



Mawlana Bhashani Science and Technology University

Lab-Report

Report No: 06

Course code: ICT-3110

Course title: Operating Systems Lab

Date of Performance:

Date of Submission: 15/09/2020

Submitted by

Name: Md Ahadul Haque

ID:IT-18045

3rd year 1st semester

Session: 2017-2018

Dept. of ICT

MBSTU.

Submitted To

Nazrul Islam

Assistant Professor

Dept. of ICT

MBSTU.

Experiment no : 06

Experiment Name : Linux command for process .

Theory :

The Linux terminal has a number of useful commands that can display running processes, kill them, and change their priority level. This post lists the classic, traditional commands, as well as some more useful, modern ones.

Many of the commands here perform a single function and can be combined that's the Unix philosophy of designing programs. Other programs, like htop, provide a friendly interface on top of the commands.

We have to executes this commands Top, htop, Ps, pstree, kill, pgrep, pkill ,killall, renice, xkill.

Working Process :

1.Top - This command is the traditional way to view your system's resource usage and see the processes that are taking up the most system resources. Top displays a list of processes, with the ones using the most CPU at the top.

```
naim@naim-HP ~  
File Edit View Search Terminal Help  
naim@naim-HP ~ $ top  
top - 10:27:28 up 10 min, 1 user, load average: 1.65, 1.48, 0.97  
Tasks: 260 total, 1 running, 183 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 6.5 us, 6.4 sy, 0.0 ni, 81.0 id, 5.8 wa, 0.0 hi, 0.3 si, 0.0 st  
KiB Mem : 8051440 total, 3592732 free, 1329852 used, 3128856 buff/cache  
KiB Swap: 4881404 total, 4881404 free, 0 used. 5844540 avail Mem  


| PID   | USER | PR | NI | VIRT    | RES    | SHR    | S | %CPU | %MEM | TIME+   | COMMAND     |
|-------|------|----|----|---------|--------|--------|---|------|------|---------|-------------|
| 2790  | naim | 20 | 0  | 5772772 | 556984 | 289888 | S | 28.8 | 6.9  | 1:18.60 | chromium-b+ |
| 1248  | root | 20 | 0  | 713488  | 126356 | 113940 | S | 5.6  | 1.6  | 0:33.71 | Xorg        |
| 18298 | naim | 20 | 0  | 625228  | 33660  | 25948  | S | 2.6  | 0.4  | 0:00.43 | mate-scre+  |
| 2669  | naim | 20 | 0  | 3505704 | 222616 | 118096 | S | 2.0  | 2.8  | 0:17.84 | chromium-b+ |
| 2758  | naim | 20 | 0  | 1407872 | 86700  | 60876  | S | 1.7  | 1.1  | 0:06.65 | chromium-b+ |
| 1841  | naim | 20 | 0  | 452924  | 33208  | 23928  | S | 1.0  | 0.4  | 0:04.35 | marco       |
| 1820  | naim | 20 | 0  | 1171920 | 77536  | 26168  | S | 0.7  | 1.0  | 0:01.01 | mate-setti+ |
| 18290 | naim | 20 | 0  | 42244   | 4008   | 3272   | R | 0.7  | 0.0  | 0:00.07 | top         |
| 5     | root | 20 | 0  | 0       | 0      | 0      | I | 0.3  | 0.0  | 0:00.11 | kworker/u1+ |
| 8     | root | 20 | 0  | 0       | 0      | 0      | I | 0.3  | 0.0  | 0:00.73 | rcu_sched   |
| 28    | root | 20 | 0  | 0       | 0      | 0      | S | 0.3  | 0.0  | 0:00.01 | ksoftirqd/3 |
| 71    | root | 20 | 0  | 0       | 0      | 0      | I | 0.3  | 0.0  | 0:00.36 | kworker/3:1 |
| 223   | root | -2 | 0  | 0       | 0      | 0      | S | 0.3  | 0.0  | 0:00.18 | i915/signa+ |
| 2424  | root | 20 | 0  | 633736  | 161172 | 81276  | S | 0.3  | 2.0  | 0:05.46 | synaptic    |
| 5295  | root | 20 | 0  | 0       | 0      | 0      | I | 0.3  | 0.0  | 0:00.05 | kworker/u1+ |


