

AIM

TO STUDY UNIX FILE SYSTEM ALONG WITH FILE AND DIRECTORY COMMANDS AND HOW PERMISSIONS ARE HANDLED.

FILE SYSTEM

- THE UNIX FILE SYSTEM IS ORGANISED IN A HIERARCHIAL TREE STRUCTURE WITH THE ROOT "/" AT THE TOP.
- DIRECTORIES AND FILES BRANCH OUT FROM THE ROOT, THIS ALLOWS FOR EFFICIENT AND EASY TO USE NAVIGATION WITHIN THE OPERATING SYSTEM.

FILE AND DIRECTORY PERMISSION

- UNIX USES A PERMISSION MODELS FOR FILES AND DIRECTORIES FOR READING, WRITING AND EXECUTING FOR OWNER, GROUPS AND OTHERS.

SINGLE USER

- A SINGLE USER ENVIRONMENT ALLOWS ONLY ONE USER TO ACCESS THE SYSTEM AT A TIME, HERE THE USER HAS CONTROL OVER THE SYSTEM'S RESOURCES AND FILES.

[MULTI-USER SYSTEM]

- HERE EACH USER HAS THEIR OWN SET OF PERMISSIONS AND ISOLATED DIRECTORIES TO PREVENT UNAUTHORIZED ACCESS.

[FILE SYSTEM COMMANDS]

① ls

- DISPLAYS CONTENT OF DIRECTORY

SYN ls [options] [directory]

Eg. ls -l

② cd

- CHANGES THE CURRENT DIRECTORY

SYN cd [directory]

Eg. cd /home/user

③ pwd

- DISPLAY FULL PATH OF CURRENT DIRECTORY

SYN pwd

Eg. pwd

④ cat

- DISPLAY CONTENT OF A FILE

SYN cat [file]

Eg. cat arthur.txt

(5) `mkdir`

- CREATE A NEW DIRECTORY

SYN `mkdir [directory-name]`

Eg. `mkdir unix`

(6) `rmdir`

- REMOVES AN EMPTY FOLDER

SYN `rmdir [folder-name]`

Eg. `rmdir unix`

(7) `rm`

- DELETE FILE AND FOLDER

SYN `rm [options] [file/folder]`

Eg. `rm arthuv.txt`

(8) `cp`

- COPY FILE AND FOLDER

SYN `cp [source] [dest]`

Eg. `cp a.txt b.txt`

(9) `mv`

- MOVES OR RENAMES FILES OR FOLDER

SYN `mv [source] [dest]`

Eg. `mv a.txt b.txt`

(10) `chmod`

- CHANGE PERMISSIONS

SYN `chmod [permission] [file]`

Eg. `chmod 777 a.txt`

⑪ wc

- COUNT LINES, WORDS AND CHARS IN A FILE

SYN wc [file]

Eg. wc b.txt

⑫ PIPING " | " AND REDIRECTION ">", "<"

- ALLOWS OUTPUT OF ONE COMMAND TO BE USED AS INPUT FOR ANOTHER OR REPIRCECS OUTPUT TO A FILE

SYN command1 | command2

command > file

Eg. ls -l | grep "txt"

⑬ grep

- SEARCH FOR A PATTERN IN A FILE

SYN grep [pattern] [file]

Eg. grep "ap" b.txt

⑭ tr

- TRANSLATES OR DELETE CHARS IN A STREAM

SYN tr [s1] [s2]

Eg. echo "Hello" | tr "a-z" "A-Z"

⑮ echo

- DISPLAY LINE OF TEXT

SYN echo [text]

Eg. echo "Hello World"

(16) sort

- SORTS LINE OF TEXT

Eg. sort a.txt
SYN sort [file]

(17) head

- DISPLAY FIRST FEW LINES OF FILE

Eg. head [file]
SYN head a.txt

(18) tail

- DISPLAY LAST FEW LINES OF FILE

SYN tail [file]
Eg. tail a.txt

(19) diff

- COMPARES CONTENT OF TWO FILES

Eg. diff [f1] [f2]
SYN diff a.txt b.txt

(20) comm

- COMPARES SORTED CONTENT OF TWO FILES

Eg. comm [f1] [f2]
SYN comm a.txt b.txt

(21) less

- VIEW CONTENT OF FILE ONE PAGE AT A TIME

SYN less [file]
Eg. less a.txt

(22) more

- SIMILAR TO "less" WITH LONGER PAGE

SYN more [file]

