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

<table>
<thead>
<tr>
<th>Command</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>shutdown -r time message</td>
<td><code>sudo shutdown -r +5 &quot;Server will restart in 5 minutes. Please save your work.&quot;</code></td>
<td>Reboot system at a specified time with a message.</td>
</tr>
<tr>
<td>halt - leaves the machine powered on</td>
<td><code>sudo shutdown -h now</code></td>
<td>Turns off the computer without powering it down.</td>
</tr>
<tr>
<td></td>
<td><code>sudo halt</code></td>
<td></td>
</tr>
<tr>
<td>Poweroff</td>
<td><code>sudo poweroff</code></td>
<td>Turns off the computer by powering it down.</td>
</tr>
<tr>
<td></td>
<td><code>shutdown -p now</code></td>
<td></td>
</tr>
<tr>
<td>Reboot</td>
<td><code>sudo reboot</code></td>
<td>Reboots the machine immediately.</td>
</tr>
<tr>
<td></td>
<td><code>sudo shutdown -r now</code></td>
<td>Reboots the machine immediately.</td>
</tr>
<tr>
<td></td>
<td><code>sudo shutdown -r09:35</code></td>
<td>Reboots the machine at 09:35am.</td>
</tr>
</tbody>
</table>