A SIMPLE WAY TO LEARN AS A DEVOPS ENGINEER BY READING GROUP USER IN LINUX

This document is share with you by s5willy.
January 31st, 2023

1- What is the importance of group and user in Linux?

- In Linux, there are two major's purposes for groups and users:

A – **Collaboration**: by sharing resources and files, multiple users are grouped and work together.

B – **Security**: in a secure manner, accesses are controlled to files and resources by providing groups and users, specific privileges.

2- How many types of users do we have on Linux and with their home directory and their login shell?

	Permissions	**Home directory**	**Login shell**
Root user	• Superuser • Highest level of permissions • Can perform all tasks on the system •	/root	/bin/bash
Regular user	• Normal users • Limited permissions	/home/	/bin/bash
System user	• Special user • Create by the system	/var/spool/	/sbin/nologin (habitually) Or /bin/false (bannes direct logins)

3- Use the head command to output just the 1st line of the /etc/passwd

To achieve that. Run the following Linux command:

→ head -n 1 /etc/passwd

```
root:x:0:0:ariane nguefack,,,:/root:bin/bash
```

other example for the first 5th lines

→ head -n 5 /etc/passwd

```
root:x:0:0:ariane nguefack,,,:/root:bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
```

4- Explain this command cat /etc/group |grep devOps and its output.

The Linux command 'cat /etc/group | grep devOps' represents a pipeline of **two Linux commands:**

A – 'cat /etc/group'

- Presents the content of the '/etc/group' file which displays the information about groups on the system.
- Each lines represent a group, and each part of each line is separated by colons

B - 'grep devOps'

- Filters the output of the Linux command 'cat /etc/group'
- Searches for lines that display the information about the group 'devOps'

IMPORTANT TO KNOW:

The Linux command '**grep**' is a powerful tool for **searching** and **filtering** text

The Output of the Linux command 'cat /etc/group |grep devOps' will be all the lines from '/etc/group' file (that content groups) that display the string (line) 'devOps' (one of the groups named 'devOps').

- If the group 'devOps' exists: a single line 'devOps' will be displayed in the Output.
- If the group 'devOps' doesn't exist, the Output will be empty.

Example Output:

Run the following Linux command:

→ cat /etc/group |grep devOps

```
devops:x:1240:wesley1,wesley2
devops_team:x:3143:abdias,ange
```

In this example, the output displays two groups with the name 'devops' with two groups ID '1240' and '3143' and two lists of members: wesley2 for the group 'devops' ID 1240 and abdias and ange for the group 'devops' ID 3143

5- Create 2 users, croko1 and croko2, and their passwords. What is the purpose of shadow file? Then check if those users really have password created.

Users creation → sudo useradd [username]

A – sudo useradd croko1

B - sudo useradd croko2

Password creation → sudo passwd [username]

A – sudo passwd croko1 (12345)

B - sudo passwd croko2 (12345)

The purpose of shadow file

SHADOW FILE 'etc/shadow'
• Stores encrypted passwords for all system users • Readable ONLY by root user • Helps secure the passwords by keeping them separate from the rest of the system files

Check if croko1 and croko2 have a password with ' /etc/shadow'

Run the following Linux command:

→ sudo cat /etc/shadow

```
croko1:$6$jwGxpEOs$IuoKbyKHdDUwI1yNJd.PO31UvpVRjC2jbSMvtqWZWmek7uS7BAQ35.kmdZTFVZsc1FfgUnP6TFG55O0HBr/QX.:19388:0:99999:7:::
croko2:$6$cgHuT4fK$U.D8YRl0DxOmiwYZzScLRHK.y2jq/VR50OmnXsxNz.4a76477Cn8gGpKDex0LVGCp4mKu2pYBgoXBFkhYVPoK/:19388:0:99999:7:::
```

Between 'croko1' **and** ':19388:0:099999:7:::' is the encrypted passwords
Between 'croko2' **and** ':19388:0:099999:7:::' is the encrypted passwords

6- your manager informs you the user crook1 you created should not have access. List two Linux command to help him get access.

Run the following Linux command:

→ sudo **usermod -L** croko1

→ sudo **passwd -l** croko2

7- List two Linux command to display the password status of a croko1 and croko2

Run the following Linux command:

→ sudo **passwd -S** croko1

→ sudo **grep** croko2 /etc/shadow

8- After a time, the same manager decides to give him back access (2 way of doing this)

Run the following Linux command:

→ sudo **usermod -U** croko1

→ sudo **passwd** croko2

9- Use a Linux command to verify if a user is unlocked.

Run the following Linux command:

→ sudo passwd -S croko1

10- Croko2 is a female and she got married recently. She wants to change her username. Help her to identify herself as pelagie.

Run the following Linux command:

→ sudo usermod -l pelagie croko2

11- Add more information for Pelagie (full name, room#, workphone)

Run the following Linux command:

→ sudo chfn pelagie

12- What is the command to switch within two users?

Run the following Linux command:

→ su pelagie

→ su [new username]

13- Create a home directory for croko1.txt and croko2.txt

Run the following Linux command:

→ sudo mkdir croko1.txt

→ sudo mkdir croko2.txt

14- Give the rigth permission to croko3 and croko4

Run the following Linux command:

→ sudo chmod u+rwx croko1.txt (symbolic)

→ sudo 755 croko4.txt (numeric)

15- Create a group with the name paloma, then add croko1, croko2, croko3 and croko4 in that group.

Run the following Linux command:

→ sudo usermod -a -G paloma croko1

→ sudo usermod -a -G paloma croko2

→ sudo usermod -a -G paloma croko3

→ sudo usermod -a -G paloma croko4

16- Use a Linux command to find info about users croko1, croko2, croko3 and croko4.

Run the following Linux command:

→ id croko1

→ id croko2

→ id croko3

→ id croko4

17- Explain the command last in Linux.

Linux command 'Last'

• Used to display information about the last logged in users on the system
• Shows the list of users who have recently logged in or out of the system included:
  ▪ date and time of recent login or out of the system
  ▪ terminal used
  ▪ host name (if available)
• The '**wtmp**' is the file displaying all the information
• Used to troubleshooting users account issues
• Used to auditing login activity on a system

18- Explain the command last in who.

Linux command 'who'

• Displays information about the users currently logged into the system. For example:
  ▪ User's username
  ▪ The terminal the user is logged in from
  ▪ Date and time of the login
  ▪ Host name (if available)
  ▪ What the user is doing on the system
• The information is taken from '**utmp**' file (records information about the status of logged-in users.

19- Explain 'lsof -u username'

The 'lsof' command in Linux stands for "List Open Files". The '-u' option is used to list the files that are open by a specific user.

The Linux command 'lsof -u username' displays a list of all the files that are currently open by the user specified after the '-u' option.

IMPORTANT TO KNOW

The **'lsof -u username'** Linux command is useful for **debugging** and **troubleshooting** purposes, as it provides a way to see which files are currently in use by a specific user, and which processes are using those files.

20- Delete all the user you created with their home directory.

Run the following Linux command:

To delete directory

→ sudo rm -r croko1.txt

→ sudo rm -r /path/to/home/directory (syntax)

To delete user

→ sudo userdel croko1

→ sudo userdel [username] (general syntax)

To delete user and user's home directory

→ sudo userdel -r [username] (general syntax)

21- Delete the groups you created

Run the following Linux command:

To delete directory

→ sudo groupdel croko1

→ sudo groupdel [group name] (general syntax)