```

2.htop - htop displays the same information with an easier-to-understand layout. It also lets you select processes with the arrow keys and perform actions, such as killing them or changing their priority, with the F keys.

```
naim@naim-HP ~  
File Edit View Search Terminal Help  
naim@naim-HP ~ $ htop
```

```
naim@naim-HP ~
File Edit View Search Terminal Help

1 [ 0.0%] 5 [ 0.0%]
2 [ 0.7%] 6 [ 0.7%]
3 [ 0.0%] 7 [ 0.7%]
4 [ 0.0%] 8 [ 1.3%]
Mem[|||||] 1.77G/7.68G
Swp[ 0K/4.66G]
Tasks: 120, 378 thr; 1 running
Load average: 0.72 1.01 0.92
Uptime: 00:15:47

PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
23237 naim 20 0 26460 3996 3232 R 0.7 0.0 0:00.69 htop
2790 naim 20 0 5637M 546M 282M S 0.7 7.0 1:27.80 /usr/lib/chromium
2761 naim 20 0 1366M 86964 61000 S 0.7 1.1 0:06.88 /usr/lib/chromium
2929 naim 20 0 5637M 546M 282M S 0.7 7.0 0:03.46 /usr/lib/chromium
2669 naim 20 0 3461M 225M 116M S 0.0 2.9 0:27.32 /usr/lib/chromium
3153 naim 20 0 3461M 225M 116M S 0.0 2.9 0:01.20 /usr/lib/chromium
22616 naim 20 0 9500M 228M 110M S 0.0 2.9 0:21.80 /usr/lib/chromium
1820 naim 20 0 1111M 44012 26168 S 0.0 0.5 0:01.53 /usr/bin/mate-set
2735 naim 20 0 3461M 225M 116M S 0.0 2.9 0:06.51 /usr/lib/chromium
23176 naim 20 0 594M 36816 27600 S 0.0 0.5 0:00.41 mate-terminal
22619 naim 20 0 9500M 228M 110M S 0.0 2.9 0:01.34 /usr/lib/chromium
393 root 20 0 35392 4576 4156 S 0.0 0.1 0:00.24 /lib/systemd/syst
1001 messagebu 20 0 44264 5184 3492 S 0.0 0.1 0:01.27 /usr/bin/dbus-dae
F1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice F8Nice F9Kill F10Quit
```

3.ps - The ps command lists running processes.

```
naim@naim-HP ~
File Edit View Search Terminal Help

naim@naim-HP ~ $ ps
PID TTY TIME CMD
23347 pts/0 00:00:00 bash
23361 pts/0 00:00:00 ps
naim@naim-HP ~ $
```

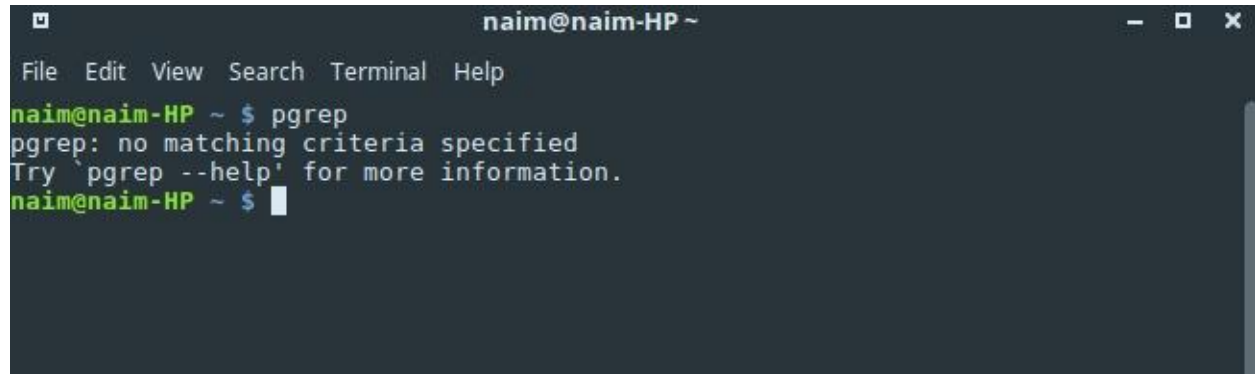
4.pstree - The pstree command is another way of visualizing processes. It displays them in tree format. So, for example, your X server and graphical environment would appear under the display manager that spawned them.

```
naim@naim-HP ~  
File Edit View Search Terminal Help  
naim@naim-HP ~ $ pstree  
systemd--ModemManager--{gdbus}  
--{gmain}  
--NetworkManager--dhclient  
--dnsmasq  
--{gdbus}  
--{gmain}  
--accounts-daemon--{gdbus}  
--{gmain}  
--acpid  
--agetty  
--anydesk--{gdbus}  
--{gmain}  
--{proc}  
--at-spi2-registr--{gdbus}  
--{gmain}  
--avahi-daemon--avahi-daemon  
--bluetoothd  
--cgmanager  
--clock-applet--{dconf worker}  
--{gdbus}  
--{gmain}  
--console-kit-dae--62*[{console-kit-dae}]  
--{gdbus}
```

5.kill - This command can kill a process, given its process ID. You can get this information from the ps -A, top or pgrep commands.

