Mawlana Bhashani Science and Technology University

Lab-Report

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Course title: Operating System Lab

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Submitted by

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Dept. of ICT

MBSTU.

Submitted To

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MBSTU.

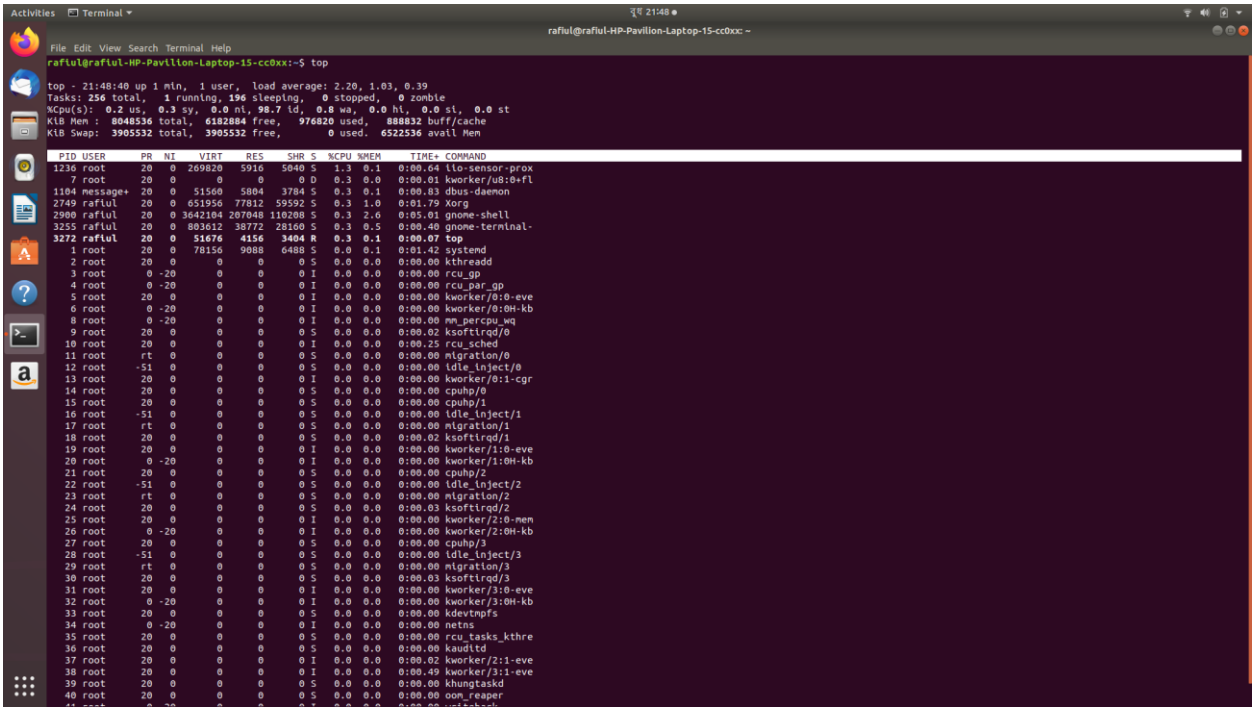
Experiment no : 06

Experiment Name: Process Handling in Linux

Objective:- Learn the fundamentals of processes management on Linux. In this lab we will be introduced to the use of some fundamental tools that will help you accomplish that vital task.

