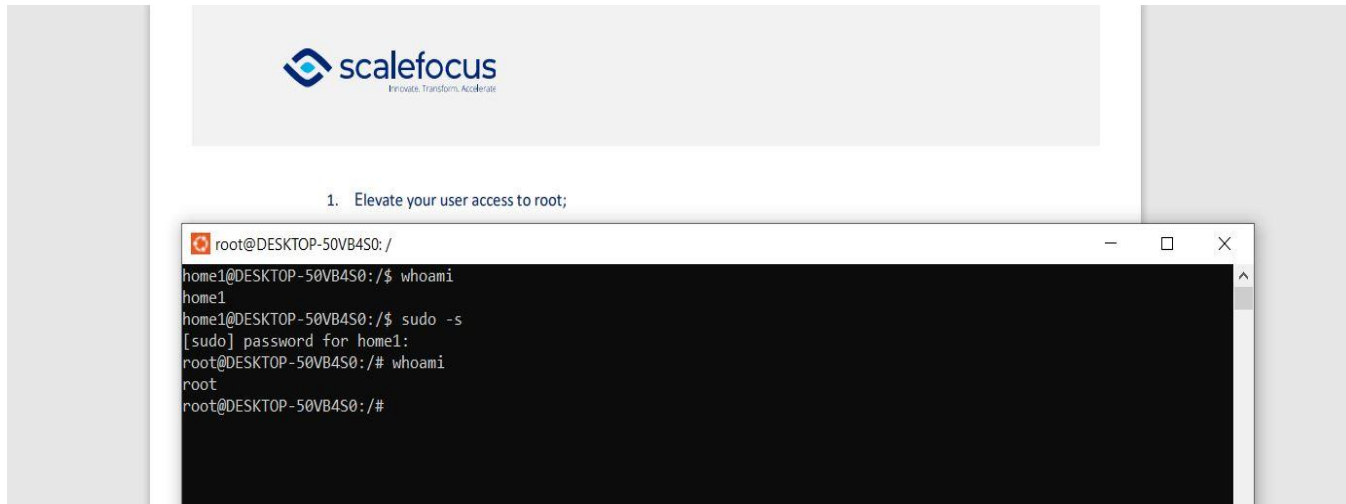


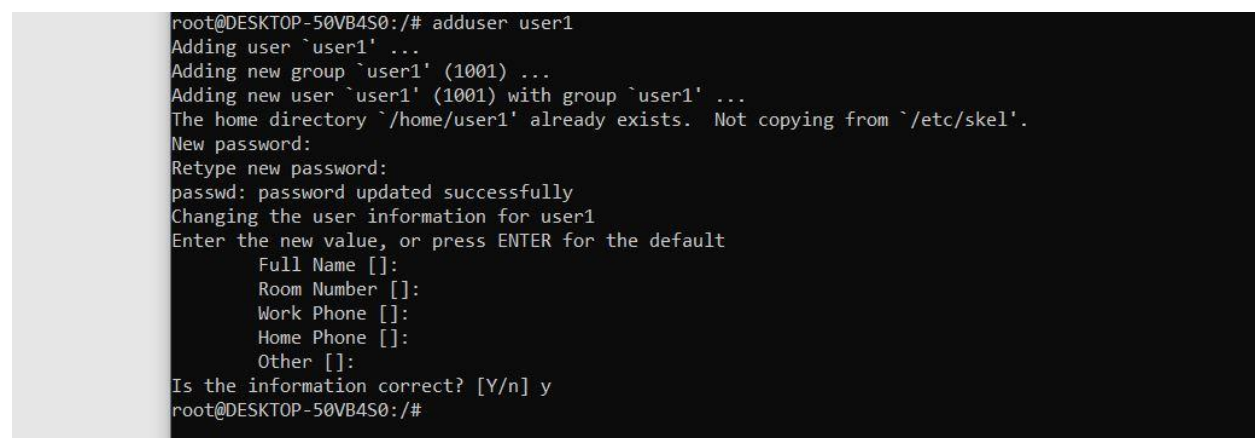
## 1. Elevate your user access to root.



On Ubuntu Linux root is a particular user account. By default, the root user has access to all commands, files, services on an Ubuntu Linux operating system. It is also known as the root account, root user and the superuser. The superuser or root user has root privileges. It is the most privileged account on Ubuntu with complete access to everything. The MS-Windows equivalent of root is the Administrators group or Administrator user.

We can use “sudo -s” to login as root user.

