

# LEC2

To day's discussion:-

→ Users and groups

→ permissions

→ switching Users

→ shut down

## Day 2 - LECTURE

/use /bin → all commands are saved there  
 /etc → has user configurations

### User Accounts:-

- Root user (Administrator) :- only one
- Normal user ; can create many of them
- Service user ; created when I install apps

Note

Users

gnome → serve graphics

syslog → save logs

systemd - network

\* sudo can act as root → root gave permissions to do stuff using the keyword sudo [as root is the manager and sudo has the permissions to act as the manager but root is still the main manager]

\* to create user :- sudo addusr duck  
 tail -n1 /etc/passwd

→ will display data about new user

tail -n1 /etc/group

tail -n1 /etc/shadow

\* Linux preserves id (0-999) for service users

\* from (1000) for normal users

sudo passwd duck

then

sudo tail -n1 /etc/shadow

will show the password encrypted

Sh & bash

\* to switch between different users

su user\_name

\* to delete user :-

sudo userdel user\_name

## Users and Groups

- The /etc/passwd file

login-name:x:uid:gid:comment:home-directory:login-shell

- Included fields are:

- Login name.
- Encrypted password.
- User Id (uid).
- Group Id (gid).
- Comment about the user.
- Home Directory.
- Login shell.

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ls -l → show all data about all files or folders in the folder I am in

rw-rw-r-- | noha noha 0 oct 22 11:50 ai  
file type permissions user created user group file size date of file creation file name  
(file or directory) the file (owner user)

in /etc/passwd

separator [colon separated line]

noha. x : 1000 : 1000 : Noha : /home/noha : /bin/bash

Login name : password : encrypted  
password : userid : group id ; Comment about ; /home directory : login shell  
user

by default at first it's only the main user

But . when create new usr..

- linux assign userid for this user
- create group (primary group) for this user with same name & ID

Slide 5  
man 5 passwd

in /etc/shadow

Login name : encrypted password : date of last change : minimum password age : max password age : password warning  
....etc

from 1/1/1970

warning before locked

cat /etc/shadow → permission denied

sudo cat /etc/shadow → will give permission to read shadow file

man 5 shadow → manual of the file data

\* inactivity date → extra time to change password

! or \* represented password (no idea what is it) but if

I can see the encryption of it it will displayed as  
encrypted data

Slide 5  
man 5 shadow

\* more /etc/group  $\Rightarrow$  has info about groups of users permissions

group name : password : group id : members (user\_id).

man 5 group  
No sudo needed

\* to customize the creation of user :-

sudo useradd -u 10000 -g 1000 -c 'ITI Duck'  
-md /home/duck -s /bin/bash duck

→ will produce error

-u → user name

-g → user group

-c → comments

-md → make directory  $\Rightarrow$  if no home directory

-s → shell

the user will not be able  
to enter using GUI

\* if I created new user I need to add home directory to it  
Some OS may not add it if you don't

(-md)

## Commands used :-

\* man 5 passwd

→ man 5 shadow → what is the shadow file

Sudo more /etc/shadow

sudo useradd duck

Sudo tail -n1 /etc/shadow → must be with sudo

whoami

su duck → switch user to duck

sudo userdel duck → delete duck

exit; → to exit the user return to default user

Sudo useradd -u 1000 -g 1000 -c 'ITI' -md /home/duck  
-s /bin/bash duck

Sudo passwd duck

tail -n1 /etc/passwd

sudo tail -n1 /etc/shadow

passwd → change password for current user

man group add → group add is a command (ch1)

Sudo groupadd -g 6666 ai → 6666 → its id 6@i→name

Sudo group del ai → delete ai group

↳ I can't delete primary group

## Files opened

Cat /etc/shadow

Cat /etc/group

Cat /etc/passwd

## Adding New User

- useradd [options] username
- passwd username
  - The **useradd** command populates user home directories from the **/etc/skel** directory.
- To view and modify default setting:  
**useradd -D**
- Adding multiple user accounts:  
**newusers filename**

Not discussed



\* if I want to know if there's anyone joined specific group I saw in /etc/group  $\Rightarrow$  I need to run tail /etc/passwd

Contains all info about users

\* sudo groupadd -g 6666 ai  $\Rightarrow$  6666  $\Rightarrow$  its id & its name



even if I added new group it will not be found in /etc/group if no one joined it . only appear in /etc/group

\* Linux Users can be member of 2 different kinds of groups:-

[1] Primary group

[2] Secondary group

\* Every user must be a member of only one "private" primary group

this primary group has the same name as the user's name. (by default if you don't add)

\* Every user can be a member of one or more secondary groups.