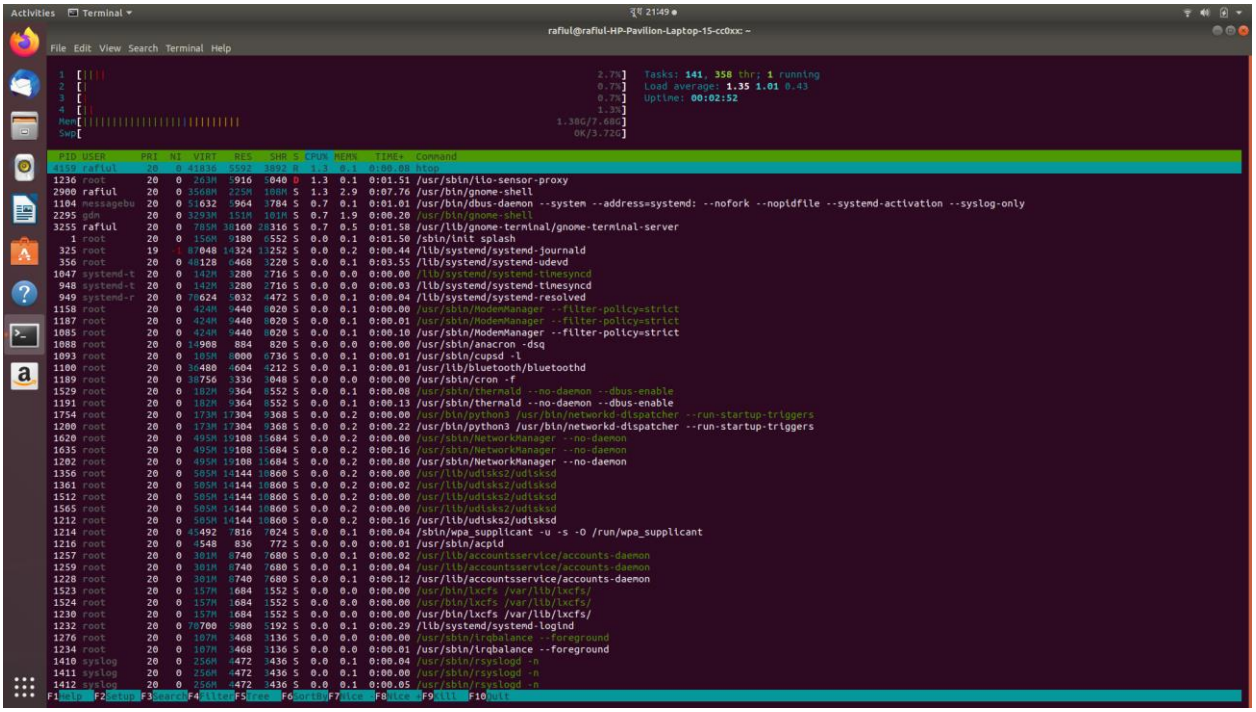
Process Manage:- The Linux terminal has a number of useful commands that can display running processes, kill them, and change their priority level. This post lists the classic, traditional commands, as well as some more useful, modern ones. Many of the commands here perform a single function and can be combined — that's the Unix philosophy of designing programs. Other programs, like htop, provide a friendly interface on top of the commands.

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.