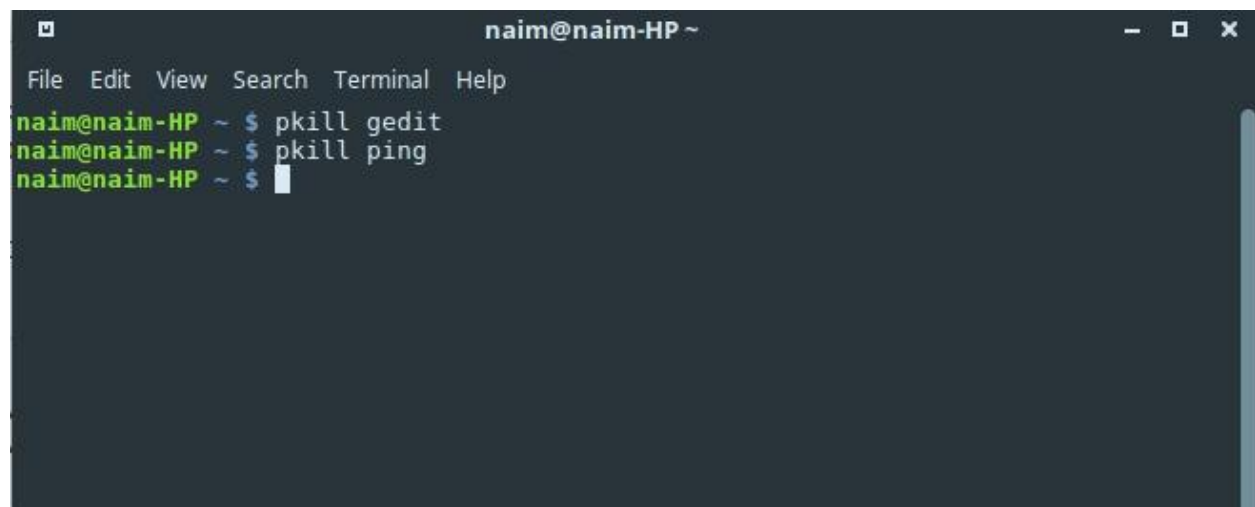
```
naim@naim-HP ~  
File Edit View Search Terminal Help  
--{in:imuxsock}  
--{rs:main 0:Reg}  
--rtkit-daemon--2*[{rtkit-daemon}]  
--syndaemon  
--systemd--(sd-pam)  
--systemd-hostnam  
--systemd-journal  
--systemd-logind  
--systemd-udev  
--thermald--{thermald}  
--udisksd--{cleanup}  
--{gdbus}  
--{gmain}  
--{probing-thread}  
--upowerd--{gdbus}  
--{gmain}  
--wnck-applet--{dconf worker}  
--{gdbus}  
--{gmain}  
--wpa_supplicant  
naim@naim-HP ~ $ kill  
kill: usage: kill [-s sigspec | -n signum | -sigspec] pid | jobspec ... or kill  
-l [sigspec]
```

6.pgrep - Given a search term,pgrep returns the process IDs that match it.

A terminal window titled 'naim@naim-HP ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The prompt is 'naim@naim-HP ~ \$'. The command 'pgrep' is entered, followed by the output: 'pgrep: no matching criteria specified' and 'Try `pgrep --help` for more information.' The prompt returns to 'naim@naim-HP ~ \$' with a cursor.

```
naim@naim-HP ~  
File Edit View Search Terminal Help  
naim@naim-HP ~ $ pgrep  
pgrep: no matching criteria specified  
Try `pgrep --help` for more information.  
naim@naim-HP ~ $
```

7.pkill - This command can kill a process.

