

Отчет по лабораторной работе №7

1. При помощи команды `ps aux` вывожу список всех системных процессов

Ps = process вывод списка процессов

Aux = a (исключает фоновые процессы) + u (устанавливает ограничение на определенного юзера) + x (все процессы запущенные вместе с системой)

```

vboxuser@Linux:~$ ps aux
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.2  0.2  23024 14020 ?        Ss   07:59   0:02 /sbin/init splash
root           2  0.0  0.0      0      0 ?        S    07:59   0:00 [kthread]
root           3  0.0  0.0      0      0 ?        S    07:59   0:00 [pool_workqueue_release]
root           4  0.0  0.0      0      0 ?        I<   07:59   0:00 [kworker/R-rcu_gp]
root           5  0.0  0.0      0      0 ?        I<   07:59   0:00 [kworker/R-sync_wq]
root           6  0.0  0.0      0      0 ?        I<   07:59   0:00 [kworker/R-kvfree_rcu_reclaim]
root           7  0.0  0.0      0      0 ?        I<   07:59   0:00 [kworker/R-slab_flushwq]
root           8  0.0  0.0      0      0 ?        I<   07:59   0:00 [kworker/R-netns]
root          10  0.0  0.0      0      0 ?        I    07:59   0:00 [kworker/0:1-cgroup_destroy]
root          11  0.0  0.0      0      0 ?        I<   07:59   0:00 [kworker/0:0H-events_highpri]
root          12  0.0  0.0      0      0 ?        I    07:59   0:00 [kworker/u2:0-ipv6_addrconf]
root          13  0.0  0.0      0      0 ?        I<   07:59   0:00 [kworker/R-mm_percpu_wq]
root          14  0.0  0.0      0      0 ?        I    07:59   0:00 [rcu_tasks_kthread]
root          15  0.0  0.0      0      0 ?        I    07:59   0:00 [rcu_tasks_rude_kthread]
root          16  0.0  0.0      0      0 ?        I    07:59   0:00 [rcu_tasks_trace_kthread]
root          17  0.0  0.0      0      0 ?        S    07:59   0:00 [ksoftirqd/0]
root          18  0.0  0.0      0      0 ?        I    07:59   0:00 [rcu_preempt]
root          19  0.0  0.0      0      0 ?        S    07:59   0:00 [rcu_exp_par_gp_kthread_worker/0]
root          20  0.0  0.0      0      0 ?        S    07:59   0:00 [rcu_exp_gp_kthread_worker]
root          21  0.0  0.0      0      0 ?        S    07:59   0:00 [migration/0]
root          22  0.0  0.0      0      0 ?        S    07:59   0:00 [idle_inject/0]

```

2. Вывод дерева процессов

Rstree – из названия следует, что выводит дерево процессов, процесс и зависящий (следующий из него) от него процесс

```
vboxuser@Linux:~$ pstree
systemd--ModemManager---3*[{ModemManager}]
      |--NetworkManager---3*[{NetworkManager}]
      |--accounts-daemon---3*[{accounts-daemon}]
      |--avahi-daemon---avahi-daemon
      |--colord---3*[{colord}]
      |--cron
      |--cups-browsed---3*[{cups-browsed}]
      |--cupsd
      |--dbus-daemon
      |--gdm3--gdm-session-wor--gdm-wayland-ses--gnome-session-b---3*[{gnome-session-b}]
              |               |               |
              |               |               +--3*[{gdm-wayland-ses}]
              |               +--3*[{gdm-session-wor}]
              +--3*[{gdm3}]
      |--gnome-remote-de---3*[{gnome-remote-de}]
      |--2*[kerneloops]
      |--polkitd---3*[{polkitd}]
      |--power-profiles- ---3*[{power-profiles-}]
      |--rsyslogd---3*[{rsyslogd}]
      |--rtkit-daemon---2*[{rtkit-daemon}]
      |--snapd---12*[{snapd}]
      |--switcheroo-cont---3*[{switcheroo-cont}]
      --systemd--(sd-pam)
                |--at-spi2-registr---3*[{at-spi2-registr}]
                |--dbus-daemon
                |--dconf-service---3*[{dconf-service}]
                |--evolution-addre---6*[{evolution-addre}]
                |--evolution-calen---9*[{evolution-calen}]
```