htop

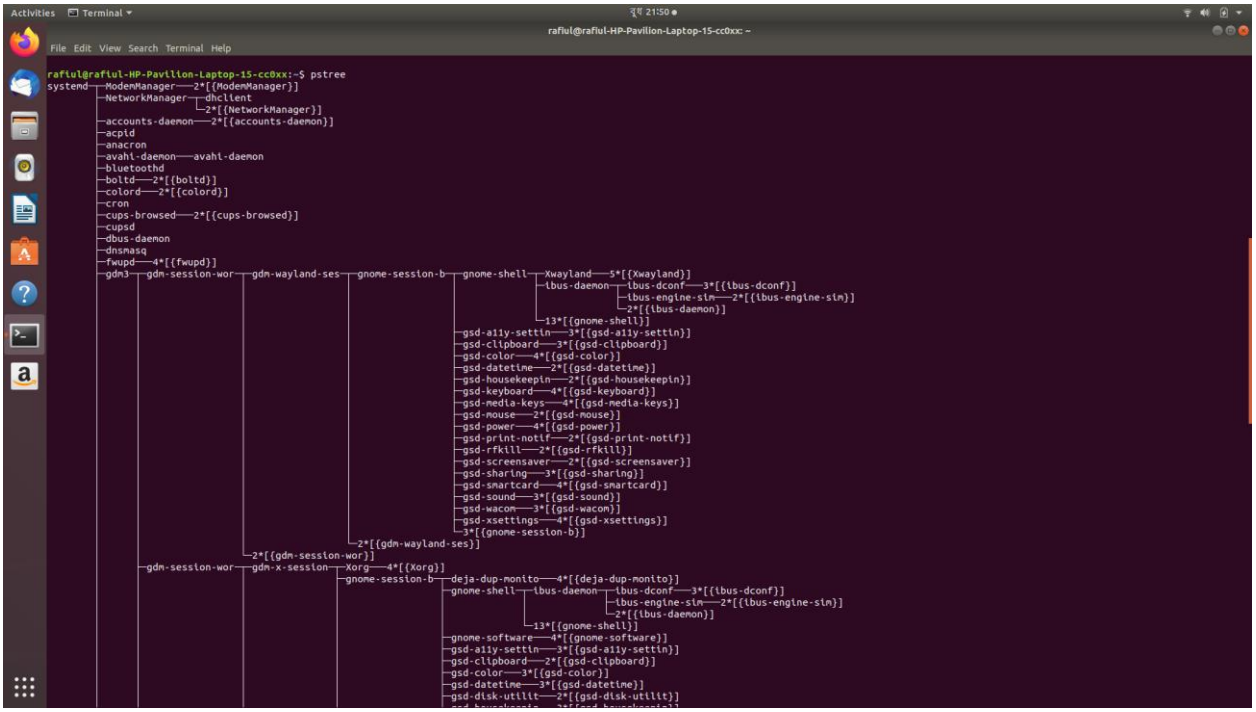
The htop command is an improved top. It's not installed by default on most Linux distributions — here's the command you'll need to install it on Ubuntu:

