Linux shell scripting

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Process management in linux

It generally takes an input, processes it and gives us the appropriate output
There are basically 2 types of processes

* Foreground processes

Such kind of processes are known as interactive process. These are the processes which are to be executed or initiated by the user or the programmer, they can not be initialized by system services.

* Background processes (non interactive processes)

These are th processes that are to be executed or initiated by the system itself or by users. though they can even be managed by users.

Eg; Forcground process

- Sleep 5 ; This command will be executed in the terminal and we would be able to execute another command after the execution of this command

- Sleep100 : Stopping a process in between of its execution. To stop a foreground process in between of its execution we can press Ctrl + Z to force stop it.

- jobs : To get the list of jobs that are either running or stopped.

- bg: To run all the pending and force stopped jobs in the background. This will start the stopped and pending processes in the background

- ps -ef | grep sleep: To get details of a process running in background

- fg: To run all the pending and force stopped jobs in the foreground. This will start the stopped and pending processes in the foreground

User management

A user is an entity, that can manipulate files and perform several other operations. Each user is assigned an ID that is unique for each user in the OS.

- awk -F':' '{print $1}' /etc/passwd

To list out all the users in linux, use the awk command with -F option. Here we are accessing a file and printing only first column with the help of print $1 and awk.

- id username

Using id command, we can get the ID of any username. Every user has an id assigned to it and the user is identified with the help of this id.

- Sudo useradd username

The command to add a user. useradd command adds a new user to the directory. The user is given the ID automatically depending on which category it falls in

- passwd username

Using this command to assign a password to a user. After using this command we have to enter the new password for the user and then the password gets updated to the new password.

Group creation

Group refer to the user groups.

- Groupadd command is used to create a new user group

  syntax: groupadd [option] group_name

  eg: sudo groupadd developers

- Every new group created is registered in the file "/etc/group" To verify that the group has been created, enter the command

  Syntax: sudo tail /etc/group

- The file shows group information in the following format:

group_name:password:group id: list of-members

Options:

- -f, force: This option forces the command to silently abort if the group with given already exists.
- -g, -gid GID: This option is used to provide a groups id to the new group
- -h, help: Display help message and exit

File permission

3 types of permissions

- read (r): The read permission allows you to open and read the content of a file. But we can't do any editing or modification in the file.
- write (w): The write permission allows you to edit, remove or rename a file. If a file is present in a directory, and write permission is set on the file but not on the directory
- Execute(x): We can't run or execute a program unless execute permission is set.

- : denotes file type
rw- : permission for user
rw- : permission for group
r-- : permission for other

absolute method

Octal	binary	File mode
0	000	---
1	001	--x
2	010	-w-
3	011	-wx
4	100	r--
5	101	r-x
6	110	rw-
7	111	rwx

eg:

chmod 777 red.txt

The above command will give permission to read, write and execute