INTRODUCTION TO LINUX

BY

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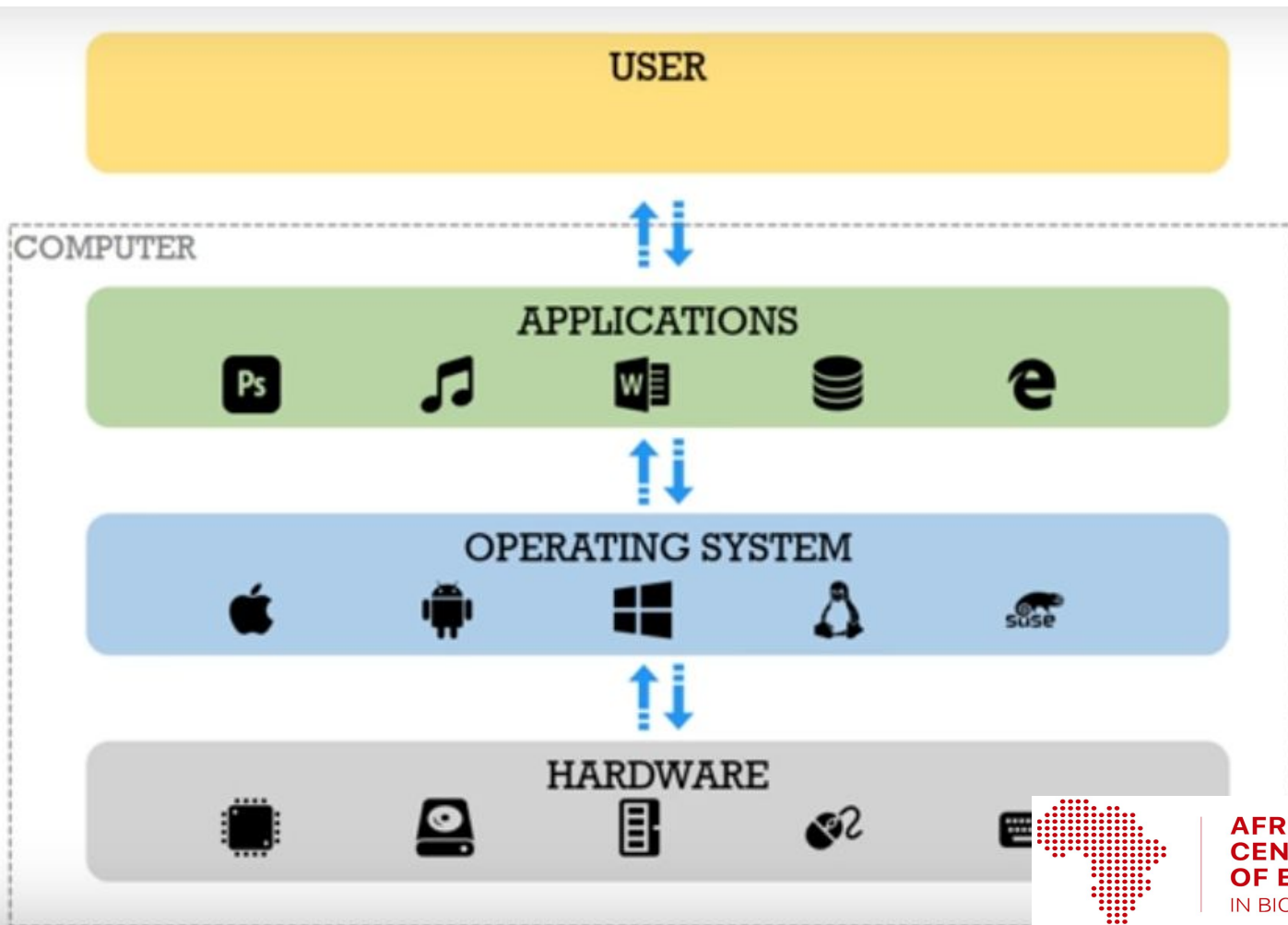
Introduction to LINUX

What is an operating system
- An operating system (OS) is the program that manages the computer hardware and other software applications. The application programs make use of the operating system by making requests for services through a defined application program interface

USER

COMPUTER

APPLICATIONS
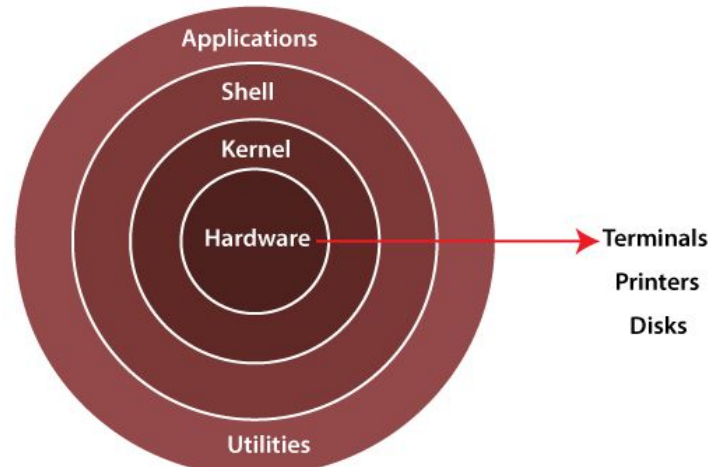
OPERATING SYSTEM

HARDWARE

What is unix
- **Unix** is multi-tasking, multi-user operating system but is not free to use and is not open source. It was developed in 1969 by Ken Thompson team at AT&T Bell Labs. It is widely used on servers, workstations

What is Linux
-

Why use linux
- FOSS
- Stability
- Ease of Maintenance
- High security

Types of linux
Categorized according to distributions
- Debian
- RHEL
- Centos
- SUSE enterprise Linux

Files and processes

Everything in UNIX is either a file or a process. A process is an executing program identified by a unique PID (process identifier). A file is a collection of data. They are created by users using text editors, running compilers etc.

