init - Receives PID of 1. program that runs when Linux starts. init will launch several processes and call init scripts.

**Process Related Commands**

ps - list processes for the current user on the current terminal

pstree - lists the processes in a tree structure identifying parent processes

top - dynamically lists the top processes running

jobs - lists the jobs run from this terminal

bg - put a program in the background

fg - put a program in the foreground

kill - kills a process based on the PID

killall - kills a process based on the name

shutdown

poweroff

reboot

halt

**key commands**

ctrl-c kills a process

ctrl-z puts a process in the background without killing it

**ps options**

a - list all processes

x - lift the BSD style

u - list processes for all users example: ps aux

o - customize the process list

ps xao pid,ppid,comm #will list all processes sorted in columns listed for pid, ppid (the parent), and the command

kill

kill -9 pid # will kill a process ID
killall xclock # will kill the xclock process

**shutdown options**

System Shutdown and Restart commands

```
shutdown -r time message
Example: sudo shutdown -r +5 "Server will restart in 5 minutes. Please save your work."

halt - leaves the machine powered on
Example: sudo shutdown -h now
Example: sudo halt

Poweroff
Example: sudo poweroff
Example: shutdown -p now

Reboot
Example: sudo reboot
Example: sudo shutdown -r now
Example: sudo shutdown -r09:35 # reboots the machine at 09:35am
```