

## Sistemas Operacionais – Pesquisa

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Comando VI:

```
guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ vi
[1]+  Stopped                  vi
guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ |
```

Comando top:

```
guilherme_02221070@ip-172-31-92-177: /home/ubuntu
top - 23:54:54 up 6 min, 1 user, load average: 0.10, 0.32, 0.17
Tasks: 158 total, 1 running, 156 sleeping, 1 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.0 sy, 0.0 ni,100.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 966.2 total, 106.0 free, 367.3 used, 492.9 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 418.3 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
10178	guilher+	20	0	11008	3672	3164	R	0.3	0.4	0:00.02	top
1	root	20	0	103996	11104	6528	S	0.0	1.1	0:05.45	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+
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	netns
6	root	20	0	0	0	0	I	0.0	0.0	0:00.07	kworker+
7	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker+
8	root	20	0	0	0	0	I	0.0	0.0	0:00.02	kworker+
9	root	0	-20	0	0	0	I	0.0	0.0	0:00.14	kworker+
10	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	mm_perc+
11	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_tas+
12	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_tas+
13	root	20	0	0	0	0	S	0.0	0.0	0:00.22	ksoftir+
14	root	20	0	0	0	0	I	0.0	0.0	0:00.77	rcu_sch+
15	root	rt	0	0	0	0	S	0.0	0.0	0:00.00	migrati+
16	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_in+

Comando nice -n -20 vi:

```

guilherme_02221070@ip-172-31-92-177: /home/ubuntu
guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ nice -n -20 vi
nice: cannot set niceness: Permission denied

[2]+  Stopped                  nice -n -20 vi
guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ top
top - 23:57:44 up 9 min, 1 user, load average: 0.00, 0.17, 0.14
Tasks: 153 total, 1 running, 150 sleeping, 2 stopped, 0 zombie
%Cpu(s): 0.0 us, 33.3 sy, 0.0 ni, 66.7 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 966.2 total, 106.0 free, 364.0 used, 496.2 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used, 421.6 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
    1 root        20   0   103996   11104   6528 S   0.0   1.1   0:05.45 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
    5 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 netns
    6 root        20   0         0        0        0 I   0.0   0.0   0:00.09 kworker/0:0-events
    7 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
    9 root         0 -20         0        0        0 I   0.0   0.0   0:00.15 kworker/0:1H-events_highpri
   10 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 mm_percpu_wq
   11 root        20   0         0        0        0 S   0.0   0.0   0:00.00 rcu_tasks_rude_
   12 root        20   0         0        0        0 S   0.0   0.0   0:00.00 rcu_tasks_trace
   13 root        20   0         0        0        0 S   0.0   0.0   0:00.23 ksoftirqd/0
   14 root        20   0         0        0        0 I   0.0   0.0   0:00.77 rcu_sched
   15 root        rt    0         0        0        0 S   0.0   0.0   0:00.00 migration/0
   16 root       -51   0         0        0        0 S   0.0   0.0   0:00.00 idle_inject/0
   18 root        20   0         0        0        0 S   0.0   0.0   0:00.00 cpuhp/0
   19 root        20   0         0        0        0 S   0.0   0.0   0:00.00 kdevtmpfs
   20 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 inet_frag_wq
   21 root        20   0         0        0        0 S   0.0   0.0   0:00.00 kauditd

```

Comando nice -n 20 vi:

```

guilherme_02221070@ip-172-31-92-177: /home/ubuntu
guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ nice -n 20 vi

[3]+  Stopped                  nice -n 20 vi
guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ top
top - 23:59:32 up 11 min, 1 user, load average: 0.00, 0.12, 0.12
Tasks: 154 total, 1 running, 150 sleeping, 3 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.0 sy, 0.0 ni,100.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 966.2 total, 106.0 free, 362.8 used, 497.4 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used, 422.9 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
    1 root        20   0   103996   11104   6528 S   0.0   1.1   0:05.45 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
    5 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 netns
    6 root        20   0         0        0        0 I   0.0   0.0   0:00.10 kworker/0:0-events
    7 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
    9 root         0 -20         0        0        0 I   0.0   0.0   0:00.15 kworker/0:1H-events_highpri
   10 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 mm_percpu_wq
   11 root        20   0         0        0        0 S   0.0   0.0   0:00.00 rcu_tasks_rude_

```

Comando Jobs:

```

guilherme_02221070@ip-172-31-92-177: /home/ubuntu
guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ vi

