

Assignment-2

1. Create some users:

- Named "alex" with its home directory at /home/user1 and give password "pass1".
- Named "brew" with its home directory at /mnt/user2 and give password "pass2".
- Named "nora" without its home directory
- Named "panny" with custom UID 2112, and assign password "pass-4"
- Named 'texas' without using the useradd or adduser commands. *(Hint: Make changes in the 7 user configuration files)

Ans:

```
[root@devops ~]# useradd -m -d /home/user1 alex
[root@devops ~]# echo "alex:pass1" | chpasswd
[root@devops ~]# useradd -m -d /mnt/user2 brew
[root@devops ~]# echo "brew:pass2" | chpasswd
```

```
[root@devops ~]# useradd -M nora
[root@devops ~]#
```

```
[root@devops ~]# useradd -u 2112 -m panny
[root@devops ~]#
```

```
[root@devops ~]# nano /etc/passwd
[root@devops ~]# nano /etc/shadow
[root@devops ~]# nano /etc/group
[root@devops ~]# nano /etc/gshadow
[root@devops ~]# mkdir /home/texas
[root@devops ~]# chmod 700 /home/texas
[root@devops ~]# passwd texas
Changing password for user texas.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@devops ~]# grep texas /etc/passwd
texas:x:1002:1002::/home/texas:/bin/bash
[root@devops ~]#
```

2. Log in as user alex using the su and su - commands, and explain their differences.

Ans:

```
[root@devops ~]# su alex
[alex@devops root]$
```

```
[root@devops ~]# su - alex
[alex@devops ~]$
```

Differences Between su and su -:

Feature	su alex	su - alex
Environment Variables	Retains original user's environment.	Loads alex's environment (e.g., PATH).
Working Directory	Stays in the current directory.	Switches to alex's home directory.
Login Shell	Does not provide a login shell.	Provides a full login shell.
Configuration Files	Does not load .bash_profile, .bashrc, etc.	Loads .bash_profile and .bashrc.

3. Set a password policy for all above users with the following requirements:

- The maximum password age should be 30 days, and the minimum password age should be 10 days.
- Set the password expiry date for all users to December 31, 2025.

Ans:

```
[root@devops ~]# chage -m 10 -M 30 alex
[root@devops ~]# chage -m 10 -M 30 brew
[root@devops ~]# chage -m 10 -M 30 nora
[root@devops ~]# chage -m 10 -M 30 panny
[root@devops ~]# chage -m 10 -M 30 texas
[root@devops ~]#
```

```
[root@devops ~]# chage -E 2025-12-31 alex
[root@devops ~]# chage -E 2025-12-31 brew
[root@devops ~]# chage -E 2025-12-31 nora
[root@devops ~]# chage -E 2025-12-31 panny
[root@devops ~]# chage -E 2025-12-31 texas
[root@devops ~]#
```

4. Modify the user "alex":

- Add a comment: "I am alex"
- Change the UID to 2581
- Change the shell to "nologin"

Ans:

```
[root@devops ~]# usermod -c "I am alex" alex
[root@devops ~]# usermod -u 2581 alex
[root@devops ~]# usermod -s /sbin/nologin alex
[root@devops ~]# grep alex /etc/passwd
alex:x:2581:35003:I am alex:/home/user1:/sbin/nologin
[root@devops ~]#
```

5. Create group with following configuration:

- Named "north" with secondary group member "alex" & "texas".
- Named "south" with GID "2222".

```
[root@devops ~]# groupadd north
[root@devops ~]# usermod -aG north alex
[root@devops ~]# usermod -aG north texas
[root@devops ~]# groupadd -g 2222 south
[root@devops ~]# grep north /etc/group
north:x:35006:alex,texas
[root@devops ~]# grep south /etc/group
south:x:2222:
[root@devops ~]#
```

6. Grant user Alex administrative privileges through the wheel group so that Alex can add Panny to the admin group without requiring root access.

```
[root@devops ~]# sudo usermod -aG wheel alex
[root@devops ~]# visudo
```

```
[root@devops ~]# su - alex
```

```
[alex@devops ~]$ sudo usermod -aG wheel panny
```

```
[alex@devops ~]$ groups panny
panny : panny wheel
[alex@devops ~]$ sudo whoami
root
[alex@devops ~]$
```

