

EPAM University Programs
DevOps external course
Module 4 Linux & Bash Essentials
TASK 4.6

1. **User management.** Here we suppose there are at least two users, namely, root and guest.

(i) Create a new user **user**

groupadd user

useradd -g user -s /bin/bash -d /home/user -m user

passwd user

id user

ls -ld /home/user

```
bobrov@bobrov-VirtualBox:~$ sudo groupadd user
[sudo] password for bobrov:
bobrov@bobrov-VirtualBox:~$ sudo useradd -g user -s /bin/bash -d /home/user -m user
bobrov@bobrov-VirtualBox:~$ sudo passwd user
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
bobrov@bobrov-VirtualBox:~$ id user
uid=1001(user) gid=1001(user) groups=1001(user)
bobrov@bobrov-VirtualBox:~$ ls -ld /home/user
drwxr-xr-x 2 user user 4096 kbi 23 10:11 /home/user
```

(ii) Log in to the system as “user” (hint use *su*).

(ii) Edit */etc/passwd* to prevent user **user** from logging in to the system.

```
bobrov@bobrov-VirtualBox:~$ su - user
Password:
user@bobrov-VirtualBox:~$ su - bobrov
Password:
bobrov@bobrov-VirtualBox:~$ sudo usermod -s /usr/sbin/nologin user
bobrov@bobrov-VirtualBox:~$ su - user
Password:
This account is currently not available.
```

2. Content of `/etc/passwd` and `/etc/group`.

- (i) Look through `/etc/passwd` and `/etc/group` (hint: use `less` or `cat`).
- (ii) Get data from `/etc/passwd` and `/etc/group` about users: **root**, **guest**, **user** (hint: filter by `grep`).

```
bobrov@bobrov-VirtualBox:~$ grep root /etc/passwd
root:x:0:0:root:/root:/bin/bash
bobrov@bobrov-VirtualBox:~$ grep guest /etc/passwd
bobrov@bobrov-VirtualBox:~$ grep user /etc/passwd
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
user:x:1001:1001::/home/user:/usr/sbin/nologin
bobrov@bobrov-VirtualBox:~$
```

Guest user and guest group is absent in my system.

```
bobrov@bobrov-VirtualBox:~$ grep root /etc/group
root:x:0:
bobrov@bobrov-VirtualBox:~$ grep guest /etc/group
bobrov@bobrov-VirtualBox:~$ grep user /etc/group
users:x:100:
user:x:1001:
bobrov@bobrov-VirtualBox:~$
```

- (iii) Parse `/etc/passwd` and `/etc/group` with `cut`.

`cut -f1 -d: /etc/passwd`

```
bobrov@bobrov-VirtualBox:~$ cut -f1 -d: /etc/passwd
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
gnats
nobody
....
```

`cut -f1,2 -d: /etc/passwd`

```
bobrov@bobrov-VirtualBox:~$ cut -f1,2 -d: /etc/passwd
root:x
daemon:x
bin:x
sys:x
sync:x
games:x
man:x
lp:x
mail:x
news:x
uucp:x
proxy:x
www-data:x
backup:x
list:x
irc:x
gnats:x
nobody:x
```

....

`cut -f1,7 -d: /etc/passwd`

```
bobrov@bobrov-VirtualBox:~$ cut -f1,7 -d: /etc/passwd
root:/bin/bash
daemon:/usr/sbin/nologin
bin:/usr/sbin/nologin
sys:/usr/sbin/nologin
sync:/bin/sync
games:/usr/sbin/nologin
man:/usr/sbin/nologin
lp:/usr/sbin/nologin
mail:/usr/sbin/nologin
news:/usr/sbin/nologin
uucp:/usr/sbin/nologin
proxy:/usr/sbin/nologin
www-data:/usr/sbin/nologin
backup:/usr/sbin/nologin
list:/usr/sbin/nologin
irc:/usr/sbin/nologin
gnats:/usr/sbin/nologin
nobody:/usr/sbin/nologin
```

....

`cut -f1 -d: /etc/group`

```
bobrov@bobrov-VirtualBox:~$ cut -f1 -d: /etc/group
root
daemon
bin
sys
adm
tty
disk
lp
mail
news
uucp
man
proxy
kmem
dialout
fax
voice
cdrom
```

....

`cut -f1,2 -d: /etc/group`

```
bobrov@bobrov-VirtualBox:~$ cut -f1,2 -d: /etc/group
root:x
daemon:x
bin:x
sys:x
adm:x
tty:x
disk:x
lp:x
mail:x
news:x
uucp:x
man:x
proxy:x
kmem:x
dialout:x
fax:x
voice:x
cdrom:x
```

....

(iv) Try to call *less* on */etc/shadow* and invoke *sudo less /etc/shadow*

```
bobrov@bobrov-VirtualBox:~$ sudo less /etc/shadow
[sudo] password for bobrov:
root!:18356:0:99999:7:::
daemon*:18295:0:99999:7:::
bin*:18295:0:99999:7:::
sys*:18295:0:99999:7:::
sync*:18295:0:99999:7:::
games*:18295:0:99999:7:::
man*:18295:0:99999:7:::
lp*:18295:0:99999:7:::
mail*:18295:0:99999:7:::
news*:18295:0:99999:7:::
uucp*:18295:0:99999:7:::
proxy*:18295:0:99999:7:::
www-data*:18295:0:99999:7:::
backup*:18295:0:99999:7:::
list*:18295:0:99999:7:::
irc*:18295:0:99999:7:::
gnats*:18295:0:99999:7:::
nobody*:18295:0:99999:7:::
```

....

man -k shadow

man 5 shadow

Analyse content of */etc/shadow* based on what you've found in *man 5 shadow*.

