

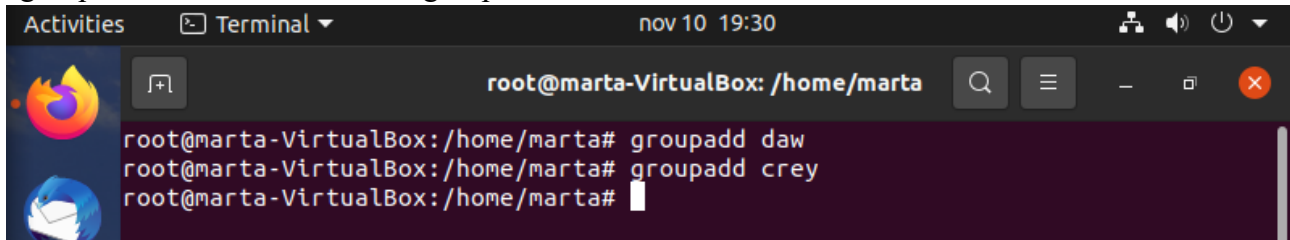
Exercises about users and groups management

NOTE 1: We have to start a root session to do the exercises

NOTE 2: Take into account that user and group names are CASE SENSITIVE

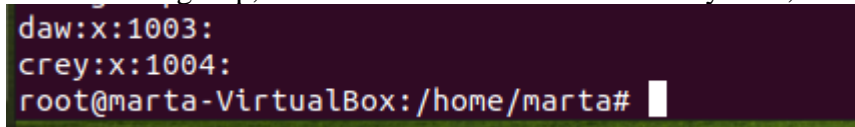
1. Add two new groups named “daw” and “crey”

Firstly, I entered as “sudo su”, with administrator privilege during all the session. Then, I type “groupadd” and the name of the groups I wanted to create:

A terminal window titled 'root@marta-VirtualBox: /home/marta' showing the execution of 'groupadd' commands. The prompt is 'root@marta-VirtualBox:/home/marta#'. The first command is 'groupadd daw', followed by 'groupadd crey'. The prompt returns after each command.

```
root@marta-VirtualBox:/home/marta# groupadd daw
root@marta-VirtualBox:/home/marta# groupadd crey
root@marta-VirtualBox:/home/marta#
```

With cat /etc/group, I can check the ID number of every GID, and that they are already created:

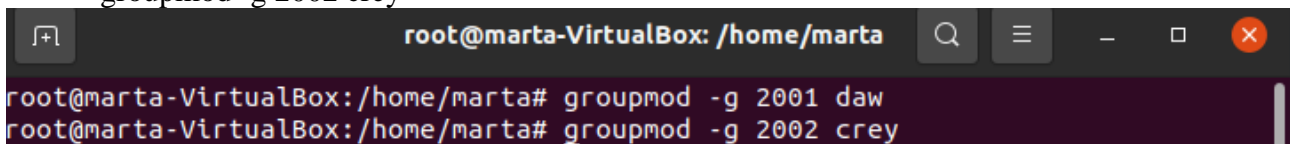
A terminal window showing the output of 'cat /etc/group'. It lists 'daw:x:1003:' and 'crey:x:1004:'. The prompt is 'root@marta-VirtualBox:/home/marta#'.

```
daw:x:1003:
crey:x:1004:
root@marta-VirtualBox:/home/marta#
```

2. Change “daw” and “crey” GIDS to 2001 and 2002, respectively.

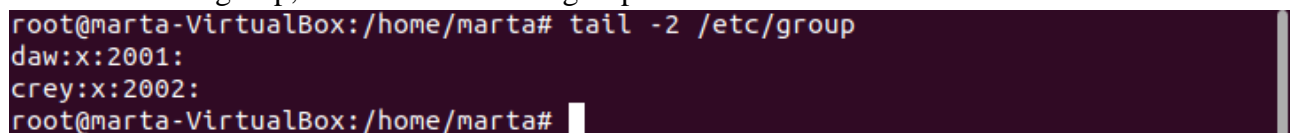
To change a group ID from “OLD_ID” to “NEW_ID”, I would simply use the commands “groupmod” and “-g”:

```
groupmod -g 2001 daw
groupmod -g 2002 crey
```

