:00 [kthreadd]
root         3  0.0  0.0      0     0 ?        I<   11:13   0:00 [rcu_gp]
root         4  0.0  0.0      0     0 ?        I<   11:13   0:00 [rcu_gar_gp]
root         6  0.0  0.0      0     0 ?        I<   11:13   0:00 [kworker/0:0H]
root         9  0.0  0.0      0     0 ?        I<   11:13   0:00 [mm_percpu_wq]
root        10  0.0  0.0      0     0 ?        S    11:13   0:00 [ksftirqd/0]
root        11  0.0  0.0      0     0 ?        I    11:13   0:00 [rcu_sched]
root        12  0.0  0.0      0     0 ?        S    11:13   0:00 [migration/0]
root        13  0.0  0.0      0     0 ?        S    11:13   0:00 [idle_inject/
root        14  0.0  0.0      0     0 ?        S    11:13   0:00 [cpuhp/0]
root        15  0.0  0.0      0     0 ?        S    11:13   0:00 [cpuhp/1]
root        16  0.0  0.0      0     0 ?        S    11:13   0:00 [idle_inject/
root        17  0.0  0.0      0     0 ?        S    11:13   0:00 [migration/1]
root        18  0.0  0.0      0     0 ?        S    11:13   0:00 [ksftirqd/1]
root        19  0.0  0.0      0     0 ?        I    11:13   0:00 [kworker/1:0H]
root        20  0.0  0.0      0     0 ?        I<   11:13   0:00 [kworker/1:0H]
root        21  0.0  0.0      0     0 ?        S    11:13   0:00 [kdevtmpfs]
root        22  0.0  0.0      0     0 ?        I<   11:13   0:00 [netns]
root        23  0.0  0.0      0     0 ?        S    11:13   0:00 [rcu_tasks_kt
root        24  0.0  0.0      0     0 ?        S    11:13   0:00 [kauditd]
root        25  0.0  0.0      0     0 ?        S    11:13   0:00 [khungtaskd]
root        26  0.0  0.0      0     0 ?        S    11:13   0:00 [oom_reaper]
root        27  0.0  0.0      0     0 ?        I<   11:13   0:00 [writeback]
root        28  0.0  0.0      0     0 ?        S    11:13   0:00 [kcompactd0]
root        29  0.0  0.0      0     0 ?        SM   11:13   0:00 [ksmd]
root        30  0.0  0.0      0     0 ?        SW   11:13   0:00 [khugepaged]
root       123  0.0  0.0      0     0 ?        I<   11:13   0:00 [kintegrityd]
root       124  0.0  0.0      0     0 ?        I<   11:13   0:00 [kblockd]
root       125  0.0  0.0      0     0 ?        I<   11:13   0:00 [blkcg_punt_b
root       126  0.0  0.0      0     0 ?        I<   11:13   0:00 [tm_dev_wq]
root       127  0.0  0.0      0     0 ?        I<   11:13   0:00 [ata_sff]
root       128  0.0  0.0      0     0 ?        I<   11:13   0:00 [nd]
