top Live process monitor

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.

CONCEPTS (cont.)

%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

`f`
Choose sort field and columns

FILTERING AND VIEW

`u` Show one user's tasks

`c`
Toggle command name / full line

`i` Hide idle tasks

`V`
Forest (process tree) view

FILTERING AND VIEW (cont.)

`v`
Collapse / expand children

`H` Show threads

`o` Add filter, ignore case

`=` Clear filters and limits

`n` Limit number of rows

`L` Find text in window

SUMMARY AREA

`1` One line per CPU

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

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

`E`
Cycle summary memory units

`e`
Cycle task memory units

`l`
Toggle Irix / Solaris %CPU

SIGNALS AND PRIORITY

`k`
Kill a task (asks PID, signal)

SIGNALS AND PRIORITY (cont.)

`r` Renice a task

NAVIGATION AND CONTROL

`Arrows`
Scroll tasks / columns

`PgUp` / `PgDn`
Scroll a page

`Home` / `End`
Jump to start / end

`d` / `s`
Change refresh delay

`Space` / `Enter`
Refresh now

`?` / `h` Help

`W`
Save settings to your toprc

`q` Quit

`x` Highlight sort column

`y` Highlight running tasks

COMMAND LINE

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

`top -d <secs>`
Set refresh delay

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

COMMAND LINE (cont.)

`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 -w <cols>`
Set output width

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
```