A terminal window showing the execution of 'groupmod' commands. The prompt is 'root@marta-VirtualBox:/home/marta#'. The first command is 'groupmod -g 2001 daw', followed by 'groupmod -g 2002 crey'. The prompt returns after each command.

```
root@marta-VirtualBox:/home/marta# groupmod -g 2001 daw
root@marta-VirtualBox:/home/marta# groupmod -g 2002 crey
```

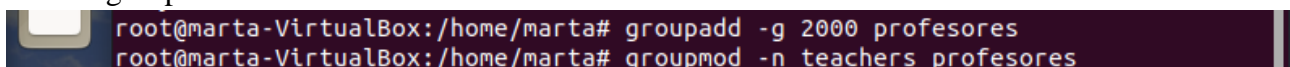
With tail -2 /etc/group, I can check that the groups have been created:

A terminal window showing the output of 'tail -2 /etc/group'. It lists 'daw:x:2001:' and 'crey:x:2002:'. The prompt is 'root@marta-VirtualBox:/home/marta#'.

```
root@marta-VirtualBox:/home/marta# tail -2 /etc/group
daw:x:2001:
crey:x:2002:
root@marta-VirtualBox:/home/marta#
```

3. Create a new group called “profesores” with GID of 2000. Then, modify the group name to teachers

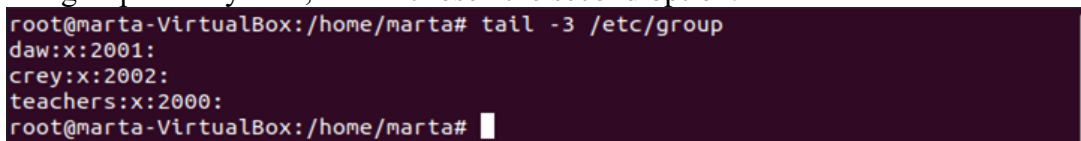
Firstly, I create the group “profesores” specifying a concrete GID in the terminal. With “groupmod”, It’s possible to modify some characteristics, such as the name (changed with “-n”), of an already created group:

A terminal window showing the execution of 'groupadd' and 'groupmod' commands. The prompt is 'root@marta-VirtualBox:/home/marta#'. The first command is 'groupadd -g 2000 profesores', followed by 'groupmod -n teachers profesores'. The prompt returns after each command.

```
root@marta-VirtualBox:/home/marta# groupadd -g 2000 profesores
root@marta-VirtualBox:/home/marta# groupmod -n teachers profesores
```

4. Verify that you have correctly created the groups named “daw”, “crey” and “teachers”

To verify this, I can use either “cat /etc/group” or “tail -3 (the last lines that I wanted to see) /etc/group”. In my case, I have chosen the second option:

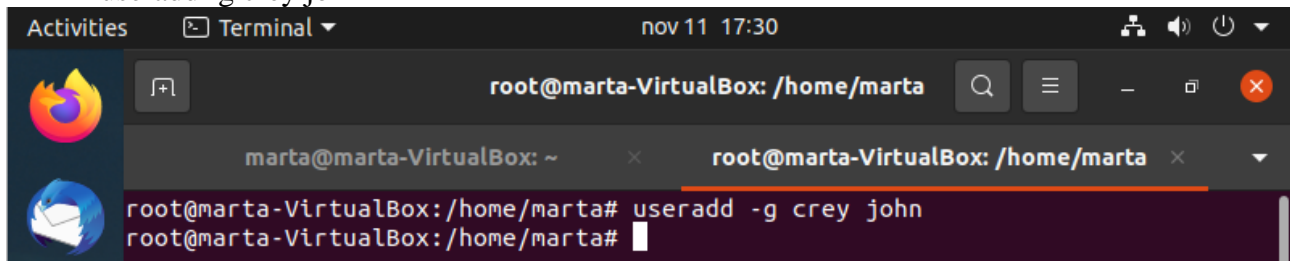
A terminal window showing the output of 'tail -3 /etc/group'. It lists 'daw:x:2001:', 'crey:x:2002:', and 'teachers:x:2000:'. The prompt is 'root@marta-VirtualBox:/home/marta#'.

```
root@marta-VirtualBox:/home/marta# tail -3 /etc/group
daw:x:2001:
crey:x:2002:
teachers:x:2000:
root@marta-VirtualBox:/home/marta#
```

5. Add a new user named “john” whose primary group is “crey”. Has the home directory been created with the default command?