\* Use -r option to the groupadd command avoids using a GID within the range

typically assigned to users and their private groups.

group mems -g group1 -l

the groupmems command can be used to see which users are member of group1

groups

will print all groups the current user is member of

groups duck

will print all groups the duck user is member of

```
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ 
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ 
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ whoami
noha
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ groups
noha adm cdrom sudo dip plugdev users lpadmin
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ groups duck
duck : duck
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ groups iti
iti : duck
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ groups noha
noha : noha adm cdrom sudo dip plugdev users lpadmin
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ █
```

id

will print user id and id of all groups the user is member of

```
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ id
uid=1000(noha) gid=1000(noha) groups=1000(noha),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),100(users),114(lpadmin)
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ id iti
uid=10001(iti) gid=10000(duck) groups=10000(duck)
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ █
```

\* modify users account you can :-

- 1 Edit /etc/passwd or /etc/shadow files manually
- 2 Use the usermod or chage commands

## Usermod

— usermod command can be used to set all properties of users as stored in /etc/passwd and /etc/shadow, plus some additional tasks such as:-  
mapping group membership.

— THERE is one task that usermod can't do well:-  
setting passwords.

— user mod [option] username

- change Login name -l <login name>
- lock password use -L
- unlock password use -U
- add new secondary group -aG

```
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo useradd -m /home/clown clown
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ tail -n3 /etc/passwd
_flatpak:x:123:125:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
iti:x:10001:10000::/home/iti:/bin/sh
clown:x:10002:10002::/home/clown:/bin/sh
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo usermod -l updated clown
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ tail -n3 /etc/passwd
_flatpak:x:123:125:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
iti:x:10001:10000::/home/iti:/bin/sh
updated:x:10002:10002::/home/clown:/bin/sh
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo passwd updated
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo tail -n1 /etc/shadow
updated:$y$j9T$6BK0e46068rzZuhMCztM8.$$WcgPQyfVOW81wwqIA74kNQdih3bcVZ8D.16WGq2eg2:20019:0:99999:7:::
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo usermod -L updated
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo tail -n1 /etc/shadow
updated:$y$j9T$6BK0e46068rzZuhMCztM8.$$WcgPQyfVOW81wwqIA74kNQdih3bcVZ8D.16WGq2eg2:20019:0:99999:7:::
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ su updated
Password:
su: Authentication failure
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$
```

```
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo usermod -U updated
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo tail -n1 /etc/shadow
updated:$y$j9T$6BK0e46068rzZuhMCztM8.$$WcgPQyfVOW81wwqIA74kNQdih3bcVZ8D.16WGq2eg2:20019:0:99999:7:::
noha@noha-HP-EliteDesk-800-G4-WKS-TWR:~$
```

man usermod → you can use it

# Chage $\Rightarrow$ from lecture 3.

## Password Aging Policies

- The **chage** command sets up password aging.
- chage [options] username**

### Options

- To change the min number of days between password changes use **-m**
- To change the max number of days between password changes use **-M**
- To change the expiration date for the account use **-E date year-month-day**
- To change the number of days to start warning before a password change will be required use **-W**
- To show password expiry information use **-l**

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```
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo chage -l weekend
password change
    -d expires : Oct 24, 2024
    -d inactive : never
    -t expires  : never
    n number of days between password change : 0
    n number of days between password change : 99999
    n of days of warning before password expires : 7
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo chage -m 3 weekend
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo chage -l weekend
password change
    -d expires : Oct 24, 2024
    -d inactive : never
    -t expires  : never
    n number of days between password change : 3
    n number of days between password change : 99999
    n of days of warning before password expires : 7
sha-HP-EliteDesk-800-G4-WKS-TWR:~$
```

(used in your area). A user whose account is locked must contact the system administrator before being able to use the system again.

For example the following can be used to set an account to expire in 180 days:

```
chage -E $(date -d +180days +%Y-%m-%d)
```

Passing the number **-1** as the **EXPIRE\_DATE** will remove an account expiration date.

**-h, --help**  
Display help message and exit.  
**-i, --iso8601**  
When printing dates, use YYYY-MM-DD format.  
**-I, --inactive INACTIVE**  
Set the number of days of inactivity after a password has expired before the account is locked.  
The **INACTIVE** option is the number of days of inactivity. A user whose account is locked must contact the system administrator before being able to use the system again.  
Passing the number **-1** as the **INACTIVE** will remove an account's inactivity.  
**-l, --list**  
Show account aging information.  
**-n, --mindays MIN\_DAYS**  
.page chage(1) line 26 (press h for help or q to quit)

```
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo chage -E 2024-12-1 weekend
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo chage -l weekend
password change
    -d expires : Oct 24, 2024
    -d inactive : Nov 03, 2024
    -t expires  : never
    n number of days between password change : 3
    n number of days between password change : 10
    n of days of warning before password expires : 1
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ man chage
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo chage -I 2 weekend
sha-HP-EliteDesk-800-G4-WKS-TWR:~$ sudo chage -l weekend
password change
    -d expires : Oct 24, 2024
    -d inactive : Nov 05, 2024
    -t expires  : Dec 01, 2024
    n number of days between password change : 3
    n number of days between password change : 10
    n of days of warning before password expires : 1
sha-HP-EliteDesk-800-G4-WKS-TWR:~$
```

