CENTRE ESPECÍFIC
D´EDUCACIÓ A DISTÀNCIA DE
LA COMUNITAT VALENCIANA

UNIT 10.LINUX

Activities IV. Solutions

Computer Systems
CFGS DAW

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2020/2021

Versión:210217.1812

Licencia

Nomenclatura

A lo largo de este tema se utilizarán distintos símbolos para distinguir elementos importantes dentro del contenido. Estos símbolos son:

Actividad opcional. Normalmente hace referencia a un contenido que se ha comentado en la documentación por encima o que no se ha hecho, pero es interesante que le alumno investigue y practique. Son tipos de actividades que no entran para examen

Atención. Hace referencia a un tipo de actividad donde los alumnos suelen cometer equivocaciones.

UD10. LINUX
Activities IV. Solutions

1.1 Before doing these activities

Read all the class notes, yes, all, all the pages please, yes yes.

Please also read this article: http://www.perlfect.com/articles/chmod.shtml

1.2 Activity 1. Set octal permissions with chmod.

For this activity you will need at least two users: the main user which is the one you created in the Lubuntu installation, and another one.

1) With the main user:

   - Go to the main user's directory and create a new directory named ***permissions. (command mkdir).***

```
user@hostname:~$ cd
user@hostname:~$ mkdir permissions
```

   - In the ***permissions*** directory create 3 empty files: file01.txt, file10.txt, file11.txt. ***(command touch).***

```
user@hostname:~$ cd permissions
user@hostname:~/permissions$ touch file01.txt file10.txt file11.txt
```

   - Check the default permissions of the directory and the files. Which are the permissions in octal notation?

```
user@hostname:~/permissions$ ls -l
```

```
total 0
-rw-rw-r-- 1 profesor profesor 0 feb 17 13:47 file01.txt
-rw-rw-r-- 1 profesor profesor 0 feb 17 13:47 file10.txt
-rw-rw-r-- 1 profesor profesor 0 feb 17 13:47 file11.txt
octal permissions are: 664
```

2) With another user in a different terminal: tty2, tty3, etc:

   - Access to ***permissions*** directory and delete ***file01.txt.*** Do you have permissions? Give permissions, in octal notation, to this user so that the delete operation is allowed ***only for this file, and test it.***

```
test@profesor-virtualbox:~$ cd /home/profesor/permissions/
test@profesor-virtualbox:/home/profesor/permissions$ rm file01.txt
rm: ¿borrar el fichero regular vacío 'file01.txt'  protegido contra escritura? (s/n) s
rm: no se puede borrar 'file01.txt': Permiso denegado
test@profesor-virtualbox:/home/profesor/permissions$ _
```

It's not possible to allow delete operation on just one file, since these operation is applied on directories.

   - In this user's directory create:
     - a new directory named ***permissions2***

```
test@hostname:~$ mkdir permissions2
```

     - 2 empty files: file2_01.txt, file2_10.txt

```
test@hostname:~/permissions2$ touch file2_01txt file2_10.txt
```

   - Check the default permissions of the directory and the files just created. Which are the permissions in octal notation?

```
test@profesor-virtualbox:~/permissions2$ ls -l
total 0
-rw-r--r-- 1 test student 0 feb 17 14:04 file2_01.txt
-rw-r--r-- 1 test student 0 feb 17 14:04 file2_10.txt
test@profesor-virtualbox:~/permissions2$ cd ..
test@profesor-virtualbox:~$ ls -l
total 4
drwxr-xr-x 2 test student 4096 feb 17 14:04 permissions2
test@profesor-virtualbox:~$
```

Octal permissions: for files 644 and for directories 755

3) With the main user in terminal tty1.
   - Access to the other user's directory and move all the **txt** files to permissions2 directory. Do you have permissions? Give permissions, in octal notation, to this user so that the move operation is allowed ***for all the txt.files in permissions2 directory, and test it.***

```
:~/permissions$ mv *.txt /home/test/permissions2/
1.txt' a '/home/test/permissions2/file01.txt': Permiso denegad

0.txt' a '/home/test/permissions2/file10.txt': Permiso denegad

1.txt' a '/home/test/permissions2/file11.txt': Permiso denegad
```

It's not possible to allow move operation on specific files, since these operation is applied on directories. So the permissions will be applied on the directory.

```
test@profesor-virtualbox:~$ chmod 757 permissions2/
test@profesor-virtualbox:~$ ls -l
total 4
drwxr-xrwx 2 test student 4096 feb 17 14:04 permissions2
```

```
profesor@profesor-virtualbox:~/permissions$ mv *.txt /home/test/permissions2
profesor@profesor-virtualbox:~/permissions$ ls -l /home/test/permissions2/
total 0
-rw-rw-r-- 1 profesor profesor 0 feb 17 13:52 file01.txt
-rw-rw-r-- 1 profesor profesor 0 feb 17 13:47 file10.txt
-rw-rw-r-- 1 profesor profesor 0 feb 17 13:47 file11.txt
-rw-r--r-- 1 test     student  0 feb 17 14:04 file2_01.txt
-rw-r--r-- 1 test     student  0 feb 17 14:04 file2_10.txt
```

1.3 Activity 3.

1) Convert the following octal permissions to alpha/symbolic notation:
   - 664 → u=rw,g=rw,o=r
   - 700 → u=rwx,go-=
   - 771 → u=rwx,g=rwx,o=x
   - 502 → u=rx,g=-,o=w
   - 000 → ugo=- or a=-
   - 640 → u=rw,g=r,o=-
2) Convert the following alpha/symbolic permissions to octal notation:
   - u=rwx,g=w,o=r → 724
   - u=rw,g=rw,o=- → 660
   - u=r,go=- → 400
   - a=rw → 666
   - ug=rw,o=r → 664
   - uo=rw,g=r → 646

1.4 Activity 4. Groups.

1) Create a new group: ***linuxusers***

   groupadd linuxusers

2) Add to this group the two users of the previous activities.

   usermod -aG linuxusers mainuser

   usermod -aG linuxusers user

3) With main user in the user's directory,

   - create a new directory: dir_group

     mkdir dir_group

   - create two files in the directory dir_group

     touch file1 file2

   - verify permissions with the other user of the group.

     Since the files created are in the main user group, it's better to change the group of these files so that every user in the group will have the same permissions.

     chown mainuser:linuxusers file1

     chown mainuser:linuxusers file2