To do this, I write “useradd”, and “-g” to specify its primary group, so the commands will show as follows:

```
useradd -g crey john
```

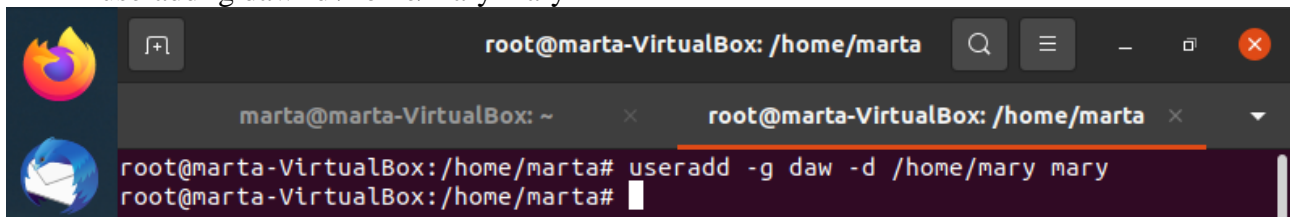
A screenshot of a terminal window titled 'Terminal' with a timestamp of 'nov 11 17:30'. The terminal shows the prompt 'root@marta-VirtualBox: /home/marta' and the command 'useradd -g crey john' being entered and executed. The prompt changes to 'root@marta-VirtualBox: /home/marta#' after the command is run.

The home directory it's not created with the default command. It's important to create another one because the user created (login as root), will not be able to access the directory “home”, and wouldn't also be able to login.

6. Add a new user named “mary”, whose primary group is “daw” and the home directory /home/mary

I do the same steps as before, but adding the parameter “-d”, that indicates the path of the home directory of the user. The command will be:

```
useradd -g daw -d /home/mary mary
```

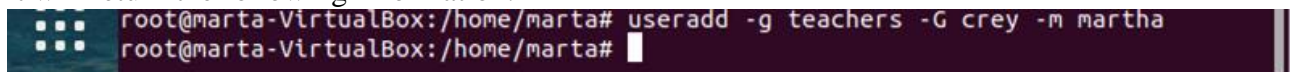
A screenshot of a terminal window titled 'Terminal' with a timestamp of 'nov 11 17:30'. The terminal shows the prompt 'root@marta-VirtualBox: /home/marta' and the command 'useradd -g daw -d /home/mary mary' being entered and executed. The prompt changes to 'root@marta-VirtualBox: /home/marta#' after the command is run.

7. Add a new user named “martha”, whose primary group is “teachers”, the home directory /home/martha and belonging to the secondary group “crey”

To add this user, I type the parameters “-g” and “-d” (to create a home directory). Then, to include this user into a secondary group, I write the parameter “-G”:

```
useradd -g teachers -d /home/marta -G teachers,crey martha
```

It will return the following information:

A screenshot of a terminal window titled 'Terminal' with a timestamp of 'nov 11 17:30'. The terminal shows the prompt 'root@marta-VirtualBox: /home/marta' and the command 'useradd -g teachers -G crey -m martha' being entered and executed. The prompt changes to 'root@marta-VirtualBox: /home/marta#' after the command is run.

With “grep”, I can check that the user martha has been created:

A screenshot of a terminal window titled 'Terminal' with a timestamp of 'nov 11 17:30'. The terminal shows the prompt 'root@marta-VirtualBox: /home/marta' and the commands 'grep martha /etc/passwd' and 'grep martha /etc/group' being entered and executed. The output of the first command is 'martha:x:1003:2000::/home/martha:/bin/sh' and the output of the second command is 'crey:x:2002:martha'.