root       129  0.0  0.0      0     0 ?        I<   11:13   0:00 [edac-poller]
root       130  0.0  0.0      0     0 ?        I<   11:13   0:00 [devfreq_wq]
root       131  0.0  0.0      0     0 ?        S    11:13   0:00 [watchdogd]
root       134  0.0  0.0      0     0 ?        S    11:13   0:00 [kswapd0]
root       135  0.0  0.0      0     0 ?        S    11:13   0:00 [ecryptfs-kth
root       138  0.0  0.0      0     0 ?        I<   11:13   0:00 [kthrotld]
root       139  0.0  0.0      0     0 ?        I<   11:13   0:00 [scsi thermal]
root       140  0.0  0.0      0     0 ?        S    11:13   0:00 [scsi eh 0]
root       141  0.0  0.0      0     0 ?        I<   11:13   0:00 [scsi tmf 0]
root       142  0.0  0.0      0     0 ?        S    11:13   0:00 [scsi eh 1]
root       143  0.0  0.0      0     0 ?        I<   11:13   0:00 [scsi tmf 1]
root       145  0.0  0.0      0     0 ?        I<   11:13   0:00 [vfio-irqfd-c
root       148  0.0  0.0      0     0 ?        I<   11:13   0:00 [ipwv_ahdcon]
root       159  0.0  0.0      0     0 ?        I<   11:13   0:00 [kstrp]
root       163  0.0  0.0      0     0 ?        I<   11:13   0:00 [kworker/u5:0]
root       179  0.0  0.0      0     0 ?        I<   11:13   0:00 [charger mana
root       225  0.0  0.0      0     0 ?        I<   11:13   0:00 [cryptd]
root       230  0.0  0.0      0     0 ?        S    11:13   0:00 [scsi eh 2]
root       234  0.0  0.0      0     0 ?        I<   11:13   0:00 [scsi tmf 2]
root       240  0.0  0.0      0     0 ?        S    11:13   0:00 [irq/10-vmwgf
root       248  0.0  0.0      0     0 ?        I<   11:13   0:00 [tm_swap]
root       249  0.0  0.0      0     0 ?        I<   11:13   0:00 [kworker/0:1H]
root       337  0.0  0.0      0     0 ?        I<   11:13   0:00 [kworker/1:1H]
root       360  0.0  0.0      0     0 ?        S<   11:13   0:01 [loopd]
root       816  0.0  0.1 35244 9604 ?        S<+  11:13   0:00 /lib/systemd/
root       839  0.0  0.2 23276 7012 ?        S<+  11:13   0:00 /lib/systemd/
systemd+   952  0.0  0.4 24184 13436 ?        S<+  11:13   0:00 /lib/systemd/
systemd+   953  0.0  0.2 50516 1460 ?        Ssl  11:13   0:00 /lib/systemd/
root       955  0.0  0.2 239980 7492 ?        Ssl  11:13   0:00 /usr/lib/acco
root       956  0.0  0.0 2540 732 ?        S<+  11:13   0:00 /usr/sbin/acp
avahi     958  0.0  0.1 8500 3632 ?        S<+  11:13   0:00 avahi-daemon:
root       960  0.0  0.1 11136 2852 ?        S<+  11:13   0:00 /usr/sbin/cro