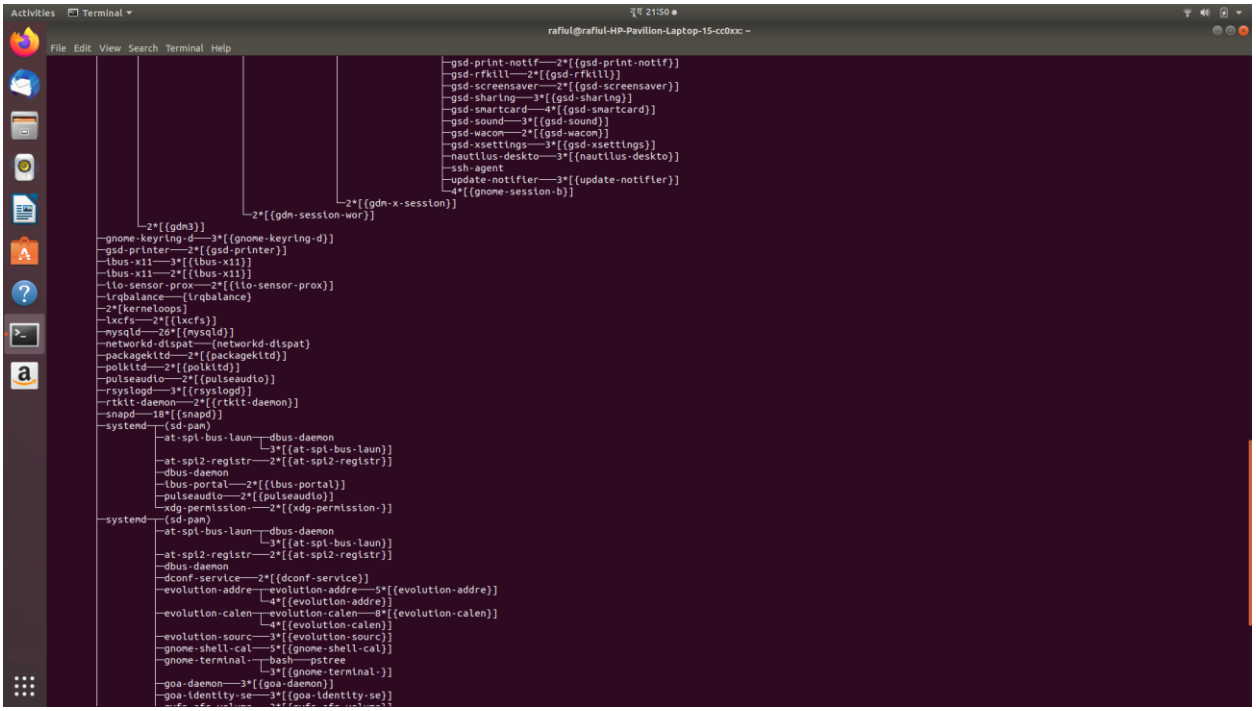


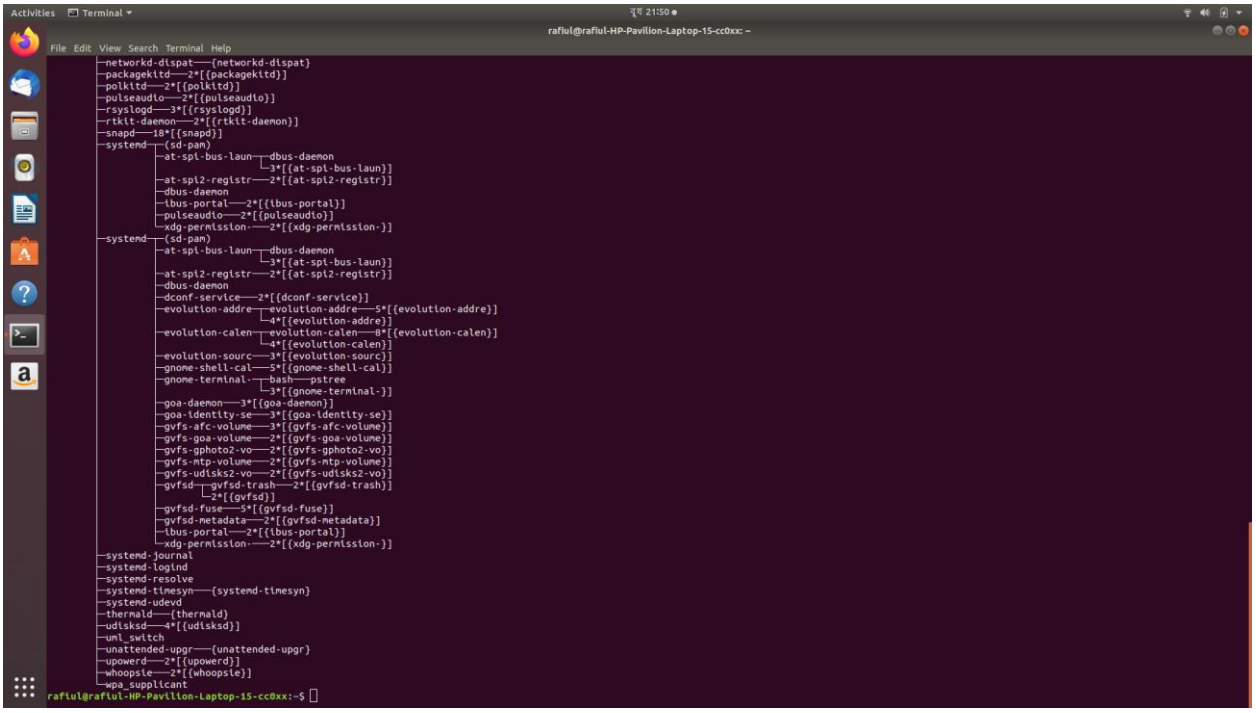
htop displays the same information with an easier-to-understand layout. It also lets you select processes with the arrow keys and perform actions, such as killing them or changing their priority, with the F keys.

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.


