

**Lab report no : o6**

**Name of the lab report:** Linux command for process

**objectives:**

- ✓ How to Manage Processes from the Linux Terminal?
- ✓ Run the following process commands in Linux.  
Top, htop, Ps, pstree, kill, pgrep, pkill ,killall, renice, xkill,

**How to Manage Processes from the Linux Terminal:**

The Linux terminal has a number of useful commands that can display running processes, kill them, and change their priority level. 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.

**Processes can be manage from the Linux terminal using the below commands:**

- top.
- Htop
- ps
- pstree
- kill
- pgrep
- pkill & killall
- renice
- xkill

**top**

The **top** 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.

```
abdullah@abdullah-X455LAB: ~  
File Edit View Search Terminal Help  
top - 11:50:15 up 33 min, 1 user, load average: 0.72, 0.57, 0.75  
Tasks: 253 total, 2 running, 251 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 7.3 us, 2.1 sy, 0.4 ni, 90.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st  
KiB Mem : 3941120 total, 147748 free, 1970840 used, 1822532 buff/cache  
KiB Swap: 1999868 total, 1999868 free, 0 used. 1206952 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1229	abdullah	20	0	4005560	397196	124824	S	17.5	10.1	3:31.44	gnome-shell
23182	abdullah	20	0	950732	207028	125464	S	4.7	5.3	1:11.00	chrome
23227	abdullah	20	0	608036	151544	108612	S	4.2	3.8	1:12.70	chrome
24277	abdullah	20	0	799880	42000	33180	S	4.2	1.1	0:00.51	gnome-terminal-
2053	abdullah	30	10	1008260	172960	97456	R	1.4	4.4	1:03.64	update-manager
872	root	20	0	49328	7848	7052	S	0.9	0.2	0:00.30	wpa_supplicant
1235	abdullah	20	0	648764	77028	49936	S	0.9	2.0	0:31.19	Xwayland
1	root	20	0	220636	8648	6412	S	0.5	0.2	0:03.00	systemd

## htop

The **htop** command is an improved top. It's not installed by default on most Linux distributions — here's the command you'll need to install it on Ubuntu:

