

NAME

Sprof - system profile

SYNOPSIS

```
sprof [ -rianpe ] [ -l lowpc -h highpc [ -s intsize ] ]
      [ -o cutoff ] [ -t interval ] [ -c count ]
```

DESCRIPTION

Sprof initiates profiling of UNIX system activities. A summary of the results is given automatically. If the **-r** option is used (the default), then a counter is reserved for every system routine. Under this option, the system is profiled for *interval* seconds *count* times, and whenever the system clock routine interrupted a system routine, that system routine's counter is incremented by one. If the **-i** option is used, the system is profiled for *interval* seconds *count* times, with a separate counter for each *intsize* (default two) interval of bytes between byte addresses *lowpc* and *highpc*. *Lowpc*, *highpc*, and *intsize* should be even numbers, and may be entered either in decimal or octal (lead 0 implies octal).

After *interval* seconds (default 3600, or one hour), a report is printed containing the number of times the system clock routine found that it interrupted a system routine or interval of bytes. The report shows the number of hits for user, system, and idle time, and the percentage of the total for each. The routines' or intervals' percentages are percentages of system hits only, with the system idle routine excluded.

If the **-a** option is selected with **-r**, the system routines are sorted by start address before printing. If the **-n** option is used, the routines are sorted in alphabetical routine name order. If the **-p** option is used (the default), the routines are listed in order by decreasing percentage of number of hits.

If the *cutoff* specified with the **-o** option is greater than zero (the default), then no routines or intervals are reported that have a percentage of hits less than the *cutoff*. They are all lumped together at the end of the report under "Other". Under the **r** option (only), no routine is listed that has been hit zero times. To include those in the list, the **-e** (or *everything*) option must be specified. The **-e** option is the default for any **i** report.

Cautions:

If *sprof* uses the system clock (1/60th second granularity), activities in sync with the clock will be missed. In particular, *sprof* would show zero hits for the system clock routines, including *sincupc*, which does the system profile counting. System profiling may be done using an independent clock (a DEC KW11-K or a Digital Pathways TCU100). The user should find out what profiling clock is being used on his machine.

If the super-user initiates system profiling, the system will lock *sprof* in low main memory, which may cause shuffling of other processes. If anyone else initiates profiling, the process will *not* be moved to low memory before being locked, and overall system performance may be degraded.

If **/unix** does not have the namelist of the currently running operating system, the **-r** option may print garbage (but should not crash).

FILES

/unix, for system routine names and starting addresses

BUGS

Results can vary somewhat from run to run, even under similar system loads, due to variations in the clock interrupt times, correlated with system activities. This effect is greatly decreased if one of the independent profiling clocks is being used.

Sprof may not be run concurrently with other *sprof* processes.

Cutoff must be an integer.