root       961  0.0  0.3 28484 8364 ?        S<+  11:13   0:00 /usr/sbin/cup
message+  962  0.0  0.2 8648 5584 ?        S<+  11:13   0:00 /usr/sbin/dbus
root       963  0.0  0.7 485100 19696 ?        Ssl  11:13   0:00 /usr/sbin/Net
root       973  0.0  0.1 81812 3780 ?        Ssl  11:13   0:00 /usr/sbin/irq
root       977  0.0  0.0 39404 17460 ?        S<+  11:13   0:00 /usr/bin/pyth
```

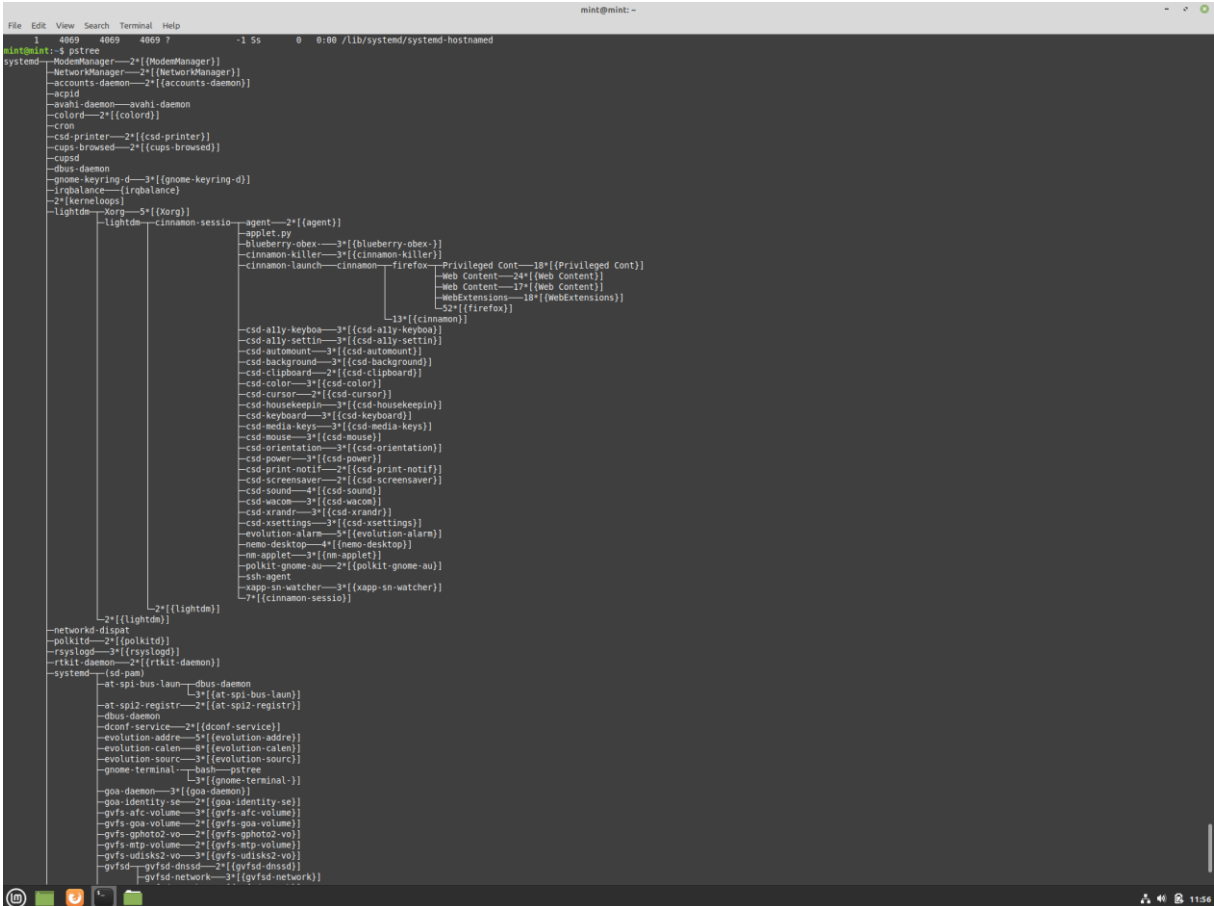
ps -ejH - processz fa kinyomtatása

```
File Edit View Search Terminal Help
mint@mint: ~
2 300 0 0 0 ? -1 Ss 0 0:01 \. [loop0]
2 991 0 0 0 ? -1 I 0 0:00 \. [worker/0:4-cgroup.destroy]
2 1223 0 0 0 ? -1 Ic 0 0:00 \. [grrt-Roadhouse]
2 2217 0 0 0 ? -1 I 0 0:00 \. [worker/0:0-events]
2 2317 0 0 0 ? -1 I 0 0:00 \. [worker/1:1-events]
2 2536 0 0 0 ? -1 I 0 0:00 \. [worker/u4:2-events.unbound]
2 3216 0 0 0 ? -1 I 0 0:00 \. [worker/0:1-events]
2 3259 0 0 0 ? -1 I 0 0:00 \. [worker/u4:0-events.unbound]
2 3269 0 0 0 ? -1 I 0 0:00 \. [worker/1:4-cgroup.destroy]
2 3301 0 0 0 ? -1 I 0 0:00 \. [worker/0:3-cgroup.destroy]
2 3902 0 0 0 ? -1 I 0 0:00 \. [worker/u4:1-events.unbound]
2 4047 0 0 0 ? -1 I 0 0:00 \. [worker/0:2]
0 1 1 1 1 ? -1 Ss 0 0:01 /sbin/init splash
1 816 816 816 ? -1 Ss 0 0:00 /lib/systemd/systemd-journald
1 839 839 839 ? -1 Ss 0 0:00 /lib/systemd/systemd-journald
1 952 952 952 ? -1 Ss 101 0:00 /lib/systemd/systemd-resolved
1 953 953 953 ? -1 Ssl 102 0:00 /lib/systemd/systemd-timesyncd
1 955 955 955 ? -1 Ssl 0 0:00 /usr/lib/AccountsService/accounts-daemon
1 956 956 956 ? -1 Ss 0 0:00 /usr/sbin/acpid
1 958 958 958 ? -1 Ss 118 0:00 avahi-daemon: running [mint-2.local]
959 996 958 958 ? -1 Ss 118 0:00 \. avahi-daemon: chroot helper
1 960 960 960 ? -1 Ss 0 0:00 /usr/sbin/cron -f
1 961 961 961 ? -1 Ss 0 0:00 /usr/sbin/cupsd -l
1 962 962 962 ? -1 Ss 103 0:00 /usr/sbin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
1 963 963 963 ? -1 Ssl 0 0:00 /usr/sbin/NetworkManager --no-daemon
1 973 973 973 ? -1 Ssl 0 0:00 /usr/sbin/irqbalance --foreground
1 977 977 977 ? -1 Ss 0 0:00 /usr/sbin/plymouthd /usr/bin/networkd-dispatcher --run-startup-triggers
1 978 978 978 ? -1 Ssl 0 0:00 /usr/lib/policykit-1/polkitd --no-debug
1 980 980 980 ? -1 Ssl 104 0:00 /usr/sbin/rsyslogd -n -iNONE
1 981 981 981 ? -1 Ss 0 0:00 /lib/systemd/systemd-logind
1 986 986 986 ? -1 Ssl 0 0:00 /usr/lib/udisks2/udisksd
1 987 987 987 ? -1 Ss 0 0:00 /sbin/wpa_supplicant -u -s -O /run/wpa_supplicant
