



RHEL9

Session 8 – 20th Nov 2022 Summary

- There are three different users in linux
 - **Admin users** – unlimited power with UID 0
 - **General users** - limited power with UID > 1000 – 60000
 - **Service or System users** – that is used by processes with UID (1 - 999) or (> 60000 – 65335)
- The users can be created as per the application specific that is for testing, deploying applications, run program etc.
- The command to check the location of “python” command is “**which python**”

```
[root@localhost ~]# which python
/usr/bin/python
```

- The command used to open the “/etc/passwd” file is “**vim /etc/passwd**”, the user “umesh” account is dedicated to run python program

```
[root@localhost ~]# vim /etc/passwd
```

```
umesh:x:1008:1009::/home/umesh:/usr/bin/python
```

```
localhost login: umesh
Password:
Last login: Sun Nov 20 14:05:41 on tty5
#####
##### Welcome Back from diwali festival #####
now focus on study.....
Python 3.9.10 (main, Feb  9 2022, 00:00:00)
[GCC 11.2.1 20220127 (Red Hat 11.2.1-9)] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
>>>
>>>
```

- The command used to create a user “pop111” with a specific UID 1234 is “**useradd -u 1234 pop111**”

```
[root@localhost ~]#  
[root@localhost ~]# useradd -u 1234 pop111  
[root@localhost ~]# _
```

```
pop111:x:1234:1234::/home/pop111:/bin/bash
```

- The command used to create a user “pop222” with a specific shell “sh” is “**useradd -s /bin/sh pop222**”

```
[root@localhost ~]#  
[root@localhost ~]# useradd -s /bin/sh pop222
```

```
pop222:x:1235:1235::/home/pop222:/bin/sh
```

- The command used to create a user “pop333” with a specific home directory “/tmp/pop333” is “**useradd -d /tmp/pop333 pop333**”

```
[root@localhost ~]#  
[root@localhost ~]# useradd -d /tmp/pop333 pop333
```

```
pop333:x:1236:1236::/tmp/pop333:/bin/bash
```

```
pop333:x:1236:1236::/tmp/pop333:/bin/bash
```

```
[root@localhost ~]# cd /tmp/  
[root@localhost tmp]# ls  
dbus-b5h2Z1a26F  
pop333
```

- The command used to modify the information of the pre-created users is “**usermod**” command

- The command used to change the UID of user “pop3333” to “4444” is “**usermod -u 4444 pop3333**”

```
[root@localhost tmp]# id pop3333
uid=1236(pop3333) gid=1236(pop3333) groups=1236(pop3333)
[root@localhost tmp]#
[root@localhost tmp]# usermod -u 4444 pop3333
[root@localhost tmp]# id pop3333
uid=4444(pop3333) gid=1236(pop3333) groups=1236(pop3333)
[root@localhost tmp]#
```

```
pop3333:x:4444:1236::/tmp/pop3333:/bin/bash
```

- The command used to delete the user “pop3333” is “**userdel pop3333**”, the user home directory is not deleted, while deleting user if you want to delete the home directory we can use “-r” option in the “userdel” command. Ex:- “**userdel -r user_name**”

```
[root@localhost tmp]# userdel pop3333
[root@localhost tmp]#
[root@localhost tmp]# pwd
/tmp
[root@localhost tmp]# ls
dbus-b5h2ZIa26F
pop3333
```

- To see more options of “userdel” command is “**userdel -h**”

```
[root@localhost ~]# userdel -h
Usage: userdel [options] LOGIN

Options:
  -f, --force           force some actions that would fail otherwise
                        e.g. removal of user still logged in
                        or files, even if not owned by the user
  -h, --help            display this help message and exit
  -r, --remove          remove home directory and mail spool
  -R, --root CHROOT_DIR
  -P, --prefix PREFIX_DIR
  -Z, --selinux-user   remove any SELinux user mapping for the user
```

- The “**useradd**” command is used to create users, behind the scene it updates the files such as “/etc/passwd”, “/etc/shadow”, “/etc/group” etc