8. Add the following names to the users that you have just created:

- a) John= “John Doe”
- b) Mary = “Mary Williams”
- c) Martha = “Martha Jones”

To modify a user already created and add a name, I use the parameter “usermod”

```
usermod -c “john Doe” john  
usermod -c “Mary Willoams” mary  
usermod -c “Martha Jones” martha
```

```
root@marta-VirtualBox:/home/marta# usermod -c "John Doe" john
root@marta-VirtualBox:/home/marta# usermod -c "Mary Williams" mary
root@marta-VirtualBox:/home/marta# usermod -c "Martha Jones" martha
root@marta-VirtualBox:/home/marta#
```

9. How could you check that you have created all the users with the right primary groups?

I can check it by printing the folders created for every user, writing:

`cat /etc/passwd`

```
root@marta-VirtualBox:/home/marta# cd $HOME
root@marta-VirtualBox:~# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
```

`cat /etc/group`

```
root:x:1000:1000:root:/home/root:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:usr/sbin/nologin
vboxadd:x:998:1:/:var/run/vboxadd:/bin/false
john:x:1001:2002:John Doe:/home/john:/bin/sh
mary:x:1002:2001:Mary Williams:/home/mary:/bin/sh
martha:x:1003:2000:Martha Jones:/home/martha:/bin/sh
root@marta-VirtualBox:~#
```

Now, I can compare the group id (located in the fourth place) that belongs to each group, and compare it with the id of the primary groups.

10. Verify if crey and daw groups have martha as a member.

If the user martha is in a primary group, her name will not appear. It's possible to know this by typing:

`grep crey /etc/group`

```
teachers:x:2000:
root@marta-VirtualBox:~# grep crey /etc/group
crey:x:2002:martha
root@marta-VirtualBox:~# grep daw /etc/group
daw:x:2001:
root@marta-VirtualBox:~#
```

11. Can you log in with any of the users you have created?

No, It's not possible until a password is created.

12. Set the password "martha22" for the user "martha"

To do this, I write in the terminal the parameter:

`passwd martha` (the user that I want to generate a password)

If I want to create a security key with an encrypted password, I could do it with the command:

`openssl passwd -crypt martha22`

```
root@marta-VirtualBox:~# passwd martha
New password:
Retype new password:
passwd: password updated successfully
root@marta-VirtualBox:~#
```

13. Display on the shell prompt the groups to which Martha belongs

To display this query, I can type one by one these commands, or type both with a semicolon. I have chosen the second option:

`grep martha /etc/passwd; grep martha /etc/group`

```
root@marta-VirtualBox:~# grep martha /etc/passwd; grep martha /etc/group
martha:x:1003:2000:Martha Jones:/home/martha:/bin/sh
crey:x:2002:martha
```

Then, to specify all the groups where this user belongs, I write:
groups martha

```
root@marta-VirtualBox:~# groups martha
martha : teachers crey
root@marta-VirtualBox:~#
```

14. Create a directory named “teachers” in “/home”. Then, assign the directory “/home/teachers” to the user martha (you can do all the steps typing just one command).

To have several parameters in one command, I write the following combination in order to modify the user martha:

usermod -d /home/teachers -m martha

```
root@marta-VirtualBox:~# usermod -d /home/teachers -m martha
root@marta-VirtualBox:~#
```

15. Now, log in as user “martha”. Run the command “cd \$SHOME” and check that the home directory is “/home/teachers”

To do so, I write the following command, that will ask me for its password (martha22), given in exercise 12:

login martha

```
? root@marta-VirtualBox:~# login martha
Password:
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.11.0-40-generic x86_64)

*_ Documentation:   https://help.ubuntu.com
*_ Management:     https://landscape.canonical.com
*_ Support:         https://ubuntu.com/advantage

203 updates can be installed immediately.
0 of these updates are security updates.
```

As it's seen above, once I have been logged there will appear a welcome message and more information.

To see the home directory where I am, I can type the parameter:

pwd

```
$ pwd
/home/teachers
$
```

16. Go back to the root shell

To go back, I just simply type:

exit

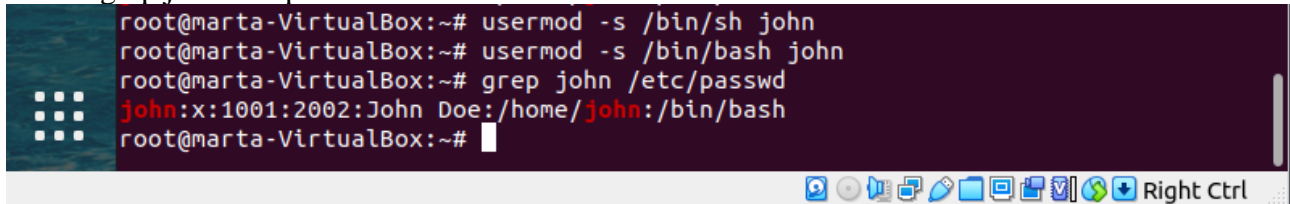
```
/home/teachers
$ exit
root@marta-VirtualBox:~#
```

And it will return me to the previous root shell.