```
abdullah@abdullah-X455LAB: ~  
File Edit View Search Terminal Help
```

1 [ 0.0%]

2 [ 0.0%]

3 [|| 1.3%]

4 [ 0.0%]

Mem[|||||||||||||||2.48G/3.76G]

Swp[| 2.00M/1.91G]

Tasks: 166, 509 thr; 1 running

Load average: 0.93 0.57 0.54

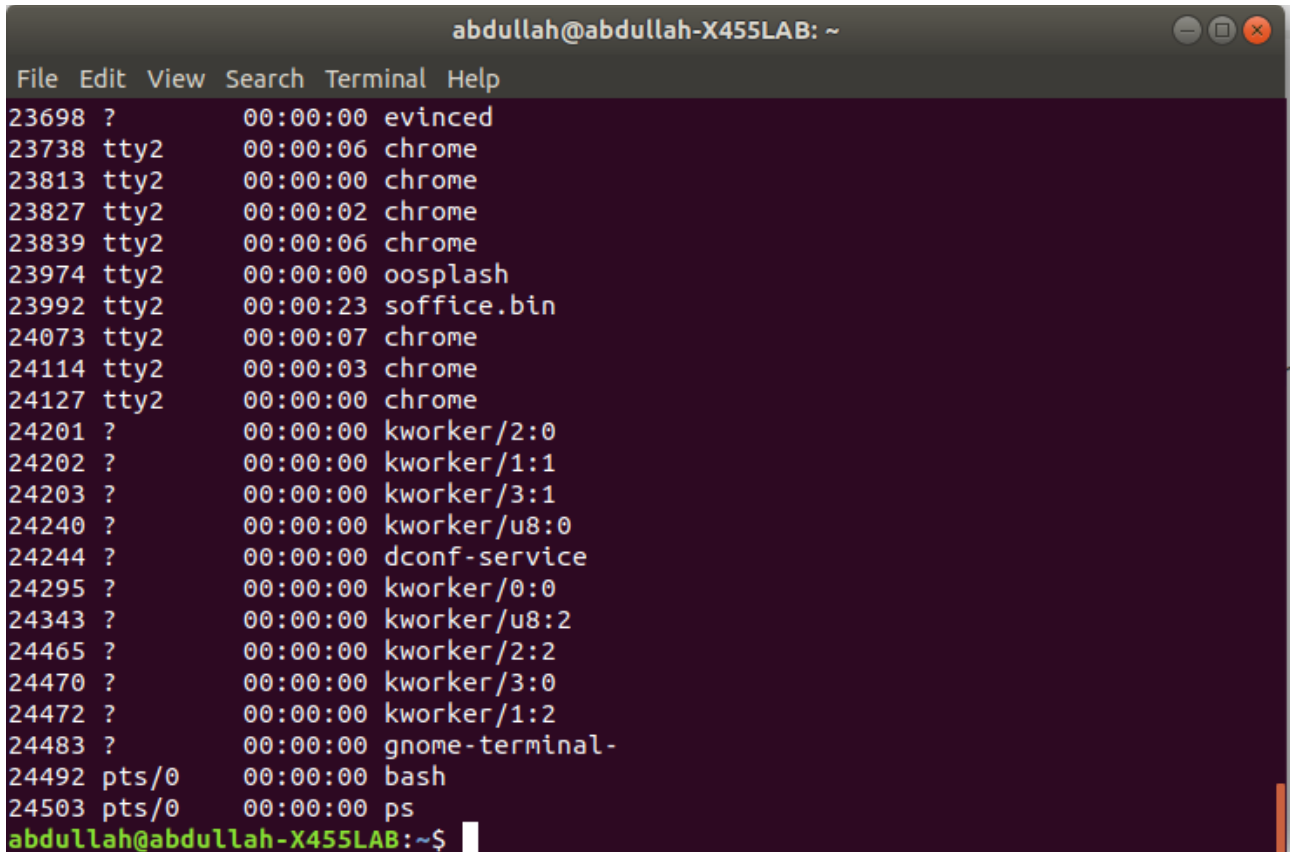
Uptime: 01:03:45

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
25854	abdullah	20	0	27728	4688	3460	R	1.3	0.1	0:00.36	htop
1	root	20	0	215M	8648	6412	S	0.0	0.2	0:04.23	/sbin/init spla
246	root	20	0	76188	8620	7396	S	0.0	0.2	0:00.77	/lib/systemd/sy
260	root	20	0	47760	6484	3156	S	0.0	0.2	0:01.54	/lib/systemd/sy
607	systemd-t	20	0	144M	5056	4484	S	0.0	0.1	0:00.00	/lib/systemd/sy
597	systemd-t	20	0	144M	5056	4484	S	0.0	0.1	0:00.03	/lib/systemd/sy
715	root	20	0	294M	8820	7772	S	0.0	0.2	0:00.08	/usr/lib/accoun
748	root	20	0	294M	8820	7772	S	0.0	0.2	0:00.02	/usr/lib/accoun
692	root	20	0	294M	8820	7772	S	0.0	0.2	0:00.16	/usr/lib/accoun
702	root	20	0	4552	776	716	S	0.0	0.0	0:00.20	/usr/sbin/acpid
703	root	20	0	38540	4620	4220	S	0.0	0.1	0:00.01	/usr/lib/blueto
717	syslog	20	0	250M	3876	2936	S	0.0	0.1	0:00.06	/usr/sbin/rsysl

F1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice - F8Nice + F9Kill F10Quit

## ps

The **ps** command lists running processes. The following command lists all processes running on your system:

A terminal window titled 'abdullah@abdullah-X455LAB: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal displays the output of the 'ps' command, listing various processes with their PIDs, PPIDs, states, and names. The processes include 'evince', multiple instances of 'chrome', 'oosplash', 'soffice.bin', 'kworker' processes, 'dconf-service', 'gnome-terminal', 'bash', and 'ps'. The prompt 'abdullah@abdullah-X455LAB:~\$' is visible at the bottom.