1 1004 1004 1004 ? -1 Ss 109 0:00 /usr/sbin/kerneloops --test
1 1013 1013 1013 ? -1 Ss 109 0:00 /usr/sbin/kerneloops
1 1026 1026 1026 ? -1 Ssl 0 0:00 /usr/sbin/cups-browsed
1 1030 1030 1030 ? -1 Ssl 0 0:00 /usr/sbin/ModemManager --filter-policy=strict
1 1065 1065 1065 ? -1 Ssl 0 0:00 /usr/sbin/lightdm
1065 1299 1299 1299 tty? 1299 Ssl+ 0 0:27 \. /usr/lib/Xorg/Xorg -core -B -seat seat0 -auth /var/run/lightdm/root/:0 -nolisten tcp vt7 -novtswitch
1065 1307 1065 1065 ? -1 Ssl 0 0:00 \. lightdm --session-child 12 15
1397 1457 1457 1457 ? -1 Ssl 999 0:00 \. cinnamon-session --session cinnamon
1457 1551 1551 1551 ? -1 Ss 999 0:00 \. /usr/bin/ssh-agent /usr/bin/in-launch cinnamon-session-cinnamon
1457 1591 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-print-notifications
1457 1593 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-xrandr
1457 1596 1457 1457 ? -1 Ssl 999 0:01 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-background
1457 1597 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-keyboard
1457 1603 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-screensaver-proxy
1457 1607 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-xsettings
1457 1614 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-clipboard
1457 1615 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-media-keys
1457 1619 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-color
1457 1620 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-mouse
1457 1624 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-ally-keyboard
1457 1626 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-sound
1457 1641 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-cursor
1457 1642 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-orientation
1457 1648 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-ally-settings
1457 1649 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-wacom
1457 1657 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-housekeeping
1457 1659 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-power
1457 1665 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-automount
1457 1743 1457 1457 ? -1 Ss 999 0:00 cinnamon-launcher
1743 1754 1457 1457 ? -1 Ssl 999 3:43 \. cinnamon --replace
1754 2538 1457 1457 ? -1 Ssl 999 0:32 \. /usr/lib/firefox/firefox