17. Change the shell of the user named “john” to “sh”

To change it, I write the following commands in the user:

```
usermod -s /bin/sh john
usermod -s /bin/bash john
grep john /etc/passwd
```

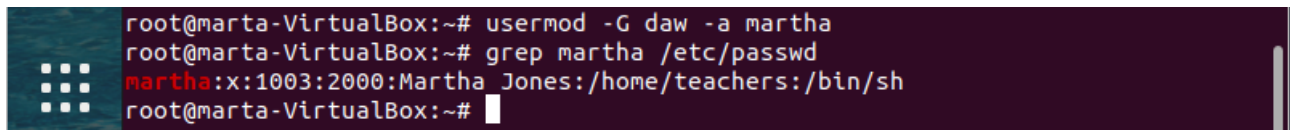


```
root@marta-VirtualBox:~# usermod -s /bin/sh john
root@marta-VirtualBox:~# usermod -s /bin/bash john
root@marta-VirtualBox:~# grep john /etc/passwd
john:x:1001:2002:John Doe:/home/john:/bin/bash
root@marta-VirtualBox:~#
```

18. Add the user “martha” to the secondary group “daw” without removing the already assigned secondary groups.

With “usermod”, “-G” (the list of supplementary groups which the user is also a member of), followed by the chosen secondary group (“daw”) and “-a”. If the last command it’s not executed, the group “crey” won’t appear.

```
usermod -G daw -a martha
```



```
root@marta-VirtualBox:~# usermod -G daw -a martha
root@marta-VirtualBox:~# grep martha /etc/passwd
martha:x:1003:2000:Martha Jones:/home/teachers:/bin/sh
root@marta-VirtualBox:~#
```

19. Run a command to print the following information for each user

User	Primary group	Secondary groups
john	crey	
mary	daw	
martha	teachers	crey, daw

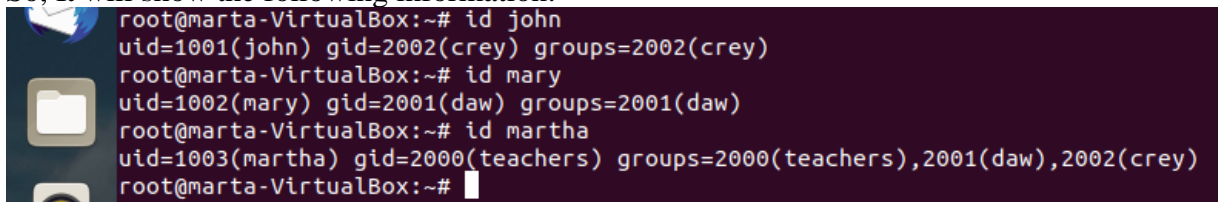
To show this information, I write in the terminal:

Id (the user) → that shows which groups a determined user belongs to

In this case, the parameters will be:

```
Id john
Id mary
Id martha
```

So, It will show the following information:



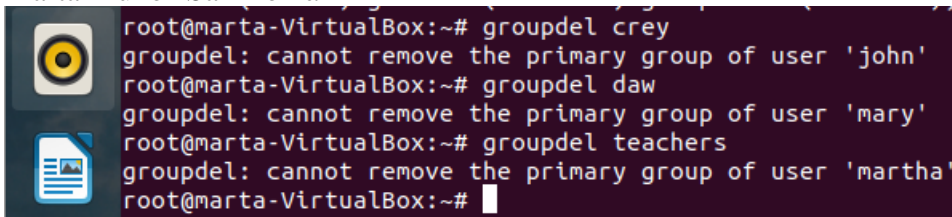
```
root@marta-VirtualBox:~# id john
uid=1001(john) gid=2002(crey) groups=2002(crey)
root@marta-VirtualBox:~# id mary
uid=1002(mary) gid=2001(daw) groups=2001(daw)
root@marta-VirtualBox:~# id martha
uid=1003(martha) gid=2000(teachers) groups=2000(teachers),2001(daw),2002(crey)
root@marta-VirtualBox:~#
```

20. Delete all the groups you have created. Could you delete them? Why?

The command that deletes all users should be:

```
groupdel crey
groupdel daw
```

But it’s not possible to delete them, because the group should not have primary members. To do that operation, I should delete every user at first.