```
abdullah@abdullah-X455LAB: ~
File Edit View Search Terminal Help
23698 ?      00:00:00 evince
23738 tty2    00:00:06 chrome
23813 tty2    00:00:00 chrome
23827 tty2    00:00:02 chrome
23839 tty2    00:00:06 chrome
23974 tty2    00:00:00 oosplash
23992 tty2    00:00:23 soffice.bin
24073 tty2    00:00:07 chrome
24114 tty2    00:00:03 chrome
24127 tty2    00:00:00 chrome
24201 ?      00:00:00 kworker/2:0
24202 ?      00:00:00 kworker/1:1
24203 ?      00:00:00 kworker/3:1
24240 ?      00:00:00 kworker/u8:0
24244 ?      00:00:00 dconf-service
24295 ?      00:00:00 kworker/0:0
24343 ?      00:00:00 kworker/u8:2
24465 ?      00:00:00 kworker/2:2
24470 ?      00:00:00 kworker/3:0
24472 ?      00:00:00 kworker/1:2
24483 ?      00:00:00 gnome-terminal-
24492 pts/0    00:00:00 bash
24503 pts/0    00:00:00 ps
abdullah@abdullah-X455LAB:~$
```

## 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.

```
abdullah@abdullah-X455LAB: ~
File Edit View Search Terminal Help
abdullah@abdullah-X455LAB:~$ pstree
systemd--ModemManager--2*[{ModemManager}]
--NetworkManager--2*[{NetworkManager}]
--accounts-daemon--2*[{accounts-daemon}]
--acpid
--anacron
--aptd--{aptd}
--avahi-daemon--avahi-daemon
--bluetoothd
--chrome--2*[cat]
--chrome--chrome--chrome--2*[chrome--10*[{chrome}]]
--chrome--chrome--chrome--6*[chrome--9*[{chrome}]]
--chrome--chrome--chrome--2*[chrome--8*[{chrome}]]
--chrome--chrome--nacl_helper
--chrome--chrome--chrome--6*[{chrome}]
--chrome--chrome--chrome--8*[{chrome}]
--chrome--chrome--27*[{chrome}]
--colord--2*[{colord}]
--cron
--cups-browsed--2*[{cups-browsed}]
--cupsd
--dbus-daemon
--fwupd--4*[{fwupd}]
```

## kill

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

```
abdullah@abdullah-X455LAB: ~
File Edit View Search Terminal Help
abdullah@abdullah-X455LAB:~$ kill Google Chrome
bash: kill: Google: arguments must be process or job IDs
bash: kill: Chrome: arguments must be process or job IDs
abdullah@abdullah-X455LAB:~$ ps -A | grep Google Chrome
```

## pgrep

Given a search term **pgrep** returns the process IDs that match it. For example, you could use the following command to find bash PID:

```
abdullah@abdullah-X455LAB: ~
File Edit View Search Terminal Help
abdullah@abdullah-X455LAB:~$ pgrep bash
24864
abdullah@abdullah-X455LAB:~$
```

## pkill & killall

The **pkill** and **killall** commands can kill a process, given its name.

```
abdullah@abdullah-X455LAB: ~  
File Edit View Search Terminal Help  
abdullah@abdullah-X455LAB:~$ killall bash  
abdullah@abdullah-X455LAB:~$ pkill bash  
abdullah@abdullah-X455LAB:~$
```

## 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 **-19** is very high priority, while a value of **19** is very low priority. A value of **0** is the default priority.

```
abdullah@abdullah-X455LAB: ~  
File Edit View Search Terminal Help  
abdullah@abdullah-X455LAB:~$ renice 19 PID  
renice: bad process ID value: PID  
abdullah@abdullah-X455LAB:~$
```

## 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.

```
abdullah@abdullah-X455LAB: ~  
File Edit View Search Terminal Help  
abdullah@abdullah-X455LAB:~$ xkill  
Select the window whose client you wish to kill with button 1....  
█
```

