

# Computer Systems – Activities 3 solutions

## UD 10. LINUX



Computer Systems  
CFGS DAW

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## 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.

## UD010. LINUX

### Activities 3

#### 1.1 Activity 4

🔧 Solves those exercises using `grep`. `grep`. Note: you can chain `grep` commands using `|` redirector.

1. Show all lines of file `list.txt` that contain `lib`.

**Solution:** `grep "lib" list.txt`

2. Show how many lines contain `mp3` in `list.txt`.

**Solution:** `grep mp3 list.txt | wc -l`

3. Show files inside `/etc` directory that contain `host` string inside.

**Solution:** `grep -r host /etc`

4. Show all lines of file `list.txt` that not contains `a` (uppercase or lowercase).

**Solution:** `grep -vi *a* list.txt`

5. Show all lines of file `list.txt` that not contains `a` (uppercase or lowercase) and contains `m` (lowercase).

**Solution:** `grep -vi *a* list.txt | grep l *m*`

#### 1.2 Activity 6

1. Using `setUid` bit and supposing that temporally (something like 1 hour) you have access to a machine as root and in that machine you have an user called `alumno` without sudoer permissions.

How can we use `setUid` bit to create a backdoor?

CLUE: file `/bin/sh` could be useful.

**Solution**

**AS root:**

```
cd $HOME
```

```
cp /bin/sh ./
```

```
chown root ./sh
```

```
chmod 4777 ./sh
```

Now we have created the backdoor

**AS myuser:**

Simply run `./sh` and you will be root (you can check it with `id` command)

2. How can we detect that kind of backdoors on our system? What kind of measures can we take to be safe against this kind of attack?

**Solution**

With:

```
find / -path /proc -prune -o -type f -perm +4000 -ls > listado.txt
```

We can obtain all the files with setUID bit active. If the list changes, maybe a new setUID file has been created.

Also we can use software for “system integrity”  
<http://www.ossec.net/>