Activities
Terminal
রবি 21:50
rafiul@rafiul-HP-Pavilion-Laptop-15-cc0xx: ~
File Edit View Search Terminal Help
rafiul@rafiul-HP-Pavilion-Laptop-15-cc0xx:~$ pstree
systemd─┬─ModemManager───2*[{ModemManager}]
─NetworkManager─┬─dhclient
└─2*[{NetworkManager}]
─accounts-daemon───2*[{accounts-daemon}]
─acpid
─anacron
─avahi-daemon───avahi-daemon
─bluetoothd
─boltd───2*[{boltd}]
─colord───2*[{colord}]
─cron
─cups-browsed───2*[{cups-browsed}]
─cupsd
─dbus-daemon
─dnsmasq
─fwupd───4*[{fwupd}]
─gdm3─┬─gdm-session-wor─┬─gdm-wayland-ses─┬─gnome-session-b─┬─gnome-shell─┬─Xwayland───5*[{Xwayland}]
─ibus-daemon─┬─ibus-dconf───3*[{ibus-dconf}]
─ibus-engine-sim───2*[{ibus-engine-sim}]
└─2*[{ibus-daemon}]
└─13*[{gnome-shell}]
─gsd-a11y-settin───3*[{gsd-a11y-settin}]
─gsd-clipboard───3*[{gsd-clipboard}]
─gsd-color───4*[{gsd-color}]
─gsd-datetime───2*[{gsd-datetime}]
─gsd-housekeepin───2*[{gsd-housekeepin}]
─gsd-keyboard───4*[{gsd-keyboard}]
─gsd-media-keys───4*[{gsd-media-keys}]
─gsd-mouse───2*[{gsd-mouse}]
─gsd-power───4*[{gsd-power}]
─gsd-print-notif───2*[{gsd-print-notif}]
─gsd-rfkill───2*[{gsd-rfkill}]
─gsd-screensaver───2*[{gsd-screensaver}]
─gsd-sharing───3*[{gsd-sharing}]
─gsd-smartcard───4*[{gsd-smartcard}]
─gsd-sound───3*[{gsd-sound}]
─gsd-wacom───3*[{gsd-wacom}]
─gsd-xsettings───4*[{gsd-xsettings}]
─3*[{gnome-session-b}]
└─2*[{gdm-wayland-ses}]
└─2*[{gdm-session-wor}]
─gdm-session-wor─┬─gdm-x-session─┬─Xorg───4*[{Xorg}]
─gnome-session-b─┬─deja-dup-monito───4*[{deja-dup-monito}]
─gnome-shell─┬─ibus-daemon─┬─ibus-dconf───3*[{ibus-dconf}]
─ibus-engine-sim───2*[{ibus-engine-sim}]
└─2*[{ibus-daemon}]
└─13*[{gnome-shell}]
─gnome-software───4*[{gnome-software}]
─gsd-a11y-settin───3*[{gsd-a11y-settin}]
─gsd-clipboard───2*[{gsd-clipboard}]
─gsd-color───3*[{gsd-color}]
─gsd-datetime───3*[{gsd-datetime}]
─gsd-disk-utilit───2*[{gsd-disk-utilit}]