Eg. more a.txt

(23) file

- SHOWS TYPE OF FILE

SYN file [file]

Eg. file a.txt

(24) type

- SHOWS TYPE OF COMMAND

SYN type [command]

Eg. type ls

(25) split

- SPLITS FILE INTO SMALLER PARTS

SYN split [file] [prefix]

Eg. split a.txt

(26) cmp

- COMPARE FILES BY BYTE

SYN cmp [f1] [f2]

Eg. cmp a.txt b.txt

(27) tar

- ARCHIVE FILES INTO A TARBALL

SYN tar [options] [archive] [files]

Eg. tar -cvf a.tar a.txt b.txt

(28)

find

— SEARCH FOR FILE OR FOLDER

SYN

find [path] [exp]

Eg.

find /home -name "a.txt"

(29)

vim

— OPEN A FILE IN VIM EDITING TOOL

N

vim [file]

Eg.

vim a.txt

(30)

gzip

— COMPRESS FILES USING "gzip"

SYN

gzip [file]

Eg.

gzip a.txt

(31)

bzip2

— COMPRESS VIA "bzip2"

SYN

bzip2 [file]

Eg.

bzip2 a.txt

(32)

unzip

— EXTRACT FILES FROM ".zip"

SYN

unzip [a.zip]

Eg.

unzip b.zip

(33)

locate

— QUICKLY SEARCH FOR FILES BY NAME

SYN

locate a.txt

Eg.

locate [filename]

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AIM

TO STUDY USER MANAGEMENT COMMANDS IN UNIX SYSTEM

(1)

who

— DISPLAY LOGGED IN USERS

SYN

who

Eg. who

(2)

who am i

— DISPLAYS CURRENT USERNAME

SYN

who am i

Eg. who am i

(3)

su

— SWITCH TO DIFFERENT USER

SYN

su [user]

Eg. su root

(4)

sudo

— RUN COMMANDS WITH ROOT PRIVILEGES

SYN

sudo [Command]

Eg. sudo apt update

(5)

login

— LOGS A USER INTO SYSTEM

SYN

login [username]

Eg. login "Abd"

⑥ logout
- LOGS CURRENT USER FROM SYSTEM

SYN logout
Eg. logout

⑦ exit
- EXITS CURRENT SHELL SESSION

SYN exit
Eg. exit

⑧ passwd
- CHANGE PASSWORD OF USER

SYN passwd [user]
Eg. passwd "john"

⑨ useradd
- ADD NEW USER

SYN useradd [options] [username]

Eg. sudo useradd john

⑩ usermod
- MODIFY USER DETAILS

SYN usermod [options] [username]

Eg. sudo usermod -aG sudo alice

⑪ userdel
- DELETE A USER ACCOUNT

SYN userdel [options] username

Eg. sudo userdel -r alice

(12) groupadd

- ADD A NEW GROUP

SYN groupadd [grp-name]

Eg. sudo groupadd developers

(13) groupmod

- MODIFY A GROUP'S DETAILS

SIN groupmod [options] [grp-name]

Eg. sudo groupmod -n devs developers

(14) groupdel

- DELETE A GROUP

SYN groupdel [grp-name]

Eg. sudo grpdel devs

(15) gpasswd

- MANAGE GROUP PASSWORD

SIN gpasswd [options] [grp-name]

Eg. sudo gpasswd -a alice developers

(16) chown

- CHANGE OWNERSHIP OF SOMETHING

SYN chown [owner] [file]

Eg. sudo chown alice a.txt

⑯ chage

→ MANAGE PASSWORD EXPIRATION OF ACCOUNT

Syn chage [options] [username]

Eg. sudo chage -l john

⑰ chgrp

→ CHANGE GROUP OWNERSHIP OF SOMETHING

Syn chgrp [grp] [file]

Eg. chgrp developers a.txt

⑱ chfn

→ CHANGE USER FULL NAME AND DETAILS

Syn chfn [username]

Eg. sudo chfn alice