

2) What are the uid ranges? What is UID? How to define it?
UID - is a user identifier. For example user root has UID 0

```
root@master:/home/master# less /etc/passwd | grep root
root:x:0:0:root:/root:/bin/bash
root@master:/home/master#
```

UID starts from 1000 but you can set less than 1000 manually.

```
ck connect... 2. 192.168.1.11 (master)
root@master:/home/master# less /etc/passwd | grep master
master:x:1000:1000:Andrii,,,:/home/master:/bin/bash
masteryoda:x:777:1001::/home/masteryoda:/bin/sh
root@master:/home/master#
```

3) What is GID? How to define it?

```
ck connect... 2. 192.168.1.11 (master)
root@master:/home/master# less /etc/group | grep masteryoda
masteryoda:x:1001:
root@master:/home/master#
```

4) How to determine belonging of user to the specific group?

```
root@master:/home/master# groups masteryoda && groups master
masteryoda : masteryoda
master : master adm cdrom sudo dip plugdev lxd
root@master:/home/master#
```

5) What are the commands for adding a user to the system?

What are the basic parameters required to create a user?

The main command useradd or adduser.

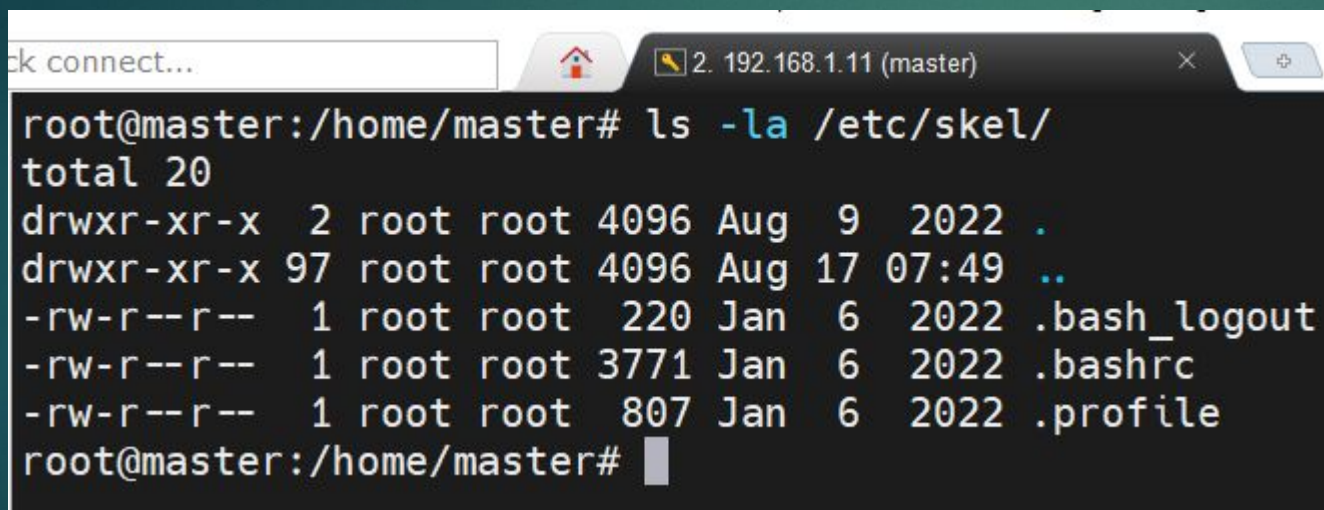
I usually use:

```
root@master:/home/master# useradd testuser -m -d /home/testuser -s /bin/bash && ls -l /home/ && less /etc/passwd | grep testuser
total 8
drwxr-x--- 4 master  master  4096 Aug 17 07:13 master
drwxr-x--- 2 testuser testuser 4096 Aug 17 07:46 testuser
testuser:x:1001:1002::/home/testuser:/bin/bash
root@master:/home/master#
```


6) How do I change the name (account name) of an existing user?

```
root@master:/home/master# usermod -l superuser testuser && less /etc/passwd | grep superuser
superuser:x:1001:1002::/home/testuser:/bin/bash
root@master:/home/master#
```

7) What is skell_dir? What is its structure?



A terminal window titled "2. 192.168.1.11 (master)" showing the command `ls -la /etc/skel/` and its output. The output lists the directory structure of the skeleton directory, including permissions, owner, size, date, and file names.

```
root@master:/home/master# ls -la /etc/skel/
total 20
drwxr-xr-x  2 root root 4096 Aug  9 2022 .
drwxr-xr-x 97 root root 4096 Aug 17 07:49 ..
-rw-r--r--  1 root root  220 Jan  6 2022 .bash_logout
-rw-r--r--  1 root root 3771 Jan  6 2022 .bashrc
-rw-r--r--  1 root root  807 Jan  6 2022 .profile
root@master:/home/master#
```

.bashrc - You can use aliases for commands. Etc.

```
ick connect... 2. 192.168.1.11 (master)
# ~/.bashrc: executed by bash(1) for non-login shells.
# see /usr/share/doc/bash/examples/startup-files (in the package bash-doc)
# for examples

alias show=ls

# If not running interactively, don't do anything
case $- in
    *i*) ;;
    *) return;;
esac
```

```
ick connect... 2. 192.168.1.11 (master)
root@master:/home/master# show /home
master testuser
root@master:/home/master#
```

/etc/skel/.profile - You can configure default user profile.

