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

COMMAND LINE (cont.)

`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
```