3.Получаем список из 5 процессов, с наибольшим потреблением процессорного времени. Сделал это при помощи команды top

```
vboxuser@Linux:~$ top
```

```
top - 08:20:10 up 20 min, 1 user, load average: 0.00, 0.06, 0.09
Tasks: 233 total, 1 running, 232 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.4 us, 0.6 sy, 0.0 ni, 99.0 id, 0.1 wa, 0.0 hi, 0.1 si, 0.0 st
MiB Mem : 5153.5 total, 2663.2 free, 1173.2 used, 1581.6 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 3980.4 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2820	vboxuser	20	0	5418876	423276	146180	S	7.3	8.0	0:57.36	gnome-shell
5155	vboxuser	20	0	625704	56672	45552	S	1.1	1.1	0:02.33	gnome-terminal-
5224	vboxuser	20	0	14516	5800	3624	R	0.5	0.1	0:00.02	top
3270	vboxuser	20	0	236768	7136	6624	S	0.3	0.1	0:00.05	ibus-engine-sim
5220	root	20	0	0	0	0	I	0.3	0.0	0:00.01	kworker/u23:1-events_unbound
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:34.02	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.00	pool_workqueue_release
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-rcu_gp
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-sync_wq
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-kvfree_rcu_reclaim
7	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-slub_flushwq

3.2 – нажимаю N, чтобы попасть в строку “maximum task” и ввожу 5 (кол-во отображаемых процессов)

```
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 3934.3 avail Mem
Maximum tasks = 0, change to (0 is unlimited) 5
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2820 vboxuser 20 0 5418860 423724 146244 S 4.8 8.0 0:41.18 gnome-shell
```

Результат:

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2820	vboxuser	20	0	5414732	424748	146244	R	5.0	8.0	1:00.24	gnome-shell
5155	vboxuser	20	0	625924	56928	45552	S	1.1	1.1	0:02.94	gnome-terminal-
373	root	20	0	30580	8280	4696	S	0.2	0.2	0:02.27	systemd-udevd
2939	vboxuser	20	0	462580	12176	7004	S	0.2	0.2	0:00.47	ibus-daemon
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:34.11	systemd

3.3. далее нажимаю F и попадаю в меню, где выбираю строку time+ , нажимаю s и для выхода q

* PID	= Process Id	SWAP	= Swapped Size (KiB)	RSlk	= RES Locked (KiB)
* USER	= Effective User Name	CODE	= Code Size (KiB)	RSsh	= RES Shared (KiB)
* PR	= Priority	DATA	= Data+Stack (KiB)	CGNAME	= Control Group name
* NI	= Nice Value	nMaj	= Major Page Faults	NU	= Last Used NUMA node
* VIRT	= Virtual Image (KiB)	nMin	= Minor Page Faults	LOGID	= Login User Id
* RES	= Resident Size (KiB)	nDRT	= Dirty Pages Count	EXE	= Executable Path
* SHR	= Shared Memory (KiB)	WCHAN	= Sleeping in Function	RSS	= Res Mem (smaps), KiB
* S	= Process Status	Flags	= Task Flags <sched.h>	PSS	= Proportion RSS, KiB
* %CPU	= CPU Usage	CGROUPS	= Control Groups	PSan	= Proportion Anon, KiB
* %MEM	= Memory Usage (RES)	SUPGIDS	= Supp Groups IDs	PSfd	= Proportion File, KiB
* TIME+	= CPU Time, hundredths	SUPGRPS	= Supp Groups Names	PSsh	= Proportion Shrd, KiB
* COMMAND	= Command Name/Line	TGID	= Thread Group Id	USS	= Unique RSS, KiB
PPID	= Parent Process pid	OOMa	= OOMEM Adjustment	ioR	= I/O Bytes Read
UID	= Effective User Id	OOMs	= OOMEM Score current	ioRop	= I/O Read Operations
RUID	= Real User Id	ENVIRON	= Environment vars	ioW	= I/O Bytes Written
RUSER	= Real User Name	vMj	= Major Faults delta	ioWop	= I/O Write Operations
SUID	= Saved User Id	vMn	= Minor Faults delta	AGID	= Autogroup Identifier
SUSER	= Saved User Name	USED	= Res+Swap Size (KiB)	AGNI	= Autogroup Nice Value
GID	= Group Id	nsIPC	= IPC namespace Inode	STARTED	= Start Time from boot

Итог

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2820	vboxuser	20	0	5418860	424740	146244	S	1.3	8.0	0:46.44	gnome-shell
5155	vboxuser	20	0	625924	56928	45552	S	0.0	1.1	0:03.80	gnome-terminal-
942	root	20	0	2144516	40936	25596	S	0.0	0.8	0:03.55	snaped
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:02.25	systemd
3185	vboxuser	20	0	424040	31776	18396	S	0.0	0.6	0:01.92	ibus-extension-

4. Находим 2 процесса, у которых более 2-х потоков. Через состояние процесса.

Для этого использую sudo (super user d) – от имени админа.

Apt inatall – установка приложения

«Htop» – название проги