2538 2932 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/firefox/firefox -contentproc -childID 2 -isForBrowser -prefslen 85 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fire
2538 2911 1457 1457 ? -1 Ssl 999 1:33 \. /usr/lib/firefox/firefox -contentproc -childID 3 -isForBrowser -prefslen 9563 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fi
2538 2910 1457 1457 ? -1 Ssl 999 0:01 \. /usr/lib/firefox/firefox -contentproc -childID 4 -isForBrowser -prefslen 9676 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fi
2538 3048 1457 1457 ? -1 Ssl 999 0:00 \. /usr/lib/firefox/firefox -contentproc -childID 5 -isForBrowser -prefslen 9986 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fi
1457 1786 1457 1457 ? -1 Ssl 999 0:00 /usr/libexec/xapps/sn-watcher/xapp-sn-watcher
1457 1800 1457 1457 ? -1 Ssl 999 0:00 /usr/libexec/evolution-data-server/evolution-alarm-notify
1457 1811 1457 1457 ? -1 Ssl 999 0:00 /usr/lib/policykit-1-gnome/polkit-gnome-authentication-agent-1
1457 1812 1457 1457 ? -1 Ssl 999 0:00 blueberry-obex-agent
1457 1817 1457 1457 ? -1 Ssl 999 0:00 nem-desktop
1457 1818 1457 1457 ? -1 Ssl 999 0:00 /usr/libexec/geoclue-2.0/demos/agent
1457 1820 1457 1457 ? -1 Ssl 999 0:00 nm-applet
1457 1827 1457 1457 ? -1 Ssl 999 0:00 cinnamon-siller-daemon
1457 2071 1457 1457 ? -1 Ss 999 0:00 /usr/bin/python3 /usr/share/system-config-printer/applet.py
1 1402 1402 1402 ? -1 Ss 999 0:00 /lib/systemd/system --user
1402 1405 1402 1402 ? -1 Ss 999 0:00 \. (sd-pam)
1402 1450 1450 1450 ? -1 Ssl 999 0:00 /usr/bin/pulseaudio --daemonize=no --log-target=journal
```

ps axjf

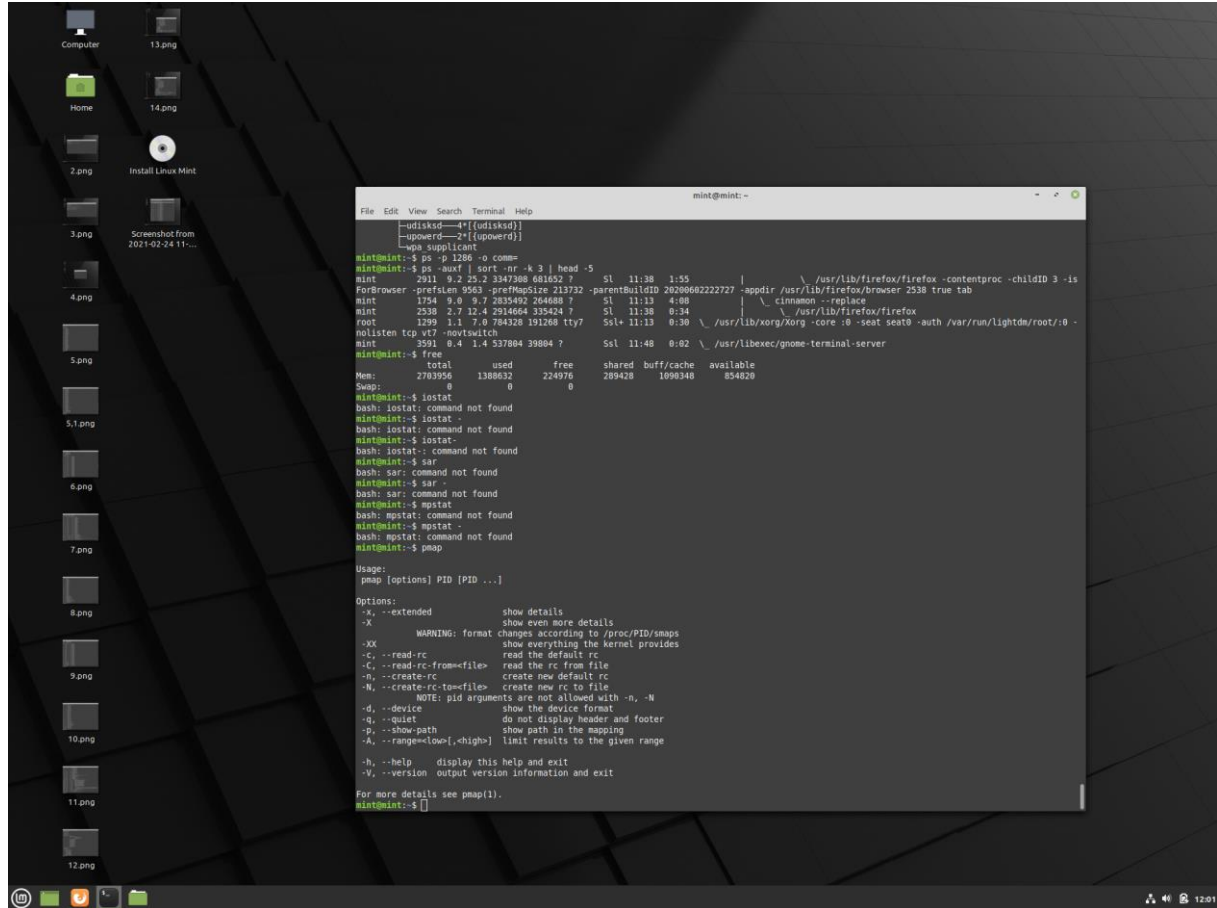
```
File Edit View Search Terminal Help
mint@mint: ~
2 360 0 0 0 -1 5w 0 0:01 \ [loop0]
2 991 0 0 0 -1 1 0 0:00 \ [worker/0:0-cgroup_destroy]
2 1233 0 0 0 -1 1 0 0:00 \ [pr-VBoxQueue]
2 2217 0 0 0 -1 1 0 0:00 \ [worker/0:0-events]
2 2217 0 0 0 -1 1 0 0:00 \ [worker/1:1-events]
2 2536 0 0 0 -1 1 0 0:00 \ [worker/u4:2-events_unbound]
2 3216 0 0 0 -1 1 0 0:00 \ [worker/0:1-events]
2 3259 0 0 0 -1 1 0 0:00 \ [worker/u4:0-events_unbound]
2 3399 0 0 0 -1 1 0 0:00 \ [worker/1:1-cgroup_destroy]
2 3381 0 0 0 -1 1 0 0:00 \ [worker/0:3-cgroup_destroy]
2 3962 0 0 0 -1 1 0 0:00 \ [worker/u4:1-events_unbound]
2 4947 0 0 0 -1 1 0 0:00 \ [worker/0:2]
0 1 1 1 1 -1 5s 0 0:01 /sbin/init splash
1 810 810 810 ? -1 5s 0 0:00 /lib/systemd/systemd-journald
1 839 839 839 ? -1 5s 0 0:00 /lib/systemd/systemd-udevd
1 952 952 952 ? -1 5s 101 0:00 /lib/systemd/systemd-resolved
