ETECHCONSULTINGLLC

LINUX administration:

Linux is an open source operating system with two layers on top of its hardware.

- **Layer1** is the shell.
- **Layer2 is** the kernel

What is a shell?

A shell is the layer of a linux operating system that receives and interpret commands from the user

Different Shells in linux

cat /etc/shells : = use to display all the shells the system support

/bin/sh

/bin/bash

/bin/rbash

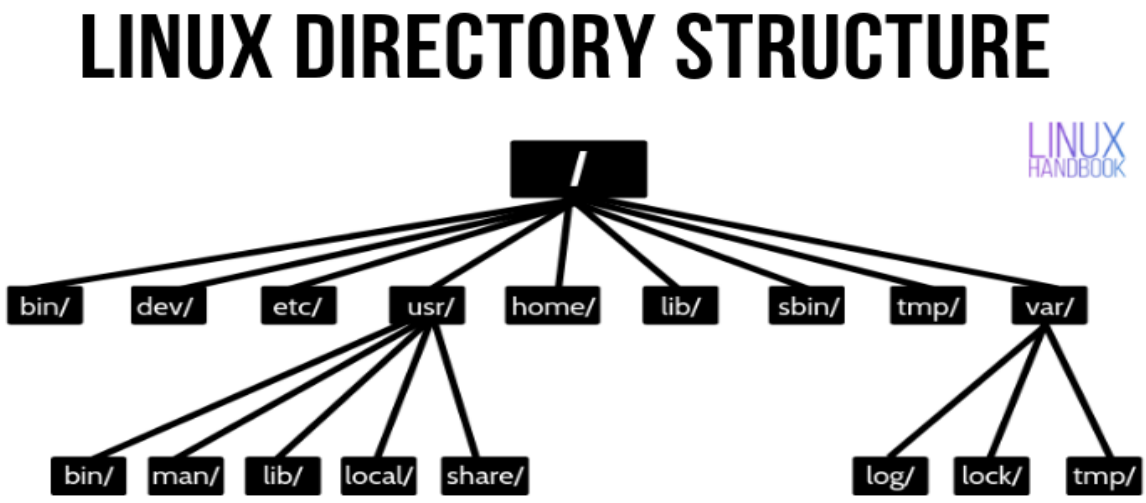
/bin/dash

/usr/bin/tmux

/usr/bin/screen

What is a kernel?

A kernel is the layer of a linux operating system directly into contact with the underlying hardware and execute interpreted commands from the shell.



Important directories of special interest

/bin : stores binary commands accessible by both regular user and superuser

/etc: contains configurations files and sub directories

/dev: stores files about devices connected to the filesystem

/usr : stores informations about users path

/home: stores informations about users home directory store

/lib: store library functions

/sbin: store superuser commands accessible with root privileges

/tmp: temporarily store data

/var: stores and contains subdirectories for log files

Types of users in linux:

Regular user and superuser

We use sudo to escalate privileges from regular user to superuser

Linux commands for daily jobs:

User management commands:

useradd Etech-admin

sudo hostname myserver = used to set the hostname of a linux server

sudo su - Etech-admin = used to switch user

File management commands - Directories:

pwd

touch

mkdir

mkdir -p devops/git/maven/sonaqube/tomcat

mkdir -pv team/engineers/se/sre

v = verbose

p = create both parent and child Directories

tree -- list Directories in a tree format

rmdir

cd

vi

tail

head

less

more

cat

ls

du

df

wc

sort

logname

whoami

free

rm

mv

cp

echo

File management commands - Directories:

touch -- creates an empty file

touch fileName

touch test.txt

Creating a file content:

```
 echo
 echo 2022 MUST BE BETTER FOR ME > file.txt
 echo "JESUS IS LORD" > file2.txt
 echo 'My DevOps training is to conquer and not to try'
```

Modifying the content of a file:

Text editors:

Windows:

- sublime text
- bracket
- notepad++
- vs code
- atom
- eclipse

Linux:

vi/vim editors

```
 vi fileName
```

1. you access the file in command mode
   press i to enter insert mode
   press "esc key" to enter command mode

   type :wq and press enter key to save and quit
   do a quick double press on the shift+z key
     to save and quit

   type :q! and press enter key to quit without saving

Reading the content of a file:

displaying the content of a file:

```
  cat fileName
  cat -n test
  head fileName = display the 1st 10 lines of a file
  head -5 fileName = display the 1st 5 lines of a file
  tail fileName = display the last 10 lines of a file
  tail -5 fileName = display the last 5 lines of a file
  tail -15 fileName = display the last 15 lines of a file
  less fileName =
  more fileName = displays content a page at a time
```

Fields of a file or directory:

```
1     2           3       4        5      6       7          8
type Permissions links  owner    group   size    date       name
d  rwxrwxr-x.     3   ec2-user  ec2-user 19 Jan 15 17:33    git
-  rw-rw-r--.     1   ec2-user  ec2-user  0 Jan 19 00:26    test
l  rw-rw-r--.     1   ec2-user  ec2-user  0 Jan 19 00:26    data
```

1) type (-file,)
2) Permissions
3) Number of links
4) Owner
5) Group Owner
6) Size of the File in Bytes
7) Date and Time of created
8) File name/Dir Name

Permission attributes:

Read - r = 4 grant read access for a user
Write - w = 2 grant write/modify access for a user
Execute - x = 1 grant access to run the file as a command

std permissions:

file	dir
0664	0775

owner	7	6
group	7	6
others	7	6
	777	666

chmod : It will change the file or directory access permissions.

```
chmod +rwx test
chmod 777 test
chmod 000 test
chmod 000 test
chmod 777 test   rwx rwx rwx
mkdir -m 700 gcp
```

By default the owner of a file is the user who creates the file or directory