NAME

ps – report process status

SYNOPSIS

ps [**–aAcdefjl**] [**–g** *grplist*] [**–n** *namelist*] [[**–o** *format*] . . .] [**–p** *proclist*]
[**–s** *sidlist*] [**–t** *term*] [**–u** *uidlist*] [**–U** *uidlist*] [**–G** *gidlist*]

AVAILABILITY

SUNWcsu

DESCRIPTION

The **ps** command prints information about active processes. Without options, **ps** prints information about processes associated with the controlling terminal. The output contains only the process ID, terminal identifier, cumulative execution time, and the command name. Otherwise, the information that is displayed is controlled by the options.

Some options accept lists as arguments. Items in a list can be either separated by commas or else enclosed in quotes and separated by commas or spaces. Values for *proclist* and *grplist* must be numeric.

OPTIONS

The following options are supported:

–a Print information about **a**ll processes most frequently requested: all those except process group leaders and processes not associated with a terminal.

–A Write information for all processes.

–c Print information in a format that reflects scheduler properties as described in **priocntl**(1). The **–c** option affects the output of the **–f** and **–l** options, as described below.

–d Print information about all processes except session leaders.

–e Print information about **e**very process now running.

–f Generate a **f**ull listing. (See below for significance of columns in a full listing.)

–g *grplist* List only process data whose group leader's ID number(s) appears in *grplist*. (A group leader is a process whose process ID number is identical to its process group ID number.)

–G *gidlist* Write information for processes whose real group ID numbers are given in *grouplist*. The *grouplist* must be a single argument in the form of a blank- or comma-separated list.

–j Print session ID and process group ID.

–l Generate a **l**ong listing. (See below.)

–n *namelist* Specify the name of an alternative system *namelist* file in place of the default. This option is accepted for compatibility, but is ignored.

–o *format* Write information according to the format specification given in *format*. This is fully described in **DISPLAY FORMATS**. Multiple **–o** options can be specified; the format specification will be interpreted as the space-character-separated concatenation of all the *format* option-arguments.

−p *proclist* List only process data whose process ID numbers are given in *proclist*.

−s *sidlist* List information on all session leaders whose IDs appear in *sidlist*.

−t *term* List only process data associated with *term*. Terminal identifiers are specified as a device file name, and an identifier. For example, **term/a**, or **pts/0**.

−u *uidlist* List only process data whose effective user ID number or login name is given in *uidlist*. In the listing, the numerical user ID will be printed unless you give the **−f** option, which prints the login name.

−U *uidlist* Write information for processes whose real user ID numbers or login names are given in *userlist*. The *userlist* must be a single argument in the form of a blank- or comma-separated list.

With the exception of **−o** *format*, all of the options shown are used to select processes. If any are specified, the default list will be ignored and **ps** will select the processes represented by the inclusive OR of all the selection-criteria options.

DISPLAY FORMATS

Under the **−f** option, **ps** tries to determine the command name and arguments given when the process was created by examining the user block. Failing this, the command name is printed, as it would have appeared without the **−f** option, in square brackets.

The column headings and the meaning of the columns in a **ps** listing are given below; the letters **f** and **l** indicate the option (**f**ull or **l**ong, respectively) that causes the corresponding heading to appear; **all** means that the heading always appears. Note: These two options determine only what information is provided for a process; they do not determine which processes will be listed.

F (l) Flags (hexadecimal and additive) associated with the process. These flags are available for historical purposes; no meaning should be currently ascribed to them.

S (l) The state of the process:

- O Process is running on a processor.
- S Sleeping: process is waiting for an event to complete.
- R Runnable: process is on run queue.
- Z Zombie state: process terminated and parent not waiting.
- T Process is stopped, either by a job control signal or because it is being traced.

UID (f,l) The effective user ID number of the process (the login name is printed under the **−f** option).

PID (all) The process ID of the process (this datum is necessary in order to kill a process).

PPID (f,l) The process ID of the parent process.

C (f,l) Processor utilization for scheduling (obsolete). Not printed when the **−c** option is used.

CLS	(f,l)	Scheduling class. Printed only when the –**c** option is used.
PRI	(l)	The priority of the process. Without the –**c** option, higher numbers mean lower priority. With the –**c** option, higher numbers mean higher priority.
NI	(l)	Nice value, used in priority computation. Not printed when the –**c** option is used. Only processes in the certain scheduling classes have a nice value.
ADDR	(l)	The memory address of the process.
SZ	(l)	The size (in pages) of the swappable process's image in main memory.
WCHAN	(l)	The address of an event for which the process is sleeping (if blank, the process is running).
STIME	(f)	The starting time of the process, given in hours, minutes, and seconds. (A process begun more than twenty-four hours before the **ps** inquiry is executed is given in months and days.)
TTY	(all)	The controlling terminal for the process (the message, **?**, is printed when there is no controlling terminal).
TIME	(all)	The cumulative execution time for the process.
CMD	(all)	The command name (the full command name and its arguments, up to a limit of 80 characters, are printed under the –**f** option).

The following two additional columns are printed when the –**j** option is specified:

PGID The process ID of the process group leader.

SID The process ID of the session leader.

A process that has exited and has a parent, but has not yet been waited for by the parent, is marked **<defunct>**.

–**o** *format* The –**o** option allows the output format to be specified under user control.

The format specification must be a list of names presented as a single argument, blank- or comma-separated. Each variable has a default header. The default header can be overridden by appending an equals sign and the new text of the header. The rest of the characters in the argument will be used as the header text. The fields specified will be written in the order specified on the command line, and should be arranged in columns in the output. The field widths will be selected by the system to be at least as wide as the header text (default or overridden value). If the header text is null, such as –**o** *user*=, the field width will be at least as wide as the default header text. If all header text fields are null, no header line will be written.

