# top Live process monitor

**START HERE**

- P — Sort by CPU
- u — Filter by user
- M — Sort by memory
- c — Full command lines
- 1 — Show each CPU
- ? — In-app help
- k — Kill a task
- q — Quit

## CONCEPTS

Keys are case sensitive: P and p are different commands. Top answers to what you type, so there is no Enter after a single key.

Load average is runnable plus waiting tasks over 1, 5 and 15 minutes; compare it with your CPU count, not with 1.

### CPU line

| Field | Time spent on |
|---|---|
| us / ni | user code / niced user code |
| sy | kernel code |
| id | idle |
| wa | waiting for disk I/O |
| hi / si | hardware / software interrupts |
| st | stolen by the hypervisor |

### S column (task state)

| Code | Meaning |
|---|---|
| R | running or runnable |
| S | sleeping, interruptible |
| D | uninterruptible sleep (usually I/O) |
| I | idle kernel thread |
| T / t | stopped by job control / by a debugger |
| Z | zombie, waiting for its parent |

Memory: judge by avail Mem, not free. Buff/cache is reclaimable and normally large.

%CPU above 100 is normal for a multi-threaded task in Irix mode (I on); in Solaris mode (I off) it is divided by the CPU count.

## SORTING

P Sort by CPU

M Sort by memory

T
Sort by cumulative CPU time

N Sort by PID

R Reverse sort order

< / >
Move sort column left / right
*Needs the current sort column to be visible.*

f
Choose sort field and columns
*In the field screen: arrows move, d toggles a column, s sets the sort field, q leaves.*

## FILTERING AND VIEW

u Show one user's tasks
*Prepend ! to exclude that user; empty input clears it.*

c
Toggle command name / full line

i Hide idle tasks

V Forest (process tree) view
*Any sort key leaves forest view.*

v Collapse / expand children
*Forest view only.*

H Show threads

o Add filter, ignore case
*Format: FIELD=value, FIELD>value or !FIELD=value, e.g. COMMAND=nginx.*

O Add filter, case sensitive

Ctrl + O Show active filters

= Clear filters and limits

n Limit number of rows

L Find text in window

& Find next match

0 Hide zero values

## SUMMARY AREA

1 One line per CPU

t
Cycle CPU summary: text, bar, blocks, off

m
Cycle memory summary: text, bar, blocks, off

l Toggle load / uptime line

4 Show CPUs side by side

E
Cycle summary memory units

e Cycle task memory units

I Toggle Irix / Solaris %CPU

## SIGNALS AND PRIORITY

k Kill a task (asks PID, signal)
*Default signal is SIGTERM; enter 9 or KILL to force. Disabled in secure mode.*

r Renice a task
*Ordinary users can only raise the nice value.*

Ctrl + K
Show full command of first task

Ctrl + N
Show environment of first task

Ctrl + G
Show cgroups of first task

Ctrl + L
Show top's log messages

Ctrl + E
Shorten CPU time format

## NAVIGATION AND CONTROL

Arrows
Scroll tasks / columns

PgUp / PgDn Scroll a page

Home / End
Jump to start / end

d / s Change refresh delay
*Fractions allowed, e.g. 0.5.*

Space / Enter Refresh now

? / h Help

W
Save settings to your toprc
*Written under $XDG_CONFIG_HOME/procps or ~/.config/procps; an older ~/.toprc is still read.*

q Quit

z Color / monochrome

x Highlight sort column

y Highlight running tasks

Z Change colours

A
Alternate display with 4 windows

g Pick current window (1-4)

## COMMAND LINE

`top -b -n 1`
One snapshot, no UI

`top -d <secs>`
Set refresh delay

`top -p <pid,pid>`
Watch only these PIDs

`top -u <user>`
Only this user's tasks

`top -H`
Start in threads mode

`top -c`
Toggle full command lines

`top -o <FIELD>`
Sort by a field name

`top -O`
List sortable field names

`top -w <cols>`
Set output width
*Piped batch output is cut at 80 columns unless COLUMNS is set; use this to avoid it.*

`top -E <k|m|g|t|p|e>`
Summary memory units

`top -e <k|m|g|t|p>`
Task memory units

`top -i`
Toggle idle task display

`top -s`
Secure mode (no kill / renice)

`top -1`
Toggle per-CPU lines

`top -S`
Toggle cumulative time

## RECIPES

### Log a process over time

```
top -b -d 5 -n 120 -p <pid> >
top.log
# 10 minutes at 5s steps, one
block per sample
```

### Top 10 memory users

```
top -b -n 1 -o %MEM -w 200 |
head -n 17
# 5 summary lines, a blank line
and the header, then 10 rows
```

### Thread view of one process

```
top -H -p <pid>
# then P for CPU; c shows the
command line
```

### Find what a busy box is doing

```
top
# 1 shows per-CPU load, wa
shows I/O wait
# M then P compare memory and
CPU; V shows who forked what
```