[4]+  Stopped                  vi
guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ jobs
[1]    Stopped                  vi
[2]    Stopped                  nice -n -20 vi
[3]-   Stopped                  nice -n 20 vi
[4]+   Stopped                  vi
guilherme_02221070@ip-172-31-92-177: /home/ubuntu$

```

**Comando Jobs -l, Jobs -s, Jobs -p:**

```

guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ jobs -l
[1]  10173 Stopped              vi
[2]  10183 Stopped              nice -n -20 vi
[3]- 10190 Stopped              nice -n 20 vi
[4]+ 10225 Stopped              vi
guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ jobs -s
[1]    Stopped                  vi
[2]    Stopped                  nice -n -20 vi
[3]-   Stopped                  nice -n 20 vi
[4]+   Stopped                  vi
guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ jobs -p
10173
10183
10190
10225
guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ |

```

**Comando PS:**

```

guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ ps
  PID TTY          TIME CMD
 10163 pts/0        00:00:00 bash
 10173 pts/0        00:00:00 vi
 10183 pts/0        00:00:00 vi
 10190 pts/0        00:00:00 vi
 10225 pts/0        00:00:00 vi
 10231 pts/0        00:00:00 ps
guilherme_02221070@ip-172-31-92-177: /home/ubuntu$ |

```

**Comando PS -a, -u, -x, -l, -e:**

guilherme\_02221070@ip-172-31-92-177:/home/ubuntu\$ ps -a

PID	TTY	TIME	CMD
934	tty1	00:00:00	Xorg
940	tty1	00:00:00	dbus-run-sessio
941	tty1	00:00:00	dbus-daemon
942	tty1	00:00:00	gnome-session-b
945	tty1	00:00:00	at-spi-bus-laun
950	tty1	00:00:00	dbus-daemon
976	tty1	00:00:04	gnome-shell
989	tty1	00:00:00	ibus-daemon
992	tty1	00:00:00	ibus-memconf
995	tty1	00:00:00	ibus-x11
999	tty1	00:00:00	ibus-portal
1007	tty1	00:00:00	at-spi2-registr
1031	tty1	00:00:00	gjs
1036	tty1	00:00:00	gsd-color
1037	tty1	00:00:00	gsd-print-notif
1040	tty1	00:00:00	gsd-ally-settin
1042	tty1	00:00:00	gsd-power
1044	tty1	00:00:00	gsd-media-keys
1045	tty1	00:00:00	gsd-rfkill
1047	tty1	00:00:00	gsd-keyboard
1050	tty1	00:00:00	gsd-wacom
1051	tty1	00:00:00	gsd-housekeepin
1053	tty1	00:00:00	ibus-engine-sim
1054	tty1	00:00:00	gsd-sound
1057	tty1	00:00:00	gsd-datetime
1058	tty1	00:00:00	gsd-smartcard
1062	tty1	00:00:00	gsd-screensaver
1064	tty1	00:00:00	gsd-sharing
1079	tty1	00:00:00	gsd-printer
10162	pts/0	00:00:00	su
10163	pts/0	00:00:00	bash
10173	pts/0	00:00:00	vi
10183	pts/0	00:00:00	vi
10190	pts/0	00:00:00	vi
10225	pts/0	00:00:00	vi
10233	pts/0	00:00:00	ps

```

guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ ps -u
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT   ST
ART    TIME COMMAND
guilher+    10163   0.0   0.5  10008   5036 pts/0    S      Oc
t18    0:00 bash
guilher+    10173   0.0   0.9  23344   9496 pts/0    T      Oc
t18    0:00 vi
guilher+    10183   0.0   0.9  23344   9536 pts/0    T      Oc
t18    0:00 vi
guilher+    10190   0.0   0.9  23492   9544 pts/0    TN     Oc
t18    0:00 vi
guilher+    10225   0.0   0.9  23332   9444 pts/0    T      00
:01    0:00 vi
guilher+    10234   0.0   0.3  10620   3276 pts/0    R+     00
:05    0:00 ps -u

```

```

guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ ps -x
      PID TTY          STAT       TIME COMMAND
    10163 pts/0        S           0:00 bash
    10173 pts/0        T           0:00 vi
    10183 pts/0        T           0:00 vi
    10190 pts/0        TN          0:00 vi
    10225 pts/0        T           0:00 vi
    10236 pts/0        R+          0:00 ps -x

```

