top Live process monitor

START HERE

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

FILTERING AND VIEW (cont.)

- 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

NAVIGATION AND CONTROL (cont.)

- 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

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

COMMAND LINE (cont.)

- `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

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
```