Working with Links – Hard links

ln f1 hf1

f1 should be an existing file name

hf1 and f1 share inode number

As a consequence, single instance of attributes and data shared between f1 and hf1

Link count incremented by one

Can span only a single file system

Can not link directories

Deleting f1 or hf1 first decrements link count

Inode & data blocks freed only if link count reaches zero

Working with soft – symbolic links

ln -s f1 sf1

f1 should be existing file name

f1 and sf1 have different inode numbers

As a consequence, separate instances of attributes and data

Data part of soft link has the file name to which it links

Can span across file systems

Opening soft link opens the file linked to

Can span across file systems

Soft link and the file linked can be deleted independent of the other

Processes

Process - an instance of a program in execution

Identiifed by a process id and has a parent process id

Only a process can create another process

First user process, init, created by kernel with PID=1

Shell spawns a child process for commands

Foreground execution:

sleep 20

Waits until child terminates and redisplays prompt

Background execution:

sleep 20 &

Display prompt immediately without waiting

Generates a termination status later on activity

Process Status

ps

ps -f

ps -u userid

ps -l

ps -e

Job and Process control

kill PID

kill -9 PID Sure kill

kill $! Last background process

Fore ground job termination

sleep 300

ctrl-c

Fore ground job suspension

sleep 300

ctrl-z

Listing the jobs

jobs

Resumption of execution

fg %jobid Resume in the fore ground

bg %jobid Resume in the back ground

Job control Examples

sleep 500 &

sleep 400 &

jobs

sleep 700

ctrl-z

jobs

fg %jobid

ctrl-z

jobs

bg %jobid

jobs

Nice and nohup

nice : Being nice to others, not to oneself

nice command

nice command &

nice -nicevalue command

Default nicevalue=15

nicevalues:

0-19 normal users. -20 to 19 super user

nice -15 sort database > sorteddata &

nohup : Don't hanup with logout

nohup comand &

Output saved in file nohup.out in current directory

nohup sort database &

Entering input modes

i - Insert at cursor

I - Insert at the beginning of line

a - Add after the cursor position

A - Append at the end of line

r - Replace one char

R - Replace mode

o - Open a new line below cursor

O - Open a new line at cursor

Command mode

x - Delete one char

20x - Delete 20 chars

dw - Delete current word, from cusor to end

4dw - Delete 4 words

dd - Delete current line

5dd - Delete 5 lines

yw - Copy current word, from cursor to end

2yw - Copy 2 words

yy - Copy current line

10yy - Copy 10 lines

p - Paste from next line/char

P - Paste from current line/char

u - Undo

ctrl-r - Redo

Command mode

hjkl - Left down up right cursor movements

$ - End of line

0 - Beginning of line

w - Beginning of next word

3W - Beginning of 3rd next word

b - Beginning of previous word

5B - Beginning of 5th previous word

/pattern - Search forward for a match

- n next match

- N previous match

?pattern - search backward for a match

- n previous match

- N next match

Command line mode

:w - Save

:w filename - Save to the file

:q - Quit

:wq - Save and quit.

ZZ (uppercase) in command mode

:q! - Force quit without saving

:100 - Move to 100th line.

:$ - Move to last line

:set number - Display line numbers

:set nonumber - Disable line numbers

:set hlsearch - Hightlight search matchs

:set nohlsearch- Disable highlighting

Command line mode

:!cmd - Execute shell command

:r filename - Load file at next line

:r!cmd - Command output from next line