RHCEv8 Online Class 09052021 10:00pm
RHCSA-sysadmin
- Managing Local Users and Groups

WHAT IS A USER?
A user account is used to provide security boundaries between different people and programs that can run commands.
id <username>
id user1
ide devops

-create user
useradd <username> ->Linux original
or
adduser <username> ->perl script
ex:
useradd user1
adduser user2
when try to create user on Linux, some files will update immediately:
1-/etc/passwd ->stores user's info
2-/etc/shadow ->stores user's credentials
3-/etc/group ->store's group's info
4-/etc/gshadow ->stores group's credentials

explain text files operate
-cat
cat /etc/passwd

-head
head /etc/passwd ->first 10lines
head -**3** /etc/passwd ->first 3lines
or
head -n 3 /etc/passwd

-tail
tail /etc/passwd ->last 10lines
tail -5 /etc/passwd ->last 5lines
or
tail -n 5 /etc/passwd

-wc world count
wc /etc/passwd
 32 74 1726 /etc/passwd
wc --help
wc -c bytes
  -l lines
  -m character
  -w words
wc -l /etc/passwd
32 /etc/passwd
wc -w /etc/passwd
74 /etc/passwd
wc -m /etc/passwd
1726 /etc/passwd

-grep ->filter user input
grep "**a**" /etc/passwd
grep "root" /etc/passwd
grep "9" /etc/passwd

-lines started by "root"
grep ^"root" /etc/passwd
-lines ended by "root"
grep "nologin"$ /etc/passwd

what is **|** character?
output of one command becomes input for other command.
cat /etc/passwd | grep "root"
cat /etc/passwd | grep "root" | wc -l
2
less <filename>
more <filename>

1-/etc/passwd ->stores user's info
grep "user1" /etc/passwd
user1:x:1001:1001::/home/user1:/bin/bash

user1 ->username
x ->password symbol
1001 ->user-id(uid)
1001 ->group-id(gid)->primary g-id
:: ->comment
/home/user1 ->default user home dir
/bin/bash ->default shell

what is user-id(uid)
Linux knows users by id, by default started from 0 to 60000
0 ->superuser(root)
1 to 999 ->system/service user
1000 to 60000 ->users/regular users
ex:
id -u <username>
id -u root
id -u user1

what is group-id(gid)
on Linux we have 2groups:
1-primary
2-secondary

1-primary
-on Linux by default we don't have user without primary-group.
-when create user if won't mention primary group, Linux will create a group based-on username and will join user to that group.
ex:
useradd user3
when press Enter, s group based-on username will create inside /etc/group and user will join it.
tail -1 /etc/group
user3:x:1003: ->1003 group-id
tail -1 /etc/passwd
user3:x:1003:1003::/home/user3:/bin/bash

Linux knows groups by id, by default started from 0 to 60000
0 ->superuser group(root)
1 to 999 ->system/service group
1000 to 60000 ->group
id -g root
0
id -g user1
1001

/home/user1 ->default user's home dir
/bin/bash ->default shell

How Linux knows about **default home dir** and **default shell**?
on Linux some templates are available
1-/etc/default/useradd
2-/etc/login.defs

1-/etc/default/useradd
# cat /etc/default/useradd
HOME=/home
SHELL=/bin/bash

cat /etc/shells
/bin/sh
/bin/bash
or
chsh -l
/bin/sh
/bin/bash

# vim /etc/default/useradd
SHELL=/bin/sh
:wq!

useradd user4
tail -1 /etc/passwd
user4:x:1004:1004::/home/user4:/bin/sh

-create user with custom parameters
useradd -u uid
-g p-gid
-G sec-gid
-s shell
-d home dir
-M user without home dir
-r system user
-o non-unique uid
-c comment
useradd --help
ex:
useradd -u 2000 user6
useradd -s /bin/sh user7
id -u user5
1500
useradd -u 1005 -o user8
useradd -r user9
id -u user9
988
-switch between users by use 'su' command **s**witch **u**ser
# su - user4
$ pwd
/home/user4
-to back type 'exit' or press Ctrl+d

shift to user home dir
cd /home/<user-name>
cd /root
or
cd /home/user1
or
cd
or
cd ~

2types of shell available on Linux:
1-logginable shells **->**can login to OS through these shells. likes /bin/bash, /bin/sh
2-non-logginable shell **->**/sbin/nologin
useradd -s /sbin/nologin user10
tail -1 /etc/passwd
user10:x:2002:2003::/home/user10:/sbin/nologin
# passwd user10
# su - user1
$ su - user10
Password:
This account is currently not available.

