Day 3

1) What is a Process? Explain Foreground Process and Background Process and Explain the Process management commands

An instances of a program is called a process. In simple terms, any command that you give to your Linux machine starts a new process

There are 2 types of Process are:-

- Foreground Process : They run on the screen and need input from the user For example: Office programs
- Background Process: They run in the background and usually do not need user input. For example Antivirus

Running a Foreground process :-

To start a foreground process you can either run it from the dashboard or you can run it from the terminal

When using the terminal, you will have to wait, until the foreground process runs.

Fg is the command used to continue a program which was stoppend and bring it to the foreground

Syntax:-

fg jobname.

Running a Background Process:

If you start a foreground program/process from the terminal, then you cannot work on the terminal, till the program is up and running.

Particular, data-intensive tasks take lots of processing power and may even take hours to complete. You do not want your terminal to be held up for such a long time.

To avoid such a solution, you can run the program and send it to the background so that terminal remains available to you. Ctrl+z

Start a program and press Ctrl+z.

Type bg to send the process to the background.

⇒ Commands used in process management

TOP

This utility tells the user about all the running processes on the Linux machine

Ex:-

PID	USER	PR	NI	VIRT	RES	SHR	% CPU	% MEM	TIME+
1525	home	20	0	1711m	100m	28m	1.7	10.0	5:05:34

Comand

Photoshop.exe

PID → The process ID of each task
User → The username of task owner
PR → Priority
Can be 20 (highest) or -20 (lowest)
NI → The nice value of task
VIRT → Virtual memory used (kb)
RES → Physical memory used (kb)
SHR → Shared memory used (kb)

S Status

D = uninterruptible sleep
R = running
S = sleeping
T = traced or stopped
Z = Zombie

%CPU % of CPU time
%MEM Physical memory used
TIME+ Total CPU time
Command Command name

PS

This command stands for 'Process Status'. It is similar to the "Task Manager" that pop-ups in a Windows Machine when we use Cntrl + Alt + Del. This command is similar to 'top' command but the information displayed is different.

pa ux

you can also check the process status of a single process, use the syntax
ps PID

Kill

This command terminates running processes on a Linux machine.
To use these utilities you need to know the PID (process id) of the process you want to kill
Syntax:-

kill PID

To find the PID of a process simply type.
pid of Process name

NICE

Linux can run a lot of processes at a time, which can slow down the speed of some high priority processes and result in poor performance.

To avoid this, you can tell your machine to prioritize processes as per your requirements.

This priority is called Niceness in Linux and it has a value between -20 to 19. The lower the Niceness index, the higher would be a priority given to that ta

The default value of all the processes is 0.

Syntax:-

nice -n 'Nice value' process name

DF

This utility reports the free disk space (Hard Disk) on all the file systems

df -h

Free

This command shows the free and used memory (RAM) on the Linux system

You can use the following ~~common~~ agge arguments.

free -m to display output in MB
free -g to display output in GB

Explain User management in Linux.

As Linux is a multi-user operating system, there is a high need of an administrator, who can manage user accounts, their rights, and the overall system security for user management in Linux

User management is the process of managing of different user accounts and their respective permissions in an operating system In Linux ~~os~~ operating system, we can create different user account, sort them into groups change their set of permissions or delete them

→ Creating a User.

In Linux, every user is assigned an individual ~~account~~ account which contains all the files, information and data of the user. You can create multiple user in a Linux operating system using Linux user commands.

→ Use the command sudo adduser
→ Enter password for the new account and confirm
→ Enter details of the new user and press Y
→ New account is created

→ Deleting, disabling account.

For disabling an account using Terminal, remove the password set on the account.

sudo passwd -l 'username'

To delete an account, use the command.

sudo userdel -r 'username'

→ Adding users to the group

You can view the existing groups.

syntax.

groupmod "Press Tab key twice"

add users to a group.

sudo usermod -a -G Groupname Username.

Removing user from Usergroup.

sudo deluser USER Groupname.

→ Finger

Finger command is used to procure information of the users on a Linux machine. You can use it on both local and remote machines.

Finger.

finger gives data on all the logged users on the remote and local machines.

finger username.

Specifies the information of the user in User Administration in Linux

→ Permit permissions.

Chmod permissions resource-name