A terminal window titled 'naim@naim-HP ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The prompt is 'naim@naim-HP ~ \$'. The command 'pkill gedit' is entered. The prompt returns to 'naim@naim-HP ~ \$'. The command 'pkill ping' is entered. The prompt returns to 'naim@naim-HP ~ \$' with a cursor.

```
naim@naim-HP ~  
File Edit View Search Terminal Help  
naim@naim-HP ~ $ pkill gedit  
naim@naim-HP ~ $ pkill ping  
naim@naim-HP ~ $
```

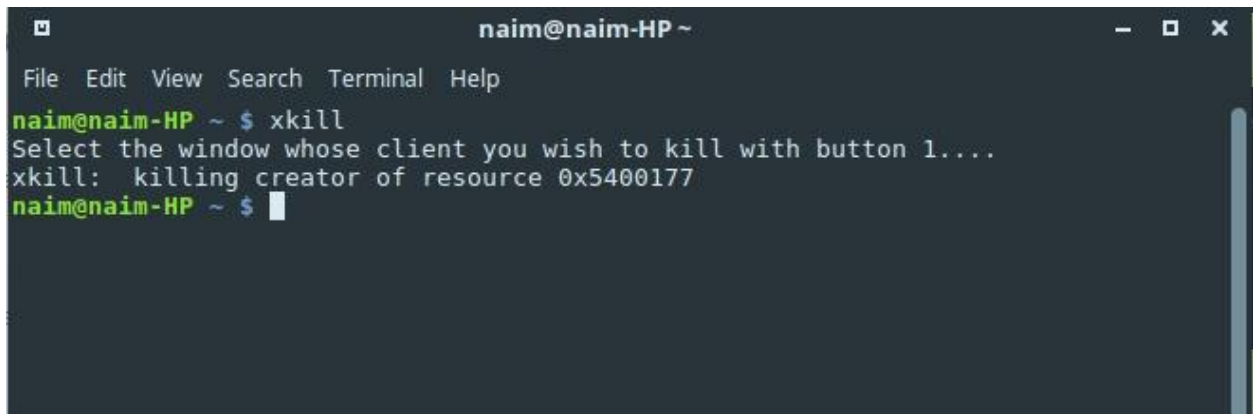

8.killall - This command can kill all process.

```
naim@naim-HP ~  
File Edit View Search Terminal Help  
naim@naim-HP ~ $ killall  
Usage: killall [-Z CONTEXT] [-u USER] [ -eIgiqrvw ] [ -SIGNAL ] NAME...  
      killall -l, --list  
      killall -V, --version  
  
-e,--exact          require exact match for very long names  
-I,--ignore-case    case insensitive process name match  
-g,--process-group  kill process group instead of process  
-y,--younger-than   kill processes younger than TIME  
-o,--older-than     kill processes older than TIME  
-i,--interactive    ask for confirmation before killing  
-l,--list           list all known signal names  
-q,--quiet          don't print complaints  
-r,--regex          interpret NAME as an extended regular expression  
-s,--signal SIGNAL  send this signal instead of SIGTERM  
-u,--user USER      kill only process(es) running as USER  
-v,--verbose        report if the signal was successfully sent  
-V,--version        display version information  
-w,--wait           wait for processes to die  
-Z,--context REGEXP kill only process(es) having context  
                   (must precede other arguments)
```

9.renice - The renice command changes the nice value of an already running process. The nice value determines what priority the process runs with. A value of -15 is very high priority, while a value of 15 is very low priority. A value of 0 is the default priority.

```
naim@naim-HP ~ $ renice  
  
Usage:  
renice [-n] <priority> [-p|--pid] <pid>...  
renice [-n] <priority> -g|--pgrp <pgid>...  
renice [-n] <priority> -u|--user <user>...  
  
Alter the priority of running processes.  
  
Options:  
-n, --priority <num>  specify the nice increment value  
-p, --pid <id>        interpret argument as process ID (default)  
-g, --pgrp <id>       interpret argument as process group ID  
-u, --user <name>|<id> interpret argument as username or user ID  
  
-h, --help            display this help and exit  
-V, --version          output version information and exit  
  
For more details see renice(1).
```

10.xkill - The xkill command is a way of easily killing graphical programs. Run it and your cursor will turn into an x sign. Click a program's window to kill that program. If you don't want to kill a program, you can back out of xkill by right-clicking instead.

A screenshot of a terminal window titled 'naim@naim-HP ~'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal shows the command 'xkill' being entered at the prompt 'naim@naim-HP ~ \$'. The output is 'Select the window whose client you wish to kill with button 1....' followed by 'xkill: killing creator of resource 0x5400177'. The prompt 'naim@naim-HP ~ \$' is shown again with a cursor.

```
naim@naim-HP ~  
File Edit View Search Terminal Help  
naim@naim-HP ~ $ xkill  
Select the window whose client you wish to kill with button 1....  
xkill: killing creator of resource 0x5400177  
naim@naim-HP ~ $
```

Discussion :

The terminal in Unix is a wonderful, powerful tool. we can terminate a process within a second by using this command. This command has made our day. We can easily execute our work and do our work faster by using this terminal and very easy commands.