The file */etc/shadow* contains information about encrypted user passwords.

- login name
- encrypted password
- date of last password change
- minimum password age
- maximum password age
- password warning period
- password inactivity period
- account expiration date
- reserved field

3. Dealing with *chmod*.

(i) An executable script. Open your favorite editor and put these lines into a file

```
#!/bin/bash
```

```
echo "Drugs are bad MKAY?"
```

Give name "script.sh" to the script and call to

```
chmod +x script.sh
```

Then you are ready to execute the script:

```
./script.sh
```

```
bobrov@bobrov-VirtualBox:~$ nano
bobrov@bobrov-VirtualBox:~$ ls -l
total 36
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Desktop
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Documents
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Downloads
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Music
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Pictures
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Public
-rw-rw-r-- 1 bobrov bobrov 40 κbi 23 23:14 script.sh
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Templates
drwxr-xr-x 2 bobrov bobrov 4096 κbi 5 01:13 Videos
bobrov@bobrov-VirtualBox:~$ chmod +x script.sh
bobrov@bobrov-VirtualBox:~$ ./script.sh
Drugs are bad MKAY?
bobrov@bobrov-VirtualBox:~$
```

(ii) Suppose, you have logged in to the system as **guest**. Create directory "testDir" in the */tmp*; put some file into testDir and prohibit user **user** from visiting this directory (i.e. "testDir").

```
bobrov@bobrov-VirtualBox:~$ sudo groupadd guest
bobrov@bobrov-VirtualBox:~$ sudo useradd -g guest -s /bin/bash -d /home/guest -m guest
bobrov@bobrov-VirtualBox:~$ passwd guest
passwd: You may not view or modify password information for guest.
bobrov@bobrov-VirtualBox:~$ sudo passwd guest
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
bobrov@bobrov-VirtualBox:~$ su - guest
Password:
guest@bobrov-VirtualBox:~$ ls -l
total 0
```

```

guest@bobrov-VirtualBox:~$ cd /tmp
guest@bobrov-VirtualBox:/tmp$ mkdir testDir
guest@bobrov-VirtualBox:/tmp$ cd testDir
guest@bobrov-VirtualBox:/tmp/testDir$ echo "Rock n Roll" testfile
Rock n Roll testfile
guest@bobrov-VirtualBox:/tmp/testDir$ echo "Rock n Roll"> testfile
guest@bobrov-VirtualBox:/tmp/testDir$ ls -l
total 4
-rw-rw-r-- 1 guest guest 12 kbi 23 23:35 testfile

guest@bobrov-VirtualBox:/tmp/testDir$ chmod -R 740 /tmp/testDir
guest@bobrov-VirtualBox:/tmp/testDir$ ls -l
total 4
-rwxr----- 1 guest guest 12 kbi 23 23:35 testfile

```

(iii) Test, if it possible to forbid an owner of some file to read to or write from this file.

```

user@bobrov-VirtualBox:/tmp$ ls -l
total 28
-rw----- 1 bobrov bobrov  0 kbi 23 21:27 config-err-0gLPp0
drwx----- 2 bobrov bobrov 4096 kbi 23 21:27 ssh-0UxidCki0pvl
drwx----- 3 root   root   4096 kbi 23 08:22 systemd-private-d62fb1e9742048ca936d9bd5f70563ef-bolt.service-V38rNE
drwx----- 3 root   root   4096 kbi 23 08:22 systemd-private-d62fb1e9742048ca936d9bd5f70563ef-colord.service-3X1A0z
drwx----- 3 root   root   4096 kbi 23 08:22 systemd-private-d62fb1e9742048ca936d9bd5f70563ef-ModemManager.service-3ZU7D0
drwx----- 3 root   root   4096 kbi 23 08:22 systemd-private-d62fb1e9742048ca936d9bd5f70563ef-rtkit-daemon.service-qikHh3
drwxr----- 2 guest  guest  4096 kbi 23 23:35 testDir
user@bobrov-VirtualBox:/tmp$ cd testDir
-su: cd: testDir: Permission denied
user@bobrov-VirtualBox:/tmp$

```

```

user@bobrov-VirtualBox:/tmp$ su - bobrov
Password:
bobrov@bobrov-VirtualBox:~$ cd /tmp
bobrov@bobrov-VirtualBox:/tmp$ cd testDir
-su: cd: testDir: Permission denied
bobrov@bobrov-VirtualBox:/tmp$ sudo -i
root@bobrov-VirtualBox:~# cd /tmp/testDir
root@bobrov-VirtualBox:/tmp/testDir# ls -l
total 4
-rwxr----- 1 guest guest 12 kbi 23 23:35 testfile
root@bobrov-VirtualBox:/tmp/testDir# cat testfile
Rock n Roll
root@bobrov-VirtualBox:/tmp/testDir#

```