Activities
Terminal
রবি 21:50
rafiul@rafiul-HP-Pavilion-Laptop-15-cc0xx: ~
File Edit View Search Terminal Help
─gsd-print-notif───2*[{gsd-print-notif}]
─gsd-rfkill───2*[{gsd-rfkill}]
─gsd-screensaver───2*[{gsd-screensaver}]
─gsd-sharing───3*[{gsd-sharing}]
─gsd-smartcard───4*[{gsd-smartcard}]
─gsd-sound───3*[{gsd-sound}]
─gsd-wacom───2*[{gsd-wacom}]
─gsd-xsettings───3*[{gsd-xsettings}]
─nautilus-deskto───3*[{nautilus-deskto}]
─ssh-agent
─update-notifier───3*[{update-notifier}]
─4*[{gnome-session-b}]
└─2*[{gdm-x-session}]
└─2*[{gdm-session-wor}]
└─2*[{gdm3}]
─gnome-keyring-d───3*[{gnome-keyring-d}]
─gsd-printer───2*[{gsd-printer}]
─ibus-x11───3*[{ibus-x11}]
─ibus-x11───2*[{ibus-x11}]
─iio-sensor-prox───2*[{iio-sensor-prox}]
─irqbalance───{irqbalance}
─2*[kerneloops]
─lxcfs───2*[{lxcfs}]
─mysqld───26*[{mysqld}]
─networkd-dispat───{networkd-dispat}
─packagekitd───2*[{packagekitd}]
─polkitd───2*[{polkitd}]
─pulseaudio───2*[{pulseaudio}]
─rsyslogd───3*[{rsyslogd}]
─rtkit-daemon───2*[{rtkit-daemon}]
─snapd───18*[{snapd}]
─systemd─┬─(sd-pam)
─at-spi-bus-laun─┬─dbus-daemon
└─3*[{at-spi-bus-laun}]
─at-spi2-registr───2*[{at-spi2-registr}]
─dbus-daemon
─ibus-portal───2*[{ibus-portal}]
─pulseaudio───2*[{pulseaudio}]
─xdg-permission-───2*[{xdg-permission-}]
─systemd─┬─(sd-pam)
─at-spi-bus-laun─┬─dbus-daemon
└─3*[{at-spi-bus-laun}]
─at-spi2-registr───2*[{at-spi2-registr}]
─dbus-daemon
─dconf-service───2*[{dconf-service}]
─evolution-addre─┬─evolution-addre───5*[{evolution-addre}]
└─4*[{evolution-addre}]
─evolution-calen─┬─evolution-calen───8*[{evolution-calen}]
└─4*[{evolution-calen}]
─evolution-sourc───3*[{evolution-sourc}]
─gnome-shell-cal───5*[{gnome-shell-cal}]
─gnome-terminal-─┬─bash───pstree
└─3*[{gnome-terminal-}]
─goa-daemon───3*[{goa-daemon}]
─goa-identity-se───3*[{goa-identity-se}]



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.

```
rafiul@rafiul-HP-Pavilion-Laptop-15-cc0xx:~$ kill firefox
bash: kill: firefox: arguments must be process or job IDs
rafiul@rafiul-HP-Pavilion-Laptop-15-cc0xx:~$
```

Technically speaking, the kill command can send any signal to a process. You can use kill -KILL or kill -9 instead to kill a stubborn process.

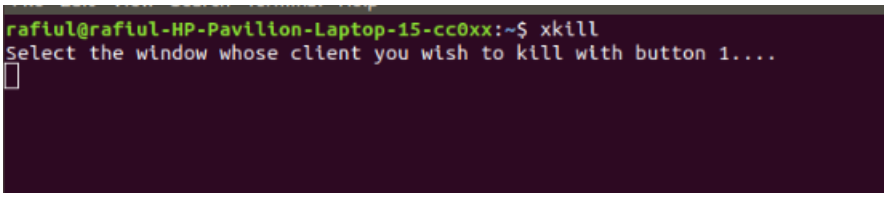
pkill & killall

The pkill and killall commands can kill a process, given its name. Use either command to kill Firefox:

```
rafiul@rafiul-HP-Pavilion-Laptop-15-cc0xx:~$ pkill firefox
rafiul@rafiul-HP-Pavilion-Laptop-15-cc0xx:~$
```

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.



You don’t have to run this command from a terminal — you can also press Alt-F2, type xkill and press Enter to use it from a graphical desktop.

Conclusion: In this lab, we have discussed few commands for the file management in Linux terminal. At first, we have discussed the commands for listing the files, then the commands to change the directory, thirdly, we have seen the commands to remove the files/ directories. Then we observed how to copy and move the files from one location to another. The next part contains commands to make new directories. Later we discussed how to change the file permissions and how to create empty files in Linux command line.