

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”

```
sudo addgroup daw ; sudo addgroup crey
```

```
zeus@zeus-VirtualBox:~$ sudo addgroup daw ; sudo addgroup crey
Adding group `daw' (GID 1002) ...
Done.
Adding group `crey' (GID 1003) ...
Done.
zeus@zeus-VirtualBox:~$ id daw
```

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

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

```
zeus@zeus-VirtualBox:~$ grep "daw" /etc/group && grep "crey" /etc/group
daw:x:2001:
crey:x:2002:
zeus@zeus-VirtualBox:~$
```

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

```
sudo groupadd -g 2000 profesores; sudo groupmod -n teachers profesores
```

```
zeus@zeus-VirtualBox:~$ sudo groupadd -g 2000 profesores; sudo groupmod -n teachers profesores
zeus@zeus-VirtualBox:~$ grep "teachers" /etc/group
teachers:x:2000:
zeus@zeus-VirtualBox:~$
```

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

```
grep 2000 /etc/group; grep 2001 /etc/group; grep 2002 /etc/group
```

```
grep "daw" /etc/group; grep "crey" /etc/group; grep "teachers" /etc/group
```

```
zeus@zeus-VirtualBox:~$ grep "daw" /etc/group; grep "crey" /etc/group; grep "teachers" /etc/group
zeus@zeus-VirtualBox:~$ grep "daw" /etc/group
zeus@zeus-VirtualBox:~$ grep daw /etc/group
daw:x:2001:
zeus@zeus-VirtualBox:~$ grep daw /etc/group; grep crey /etc/group; grep teachers /etc/group
daw:x:2001:
crey:x:2002:
teachers:x:2000:
zeus@zeus-VirtualBox:~$
```

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

`sudo useradd -g crey John` # adding to group crey and no home directory is create

`sudo useradd -g crey -m john` # home is not create

`sudo useradd -r John` # deleting a user

```
zeus@zeus-VirtualBox:~$ grep john /etc/passwd; grep john /etc/group; sudo grep john /etc/shadow
john:x:1002:2002::/home/john:/bin/sh
john:!:18656:0:99999:7:::
zeus@zeus-VirtualBox:~$
```

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

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

`useradd -g daw -m" mary`

```
zeus@zeus-VirtualBox:~$ grep mary /etc/passwd; grep mary /etc/group; sudo grep mary /etc/shadow
mary:x:1003:2001::/home/mary:/bin/sh
mary:!:18656:0:99999:7:::
zeus@zeus-VirtualBox:~$ grep mary /etc/passwd; grep daw /etc/group; sudo grep mary /etc/shadow
mary:x:1003:2001::/home/mary:/bin/sh
daw:x:2001:
mary:!:18656:0:99999:7:::
zeus@zeus-VirtualBox:~$
```

7. Add a new user named “martha”, whose primary group is “teachers”, the home directory

`adduser -g teachers -G crey -m martha` # adding Martha primary group teachers secondary group “crey” and automatic home creation

```
zeus@zeus-VirtualBox:~$ sudo useradd -g teachers -G crey -m martha
zeus@zeus-VirtualBox:~$ grep "martha" /etc/passwd; grep "daw" /etc/group; sudo grep "martha" /etc/shadow
martha:x:1004:2000::/home/martha:/bin/sh
daw:x:2001:
martha:!:18656:0:99999:7:::
zeus@zeus-VirtualBox:~$ grep "martha" /etc/passwd; grep "teacher" /etc/group; grep "daw" /etc/group; sudo grep "martha" /etc/shadow
martha:x:1004:2000::/home/martha:/bin/sh
/etc/group:teachers:x:2000:
grep: grep: No such file or directory
grep: daw: No such file or directory
/etc/group:teachers:x:2000:
martha:!:18656:0:99999:7:::
zeus@zeus-VirtualBox:~$ grep "martha" /etc/passwd; grep "teacher" /etc/group ; grep "daw" /etc/group; sudo gr
ep "martha" /etc/shadow
martha:x:1004:2000::/home/martha:/bin/sh
teachers:x:2000:
daw:x:2001:
martha:!:18656:0:99999:7:::
zeus@zeus-VirtualBox:~$ id martha
uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2002(crey)
zeus@zeus-VirtualBox:~$
```

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"

```
sudo usermod -c "John Doe" john && sudo usermod -c "Mary Williams" mary && sudo usermod -c "Martha Jones" martha
```

```
zeus@zeus-VirtualBox:~$ sudo usermod -c "John Doe" john && sudo usermod -c "Mary Williams" mary && sudo usermod -c "Martha Jones" martha
zeus@zeus-VirtualBox:~$ tail /etc/passwd
colord:x:121:128:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
pulse:x:122:129:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
zeus:x:1000:1000:Zeus,,,:/home/zeus:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/usr/sbin/nologin
desarrollador:x:1001:1001:desarrollador,,,:/home/desarrollador:/bin/bash
vboxadd:x:998:1:/:var/run/vboxadd:/bin/false
geoclue:x:123:133:/:var/lib/geoclue:/usr/sbin/nologin
john:x:1002:2002:John Doe:/home/john:/bin/sh
mary:x:1003:2001:Mary Williams:/home/mary:/bin/sh
martha:x:1004:2000:Martha Jones:/home/martha:/bin/sh
zeus@zeus-VirtualBox:~$
```