- The “/etc/shadow” file has the database of all users, every line is the information of a particular user, it has **nine fields** separated by colon(:) called as **field separator**

```
[root@localhost ~]# useradd rahul
[root@localhost ~]# cat /etc/shadow

jack:$6$d7TclwEZvIG7NsYA$hQUJC4B5DY0Wyp/gHx8bc0qaxH
ukoY.uXROXE6EC/HMB7uziByM0k8N90:19295:0:99999:7:::
eric:$6$TSakzGRbiYXSt6EY$/alwjLNL448HPtgIj2VubVTuDK
eUj7XyqhLCAnANK4Pp91CMTh00QeRJ.:19295:0:99999:7:::
pop123:!!!:19315:0:99999:7:::
tom123:!!!:19315:0:99999:7:::
krish:$6$Bgps4qgI2Xd8Pavt$mq3MDWl.qQkL8qKoZ0n0eB0sm
N5J4f5h3M2TdJIU.8gQZSgmtI64TS60/:19315:0:99999:7:::
umesh:$6$qUgq02pwgPe0ZRMf$XAWrBnh0Dqi9ui22zNrp0siW/
FmIe5RhJL2htjIk1XLpjuc7pVp9Dc6k/:19316:0:99999:7:::
pop1111:!!!:19316:0:99999:7:::
pop222:!!!:19316:0:99999:7:::
rahul:!!!:19316:0:99999:7:::
```

- The seven fields are separated by colon (:)
 - First field - **User name or Login name**
 - Second field- **Password** – not readable by general users, this field is updated by passwd command. The symbol “!” , means password is locked
 - Third field- the date when the **password was last changed**
 - Fourth field- **Minimum password age-** “0” – multiple times password can be changes by the user
 - Fifth field – **Maximum password age** – password expiry
 - Sixth field – **Warning** – “7” – means before 7 days of password expiry there will be a warning
 - Seventh field- **Password Inactive**- this field is empty – this means after password expires the password never becomes inactive. Suppose if you specify “2” here, it means after 2 days of password expiry, it becomes inactive.
 - Eighth field – **Account Expiry** - this field is empty – this means that account is never expired.
 - Ninth field – **Reserved** for future use.
- The command used to give the password for a user “rahul” is “**passwd rahul**”

```
[root@localhost ~]# passwd rahul
Changing password for user rahul.
New password:
BAD PASSWORD: The password is a palindrome
Retype new password:
passwd: all authentication tokens updated successfully
```

- The password is updated in the “/etc/shadow” file, the command used to print the file “**cat /etc/shadow**”, here the password stored in hash format that is “sha512” algorithm.

```
[root@localhost ~]# cat /etc/shadow
```

```
eric:$6$TSakzGRbiYXSt6EY$/alwjLNL448HPtgIj2VubVTuDK
eUj7XyqhLCAnANK4Pp91CMTh00QeRJ.:19295:0:99999:7:::
pop123:!!!:19315:0:99999:7:::
tom123:!!!:19315:0:99999:7:::
krish:$6$Bgps4qgI2Xd8Pavt$mq3MDWl.qQkL8qKoZ0n0eB0sm
N5J4f5h3M2TdjIU.8gQZSgmtI64TS60/:19315:0:99999:7:::
umesh:$6$qUgq02pwgPeOZRMf$XAWrBnh0Dqi9ui22zNrp0siW/
FmIe5RhJL2htjIk1XLpjuc7pVp9Dc6k/:19316:0:99999:7:::
pop1111:!!!:19316:0:99999:7:::
pop222:!!!:19316:0:99999:7:::
rahul:$6$Strr38BmnVhJY7kY$EURguYllLaYLSRv9lFebv5frqC
sXnMrcEmn5N4Ub.s5hW7xAAT2LrI4h51:19316:0:99999:7:::
```

- The command to **remove** the password for the user “rahul” is “**passwd –d rahul**”

```
[root@localhost home]# passwd -d rahul
Removing password for user rahul.
passwd: Success
```

```
rahul :: 19316:0:99999:7:::
```

- The command to **lock** the password of a user “rahul” is “**usermod –L rahul**”

```
[root@localhost home]#
[root@localhost home]# usermod -L rahul
[root@localhost home]#
```

```
rahul:$6$79QnTsUArqfXm71g$RfX2zoaXGmzc4GLkjLo0Bsc1TWCHD03QG92sYrHzid0QGD9SJ53WMeplWRcNbM/og04XKu0p!RyVxJxVygYj91:19316:0:99999:7:::
```