```
vboxuser@Linux:~$ sudo apt install htop
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  lm-sensors
The following NEW packages will be installed:
  htop
0 upgraded, 1 newly installed, 0 to remove and 80 not upgraded.
Need to get 171 kB of archives.
After this operation, 434 kB of additional disk space will be used.
Get:1 http://ru.archive.ubuntu.com/ubuntu noble/main amd64 htop amd64 3.3.0-4build1 [171 kB]
Fetched 171 kB in 6s (27.5 kB/s)
Selecting previously unselected package htop.
(Reading database ... 150391 files and directories currently installed.)
Preparing to unpack .../htop_3.3.0-4build1_amd64.deb ...
Unpacking htop (3.3.0-4build1) ...
Setting up htop (3.3.0-4build1) ...
Processing triggers for desktop-file-utils (0.27-2build1) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...
Processing triggers for man-db (2.12.0-4build2) ...
vboxuser@Linux:~$
```

Чтобы запустить вводим Htop

```

0[|] 0.7% 3[|] 2.0%
1[|] 1.3% 4[|] 2.6%
2[|] 4.6% Tasks: 113, 390 thr, 124 kthr; 1 running
Mem[|||||||||||||||||||||||||] 979M/5.03G Load average: 0.11 0.04 0.05
Swp[|] 0K/0K Uptime: 00:34:39

