**LINUX Filesystem Hierarchy**

/(Top level root directory)

Bin(Commands executed by users)/sbin(system commands)

Etc(default directory for Installation of Packages)

Usr(COnfiguration/Specification related files)

Boot(OS related files)

Home (Home directory for other normal users)

Root(Home /directory for root user)

|  |  |
| --- | --- |
| Windows(OS) | Linux(Kernel) |
| Folder | Directory |
| Software | Package |
| Admin | Root |
| \ | / |

**LINUX Commands:**

1. Sudo su - : to convert normal user into root user.
2. Clear / ctrl + L
3. File creation: Only one type of file that is .txt file. No extension. Case sensitive

|  |  |  |  |
| --- | --- | --- | --- |
| cat | touch | nano | Vi/vim |
| cat > file1->Enter->add content->enter->ctrl+d(exit) | touch file2  touch filea fileb filec  touch file{1..5} | nano file3 -> entr->add content->ctrl+x->Y+entr | vi file4->entr->press i->esc+:wq!+entr |
| Can only add more contents, cannot edit existing content.Read only files | Emplty file | Come out file using ctrl+x | I for Insert mode : to enter into insert mode from cmd mod |
| cat >> file1(To add more content |  |  |  |
| cat file1 |  | Text editor | Text editor |

1. ls: To list all files and directories in current directory.
2. mkdir: create directory. mkdir dir1, dir2, dir3
3. ls -l or ls -ltr: To know more about files/directories in current directory. d – directory - - files
4. ls -a: To list all files inside current directory like hidden files. We hidden files so that we should not delete them by mistake. .file1 or .dir1 will become hidden.
5. ls -la : ling list + hidden files
6. mkdir -p dira/dirb/dirc/dird : To create directories in hierarchy.
7. cd dir1: change directory
8. cd .. : To come back to previous directory. ‘.’ Means current directory
9. cd dira/dirb/dirc/dird
10. cd ../../../..
11. pwd(present working dir) : gives current location
12. ~ : home directory
13. cd : Only cd from anywhere takes you to Home directory.
14. apt install tree -> tree : tree package helps to display hierarchy/tree structure from your current location.
15. cp(Copy Paste) file4 dir1 : copy from source to destination
16. cp -r dir1 dira : copy dir1 into dir a. -r means recursive.
17. mv(Cut Paste) file3 dir2: move file3 into dir2
18. mv file1 file100(Rename) : when destination is not there mv converts as rename.
19. rm -rf : Streight away deletion
20. history : displays all commands used so far.
21. touch dira/dirb/dirc/dird/file1
22. touch ../../file1 : creates file under dirb
23. ls / : gives list of all files/directories under /
24. mkdir /temp: create directory under top level
25. grep root /etc/password : find ‘root’ word inside password file
26. less /etc/password : To open file.
27. more /etc/password : To open file.
28. head /etc/password : To display top 10 lines.
29. head -3 /etc/password : To display botton 3 lines.
30. tail /etc/passwd: To display bottom 10 lines
31. shortcut : copy content + right click for paste
32. shortcut : ds + tab : dsfjkdgdkjgidjgkdklfklfdk file comes up
33. hostname : computer name : can run from anywhere
34. ifconfig : to know ip address of EC2 instance : can run from anywhere
35. hostname -I : only ip address : can run from anywhere
36. cat /etc/os-release : OS related info : can run from anywhere
37. cat /etc/os-re\*
38. apt install : to insall package
39. apt update
40. apt remove
41. which git : need to vierify whether package is insa\talled or no
42. apt list installed :list all package installed
43. apt list installed | grep httpd\* : merge two commands
44. man ls : provide help of command
45. nproc : will list CPU on machine
46. free or free -g: will list memory usage
47. top : will list all processes with memory and other info
48. df -h: list disc space

**SHELL Scripting**

1. Open .sh file using vim abc.sh
2. Press ‘I’ to enter into Insert mode
3. Enter #!/(called shebang)bin/bash

Diff between /bin/sh and /bin/bash

4)echo “I am learning”

5)Esc+:wq!

6) Execute shell script or any executable : ./bashfile.sh(gives permission denied error because or sh bashfile.sh

7) chmod : This cmd grants the permission. Ch means change. Chmod is divided into 3 sections,

1)root users 2)Group users 3) what are your permissions

Chmod 777 bashfile.sh : permission to everyone. 7 digit comes from 4- read, 2-write, 1-execute

Reasons for Linux/Shell Scripting in DevOps life:

1. Infrastructure Management
2. Code – GitHub
3. Configuration Management
4. Eg: John is DevOps guy who is working for Amazon and his team has around 10000 machine under them.He has to monitor nod health of all machines. Everytime he has to go to this VM and Dev are facing problem with some nods like memory issue or CPU is going out or Linux is very slow or processes running on this VMs are very slow. In those scenarios, he will run shellscript saved in GitHub and run it. Instead of waiting Devs to come up with issues, he can create shell script and run once a day basis to check on all machines.