- The command to **unlock** the password of a user “rahul” is “**usermod -U rahul**”

```
[root@localhost ~]# usermod -U rahul
[root@localhost ~]# _
```

```
rahul:$6$79QnTsUArqfXm71g$RfX2zoaXGmzc4GLkjLo0Bsc1TWCHD03QG92sYrHzid0QGD9SJ53WMeplWRcNbM/og04XKu0p5VRyVxJxVygYj91:19316:0:99999:7:::
[root@localhost ~]#
```

- The **chage** command gives information of a user in “/etc/shadow” in simple human readable format

```
[root@localhost ~]#
[root@localhost ~]# chage -l rahul
Last password change : Nov 20, 2022
Password expires      : never
Password inactive     : never
Account expires        : never
Minimum number of days between password change : 0
Maximum number of days between password change : 99999
Number of days of warning before password expires : 7
```

- The command to see the manual of the file “/etc/shadow” is “man 5 shadow”

```
[root@localhost ~]#
[root@localhost ~]# man 5 shadow
```

- To restrict the user “rahul” to not change the password for next 5 days – this can be directly specified in the **fourth field** in the “/etc/shadow” file

```
rahul:$6$eIk6afWxYD8H37y3$1UDbhH46qzBaCcD/00YoRNTfP66Br7aRihmSr1dHmWc0ErCpGD4xAesLb4jyMrEgj51Dgbv0lyOcqebmpNoRy/:19316:5:99999:7:::
```

- Now if user “rahul” login and tries to change the password, it is restricted to change the password

```

localhost login: rahul
Password:
Last login: Sun Nov 20 14:48:09 on tty4
#####
##### Welcome Back from diwali festival #####
now focus on study..... .

[rahul@localhost ~]$ passwd
Changing password for user rahul.
Current password:
You must wait longer to change your password.
Current Password: _
```

- The command to change the number of days of **warning** to 50 before password expires of a user “rahul” is “**chage -W 50 rahul**”

```
[root@localhost ~]# chage -W 50 rahul
[root@localhost ~]# _
```

```
[root@localhost ~]# chage -l rahul
Last password change : Nov 20, 2022
Password expires       : Jan 19, 2023
Password inactive     : Jan 21, 2023
Account expires        : Nov 19, 2022
Minimum number of days between password change : 2
Maximum number of days between password change : 60
Number of days of warning before password expires: 50
[root@localhost ~]#
```

- The default login information is stored in a file “/etc/login.defs”

```
[root@localhost ~]#
[root@localhost ~]# vim /etc/login.defs
```

```
# Default initial "umask" value used by login(1) on non-PAM enabled systems.
# Default "umask" value for pam_umask(8) on PAM enabled systems.
# UMASK is also used by useradd(8) and newusers(8) to set the mode for new
# home directories if HOME_MODE is not set.
# 022 is the default value, but 027, or even 077, could be considered
# for increased privacy. There is no One True Answer here: each sysadmin
# must make up their mind.
UMASK      022

# HOME_MODE is used by useradd(8) and newusers(8) to set the mode for new
# home directories.
# If HOME_MODE is not set, the value of UMASK is used to create the mode.
HOME_MODE  0700

# Password aging controls:
#
#      PASS_MAX_DAYS   Maximum number of days a password may be used.
#      PASS_MIN_DAYS   Minimum number of days allowed between password changes
#      PASS_MIN_LEN    Minimum acceptable password length.
#      PASS_WARN_AGE   Number of days warning given before a password expires.
#
#      PASS_MAX_DAYS  9999
#      PASS_MIN_DAYS  0
#      PASS_WARN_AGE  7

# Currently PASS_MIN_LEN is not supported
# Currently SU_WHEEL_ONLY is not supported
# Currently CRACKLIB_DICTPATH is not supported

#
# Min/max values for automatic uid selection in useradd(8)
#
UID_MIN          1000
UID_MAX          60000
0157-53
```