Main I/O
PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
5519 vboxuser 20 0 11448 5000 3592 R 2.0 0.1 0:00.11 htop
2820 vboxuser 20 0 5295M 415M 142M S 6.0 8.1 0:21.78 /usr/bin/gnome-shell
2873 vboxuser 20 0 5295M 415M 142M S 2.0 8.1 0:03.70 /usr/bin/gnome-shell
5155 vboxuser 20 0 613M 58296 46152 S 2.7 1.1 0:04.53 /usr/libexec/gnome-terminal-server
1 root 20 0 23024 14020 9412 S 0.0 0.3 0:02.27 /sbin/init splash
297 root 19 -1 51104 17720 16312 S 0.0 0.3 0:00.46 /usr/lib/systemd/systemd-journald
373 root 20 0 30580 8280 4696 S 0.0 0.2 0:00.27 /usr/lib/systemd/systemd-udevd
417 systemd-oo 20 0 17560 7440 6672 S 0.0 0.1 0:00.29 /usr/lib/systemd/systemd-oond
421 systemd-re 20 0 21708 12944 10768 S 0.0 0.2 0:00.24 /usr/lib/systemd/systemd-resolved
922 avahi 20 0 8668 4500 4116 S 0.0 0.1 0:00.16 avahi-daemon: running [linux.local]
923 messagebus 20 0 12132 6952 4520 S 0.0 0.1 0:00.95 @dbus-daemon --system --address=systemd: --nofork
926 gnome-remo 20 0 500M 16112 13808 S 0.0 0.3 0:00.18 /usr/libexec/gnome-remote-desktop-daemon --system
933 polkitd 20 0 375M 10820 7724 S 0.0 0.2 0:00.39 /usr/lib/polkit-1/polkitd --no-debug
937 root 20 0 306M 6856 6344 S 0.0 0.1 0:00.05 /usr/libexec/power-profiles-daemon
942 root 20 0 2094M 40936 25596 S 0.0 0.8 0:00.98 /usr/lib/snapd/snapd
948 root 20 0 306M 7616 6848 S 0.0 0.1 0:00.09 /usr/libexec/accounts-daemon
949 root 20 0 9824 2428 2300 S 0.0 0.0 0:00.02 /usr/sbin/cron -f -P
950 root 20 0 302M 6536 6024 S 0.0 0.1 0:00.03 /usr/libexec/switcheroo-control
955 root 20 0 18140 8704 7808 S 0.0 0.2 0:00.19 /usr/lib/systemd/systemd-logind
956 root 20 0 458M 13320 11144 S 0.0 0.3 0:00.12 /usr/libexec/udisks2/udisksd
964 root 20 0 306M 6856 6344 S 0.0 0.1 0:00.00 /usr/libexec/power-profiles-daemon
1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice F8Nice +F9Kill F10Quit