-set password for user on Linux
passwd user1
New password:
Retype new password:
or
echo "<password>" | passwd --stdin <username>
echo "redhat" | passwd --stdin user2

passwd -S status
-l lock password
-u unlock password
-d delete password

2-/etc/shadow ->stores user's credentials
user6:!!:18756:0:99999:7:::
-username
-password
:!!: password doesn't set yet
:1 password has been set, Message Digest No.5-MD5
:6 password has been set, Secure Hash Algorithm-SHA(def.)
:!!1 password has been set, Message Digest No.5-MD5, its locked
:!!6 password has been set, Secure Hash Algorithm-SHA, its locked
: : password deleted

```
# tail /etc/login.defs
# Use SHA512 to encrypt password.
ENCRYPT_METHOD SHA512
# passwd -S user1
user1 PS 2021-05-09 0 99999 7 -1 (Password set, SHA512 crypt.)
# passwd -l user1
# passwd -S user1
user1 LK 2021-05-09 0 99999 7 -1 (Password locked.)

# passwd -u user1
# passwd -S user1
user1 PS 2021-05-09 0 99999 7 -1 (Password set, SHA512 crypt.)

# passwd -d user1
# passwd -S user1
user1 NP 2021-05-09 0 99999 7 -1 (Empty password.)
```

password aging

-last date password changed, its random number for each Linux and means when password has been changed. (def. value is 01.01.1970)
-minimum password age, for how many days' user cannot change the password.
-maximum password age, maximum how many days' password will work
-warning, how many days before Expire Linux will start warn to user
-inactive, how many days after Expire user will be able to login and change password by self
-expire
-blank

-change password aging parameters by **chage** command. **ch**ange **age**

```
# chage   -l    list
          -d    last date pass changed
          -m    min pass age
          -M    max pass age
          -W    warning
          -I    Inactive
          -E    expire
```

ex:
min pass age: 2, max pass age: 30, warning: 5, Inactive: 2

```
# chage -l user2
Last password change                                    : May 09, 2021
Password expires                                        : never
Password inactive                                       : never
Account expires                                         : never
Minimum number of days between password change          : 0          0 means change password immediately is possible
Maximum number of days between password change          : 99999
Number of days of warning before password expires       : 7

# chage -m 2 -M 30 -W 5 -I 2 user2
# chage -l user2
Last password change                                    : May 09, 2021
Password expires                                        : Jun 08, 2021
Password inactive                                       : Jun 10, 2021
Account expires                                         : never
Minimum number of days between password change          : 2
Maximum number of days between password change          : 30
Number of days of warning before password expires       : 5
```

-force user to change password after first login?
chage -d **0** user2
chage -l user2
Last password change : password must be changed
Password expires : password must be changed
Password inactive : password must be changed
Account expires : never
Minimum number of days between password change : 2
Maximum number of days between password change : 30
Number of days of warning before password expires : 5

# su - user1
$ su - user2
Password: redhat
You are required to change your password immediately (administrator enforced)
Current password: redhat
New password:
Retype new password:

-delete user
to delete users, use:
userdel <username> ->user home dir still available
userdel user10
ll /home
drwx------. 2 2002 2003 62 May 9 12:16 user10
or
userdel -rf user1 -<will delete everything

What is group
location to add multiple users for specific purpose.
-Create group
groupadd ibm
groupadd dell

/etc/group responsible to store group's info
tail /etc/group
dell:x:2004:

dell ->group name
x ->password symbol
2004 ->gid, maybe use as primary. maybe use as secondary
: ->list of secondary members

ex:
-create **user11** with **dell** group as primary group
useradd -g dell user11
tail -1 /etc/passwd
user11:x:2002:2004::/home/user11:/bin/bash

-create **user12** with **dell** group as secondary group
useradd -G dell user12
tail -1 /etc/passwd
user12:x:2003:2007::/home/user12:/bin/bash
tail /etc/group
dell:x:2004:user12

# id user5
uid=1005(user8) gid=2002(user8) groups=2002(user8)
# usermod -G dell user5
# tail /etc/group
dell:x:2004:user12,user5

NOTE:
-primary group is unique and un-append-able. it's not possible to append a user to more than one primary group.
-add/append a user to unlimited secondary group.

append user to multiple secondary group
-append
gpasswd -a <username> <group-name>
-a add/append
-d delete
gpasswd -a user12 coss
gpasswd -a user12 sony
or
usermod -a -G <group-name> <user-name>
usermod -a -G ibm user12
or
usermod -aG <group-name> <user-name>
usermod -aG user9 user12
-remove
gpasswd -d <user-name> <group-name>
gpasswd -d user12 user9

change existing group parameters
change existing group name to other one
ex:
change **dell** group name to **moon** group name
tail /etc/group
dell:x:2004:user12,user5
groupmod -n <new name> <old name>
groupmod -n moon dell
tail /etc/group
moon:x:2004:user12,user5

delete group
-primary
ex:
groupdel moon
groupdel: cannot remove the primary group of user 'user11'
NOTE: chage primary group for user11 first then try to delete moon group again
tail /etc/group
moon:x:**2004**:user12,user5
grep "user11" /etc/passwd
user11:x:2002:**2004**::/home/user11:/bin/bash
usermod -g ibm user11
groupdel moon

-secondary
tail /etc/group
sony:x:2005:user12
groupdel sony
#