```

guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ ps -l
F S      UID          PID      PPID  C PRI  NI ADDR SZ WCHAN  TTY
      TIME CMD
4 S    1002      10163      10162  0  80   0 - 2502 do_wai pts/
0      00:00:00 bash
0 T    1002      10173      10163  0  80   0 - 5836 do_sig pts/
0      00:00:00 vi
0 T    1002      10183      10163  0  80   0 - 5836 do_sig pts/
0      00:00:00 vi
0 T    1002      10190      10163  0  99  19 - 5873 do_sig pts/
0      00:00:00 vi
0 T    1002      10225      10163  0  80   0 - 5833 do_sig pts/
0      00:00:00 vi
0 R    1002      10237      10163  0  80   0 - 2635 -      pts/
0      00:00:00 ps

```

```
guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ ps -e
```

PID	TTY	TIME	CMD
1	?	00:00:05	systemd
2	?	00:00:00	kthreadd
3	?	00:00:00	rcu_gp
4	?	00:00:00	rcu_par_gp
5	?	00:00:00	netns
6	?	00:00:00	kworker/0:0-events
7	?	00:00:00	kworker/0:0H-events_highpri
9	?	00:00:00	kworker/0:1H-events_highpri
10	?	00:00:00	mm_percpu_wq
11	?	00:00:00	rcu_tasks_rude_
12	?	00:00:00	rcu_tasks_trace
13	?	00:00:00	ksoftirqd/0
14	?	00:00:00	rcu_sched
15	?	00:00:00	migration/0
16	?	00:00:00	idle_inject/0
18	?	00:00:00	cpuhp/0
19	?	00:00:00	kdevtmpfs
20	?	00:00:00	inet_frag_wq
21	?	00:00:00	kauditd
22	?	00:00:00	khungtaskd
23	?	00:00:00	oom_reaper
24	?	00:00:00	writeback
25	?	00:00:00	kcompactd0
26	?	00:00:00	ksmd
27	?	00:00:00	khugepaged
73	?	00:00:00	kintegrityd
74	?	00:00:00	kblockd
75	?	00:00:00	blkcg_punt_bio
76	?	00:00:00	xen-balloon
77	?	00:00:00	tpm_dev_wq
78	?	00:00:00	ata_sff
79	?	00:00:00	md

```

guilherme_02221070@ip-172-31-92-177:/home/ubuntu$ ps -aux
x
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT   ST
ART   TIME COMMAND
root           1   0.5  1.1 103996 11120 ?        Ss     Oc
t18  0:05  /sbin/init
root           2   0.0  0.0      0      0 ?        S      Oc
t18  0:00  [kthreadd]
root           3   0.0  0.0      0      0 ?        I<     Oc
t18  0:00  [rcu_gp]
root           4   0.0  0.0      0      0 ?        I<     Oc
t18  0:00  [rcu_par_gp]
root           5   0.0  0.0      0      0 ?        I<     Oc
t18  0:00  [netns]
root           6   0.0  0.0      0      0 ?        I      Oc
t18  0:00  [kworker/0:0-events]
root           7   0.0  0.0      0      0 ?        I<     Oc
t18  0:00  [kworker/0:0H-events_highpri]
root           9   0.0  0.0      0      0 ?        I<     Oc
t18  0:00  [kworker/0:1H-events_highpri]
root          10   0.0  0.0      0      0 ?        I<     Oc
t18  0:00  [mm_percpu_wq]
root          11   0.0  0.0      0      0 ?        S      Oc
t18  0:00  [rcu_tasks_rude_]
root          12   0.0  0.0      0      0 ?        S      Oc
t18  0:00  [rcu_tasks_trace]
root          13   0.0  0.0      0      0 ?        S      Oc

```

a) O o que significa Ss e TN na coluna STAT, explique

Ss significa que o processo está em Slepping.

Tn significa que o processo está parado por sinal de controle de trabalho e possui baixa prioridade.

b) O que significa ADDR SZ e WCHAN na tela abaixo, explique

WCHAN:

endereço da função kernel onde o processo está dormindo (use wchan se você quiser o nome da função do kernel). As tarefas em execução exibirão um painel ('-') nesta coluna.

SZ:

tamanho em páginas físicas da imagem central do processo. Isso inclui texto, dados e pilha espaço. Os mapeamentos de dispositivos estão atualmente excluídos; isso está sujeito a alterações.

ADDR: endereço do processo na memória