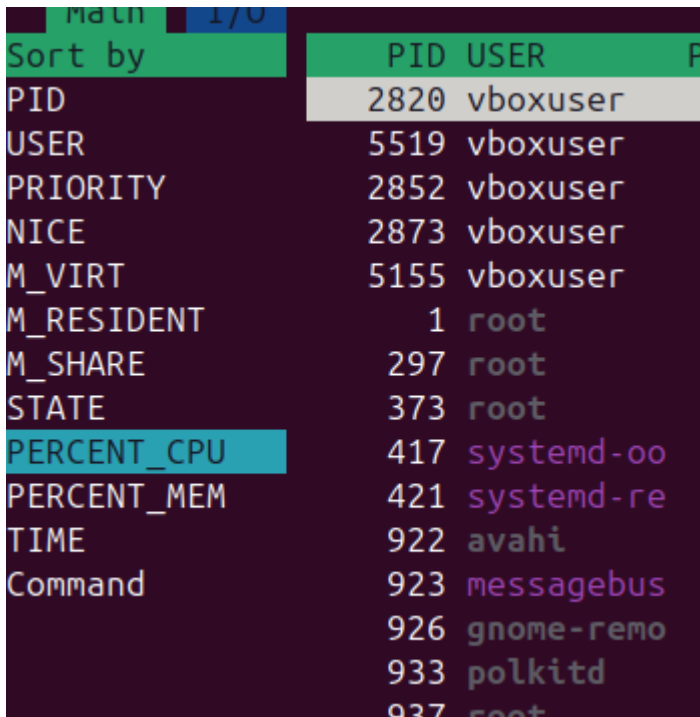
```

Нтор – улучшенная версия top

(таблица процессов)

Нажимая f6 вхожу в режим сортировки, управляя стрелочками.

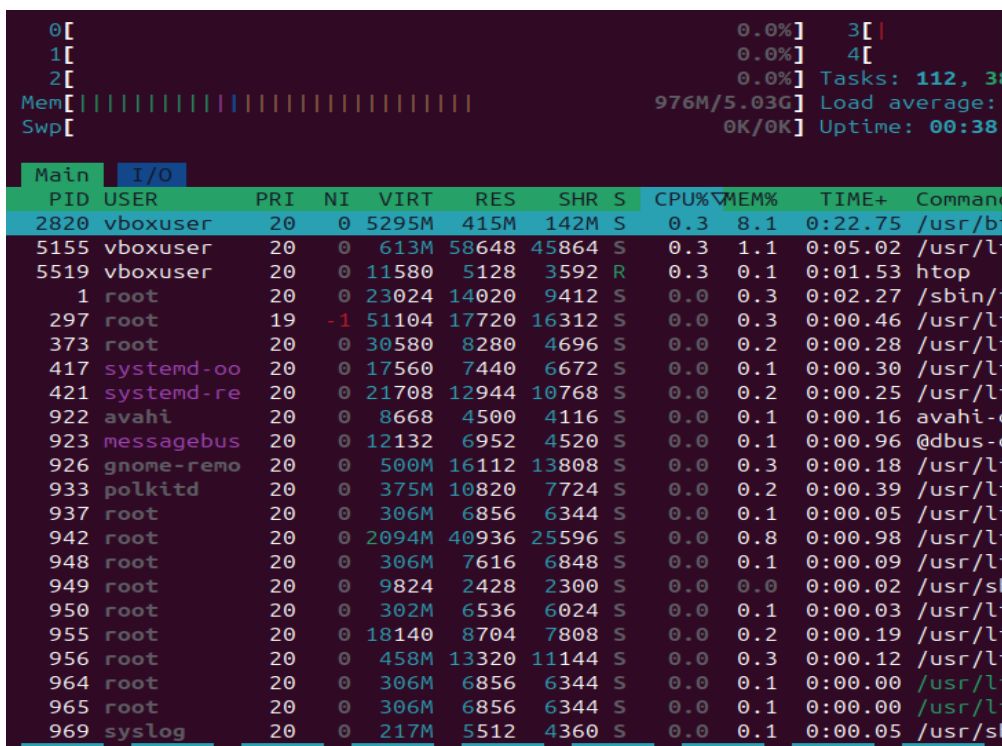
Выбираю процент загрузки процессора .



The screenshot shows the ntopm interface with the 'Sort by' menu open. The menu options are: PID, USER, PRIORITY, NICE, M_VIRT, M_RESIDENT, M_SHARE, STATE, PERCENT_CPU (highlighted), PERCENT_MEM, TIME, and Command. The background table shows the following data:

	PID	USER	P
PID	2820	vboxuser	
USER	5519	vboxuser	
PRIORITY	2852	vboxuser	
NICE	2873	vboxuser	
M_VIRT	5155	vboxuser	
M_RESIDENT	1	root	
M_SHARE	297	root	
STATE	373	root	
PERCENT_CPU	417	systemd-oo	
PERCENT_MEM	421	systemd-re	
TIME	922	avahi	
Command	923	messagebus	
	926	gnome-remo	
	933	polkitd	
	937	root	

Итог



The screenshot shows the ntopm main interface. At the top, system statistics are displayed: 0.0% CPU, 0.0% MEM, 0.0% SWP, 3 tasks, 4 processes, 976M/5.03G memory, 0K/0K swap, Load average: 0.00, and Uptime: 00:38. The 'Main' tab is selected, and the process table is sorted by CPU usage. The table has columns: PID, USER, PRI, NI, VIRT, RES, SHR, S, CPU%, MEM%, TIME+, and Command.

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
2820	vboxuser	20	0	5295M	415M	142M	S	0.3	8.1	0:22.75	/usr/bi
5155	vboxuser	20	0	613M	58648	45864	S	0.3	1.1	0:05.02	/usr/li
5519	vboxuser	20	0	11580	5128	3592	R	0.3	0.1	0:01.53	htop
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:02.27	/sbin/i
297	root	19	-1	51104	17720	16312	S	0.0	0.3	0:00.46	/usr/li
373	root	20	0	30580	8280	4696	S	0.0	0.2	0:00.28	/usr/li
417	systemd-oo	20	0	17560	7440	6672	S	0.0	0.1	0:00.30	/usr/li
421	systemd-re	20	0	21708	12944	10768	S	0.0	0.2	0:00.25	/usr/li
922	avahi	20	0	8668	4500	4116	S	0.0	0.1	0:00.16	avahi-d
923	messagebus	20	0	12132	6952	4520	S	0.0	0.1	0:00.96	@dbus-d
926	gnome-remo	20	0	500M	16112	13808	S	0.0	0.3	0:00.18	/usr/li
933	polkitd	20	0	375M	10820	7724	S	0.0	0.2	0:00.39	/usr/li
937	root	20	0	306M	6856	6344	S	0.0	0.1	0:00.05	/usr/li
942	root	20	0	2094M	40936	25596	S	0.0	0.8	0:00.98	/usr/li
948	root	20	0	306M	7616	6848	S	0.0	0.1	0:00.09	/usr/li
949	root	20	0	9824	2428	2300	S	0.0	0.0	0:00.02	/usr/st
950	root	20	0	302M	6536	6024	S	0.0	0.1	0:00.03	/usr/li
955	root	20	0	18140	8704	7808	S	0.0	0.2	0:00.19	/usr/li
956	root	20	0	458M	13320	11144	S	0.0	0.3	0:00.12	/usr/li
964	root	20	0	306M	6856	6344	S	0.0	0.1	0:00.00	/usr/li
965	root	20	0	306M	6856	6344	S	0.0	0.1	0:00.00	/usr/li
969	syslog	20	0	217M	5512	4360	S	0.0	0.1	0:00.05	/usr/st

Выхожу при помощи «q» и ввожу ps -o thcount 2820

Thcount – считает кол-во процессоров использующих процесс

2820, 5519 – айди процесса

-o формат ввода

