

## TOP COMMAND

**top** command is used to show the Linux processes. It provides a dynamic real-time view of the running system. Usually, this command shows the summary information of the system and the list of processes or threads which are currently managed by the Linux Kernel.

```
top - 23:30:01 up 9 min, 2 users, load average: 0.00, 0.02, 0.00
Tasks: 212 total, 3 running, 209 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.3 sy, 0.0 ni, 99.7 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 1800.6 total, 1198.4 free, 299.6 used, 302.6 buff/cache
MiB Swap: 2048.0 total, 2048.0 free, 0.0 used, 1333.8 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
992	root	20	0	217412	11492	9896	S	0.3	0.6	0:00.58	vmtoolsd
1	root	20	0	179712	14032	9236	S	0.0	0.8	0:01.40	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	20	0	0	0	0	I	0.0	0.0	0:00.02	kworker/0:0-xfs-cil/dm-0
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/0:0H-kblockd

Here,

- PID: Shows task's unique process id.
- PR: Stands for priority of the task.
- SHR: Represents the amount of shared memory used by a task.
- VIRT: Total virtual memory used by the task.
- USER: User name of owner of task.
- %CPU: Represents the CPU usage.
- TIME+: CPU Time, the same as 'TIME', but reflecting more granularity through hundredths of a second.
- SHR: Represents the Shared Memory size (kb) used by a task.
- NI: Represents a Nice Value of task. A Negative nice value implies higher priority, and positive nice value means lower priority.
- %MEM: Shows the Memory usage of task.

### Exit Top Command After Specific repetition

```
[root@vivek ~]# top -n 10
top - 23:33:39 up 13 min, 2 users, load average: 0.01, 0.02, 0.00
Tasks: 212 total, 2 running, 210 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.3 sy, 0.0 ni, 99.7 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 1800.6 total, 1180.8 free, 300.3 used, 319.5 buff/cache
MiB Swap: 2048.0 total, 2048.0 free, 0.0 used, 1332.7 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1848	root	20	0	64660	4936	4004	S	0.3	0.3	0:01.02	top
1922	root	20	0	0	0	0	I	0.3	0.0	0:00.01	kworker/0:0-events_power_efficient
1923	root	20	0	64664	5020	4096	R	0.3	0.3	0:00.01	top
1	root	20	0	179712	14032	9236	S	0.0	0.8	0:01.40	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	0:00.06	ksoftirqd/0
10	root	20	0	0	0	0	R	0.0	0.0	0:00.04	rcu_sched

### Display Specific User Process

```
[root@vivek ~]# top -u root
top - 23:36:56 up 16 min, 2 users, load average: 0.00, 0.00, 0.00
Tasks: 212 total, 2 running, 210 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.3 us, 0.3 sy, 0.0 ni, 99.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 1800.6 total, 1179.8 free, 300.7 used, 320.1 buff/cache
MiB Swap: 2048.0 total, 2048.0 free, 0.0 used, 1332.3 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1974	root	20	0	64664	4552	3852	R	0.3	0.2	0:00.01	top
1	root	20	0	179712	14036	9240	S	0.0	0.8	0:01.40	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	0:00.07	ksoftirqd/0
10	root	20	0	0	0	0	R	0.0	0.0	0:00.05	rcu_sched

## TOP COMMAND

### Highlight Running Process in Top: Press 'z' option i

```
top - 23:38:28 up 17 min,  2 users,  load average: 0.00, 0.00, 0.00
Tasks: 212 total,   3 running, 209 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.0 us,   0.3 sy,   0.0 ni, 99.3 id,   0.0 wa,   0.3 hi,   0.0 si,   0.0 st
MiB Mem :  1800.6 total,  1179.6 free,   300.9 used,   320.1 buff/cache
MiB Swap:  2048.0 total,  2048.0 free,    0.0 used.  1332.1 avail Mem