7. Change the group name from "south" to "dakshin".

```
[root@devops ~]# groupmod -n dakshin south
[root@devops ~]# grep dakshin /etc/group
dakshin:x:2222:
[root@devops ~]#
```

8. Create a system user named "ping" and check its UID.

```
[root@devops ~]# useradd -r ping
[root@devops ~]# grep ping /etc/passwd
ping:x:976:976:::/home/ping:/bin/bash
```

9. Create a group named goa with GID 11000. Set this group as the supplementary group for "brew"

```
[root@devops ~]# groupadd -g 11000 goa
[root@devops ~]# usermod -aG goa brew
[root@devops ~]# groups brew
brew : brew goa
[root@devops ~]#
```

10. Create a group named "prod". Then, create two users, user2 and user1, and set both the user's primary group to prod.

```
[root@devops ~]# groupadd prod
```

```
[root@devops ~]# useradd -g prod user2
[root@devops ~]# useradd -g prod user1
```

11. Change the password policy for the USER3 and USER4 accounts to expire on 2026-01-15.

Ans:-

```
[root@devops ~]# sudo chage -E 2026-01-15 USER3
[root@devops ~]# sudo chage -E 2026-01-15 USER4
```

```
[root@devops ~]# sudo chage -l USER3
Last password change           : Jan 25, 2025
Password expires                : never
Password inactive              : never
Account expires                : Jan 15, 2026
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
```

```
[root@devops ~]# sudo chage -l USER4
Last password change           : Jan 25, 2025
Password expires                : never
Password inactive              : never
Account expires                : Jan 15, 2026
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
```

12. Configure administrative rights for all members of the Goa group to execute any command as any user.

Ans:-


```
[root@devops ~]# sudo visudo
[root@devops ~]#
```

```
## Allows people in group wheel to run all commands
%wheel ALL=(ALL) ALL
%goa ALL=(ALL) ALL
## Same thing without a password
```

13. How would you check all failed login attempts on the system from the last 10 days? Write the command and display the output.

Ans:-

```
[root@devops ~]# sudo journalctl --since "10 days ago" | grep "Failed password"
Jan 26 22:05:45 devops.prag sudo[4646]: root : TTY=pts/0 ; PWD=/root ; USER=root ; COMMAND
=/bin/awk -v Date=Jan 16 $0 ~ Date && /Failed password/ /var/log/secure
[root@devops ~]#
```

14. How would you determine how many users are currently logged into the system? Write the command to achieve this.

Ans:-

```
[root@devops ~]# who
root      tty2          2025-01-25 18:15 (tty2)
[root@devops ~]# who | wc -l
1
[root@devops ~]#
```

15. Add the user "sara" to the "wheel" group and create a collaborative directory /collaborative/infodir.

Ans:-

```
[root@devops ~]# sudo usermod -aG wheel sara
[root@devops ~]# groups sara
sara : sara wheel

[root@devops ~]# sudo mkdir -p /collaborative/infodir
[root@devops ~]# sudo chown :wheel /collaborative/infodir
[root@devops ~]# sudo chmod 770 /collaborative/infodir
[root@devops ~]# sudo chmod g+s /collaborative/infodir
[root@devops ~]# ls -ld /collaborative/infodir
drwxrws---. 2 root wheel 6 Jan 26 14:51 /collaborative/infodir
[root@devops ~]#
```

16. Configure login/logout messages:

- When you log in with a new user, display a message: "Hello, you are logged in as USER" (where USER is replaced with the logged-in username).

Ans:-

```
[root@devops ~]# sudo nano /etc/profile
[root@devops ~]#
```

```
unset i
unset -f pathmunge

if [ -n "${BASH_VERSION-}" ] ; then
    if [ -f /etc/bashrc ] ; then
        # Bash login shells run only /etc/profile
        # Bash non-login shells run only /etc/bashrc
        # Check for double sourcing is done in /etc/bashrc.
        . /etc/bashrc
    fi
fi
echo "Hello, you are logged in as $(whoami)"
```

```
[root@devops ~]# su - john
Hello, you are logged in as john
```

- When you log out, display: "You are logged out now".