1 953 953 953 ? -1 5s 102 0:00 /lib/systemd/systemd-timesyncd
1 955 955 955 ? -1 5s 0 0:00 /usr/lib/accounts-service/accounts-daemon
1 956 956 956 ? -1 5s 0 0:00 /usr/sbin/acpid
958 958 958 958 ? -1 5s 118 0:00 avahi-daemon: running [mint-2.local]
958 960 960 960 ? -1 5s 118 0:00 \ avahi-daemon: chroot helper
1 960 960 960 ? -1 5s 0 0:00 /usr/sbin/cron -f
1 961 961 961 ? -1 5s 0 0:00 /usr/sbin/cupsd -l
1 962 962 962 ? -1 5s 183 0:00 /usr/sbin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
1 963 963 963 ? -1 5s 0 0:00 /usr/sbin/NetworkManager --no-daemon
1 973 973 973 ? -1 5s 0 0:00 /usr/sbin/irqbalance --foreground
1 977 977 977 ? -1 5s 0 0:00 /usr/bin/python3 /usr/bin/networkd-dispatcher --run-startup-triggers
1 978 978 978 ? -1 5s 0 0:00 /usr/lib/policykit-1/polkitd --no-debug
1 980 980 980 ? -1 5s 104 0:00 /usr/sbin/rsyslogd -n -iNONE
1 981 981 981 ? -1 5s 0 0:00 /lib/systemd/systemd-logind
1 986 986 986 ? -1 5s 0 0:00 /usr/lib/udisks2/udisksd
1 987 987 987 ? -1 5s 0 0:00 /sbin/wpa_supplicant -u -s -O /run/wpa_supplicant
1 1004 1004 1004 ? -1 5s 189 0:00 /usr/sbin/kerneloops --test
1 1013 1013 1013 ? -1 5s 109 0:00 /usr/sbin/kerneloops
1 1026 1026 1026 ? -1 5s 0 0:00 /usr/sbin/cups-browsed
1 1030 1030 1030 ? -1 5s 0 0:00 /usr/sbin/ModemManager --filter-policy=strict
1 1065 1065 1065 ? -1 5s 0 0:00 /usr/sbin/lightdm
1065 1299 1299 1299 tty? 1299 ssl+ 0 0:27 \ /usr/lib/xorg/Xorg -core :0 -seat seat0 -auth /var/run/lightdm/root/:0 -nolisten tcp vt7 --novtswitch
1065 1307 1065 1065 ? -1 5s 0 0:00 \ lightdm --session-child 12 15
1397 1457 1457 1457 ? -1 5s 999 0:00 \ cinnamon-session --session cinnamon
1457 1551 1551 1551 ? -1 5s 999 0:00 \ /usr/bin/ssh-agent /usr/bin/ls-launch cinnamon-session-cinnamon
1457 1591 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-print-notifications
1457 1593 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-xrandr
1457 1596 1457 1457 ? -1 5s 999 0:01 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-background
1457 1597 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-keyboard
1457 1603 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-screensaver-proxy
1457 1607 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-xsettings
1457 1614 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-clipboard
1457 1615 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-media-keys
1457 1619 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-color
