Linux Interview Questions

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2022

User and Group Administration

1. **What is a user?**
   Ans. In Linux user is one who uses the system.

2. **How many types of users available in Linux?**
   Ans.There are 5 types of users available in Linux.
   - System user (Admin user who control the whole system nothing but root user).
   - Normal user (Created by the Super user. In RHEL - 7 the user id's from 1000 - 60000).
   - System user (Created when application or software installed
   - In RHEL - 7 the System users are Static system user id's from 1 - 200 and (ii) Dynamic system user user id'sfrom 201 - 999).
   - Network user (Nothing but remote user, ie., who are login to the system trough network created
   - Windows Active Directory or in Linux LDAP or NIS).
   - Sudo user (The normal users who are having admin or Super user privileges)

3. **What is user management?**
   Ans.User management means managing user. ie., Creating the users, deleting the users and modifying the users.

4. **What are the important points related to users?**
    - Ans.Users and groups are used to control access to files and resources.
    - Users can login to the system by supplying username and passwords to the system.
    - Every file on the system is owned by a user and associated with a group.
    - Every process has an owner and group affiliation.
    - Every user in the system is assigned a unique user id (uid) and group id (gid).
    - User names and user id are stored in /etc/passwd file.
    - User's passwords are stored in /etc/shadow file in an encrypted form.
    - Users are assigned a home directory and a shell to work with the O/S.
    - Users cannot read, write and execute each other's files without permission.
    - Whenever a user is created a mail box is created automatically in /var/spool/mail location.
    - And some user environmental files like .bash_logout, .bash_profile, .bashrc , ...etc., are also copied from /etc/skell to his/her home directory (/home/<username>).

5. **What are fields available in /etc/passwd file?**
   Ans.<user name> : x : <uid> : <gid> : <comment> : <user's home directory> : <login shell (where 'x' means link to password file ie., /etc/shadow file)

6. **What are fields available in /etc/shadow file?**
   Ans. user name : password : last changed : min. days : max. days : warn days : inactive days : expiry days : reserved for future.

7. **What are the files that are related to user management?**
   - Ans.**/etc/passwd**: Stores user's information like user name, uid, home directory and shell ...etc.,
   - **/etc/shadow**: Stores user's password in encrypted form and other information.
   - **/etc/group**: Stores group's information like group name, gid and other information.
   - **/etc/gshadow**: Stores group's password in encrypted form.
   - **/etc/passwd**: Stores the /etc/passwd file backup copy.
   - **/etc/shadow**: Stores the /etc/shadow file backup copy.
   - **/etc/default/useradd**: Whenever the user created user's default settings taken from this file.
   - **/etc/login.defs**: user's login defaults settings information taken from this file.
   - **/etc/skell**: Stores user's all environmental variables files and these are copied from this directory to user's home directory

8. **In how many ways can we create the users?**

- Ans. **useradd** - <options><user name>
- (ii) **adduser** - <options><user name>
- (iii) **newusers** <file name> (In this file we have to enter the user details same as /etc/passwd file)

9. **What is the syntax of useradd command with full options?**
   Ans. useradd -u <uid> -g <gid> -G <secondary group> -c <comment> -d <home directory> -s <shell><user name>
   Example: useradd -u 600 -g 600 -G java -c öracle userd /home/raju -s /bin/bash raju

10. **What is the syntax of adduser command with full options?**
    Ans.adduser -u <uid> -g <gid> -G <secondary group> -c <comment> -d <home directory> -s <shell><user name>
    Example# adduser -u 700 -g 700 -G linux -c öracle userd /home/ram -s /bin/bash ram.

11. **What is the syntax of newuser command?**
    - Ans. newusers <file name> (This command will create multiple users at a time)
    - First we should a file and enter user's data as fields same as the fields of /etc/passwd file for how many users do you want to create and mention that file as an argument for newusers command.

- When we execute this command new users will be created but their environmental files like

.bash_logout, .bash_profile, .bashrc and .bash_history files will not be copied from /etc/skell. Directory. So, we have to copied manually from /etc/skell directory.

12. **What is the syntax of userdel command with full options?**
Ans.userdel <options><user name>
The options are:
    - **-f** :forcefully delete the user even through the user is login. The user's home directory, mail and message directories are also deleted.
    - **-r** : recursively means files in the user's home directory will be deleted and his home directory also deleted but the other files belongs to that user should be deleted manually.