Ans:-

```
[root@devops ~]# sudo nano /etc/bash.bash_logout
[root@devops ~]#
```

```
GNU nano 5.6.1
echo "You are logged out now"
```

```
[john@devops ~]$ exit
logout
You are logged out now
[root@devops ~]#
```

17. Configure system parameters for newly created users:

- Warning period for password expiry: 5 days
- Minimum user UID: 2000
- Maximum user UID: 70000

Ans:-

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

```
# Min/max values for automatic uid selection in useradd(8)
#
UID_MIN                2000
UID_MAX                70000
```

18. Create a directory /data and configure the system so that all newly created users get /data as their home directory by default.

Ans:-

```
[root@devops ~]# sudo mkdir -p /data
[root@devops ~]# sudo chown root:root /data
[root@devops ~]# sudo chmod 755 /data
[root@devops ~]# sudo vim /etc/default/useradd
```

```
# useradd defaults file
GROUP=100
HOME=/data
INACTIVE=-1
EXPIRE=
SHELL=/bin/bash
SKEL=/etc/skel
CREATE_MAIL_SPOOL=yes
```

```
[root@devops ~]# sudo useradd melon
[root@devops ~]# ls -ld /data/testuser
ls: cannot access '/data/testuser': No such file or directory
[root@devops ~]# ls -ld /data/melon
drwx----- . 3 melon melon 78 Jan 26 15:38 /data/melon
[root@devops ~]# su - melon
Hello, you are logged in as melon
[melon@devops ~]$ pwd
/data/melon
```

19. Name a file where we can set a file size limit upto 200 MB for a single file.

Ans:- File -> /etc/security/limits.conf

```
[root@devops ~]# sudo vim /etc/security/limits.conf
```

```
##*                soft    core    0
##*                hard    rss    10000
#@student          hard    nproc   20
#@faculty          soft    nproc   20
#@faculty          hard    nproc   50
#ftp              hard    nproc   0
#@student          -       maxlogins 4
melon - fsize 204800
# End of file
```

20. Check the last three users who logged into your system.

Ans:-

```
[root@devops ~]# last | head -n 3
root      tty2          tty2          Sat Jan 25 18:15    gone - no logout
reboot    system boot    5.14.0-70.22.1.e Sat Jan 25 18:14    still running
root      tty2          tty2          Sat Jan 25 13:04    - down (02:34)
```

21. As a system administrator, how would you configure the system to ensure that:

- Automatically create an instructions.txt file in the home directory of every new user upon account creation.

Ans:-

```
[root@devops ~]# sudo vim /etc/skel/instructions.txt
[root@devops ~]#
```

```
Welcome to system!!
Please read and follow the instructions carefully.
~
~
~
```

```
[root@devops ~]# sudo useradd type
[root@devops ~]# ls /home/type/
instructions.txt
[root@devops ~]#
```

- Ensure that the mail directory for every newly created user is set to /home/spool/mail/ by default?"

Ans:-

```
[root@devops ~]# sudo vim /etc/default/useradd
[root@devops ~]#
```

```
# useradd defaults file
GROUP=100
HOME=/home
INACTIVE=-1
EXPIRE=
SHELL=/bin/bash
SKEL=/etc/skel
CREATE_MAIL_SPOOL=yes
MAIL_DIR=/home/spool/mail
```

```
[root@devops ~]# sudo echo "hello" | mail -s "hello there" loop
bash: mail: command not found...
[root@devops ~]# ls -l /home/spool/mail/
total 0
-rw-rw----. 1 loop mail 0 Jan 26 21:39 loop
```

22. Delete some users

- Named 'alex' and 'brew' with its all data contents including mail data.

Ans:-

```
[root@devops ~]# userdel -r alex
[root@devops ~]# userdel -r brew
[root@devops ~]# cat /etc/passwd | grep -E 'alex|brew'
```



```
[root@devops ~]# ls /var/spool/mail | grep -E 'alex|brew'  
[root@devops ~]#
```