## **PS Commands**

**ps** (**processes status**) is a native Unix/Linux utility for viewing information concerning a selection of running processes on a system: it reads this information from the virtual files in the [/proc filesystem](https://www.tecmint.com/exploring-proc-file-system-in-linux/)

ps command supports 3 types of usage syntax style

* Unix, may be grouped and preceded by hyphen
* BSD, may be grouped but not preceded by hyphen
* GNU, long options and preceded by double hyphens

***Process state***

*D Uninterruptible sleep (usually IO)*

*R Running or runnable (on run queue)*

*S Interruptible sleep (waiting for an event to complete)*

*T Stopped, either by a job control signal or because it is being traced.*

*W paging (not valid since the 2.6.xx kernel)*

*X dead (should never be seen)*

*Z Defunct ("zombie") process, terminated but not reaped by its parent.*

*Additional characters*

*< high-priority (not nice to other users)*

*N low-priority (nice to other users)*

*L has pages locked into memory (for real-time and custom IO)*

*s is a session leader*

*l is multi-threaded (using CLONE\_THREAD, like NPTL pthreads do)*

*+ is in the foreground process group*

***Syntax***

*$ ps [options]*

*-f full details UID, PID, PPID, TTY,CMD*

*-F Even more details*

*-M Display security info*

*-v Display virtual memory*

*USER – Tells us what user on the server owns/is running the process.*

*PID – The process ID on the server. Can be used to stop processes if needed via the commands kill or killall.*

*%CPU – Percentage of the CPU the process is using.*

*%MEM – Percentage of total RAM (memory) the process is using.*

*VSZ – Virtual memory size of the process. This may be stored in either the main memory (RAM), on the hard drive in swap space, or a combination of both.*

*RSS – Real memory (RAM) size of the process.*

*TTY – Indicates which terminal the process is running on. ? means they are running locally on the server, not by any remote terminal or local X terminal.*

*STAT – Indicates the process status. For a list of what the process statuses mean please see our knowledge base article “Linux Process Statuses”.*

*START – The time the process started running on the server.*

*TIME – The amount of CPU time in minutes and seconds that the process has been running.*

*COMMAND – The command that is running.*

***List the process of current shell***

*$ ps $ ps -f*

*PID TTY TIME CMD PID unique process*

*12330 pts/0 00:00:00 bash TTY terminal*

*21621 pts/0 00:00:00 ps*

*TIME amount of cpu in min and seconds that the process running*

***List All Active Process***

*$ ps -e or $ ps -A*

*$ ps -ef $ ps -eF*

***$ ps aux***

***List Only Running Process***

*$ ps -r*

***List All Process for a user***

*$ ps -u #By default current user*

*$ ps -u <username>*

*$ ps -Fu <username> with full details*

***List All Process for a group***

*$ ps -G <group name or id> $ ps -g <group name>*

***List all processes by process number***

***You can view multiple processes by specifying multiple process IDs separated by blank or comma***

*$ ps -p “12608 3995” $ ps -p 12608,3995.4884*

*$ ps --ppid <PPID> $ ps -f –ppid <PPID>*

***List All Process for a terminal***

*$ ps -t <terminal name> $ ps -t tty1*

***List All Process for a command***

*$ ps -C <command> $ ps -C ls -l*

***List All Process associate to the job***

*$ ps - j*

***List All Process associate to the session***

*$ ps - s*

***Top Running process by Highest memory and cpu usage.***

*$ ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%mem | head*

*OR*

*$ ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%cpu | head*

***Check execution time of a process***

*$ ps -eo comm,etime,user | grep httpd*

***Find all PIDs of all instances of a process, useful when writing scripts that need to read PIDs from an std output or file.***

*$ ps -C httpd -o pid=*

***To find a process name using its PID.***

*$ ps -p 1154 -o comm=*

***Display the Processes of consuming High Memory  
Process with Sorting***

*Here are the different keywords that may be used to control the output format (e.g., with option -o) or to sort the selected processes with the GNU-style --sort option.*

*For example: ps -eo pid,user,args --sort user*

*CODE NORMAL HEADER*

*%C pcpu %CPU*

*%G group GROUP*

*%P ppid PPID*

*%U user USER*

*%a args COMMAND*

*%c comm COMMAND*

*%g rgroup RGROUP*

*%n nice NI*

*%p pid PID*

*%r pgid PGID*

*%t etime ELAPSED*

*%u ruser RUSER*

*%x time TIME*

*%y tty TTY*

*%z vsz VSZ*

***All the thread that a process has.***

*$ ps -e -T | grep <application name or pid>*

*$ ps -e -T | grep clementine T display the thread in SPID column*

*$ ps -o nlwp <pid>*

***To see the Thread count os process***

*On proc pseudo file system, there is a task directory which records thread information:*

*$ cat /proc/1041/status*

*# ls -l /proc/3692/task*