```
vboxuser@Linux:~$ htop
vboxuser@Linux:~$ ps -o thcount 2820
THCNT
    28
vboxuser@Linux:~$ ps -o thcount 5519
THCNT
```

5. Используем top чтобы изменить приоритеты 2 процессов

Нажимаю «r» чтобы воспользоваться переназначением приоритета

```
top - 08:56:19 up 56 min,  1 user,  load average: 0.02, 0.05, 0.01
Tasks: 234 total,   1 running, 233 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.1 us,  0.1 sy,  0.0 ni, 99.7 id,  0.0 wa,  0.0 hi,  0.0 si,
MiB Mem :  5153.5 total,  2503.8 free,  1212.0 used,  1707.7 buff/cache
MiB Swap:   0.0 total,   0.0 free,   0.0 used.  3941.5 avail Mem
PID to renice [default pid = 2820] S
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	CO
2820	vboxuser	20	0	5422728	425324	146292	S	1.8	8.1	1:03.93	gr
5155	vboxuser	20	0	628104	58648	45864	S	0.4	1.1	0:06.95	gr
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:02.30	sy
2	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kr
3	root	20	0	0	0	0	S	0.0	0.0	0:00.00	pe
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kv
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kv
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kv
7	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kv
8	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kv
11	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kv
12	root	20	0	0	0	0	I	0.0	0.0	0:00.00	kv
13	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kv
14	root	20	0	0	0	0	I	0.0	0.0	0:00.00	re
15	root	20	0	0	0	0	I	0.0	0.0	0:00.00	re
16	root	20	0	0	0	0	I	0.0	0.0	0:00.00	re
17	root	20	0	0	0	0	S	0.0	0.0	0:00.09	ks
18	root	20	0	0	0	0	I	0.0	0.0	0:00.89	re
19	root	20	0	0	0	0	S	0.0	0.0	0:00.00	re
20	root	20	0	0	0	0	S	0.0	0.0	0:00.23	re

Renice PID 2820 to value -10

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	CO
2820	vboxuser	20	0	5422780	426168	146292	S	3.3	8.1	1:08.03	gn
5155	vboxuser	20	0	628104	58648	45864	S	0.9	1.1	0:07.58	gn
5564	vboxuser	20	0	14516	5872	3696	R	0.2	0.1	0:00.18	to
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:02.30	sy
2	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kt
3	root	20	0	0	0	0	S	0.0	0.0	0:00.00	po
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kw
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kw
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kw
7	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kw
8	root	0	-20	0	0	0	T	0.0	0.0	0:00.00	kw