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

```
tail -3 /etc/passwd
```

or

```
for user in john mary martha; do id "${user}"; done
```

```
uid=1002(john) gid=2002(crey) groups=2002(crey) # only primary group
uid=1003(mary) gid=2001(daw) groups=2001(daw) # only primary group
uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2002(crey) # primary
and secondly group
```

```
zeus@zeus-VirtualBox:~$ for user in john mary martha; do id "${user}"; done
uid=1002(john) gid=2002(crey) groups=2002(crey)
uid=1003(mary) gid=2001(daw) groups=2001(daw)
uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2002(crey)
zeus@zeus-VirtualBox:~$
```

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

```
grep "crey" /etc/group ; grep "daw" /etc/group
```

```
zeus@zeus-VirtualBox:~$ grep "crey" /etc/group ; grep "daw" /etc/group
crey:x:2002:martha
daw:x:2001:
zeus@zeus-VirtualBox:~$
```

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

No.

```
sudo cat etc/shadow
```

```
zeus@zeus-VirtualBox:~$ su john
Password:
su: Authentication failure
zeus@zeus-VirtualBox:~$ su martha
Password:
su: Authentication failure
zeus@zeus-VirtualBox:~$ su mary
Password:
su: Authentication failure
zeus@zeus-VirtualBox:~$
```

12. Set the password “martha22” for the user “martha”

```
sudo passwd martha
```

```
[sudo] password for zeus:
New password:
Retype new password:
passwd: password updated successfully
```

su – Martha # to logging into Martha's directory, no primitive shell

```
sudo openssl-passwd -crypt martha22 /#return zipher password
AsA.SzIK
sudo usermod -p AsA.SzIK martha
```

The first terminal window shows the command `sudo passwd martha` being executed. The prompt asks for the password for zeus, then for a new password and its confirmation. The output is `passwd: password updated successfully`. The second terminal window shows the command `su - martha` being executed. The prompt asks for the password, then shows the current directory `/home/martha` and the output of `ls -l` (total 0). Finally, the output of `id` is shown: `uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2002(crey)`.

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

```
id martha
```

```
uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2002(crey)
```

```
tail -n 3 /etc/group
```

```
daw:x:2001:
crey:x:2002:martha
teachers:x:2000:
```

```
grep martha /etc/group
grep martha etc/shadow
groups
```

The terminal shows the command `id martha` being executed, resulting in `uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2002(crey)`. Then, the command `tail -n 3 /etc/group` is executed, resulting in `daw:x:2001:`, `crey:x:2002:martha`, and `teachers:x:2000:`.

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).

```
sudo usermod -d /home/teacher -m martha
```

```
usermod: user martha is currently used by process 3069
```

```
sudo pkill -9 -u martha
```

This shut the terminal open a new terminal and

```
sudo usermod -d /home/teacher -m Martha # home directory is created
```

```
grep "martha" /etc/passwd
```

```
martha:x:1004:2000:Martha Jones:/home/teacher:/bin/sh
```

```
Terminal - zeus@zeus-VirtualBox: ~
File Edit View Terminal Tabs Help
zeus@zeus-VirtualBox:~$ sudo usermod -d /home/teacher -m martha
usermod: user martha is currently used by process 3069
zeus@zeus-VirtualBox:~$ sudo spkill id -u martha
sudo: spkill: command not found
zeus@zeus-VirtualBox:~$ sudo pkill id -u martha
zeus@zeus-VirtualBox:~$ sudo usermod -d /home/teacher -m martha
usermod: user martha is currently used by process 3069
zeus@zeus-VirtualBox:~$ sudo skill -u martha
zeus@zeus-VirtualBox:~$ sudo usermod -d /home/teacher -m martha
zeus@zeus-VirtualBox:~$ grep "martha" /etc/passwd
martha:x:1004:2000:Martha Jones:/home/teacher:/bin/sh
zeus@zeus-VirtualBox:~$
```

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

```
zeus@zeus-VirtualBox:~$ su martha
Password:
$ cd $HOME
$ pwd
/home/teacher
$ su zeus
Password:
su: Authentication failure
$ su zeus
Password:
zeus@zeus-VirtualBox:/home/teacher$ cd
zeus@zeus-VirtualBox:~$ su - martha
Password:
$ pwd
/home/teacher
```