13. **How to check whether user is already created or not?**
Ans.We can check in different ways:
    - id <user name> (It shows the user id group id and user name if that is already created)
    - grep <user name> /etc/passwd

14. **How to verify or check the integrity of the password file?**
Ans.**pwck** <options> /etc/passwd or
pwck <options> /etc/shadow The options are,

- **-q** :quiet
- **r** : read only
- **s** : sort the contents by uidin /etc/passwd and /etc/shadow files

15. **How to verify or check the integrity of the group file?**
    - grpck <options> /etc/group or
    - grpck <options> /etc/gshadow
    - The options are, **-r**-r:read only **-s**:sort the contents by **gidin /etc/group and /etc/gshadow files.**

16. **What is syntax of the usermod command with full options?**
    Ans. usermod <options><user name> The options are,
    - -L:lock the password
    - -U : unlock the password
    - -o :creates duplicate user modify the user's id same as other user
    - -u :modify user id
    - -g : modify group id
    - -G : modify or add the secondary group
    - -c : modify comment
    - -d : modify home directory
    - -s : modify user's login shell
    - -l : modify user's login name

- -md :modify the users home directory and the old home directory

17. **How to create the duplicate root user?**
Ans.useradd -o -u 0 -g root <user name>

18. **How to recover if the user deleted by mistake?**
Ans.**pwunconv** (It creates the users according **/etc/passwd** file and deletes the **/etc/shadow file)**

19. **What are the uses of .bash_logout,.bash_profile and .bashrc files?**

Ans..**bash_logout** :is a user's logout ending program file.
It will execute first whenever the user is logout. **.bash**$_{profile}$:
$is user's login startup program file. It will execute first whenever the user is login. I$
$This file is used to create the user's custom commands and to specify the umask valu$

20) **What is a group?**
Ans.The collection of users is called a group. There are two types of groups.

a) **Primary group** : It will be created automatically whenever the user is created. User belongs to on group is called a primary group.

b) **Secondary group** : It will not create automatically. The admin user should be created manually and users belongs to more than one group is called secondary group. A user can be assigned to max. 16 groups. ie., 1 primary group and 15 secondary groups.

21. **What is the command to check the user belongs to how many groups?**
Ans. groups <user name>

22. **What is the syntax to create the group?**
Ans.**groupadd**<options><group name> The options are,
    - -f :add the group forcefully
    - -g : group id no.
    - -o :non-unique (duplicate group id)
    - -p : group password
    - -r : system group
    - -R : root group

23. **What is the syntax to modify the group?**
Ans.The options are,
    - -g : group id
    - -n :new name for existing one, ie., rename the group
    - -o : non-unique (duplicate group id)
    - -p : group passwd

- -R :root group

24. **What is syntax to delete the group?**

    - **groupdel** <group name> (to delete the group without options)
    - **groupdel** <group name> (to delete the group without options)

25. **How to assign the password to the group?**
    Ans.**gpasswd** <group name> (to assign a password to the group without any options). **gpasswd** <options><group name> The options are,
    - -a : add users to the group
    - -d : delete the user from the group
    - -r : remove the group password
    - -R : restrict to access that group
    - -A : set the list of Administrative users
    - -M : set the list of group members

26. **How to check the integrity or consistency of the group?**
    Ans.grpck (it will check the integrity or consistency in **/etc/gpasswd** and /etc/gshadow files).

27. **How to restore /etc/gshadow file if deleted by mistake?**
Ans. grpconv (it creates the **/etc/gshadow** file from **/etc/-group** file)

28. **How to change the password aging policies?**
Ans.we can change the password policies in 2 ways(I.e configuration file and Chage Command) (i) First open the /etc/login.defs file and modify the current values
Example :vim /etc/login.defs

- min - 0:means the user can change the password to any no. of times.
- min -2: means the user can change the password within 2 days. ie., he can change the password after 2 days.
- max - 5: means the user should change the password before or after 5 days. Otherwise the password will be expired after 5 days.
- inactive - 2 :means after password expiry date the grace period another 2 days will be given to change the password.
- warning - 7 : means a warning will be given to the user about the password expiry 7 days before expiry date.

(ii) second by executing the chage command.
Example : chage <options><user name> The options are

- -d : last day
- -E : expiry date
- -I : inactive days

- -l : list all the policies
- -m : min. days
- -M : max. days
- -w : warning days

Note :Whenever we **change** the password aging policy using chage command, the information is will be modified in /etc/shadow file.

29. **How add 45 days to the current system date?**
Ans. date -d "+ 45 days"

30. **Explain the sudo user?**
Ans.Sudoers (nothing but sudo users) allows particular users to run various root user commands without needing a root password. **/etc/sudoers** is the configuration file for sudoers to configure the normal user as privileged user. It is not recommended to open this file using **vim** editor because this editor cannot check the syntax by default and whatever we typed in that file that will blindly save in this file. So, one editor is specially available for opening this file, i.e.,**visudo**and all normal users cannot execute this command. Only root user can run this command. Once this file is opened nobody can open this file again on another terminal because **"The file is busy"**message is displayed on the terminal for security reasons.

31. **How to give different sudo permissions to normal users?**
Ans.Open the **/etc/sudoers** file by executing visudo command and go to line no. 98 and type as **<User name> <Machine>= <Command>root**
ALL=(ALL) ALL
raju All= ALL Save and exit this file.
Note : When we trying to save this file if any syntax errors in this file, those errors are displayed with line no's and **What you do ?** (will be displayed, here press 'e' to edit this file and modify those errors or mistakes and save this file.

- su - raju (to switch to raju user)
- sudo useradd <useradd> (The normal user raju can also add the users to the system)
- We can assign sudo permissions to 'n' no. of users by specifying names separated by commas (,) or line by line.
- Instead of giving all permissions to normal user we can give only some commands.