Ввел -10 вместо 0

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2820	vboxuser	20	0	5422764	426168	146292	S	1.2	8.1	1:08.68	gnome-shell
5155	vboxuser	20	0	628104	58648	45864	S	0.2	1.1	0:07.71	gnome-terminal-
120	root	20	0	0	0	0	I	0.0	0.0	0:00.22	kworker/u23:2-eve
199	root	20	0	0	0	0	I	0.0	0.0	0:01.54	kworker/1:3-event
2939	vboxuser	20	0	462580	12176	7004	S	0.0	0.2	0:01.21	ibus-daemon
18	root	20	0	0	0	0	R	0.0	0.0	0:00.95	rcu_preempt
61	root	20	0	0	0	0	S	0.0	0.0	0:00.21	kcompactd0
417	systemd+	20	0	17560	7440	6672	S	0.0	0.1	0:00.45	systemd-oomd
923	message+	20	0	12132	6952	4520	S	0.0	0.1	0:00.98	dbus-daemon
942	root	20	0	2144516	41192	25596	S	0.0	0.8	0:25.04	snaped
2519	vboxuser	20	0	610720	7168	6528	S	0.0	0.1	0:00.08	xdg-document-po
3335	vboxuser	20	0	3009808	63704	47160	S	0.0	1.2	0:01.20	gjs
3846	root	0	-20	0	0	0	I	0.0	0.0	0:00.31	kworker/1:2H-kblo
5518	root	20	0	0	0	0	I	0.0	0.0	0:00.10	kworker/u22:3-eve
5575	root	20	0	0	0	0	I	0.0	0.0	0:00.01	kworker/u22:1-eve
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:02.30	systemd

Tasks: 235 total, 1 running, 234 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.1 us, 0.1 sy, 0.0 ni, 99.8 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 5153.5 total, 2492.3 free, 1215.8 used, 1715.4 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 3937.7 avail Mem

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2820	vboxuser	20	0	5422764	426168	146292	S	1.6	8.1	1:10.69	gnome-she
5155	vboxuser	20	0	628104	58648	45864	S	0.3	1.1	0:08.00	gnome-ter
2939	vboxuser	20	0	462580	12176	7004	S	0.1	0.2	0:01.26	ibus-daem
95	root	0	-20	0	0	0	I	0.0	0.0	0:00.13	kworker/3
199	root	20	0	0	0	0	I	0.0	0.0	0:01.58	kworker/1
5541	root	20	0	0	0	0	I	0.0	0.0	0:00.07	kworker/u
5564	vboxuser	20	0	14516	5872	3696	R	0.0	0.1	0:00.24	top
1	root	20	0	23024	14020	9412	S	0.0	0.3	0:02.30	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.00	pool_work
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R
7	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R
8	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R
11	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/0
12	root	20	0	0	0	0	I	0.0	0.0	0:00.00	kworker/u
13	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R
14	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks
15	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks
16	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks
17	root	20	0	0	0	0	S	0.0	0.0	0:00.09	ksoftirqd
18	root	20	0	0	0	0	I	0.0	0.0	0:00.97	rcu_preem
19	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_exp_p

6. Получаем список открытых файлов пользователя

Lsof – список открытых файлов, какой процесс какие файлы использует.