## 2. add a new user to your Linux OS and set a password for it.



To add user ,we need to use “adduser NAME” command and enter password for the new user.

### 3. Test if you can log in using that user

```
root@DESKTOP-50VB4S0:/# login user1
Password:
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.90.1-microsoft-standard-WSL2 x86_64)

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

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

user1@DESKTOP-50VB4S0:~$ whoami
user1
user1@DESKTOP-50VB4S0:~$
```

To login with another user ,we will use “login USERNAME” command , than type the correct password and we are logged with user1.

### 4. Using grep command check if the user is created.

```
user1@DESKTOP-50VB4S0: ~
user1@DESKTOP-50VB4S0:~$ grep user1 /etc/passwd
user1:x:1001:1001:,,,:/home/user1:/bin/bash
user1@DESKTOP-50VB4S0:~$
```

"grep user1 /etc/passwd"(Using grep command we can check if the user is created)

5. grep the UID of each user.

The User ID or UID in Linux is a unique entity through which a user is identified on a system. Every user on a Linux system has a dedicated UID. You can use “cat /etc/passwd” command to find the UID of all users.

```
user1@DESKTOP-50VB4S0:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/tcsh
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin)/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105:/:nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111:/:home/syslog:/usr/sbin/nologin
_apt:x:105:65534:/:nonexistent:/usr/sbin/nologin
uuidd:x:106:112:/:run/uuidd:/usr/sbin/nologin
tcpdump:x:107:113:/:nonexistent:/usr/sbin/nologin
home1:x:1000:1000:,,,:/home/home1:/bin/bash
user1:x:1001:1001:,,,:/home/user1:/bin/bash
user1@DESKTOP-50VB4S0:~$
```

6. Find out the GID of the created user

Groups in Linux are defined by GIDs (group IDs). Just like with UIDs, the first 100 GIDs are usually reserved for system use. The GID of 0 corresponds to the root

group and the GID of 100 usually represents the users group. GIDs are stored in the /etc/groups file:

```
systemd-timesync:x:106:
input:x:107:
sgx:x:108:
kvm:x:109:
render:x:110:
syslog:x:111:
uidd:x:112:
tcpdump:x:113:
_ssh:x:114:
admin:x:115:
netdev:x:116:home1
home1:x:1000:
group1:x:1003:
user1:x:1001:
```

```
user1@DESKTOP-50VB450:~$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,home1
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:home1
fax:x:21:
voice:x:22:
cdrom:x:24:home1
```

## 7. Change the password of the user and force it to change the pass on his next login.

We can change the password with the “passwd” command, the terminal is going to ask you to enter current password, than to enter new password and retype it again.

```

user1@DESKTOP-50VB4S0:~$ passwd
Changing password for user1.
Current password:
New password:
Retype new password:
You must choose a longer password.
New password:
Retype new password:
passwd: password updated successfully
user1@DESKTOP-50VB4S0:~$

```

## 8. Add a new user and set an expiration date for it, with a five-day warning period.

We are using the “adduser” command to create a user, but we need to add expiration date with “-e YYYY-MM-DD username”.

```

home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo adduser user2
Adding user `user2' ...
Adding new group `user2' (1002) ...
Adding new user `user2' (1002) with group `user2' ...
The home directory `/home/user2' already exists. Not copying from `/etc/skel'.
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user2
Enter the new value, or press ENTER for the default
  Full Name []:
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n]
home1@DESKTOP-50VB4S0:/home/Lyubo$

```

## 9. Create a new group

We will use “addgroup -g Group\_ID Group\_Name” command to create a group and group ID number. The -g parameter indicates that a group number will follow. This is the group number that will be assigned to this new group. The group number must be unique. “Group\_Name” is the name of the group you would like

to add. Group names should be entered in lowercase and may contain underscores. It is recommended that you do not use the same group name more than once.

```
user1@DESKTOP-50VB4S0:~$ sudo groupadd -g 1007 Users
[sudo] password for user1:
user1@DESKTOP-50VB4S0:~$ sudo tail /etc/group
uidd:x:112:
tcpdump:x:113:
_ssh:x:114:
admin:x:115:
netdev:x:116:home1
home1:x:1000:
group1:x:1003:
user1:x:1001:
user2:x:1002:
Users:x:1007:
user1@DESKTOP-50VB4S0:~$
```

#### 10. Assign the two new users to that group.

We can assign the users to the group with “sudo adduser USERNAME GROUPNAME ”command.

```
user1@DESKTOP-50VB4S0:~$ sudo adduser user1 Users
Adding user `user1' to group `Users' ...
Adding user user1 to group Users
Done.
user1@DESKTOP-50VB4S0:~$ sudo adduser user2 Users
Adding user `user2' to group `Users' ...
Adding user user2 to group Users
Done.
```

#### 11. Lock one of the user accounts.

```
user1@DESKTOP-50VB4S0:~$ sudo passwd -l user2
passwd: password expiry information changed.
```

#### 12. Change the shell of one user to tcsh.

First we need to see which script we are with “echo \$0”command.

