```
[root@master ~]# sudo apt-get install gnome-chess
[root@master ~]# sudo apt-get install -y gnome-chess
[root@master ~]# sudo apt-get remove gnome-chess
[root@master ~]# sudo apt-get upgrade gnome-chess
[root@master ~]# sudo apt-get upgrade                                          (to
upgrade all packages)


================================================================

Parent process concept:

[root@master ~]# echo $$   (To see the PID of your current shell process)
4085
[root@master ~]# bash
[root@master ~]# echo $$
8686
[root@master ~]# exit
exit
[root@master ~]# echo $$
4085

================================================================================
Listing processes:

[root@master ~]# ps
[root@master ~]# ps aux
[root@master ~]# ps -aux | less
[root@master ~]# ps aux | grep -i syslogd
[root@master ~]# ls /proc/                  (all processes creates a dir here under a
PID dir)
[root@master ~]# ps aux | grep 264    (which shown in /proc)
[root@master ~]# pidof bash        or [root@master ~]# pgrep vim
[root@master ~]# ps -l                (To display Parent PID PPID)

a.... all processes attached to a terminal
u.... provides more columns
x.... all other processes

[root@master ~]# pstree         (process status tree)

- Processes in brackets (usually at the top) are scheduled kernel threads.
================================================================================
Real-time process monitoring:
[root@master ~]# top

type 1 to show all cpu cores
type s to change the default refresh rate which is 3 seconds
type h for help
type k to kill a process
type r to renice a process
type M to change the display to sort by the amount of memory
type P to change the display to sort by the CPU utilization
type n to change the number of processes shown
type w to save current display configuration
type q to quit

PID      ...  The process ID
USER     ...  The process owner
VIRT     ...  (Virtual memory) All memory the process is using including swap
RES      ...  (Resident memory) The physical memory used by the process
```

```
TIME     ...  CPU time, the total processing time since the process started

================================================================================
Controlling Jobs:
- Background processes display a question mark (?) in the TTY column in a ps aux
command.

[root@master ~]# sleep 100000 &                 (Running a job in the background)
[1] 5151

[root@master ~]# jobs
[1]+  Running       sleep 100000 &

[root@master ~]# fg %1
sleep 100000

^Z                                    (To resend to the background)
[1]+  Stopped       sleep 100000

[root@master ~]# bg %1                (To restart the process in the
background)
[1]+ sleep 100000 &

OR
[root@master ~]# bg 5151

^C                                    (End the process)

[root@master ~]# dd if=/dev/zero of=/dev/null   (disk dump)

================================================================================
Killing Processes:
[root@master ~]# kill -l          (List all signals)
[root@master ~]# man 7 signal

1)SIGHUP   Causes the process to re-read the configuration file
9)SIGKILL  Should be used with caution
15)SIGTERM  The default

[root@master ~]# pidof vim
4123
[root@master ~]# kill 4123         (Default is SIGTERM 15)

[root@master ~]# pidof vim
7073
[root@master ~]# kill -9 7073
[root@master ~]# kill -SIGKILL 7073

[root@master ~]# pkill vim        (Default is SIGTERM 15 not recommedned as you can
have many vim processes)
[root@master ~]# killall vim
================================================================================
systemctl:

[root@master ~]# systemctl
[root@master ~]# systemctl -t help                  (Query the state of all units )
[root@master ~]# systemctl --type service           (Query the state of only the
service units)
OR)
[root@master ~]# systemctl list-units --type service   (List all active services)
[root@master ~]# systemctl list-units --type service --all   (List all active and
inactive services)
```

```
[root@master ~]# systemctl --failed --type=service          (List failed services)

[root@master ~]# systemctl status sshd.service
[root@master ~]# systemctl status sshd

[root@master ~]# systemctl is-active sshd
[root@master ~]# systemctl is-enabled sshd
============================================================
Controlling System Services:
[root@master ~]# systemctl status sshd
[root@master ~]# systemctl restart sshd
[root@master ~]# systemctl stop sshd
[root@master ~]# systemctl start sshd
[root@master ~]# systemctl reload sshd         (Re-read the configuration file)
============================================================
Enabling system daemons to start or stop at boot:
[root@master ~]# systemctl enable sshd
[root@master ~]# systemctl disable sshd

============================================================
Logs:


journald:                    [logs through startup of the machine]

[root@server ~]# systemctl status systemd-journald
[root@server ~]# journalctl
[root@server ~]# journalctl -n        (shows the last 10 log entries)
[root@server ~]# journalctl -n 5      (shows the last 5 log entries)

[root@server ~]# journalctl _PID=1
[root@server ~]# journalctl _UID=0

[root@server ~]# cat /etc/systemd/journald.conf
============================================================
rsyslogd:

[root@server ~]# systemctl status rsyslog
[root@server ~]# tail -f /var/log/auth.log
[root@server ~]# tail -f /var/log/apache/access.log
```