-u – имя пользователя

```
vboxuser@Linux:~$ lsof -u vboxuser
```

COMMAND	PID	USER	FD	TYPE	DEVICE	SIZE/OFF	NODE	NAME
systemd	2449	vboxuser	cwd	unknown				/proc/2449/cwd (readlink: Permission denied)
systemd	2449	vboxuser	rtd	unknown				/proc/2449/root (readlink: Permission denied)
systemd	2449	vboxuser	txt	unknown				/proc/2449/exe (readlink: Permission denied)
systemd	2449	vboxuser	0	unknown				/proc/2449/fd/0 (readlink: Permission denied)
systemd	2449	vboxuser	1	unknown				/proc/2449/fd/1 (readlink: Permission denied)
systemd	2449	vboxuser	2	unknown				/proc/2449/fd/2 (readlink: Permission denied)
systemd	2449	vboxuser	3	unknown				/proc/2449/fd/3 (readlink: Permission denied)
systemd	2449	vboxuser	4	unknown				/proc/2449/fd/4 (readlink: Permission denied)
systemd	2449	vboxuser	5	unknown				/proc/2449/fd/5 (readlink: Permission denied)
systemd	2449	vboxuser	6	unknown				/proc/2449/fd/6 (readlink: Permission denied)
systemd	2449	vboxuser	7	unknown				/proc/2449/fd/7 (readlink: Permission denied)
systemd	2449	vboxuser	8	unknown				/proc/2449/fd/8 (readlink: Permission denied)
systemd	2449	vboxuser	9	unknown				/proc/2449/fd/9 (readlink: Permission denied)
systemd	2449	vboxuser	10	unknown				/proc/2449/fd/10 (readlink: Permission denied)
)								
systemd	2449	vboxuser	11	unknown				/proc/2449/fd/11 (readlink: Permission denied)
)								
systemd	2449	vboxuser	12	unknown				/proc/2449/fd/12 (readlink: Permission denied)
)								
systemd	2449	vboxuser	13	unknown				/proc/2449/fd/13 (readlink: Permission denied)
)								
systemd	2449	vboxuser	14	unknown				/proc/2449/fd/14 (readlink: Permission denied)
)								

7. Текущее состояние системной памяти

Free – статистика по постоянно запоминающему устройству

```
vboxuser@Linux:~$ free
```

	total	used	free	shared	buff/cache	available
Mem:	5277196	1244236	2550692	34956	1759824	4032960
Swap:	0	0	0			

8. Справка дискового пространства (использование)

Df – дает полную инфу

-h – показывает, сколько занято и свободно в числах

```
vboxuser@Linux:~$ df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
tmpfs	516M	1.7M	514M	1%	/run
/dev/sda2	25G	5.4G	18G	23%	/
tmpfs	2.6G	0	2.6G	0%	/dev/shm
tmpfs	5.0M	8.0K	5.0M	1%	/run/lock
tmpfs	516M	144K	516M	1%	/run/user/1000

9. Информация о процессе при помощи каталога /proc

Ls – l выводит список содержимого каталога в длинном формате

3 – номер процесса

```
vboxuser@Linux:~$ ls -l /proc/3
ls: cannot read symbolic link '/proc/3/cwd': Permission denied
ls: cannot read symbolic link '/proc/3/root': Permission denied
ls: cannot read symbolic link '/proc/3/exe': Permission denied
total 0
-r--r--r-- 1 root root 0 Nov  6 09:14 arch_status
dr-xr-xr-x 2 root root 0 Nov  6 09:14 attr
-rw-r--r-- 1 root root 0 Nov  6 09:14 autogroup
-r----- 1 root root 0 Nov  6 09:14 auxv
-r--r--r-- 1 root root 0 Nov  6 07:59 cgroup
--w----- 1 root root 0 Nov  6 09:14 clear_refs
-r--r--r-- 1 root root 0 Nov  6 07:59 cmdline
-rw-r--r-- 1 root root 0 Nov  6 09:14 comm
-rw-r--r-- 1 root root 0 Nov  6 09:14 coredump_filter
-r--r--r-- 1 root root 0 Nov  6 09:14 cpu_resctrl_groups
-r--r--r-- 1 root root 0 Nov  6 09:14 cpuset
lrwxrwxrwx 1 root root 0 Nov  6 09:14 cwd
-r----- 1 root root 0 Nov  6 08:12 environ
lrwxrwxrwx 1 root root 0 Nov  6 09:14 exe
dr-x----- 2 root root 0 Nov  6 09:14 fd
dr-xr-xr-x 2 root root 0 Nov  6 09:14 fdinfo
-rw-r--r-- 1 root root 0 Nov  6 09:14 gid_map
-r----- 1 root root 0 Nov  6 09:14 io
-r----- 1 root root 0 Nov  6 09:14 ksm_merging_pages
```