16. Go back to the root shell

```
/home/teacher
$ su - root
Password:
root@zeus-VirtualBox:~#
```

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

sudo usermod -s sh john

```
zeus@zeus-VirtualBox:~$ grep john /etc/passwd
john:x:1002:2002:John Doe:/home/john:/bin/sh
zeus@zeus-VirtualBox:~$ usermod -s sh john
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
zeus@zeus-VirtualBox:~$ sudo usermod -s sh john
[sudo] password for zeus:
zeus@zeus-VirtualBox:~$ grep john /etc/passwd
john:x:1002:2002:John Doe:/home/john:sh
zeus@zeus-VirtualBox:~$
```

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

sudo usermod -G daw -a Martha


```
zeus@zeus-VirtualBox:~$ id martha
uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2002(crey)
zeus@zeus-VirtualBox:~$ usermod -G daw -a martha
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
zeus@zeus-VirtualBox:~$ sudo usermod -G daw -a martha
zeus@zeus-VirtualBox:~$ id martha
uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2001(daw),2002(crey)
zeus@zeus-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

```
zeus@zeus-VirtualBox:~$ for user in john mary martha; do id "${user}"; done
uid=1002(john) gid=2002(crey) groups=2002(crey)
uid=1003(mary) gid=2001(daw) groups=2001(daw)
uid=1004(martha) gid=2000(teachers) groups=2000(teachers),2001(daw),2002(crey)
zeus@zeus-VirtualBox:~$
```

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

No, because, it cannot be removed the primary groups of any existing user. First it must be remove the thr user and then the group.

```
sudo groupdel <group name>
```

```
zeus@zeus-VirtualBox:~$ sudo groupdel daw
groupdel: cannot remove the primary group of user 'mary'
zeus@zeus-VirtualBox:~$ sudo groupdel crey
groupdel: cannot remove the primary group of user 'john'
zeus@zeus-VirtualBox:~$ sudo groupdel teachers
groupdel: cannot remove the primary group of user 'martha'
zeus@zeus-VirtualBox:~$
```

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

For loop for as **root** execute

```
for user in john mary martha; do userdel -r "${user}"; done
for user in john mary martha; do userdel -f "${user}"; done
```

```

Terminal - root@zeus-VirtualBox: ~
File Edit View Terminal Tabs Help
zeus@zeus-VirtualBox:~$ sudo for user in john mary martha; do id "${user}"; done
-bash: syntax error near unexpected token `do'
zeus@zeus-VirtualBox:~$ su - root
Password:
root@zeus-VirtualBox:~# for user in john mary martha; do userdel -r "${user}"; done
userdel: john mail spool (/var/mail/john) not found
userdel: john home directory (/home/john) not found
userdel: mary mail spool (/var/mail/mary) not found
userdel: mary home directory (/home/mary) not found
userdel: user martha is currently used by process 5311
root@zeus-VirtualBox:~# for user in john mary martha; do userdel -r -f "${user}"; done
userdel: user 'john' does not exist
userdel: user 'mary' does not exist
userdel: user martha is currently used by process 5311
userdel: martha mail spool (/var/mail/martha) not found
userdel: martha home directory (/home/martha) not found
root@zeus-VirtualBox:~# for user in john mary martha; do id "${user}"; done
id: 'john': no such user
id: 'mary': no such user
id: 'martha': no such user

```

- f: This option forces the removal of the specified user account. It doesn't matter that the user is still logged in. It also forces the *userdel* to remove the user's home directory and mail spool, even if another user is using the same home directory or even if the mail spool is not owned by the specified user
- r: remove the files in the user's home directory along with the home directory itself and the user's mail spool. All the files located in other file systems will have to be searched for and deleted manually.
- R: This option apply changes in the *CHROOT_DIR* directory and use the configuration files from the *CHROOT_DIR* directory.
- Z : remove any SELinux policies.

22. Try again to delete the groups

For loop for as **root** execute

for user in daw crey teachers; do groupdel "\${user}"; done

```
root@zeus-VirtualBox:~# tail -n 3 /etc/group
daw:x:2001:
crey:x:2002:
teachers:x:2000:
root@zeus-VirtualBox:~# for user in daw crey teachers; do groupdel "${user}"; done
root@zeus-VirtualBox:~# tail -n 3 /etc/group
desarrollador:x:1001:
vboxsf:x:998:zeus
geoclue:x:133:
root@zeus-VirtualBox:~#
```

References:

<https://linux.die.net/man/8/groupdel>

<https://linux.die.net/man/8/useradd>

<https://kb.iu.edu/d/adwf> (find users by uid)

<https://unix.stackexchange.com/questions/248426/add-multiple-user-to-unix-group-in-one-line>

<https://www.cyberciti.biz/tips/howto-linux-kill-and-logout-users.html>

<https://www.geeksforgeeks.org/userdel-command-in-linux-with-examples/>