The following names are recognised in the POSIX locale:

user The effective user ID of the process. This will be the textual user ID, if it can be obtained and the field width permits, or a decimal representation otherwise.

ruser The real user ID of the process. This will be the textual user ID, if it can be obtained and the field width permits, or a decimal representation otherwise.

group The effective group ID of the process. This will be the textual group ID, if it can be obtained and the field width permits, or a decimal representation otherwise.

rgroup The real group ID of the process. This will be the textual group ID, if it can be obtained and the field width permits, or a decimal representation otherwise.

pid The decimal value of the process ID.

ppid The decimal value of the parent process ID.

pgid The decimal value of the process group ID.

pcpu The ratio of CPU time used recently to CPU time available in the same period, expressed as a percentage. The meaning of ''recently'' in this context is unspecified. The CPU time available is determined in an unspecified manner.

vsz The size of the process in (virtual) memory in kilobytes as a decimal integer.

nice The decimal value of the system scheduling priority of the process. See **nice**(1).

etime In the POSIX locale, the elapsed time since the process was started, in the form:
[[*dd***-]***hh***:]***mm***:***ss*

where

dd will represent the number of days,
hh the number of hours,
mm the number of minutes, and
ss the number of seconds. The
dd field will be a decimal integer.

The *hh*, *mm* and *ss* fields will be two-digit decimal integers padded on the left with zeros.

time In the POSIX locale, the cumulative CPU time of the process in the form:
[*dd***-]***hh***:***mm***:***ss*

The dd, *hh*, *mm*, and *ss* fields will be as described in the **etime** specifier.

tty The name of the controlling terminal of the process (if any) in the same format used by the **who**(1) command.

comm The name of the command being executed (**argv[0]** value) as a string.

args The command with all its arguments as a string. The implementation may truncate this value to the field width; it is implementation-dependent whether any further truncation occurs. It is unspecified whether the string represented is a version of the argument list as it was passed to the command when it started, or is a version of the arguments as they may have been modified by the application. Applications cannot depend on being able to modify their argument list and having that modification be reflected in the output of **ps**. The Solaris implementation limits the string to 80 characters; the string is the version of the argument list as it was passed to the command when it started.

The following names are recognized in the Solaris implementation:

f Flags (hexadecimal and additive) associated with the process.

s The state of the process.

c Processor utilization for scheduling (obsolete).

uid The effective user ID number of the process as a decimal integer.

ruid The real user ID number of the process as a decimal integer.

gid The effective group ID number of the process as a decimal integer.

rgid The real group ID number of the process as a decimal integer.

sid The process ID of the session leader.

class The scheduling class of the process.

pri The priority of the process. Higher numbers mean higher priority.

opri The obsolete priority of the process. Lower numbers mean higher priority.

addr The memory address of the process.

osz The size (in pages) of the swappable process's image in main memory.

wchan The address of an event for which the process is sleeping (if −, the process is running).

stime The starting time or date of the process, printed with no blanks.

rss The resident set size of the process, in kilobytes as a decimal integer.

pmem The ratio of the process's resident set size to the physical memory on the machine, expressed as a percentage.

fname The first 16 characters of the base name of the process's executable file.

Only **comm** and **args** are allowed to contain blank characters; all others, including the Solaris implementation variables, are not.

The following table specifies the default header to be used in the POSIX locale corresponding to each format specifier.

Format Specifier	Default Header	Format Specifier	Default Header
args	COMMAND	ppid	PPID
comm	COMMAND	rgroup	RGROUP
etime	ELAPSED	ruser	RUSER
group	GROUP	time	TIME
nice	NI	tty	TT
pcpu	%CPU	user	USER
pgid	PGID	vsz	VSZ
pid	PID		

The following table lists the Solaris implementation format specifiers and the default header used with each.

Format Specifier	Default Header	Format Specifier	Default Header
addr	ADDR	pri	PRI
c	C	rgid	RGID
class	CLS	rss	RSS
f	F	ruid	RUID
fname	COMMAND	s	S
gid	GID	sid	SID
opri	PRI	stime	STIME
osz	SZ	uid	UID
pmem	%MEM	wchan	WCHAN

EXAMPLES

The command:

example% ps -o user,pid,ppid=MOM -o args

writes the following in the POSIX locale:

```
USER      PID   MOM   COMMAND
helene     34    12   ps -o uid,pid,ppid=MOM -o args
```

The contents of the **COMMAND** field need not be the same due to possible truncation.

ENVIRONMENT

See **environ**(5) for descriptions of the following environment variables that affect the execution of **ps**: **LC_CTYPE**, **LC_MESSAGES**, **LC_TIME**, and **NLSPATH**.

COLUMNS Override the system-selected horizontal screen size, used to determine the number of text columns to display.

EXIT STATUS

The following exit values are returned:

0 Successful completion.

>0 An error occurred.

FILES

/dev/pts/*
/dev/term/* terminal (‘‘tty’’) names searcher files
/etc/passwd UID information supplier
/proc/* process control files

/tmp/ps_data internal data structure

SEE ALSO

kill(1), **nice**(1), **priocntl**(1), **who**(1), **getty**(1M), **proc**(4), **ttysrch**(4), **environ**(5)

NOTES

Things can change while **ps** is running; the snap-shot it gives is true only for a split-second, and it may not be accurate by the time you see it. Some data printed for defunct processes is irrelevant.

If no options to select processes are specified, **ps** will report all processes associated with the controlling terminal. If there is no controlling terminal, there will be no report.

ps −**ef** or **ps** −**o stime** may not report the actual start of a tty login session, but rather an earlier time, when a getty was last respawned on the tty line.