Examples of files:

- a document (report, essay etc.)
- a directory, containing information about its contents, which may be a mixture of other directories (subdirectories) and ordinary files.

Directory structure
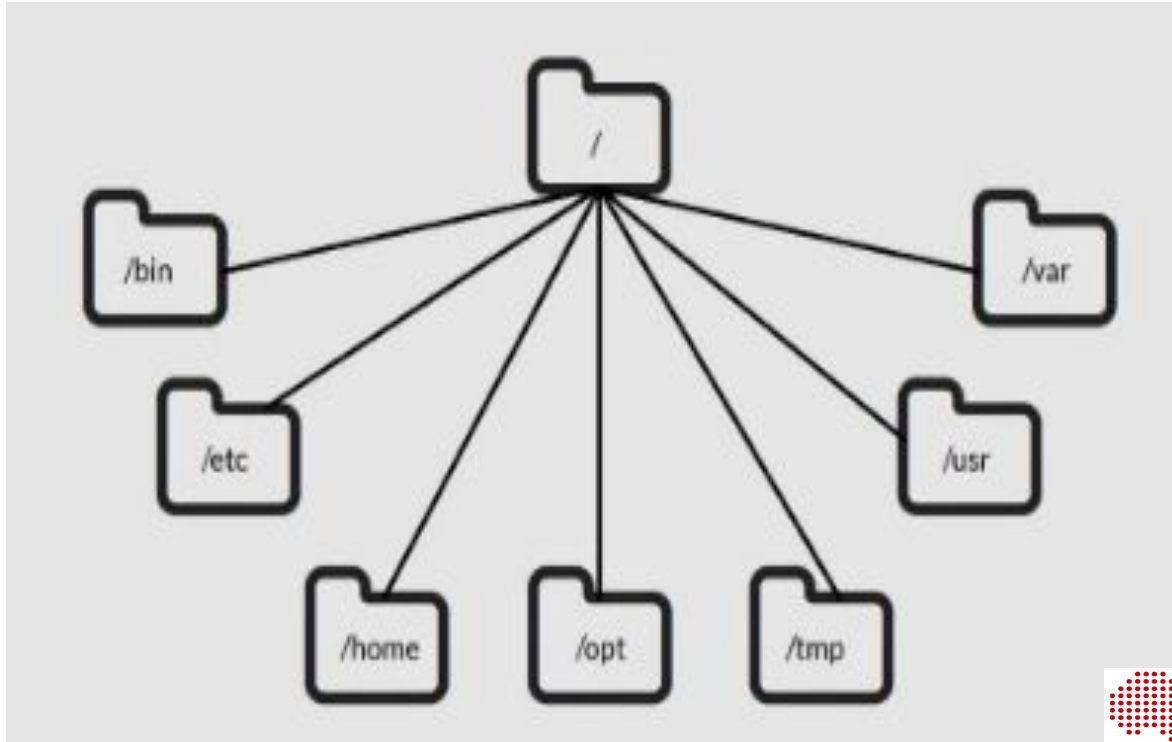
How do I open a terminal

What is a command

- A command is an instruction given by a user telling a computer to do something, such a run a single program or a group of linked programs. Commands are generally issued by typing them in at the command line (i.e., the all-text display mode) and then pressing the ENTER key, which passes them to the shell.

Syntax

<command> <options> <arguments>

How do I know my location
- pwd

What is a path
- Human readable representation of a file or folder's location on a computer system

Listing files and directories
- ls

Creating files and directories
- touch
- Text editors (vim, emacs, nano, pico, etc)
- mkdir

Removing files and directories
- rm
- rmdir

Copying and moving files
- cp
- mv

I have created a file/directory but I can't see its contents. How do I proceed
- You can edit your file using a text editor of choice
- You can display contents on the screen
- Move into the directory and ………………………..

The file is too huge but I would like to see whether a particular text exists
- grep
- sed
- awk

Redirection
- >
- >>
- |

Wildcards
- A wildcard is a character that can be used as a substitute for any of a class of characters in a search, thereby greatly increasing the flexibility and efficiency of searches
- *
- []
- ?

File permissions

- All files have permissions. They determine who can access specified files and what they can do with those files

- In linux, these permissions are organised according to ownership. Ownership is who owns the file.

- A file can be owned by the user, group or other user.

- A user is the owner of the file

- A group can contain multiple users

- Other is any other user who has access to a file.

- User, group, and other are denoted as u, g, and o respe

- All the three owners (user owner, group, others) in the Linux system have three types of permissions defined. Nine characters denotes the three types of permissions.

- Read (r) : The read permission allows you to open and read the content of a file.

- Write (w) : The write permission allows you to edit, remove or rename a file.

- Execute (x): In Unix type system, you can't run or execute a program unless execute permission is set

How do I change permissions

chmod <ownership>(+/-)<permissionName> <fileName>

Octal permissions

Octal permissions can also be set for the groups.

For example, to set r octal will be 4, to set w octal will be 2, to set x octal will be 1

Default permissions

File = 666

Directory = 777

Umask

Compression

- Gzip

- Tar

- Bzip

How can I work with compressed files

- Zcat

- Zless

Working between the local and remote

- What is a server

In computing, a server is a piece of computer hardware or software (computer program) that provides functionality for other programs or devices, called "clients"

- Why do I need a server

- How do I log onto the server

- What should I do from the server

- I have files on my local machine but would like to access them from the server. How do I transfer these files between ... and my local machine