Than we need to login into the wanted user and than we use “chsh -s ”command.



13. Make sure your home directory has “execute” access enabled for group and other.

The `ls -l` command displays directory contents in long format. The long format contains both permissions and ownership. You can see that the user account that created the resources also owns those resources. The group association is also that user's primary group.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ ls -l
total 4
drwxr-xr-x 4 root root 4096 Mar 10 02:46 Homework
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

14. Change to your home directory, and create a directory called labs.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ mkdir labs
home1@DESKTOP-50VB4S0:/home/Lyubo$ ls
Homework labs
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

15. Create an empty file in labs directory.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ cat>file.txt
empty
home1@DESKTOP-50VB4S0:/home/Lyubo$ ls
Homework file.txt labs
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

16. Change permissions of file to `rwx-rwx-rwx`.

## 17. List the file. What color is the file?

To change directory permissions in Linux, use the following:

`chmod +rwx filename` to add permissions

`chmod -rwx directoryname` to remove permissions.

`chmod +x filename` to allow executable permissions.

`chmod -wx filename` to take out write and executable permissions.

Note that “r” is for read, “w” is for write, and “x” is for execute.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ chmod 777 file.txt
home1@DESKTOP-50VB4S0:/home/Lyubo$ ls -l
total 12
drwxr-xr-x 4 root root 4096 Mar 10 02:46 Homework
-rwxrwxrwx 1 home1 home1 6 Apr 2 22:31 file.txt
drwxr-xr-x 2 home1 home1 4096 Apr 2 22:19 labs
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

## 18. Change the permissions back to rx-rw-rw

## 19. Check what owners does the file have.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ chmod 664 file.txt
home1@DESKTOP-50VB4S0:/home/Lyubo$ ls -l
total 12
drwxr-xr-x 4 root root 4096 Mar 10 02:46 Homework
-rw-rw-r-- 1 home1 home1 6 Apr 2 22:31 file.txt
drwxr-xr-x 2 home1 home1 4096 Apr 2 22:19 labs
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

## 20. Change the user ownership of the file to another user.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo chown user2 file.txt
```



21. Create a group called group1 and assign two users to the group.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo addgroup group22
Adding group `group22' (GID 1004) ...
Done.
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo adduser user group22
adduser: The user `user' does not exist.
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo adduser user1 group22
Adding user `user1' to group `group22' ...
Adding user user1 to group group22
Done.
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo adduser user2 group22
Adding user `user2' to group `group22' ...
Adding user user2 to group group22
Done.
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

22. Create a file called group1.txt and redirect below input into the file:

“This is our group test file”.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo nano group1.txt
home1@DESKTOP-50VB4S0:/home/Lyubo$ cat group1.txt
This is our group test file.
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

23. Change the group of the file to one of your users.

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo chgrp user1 group1.txt
home1@DESKTOP-50VB4S0:/home/Lyubo$ ls -l
total 16
drwxr-xr-x 4 root  root  4096 Mar 10 02:46 Homework
-rw-rw-r-- 1 user2 home1    6 Apr  2 22:31 file.txt
-rw-r--r-- 1 root  user1   29 Apr  2 22:45 group1.txt
drwxr-xr-x 2 home1 home1 4096 Apr  2 22:19 labs
home1@DESKTOP-50VB4S0:/home/Lyubo$
```

24. Give members of the group group1 read/write access to this file?

```
home1@DESKTOP-50VB4S0:/home/Lyubo$ sudo chmod g+rw group1.txt
home1@DESKTOP-50VB4S0:/home/Lyubo$ ls -l
total 16
drwxr-xr-x 4 root  root  4096 Mar 10 02:46 Homework
-rw-rw-r-- 1 user2 home1    6 Apr  2 22:31 file.txt
-rw-rw-r-- 1 root  user1   29 Apr  2 22:45 group1.txt
drwxr-xr-x 2 home1 home1 4096 Apr  2 22:19 labs
home1@DESKTOP-50VB4S0:/home/Lyubo$
```