  PID USER      PR  NI   VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
 1974 root        20   0   64664   4552   3852 R   0.3   0.2   0:00.15 top
    1 root        20   0  179712  14036   9240 S   0.0   0.8   0:01.40 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   0:00.07 ksoftirqd/0
   10 root        20   0        0        0        0 R   0.0   0.0   0:00.05 rcu_sched
   11 root        rt    0        0        0        0 S   0.0   0.0   0:00.00 migration/0
   12 root        rt    0        0        0        0 S   0.0   0.0   0:00.00 watchdog/0
```

### Shows Absolute Path of Processes: Press 'c'

```
  PID USER      PR  NI   VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
  992 root        20   0  217412  11492   9896 S   1.2   0.6   0:01.50 vmttoolsd
 1848 root        20   0   64660   4936   4004 S   1.2   0.3   0:02.38 top
 2042 root        20   0   64664   5036   4112 R   1.2   0.3   0:00.04 top
    1 root        20   0  179712  14036   9240 S   0.0   0.8   0:01.41 systemd
    2 root        20   0        0        0        0 S   0.0   0.0   0:00.00 kthreadd
```

### Kill running process: press k

```
top - 23:48:51 up 28 min,  2 users,  load average: 0.00, 0.01, 0.00
Tasks: 212 total,   3 running, 209 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.0 us,   6.2 sy,   0.0 ni, 93.8 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :  1800.6 total,  1179.7 free,   300.8 used,   320.1 buff/cache
MiB Swap:  2048.0 total,  2048.0 free,    0.0 used.  1332.2 avail Mem
PID to signal/kill [default pid = 1]
```

### Sort by CPU Utilisation: Press (Shift+P)

```
  PID USER      PR  NI   VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
 1848 root        20   0   64660   4936   4004 S   0.3   0.3   0:03.23 top
    1 root        20   0  179712  14036   9240 S   0.0   0.8   0:01.43 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
```

### Shows top command syntax

```
[root@vivek ~]# top -h
procps-ng 3.3.15
Usage:
  top -hv | -bcEHIOssl -d secs -n max -u|U user -p pid(s) -o field -w [cols]
[root@vivek ~]#
```

### Batch Mode: Send output from top to file or any other programs

```
[root@vivek ~]# top -b
```

```
 1798 root        20   0  165524  11204   9600 S   0.0   0.6   0:00.03 sshd
 1802 root        20   0  165524   5440   4092 S   0.0   0.3   0:00.21 sshd
 1803 root        20   0  265556   5164   3292 S   0.0   0.3   0:00.04 bash
 2059 root        20   0        0        0        0 I   0.0   0.0   0:00.03 kworker/0:1-xfs-cil/dm-0
 2139 root        20   0        0        0        0 R   0.0   0.0   0:00.15 kworker/0:0-events_power_efficient
 2175 root        20   0   64508   4916   4088 R   0.0   0.3   0:00.20 top
 2191 root        20   0    7280    720    660 S   0.0   0.0   0:00.00 sleep
 2192 root        20   0        0        0        0 I   0.0   0.0   0:00.00 kworker/0:2
```

## TOP COMMAND

### Secure Mode: Use top in Secure mode

```
[root@vivek ~]# top -s
top - 00:00:29 up 39 min,  2 users,  load average: 0.00, 0.00, 0.00
Tasks: 212 total,   2 running, 210 sleeping,   0 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 :  1800.6 total,  1179.7 free,   300.8 used,   320.1 buff/cache
MiB Swap:  2048.0 total,  2048.0 free,    0.0 used.  1332.2 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
992	root	20	0	217448	11580	9896	S	0.3	0.6	0:02.40	vmtoolsd
1848	root	20	0	64660	4936	4004	S	0.3	0.3	0:04.14	top
2209	root	20	0	64664	5016	4080	R	0.3	0.3	0:00.01	top
1	root	20	0	179712	14036	9240	S	0.0	0.8	0:01.43	systemd