1457 1620 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-mouse
1457 1624 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-ally-keyboard
1457 1626 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-sound
1457 1641 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-cursor
1457 1642 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-orientation
1457 1648 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-ally-settings
1457 1649 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-wacom
1457 1657 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-housekeeping
1457 1659 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-power
1457 1665 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/x86_64-linux-gnu/cinnamon-settings-daemon/csd-automount
1457 1743 1457 1457 ? -1 5s 999 0:00 cinnamon-launcher
1743 1754 1457 1457 ? -1 5s 999 3:43 \ cinnamon --replace
1754 2938 1457 1457 ? -1 5s 999 0:32 \ /usr/lib/firefox/firefox
2538 2832 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/firefox/firefox -contentproc -childID 2 -isForBrowser -prefstlen 85 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fire
2538 2911 1457 1457 ? -1 5s 999 1:33 \ /usr/lib/firefox/firefox -contentproc -childID 3 -isForBrowser -prefstlen 9563 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fi
2538 2919 1457 1457 ? -1 5s 999 0:01 \ /usr/lib/firefox/firefox -contentproc -childID 4 -isForBrowser -prefstlen 9676 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fi
2538 3048 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/firefox/firefox -contentproc -childID 5 -isForBrowser -prefstlen 9988 -prefMapSize 213732 -parentBuildID 20200602222727 -appdir /usr/lib/fi
1457 1786 1457 1457 ? -1 5s 999 0:00 \ /usr/libexec/xapps/sn-watcher/xapp-sn-watcher
1457 1808 1457 1457 ? -1 5s 999 0:00 \ /usr/libexec/evolution-data-server/evolution-alarm-notify
1457 1811 1457 1457 ? -1 5s 999 0:00 \ /usr/lib/policykit-1-gnome/polkit-gnome-authentication-agent-1
1457 1812 1457 1457 ? -1 5s 999 0:00 \ blueberry-obex-agent
1457 1817 1457 1457 ? -1 5s 999 0:05 \ nm-dnssd
1457 1818 1457 1457 ? -1 5s 999 0:00 \ /usr/libexec/geoclue-2.0/demos/agent
1457 1820 1457 1457 ? -1 5s 999 0:00 \ nm-applet
1457 1827 1457 1457 ? -1 5s 999 0:00 \ cinnamon-killer-daemon
1457 2071 1457 1457 ? -1 5s 999 0:00 \ /usr/bin/python3 /usr/share/system-config-printer/applet.py