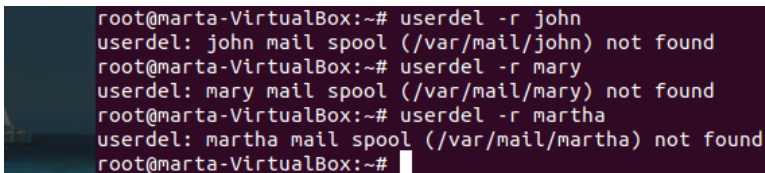
A terminal window with a dark background and light text. It shows three attempts to delete groups using the 'groupdel' command. The first attempt is 'groupdel crey', which fails with the message 'groupdel: cannot remove the primary group of user 'john''. The second attempt is 'groupdel daw', which fails with 'groupdel: cannot remove the primary group of user 'mary''. The third attempt is 'groupdel teachers', which fails with 'groupdel: cannot remove the primary group of user 'martha''. The prompt is 'root@marta-VirtualBox:~#'.

```
root@marta-VirtualBox:~# groupdel crey
groupdel: cannot remove the primary group of user 'john'
root@marta-VirtualBox:~# groupdel daw
groupdel: cannot remove the primary group of user 'mary'
root@marta-VirtualBox:~# groupdel teachers
groupdel: cannot remove the primary group of user 'martha'
root@marta-VirtualBox:~#
```

21. Delete all the users you have created, including the files and directories inside the home.

To delete all users, I type:

Userdel -r “user”

A terminal window showing three successful deletions of users using the 'userdel -r' command. The first is 'userdel -r john', the second is 'userdel -r mary', and the third is 'userdel -r martha'. Each command is followed by a confirmation message: 'userdel: john mail spool (/var/mail/john) not found', 'userdel: mary mail spool (/var/mail/mary) not found', and 'userdel: martha mail spool (/var/mail/martha) not found'. The prompt is 'root@marta-VirtualBox:~#'.

```
root@marta-VirtualBox:~# userdel -r john
userdel: john mail spool (/var/mail/john) not found
root@marta-VirtualBox:~# userdel -r mary
userdel: mary mail spool (/var/mail/mary) not found
root@marta-VirtualBox:~# userdel -r martha
userdel: martha mail spool (/var/mail/martha) not found
root@marta-VirtualBox:~#
```

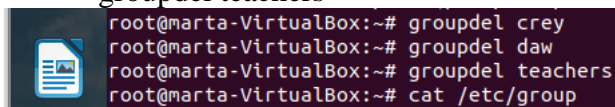
22. Try again to delete the groups

Once the users have been deleted, it's possible to delete groups:

groupdel crey

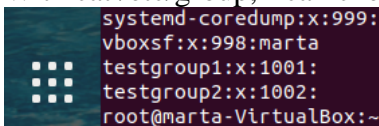
groupdel daw

groupdel teachers

A terminal window showing three successful deletions of groups using the 'groupdel' command. The first is 'groupdel crey', the second is 'groupdel daw', and the third is 'groupdel teachers'. The prompt is 'root@marta-VirtualBox:~#'.

```
root@marta-VirtualBox:~# groupdel crey
root@marta-VirtualBox:~# groupdel daw
root@marta-VirtualBox:~# groupdel teachers
root@marta-VirtualBox:~# cat /etc/group
```

With cat /etc/group, I can check that the groups have been deleted:

A terminal window showing the output of the 'cat /etc/group' command. It lists the remaining groups: 'systemd-coredump:x:999:', 'vboxsf:x:998:marta', 'testgroup1:x:1001:', and 'testgroup2:x:1002:'. The prompt is 'root@marta-VirtualBox:~#'.

```
systemd-coredump:x:999:
vboxsf:x:998:marta
testgroup1:x:1001:
testgroup2:x:1002:
root@marta-VirtualBox:~#
```