1 1402 1402 1402 ? -1 5s 999 0:00 /lib/systemd/system --user
1402 1405 1402 1402 ? -1 5s 999 0:00 \ (sd-pam)
1402 1450 1450 1450 ? -1 5s 999 0:00 \ /usr/bin/pulseaudio --daemonize=no --log-target=journal
```

pstree



`ps -p 1286 -o comm=` - egy adott PID neve jelenjen meg
`ps -auxf | sort -nr -k 3 | head -5` - 5 legtöbb CPU memóriát fogyasztó folyamat azonosítása.

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



```
mint@mint:~$ ps -auxf | sort -nr -k 3 | head -5
mint 2911  9.2 25.2 3347388 681452 ?        Ssl  11:38   1:55      \  /usr/lib/firefox/firefox -contentproc -childID 3 -is
Firefox -preflen 9563 -preMapSize 213732 -parentBuildID 20280602222727 -appdir /usr/lib/firefox/browser 2538 true tab
mint 1754  9.0  9.7 2835492 264688 ?        Ssl  11:13   4:00      \  \ cinnamon --replace
mint 2538  2.7 12.4 2914664 335424 ?        Ssl  11:38   0:34      \  \ /usr/lib/firefox/firefox
root 1299  1.1  7.0 784328 191268 tty7      Ssl+ 11:13   0:30      \  /usr/lib/xorg/Xorg -core :0 -seat seat0 -auth /var/run/lightdm/root/:0 -
holisten tcp r77 -novtswitch
mint 3591  0.4  1.4 537884 39884 ?        Ssl  11:48   0:02      \  /usr/libexec/gnome-terminal-server

mint@mint:~$ free
Mem: 2703956      138632      224976      289428      1098348      854828
Swap: 0            0            0

mint@mint:~$ iostat
bash: iostat: command not found
mint@mint:~$ iostat -
bash: iostat: command not found
mint@mint:~$ iostat -
bash: iostat: command not found
mint@mint:~$ sar
bash: sar: command not found
mint@mint:~$ mpstat
bash: mpstat: command not found
mint@mint:~$ pmmap
Usage:
pmmap [options] PID [PID ...]

Options:
-x, --extended          show details
-X                      WARNING: format changes according to /proc/PID/smmaps
                        show everything the kernel provides
-XX                     read the default rc
-C, --read-rc            read the rc from file
-N, --create-rc          create new default rc
-N, --create-rc-from-file create new rc to file
                        NOTE: pid arguments are not allowed with -n, -N
-d, --device            show the device format
-q, --quiet             do not display header and footer
-p, --show-path          show path in the mapping
-A, --range=<low>[,<high>] limit results to the given range

-h, --help              display this help and exit
-V, --version            output version information and exit

For more details see pmmap(1).
mint@mint:~$
```