8) How to remove a user from the system (including his mailbox)?

```
root@master:/home/master# userdel -r superuser && ls -la /home/ && ls -la /var/mail/
userdel: superuser mail spool (/var/mail/superuser) not found
total 12
drwxr-xr-x  3 root    root    4096 Aug 17 08:52 .
drwxr-xr-x 19 root    root    4096 Aug 15 13:19 ..
drwxr-x---  4 master  master 4096 Aug 17 07:13 master
total 8
drwxrwsr-x  2 root  mail 4096 Aug  9 2022 .
drwxr-xr-x 13 root  root 4096 Aug  9 2022 ..
root@master:/home/master#
```


9) What commands and keys should be used to lock and unlock a user account?

```
root@master:/home/master# passwd -l masteryoda && cat /etc/shadow | grep masteryoda
passwd: password expiry information changed.
masteryoda:!:19586:0:99999:7:::
root@master:/home/master#
```

! - It locked.

```
root@master:/home/master# usermod masteryoda -p password
root@master:/home/master# passwd -u masteryoda && cat /etc/shadow | grep masteryoda
passwd: password expiry information changed.
masteryoda:password:19586:0:99999:7:::
root@master:/home/master# passwd masteryoda
New password:
Retype new password:
passwd: password updated successfully
root@master:/home/master# cat /etc/shadow | grep masteryoda
masteryoda:$y$j9T$k0.VoYq7vXHy1KkXxW.iL1$He0bW3ionBQL/rVFL50LjJvLETMQeInr7hp0MPFUzz9:19586:0:99999:7:::
root@master:/home/master#
```

Unlock

10) How to remove a user's password and provide him with a password-free login for subsequent password change?

```
root@master:/home/master# passwd -d masteryoda && cat /etc/shadow | grep masteryoda
passwd: password expiry information changed.
masteryoda::19586:0:99999:7:::
```

11) Display the extended format of information about the directory, tell about the information columns displayed on the terminal.

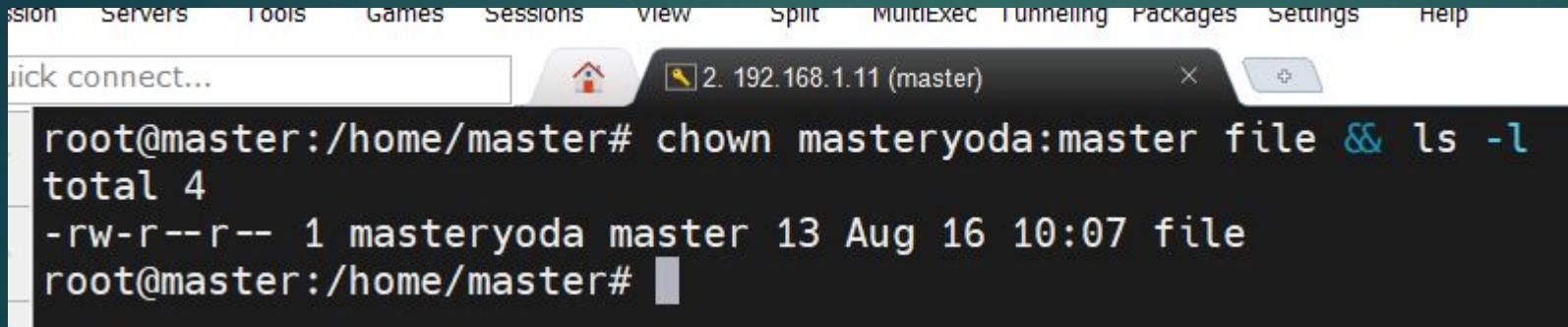
```
root@master:/home/master# ls -l /var/log/
total 1164
-rw-r--r-- 1 root root 36694 Aug 15 13:47 alternatives.log
drwxr-xr-x 2 root root 4096 Aug 16 09:58 apt
-rw-r----- 1 syslog adm 17836 Aug 17 09:05 auth.log
-rw-r--r-- 1 root root 64549 Aug 9 2022 bootstrap.log
-rw-rw---- 1 root utmp 2688 Aug 16 06:59 btmp
-rw-r----- 1 syslog adm 76095 Aug 15 13:35 cloud-init.log
-rw-r----- 1 root adm 4960 Aug 15 13:35 cloud-init-output.log
drwxr-xr-x 2 root root 4096 Aug 3 2022 dist-upgrade
-rw-r----- 1 root adm 51583 Aug 15 13:35 dmesg
-rw-r--r-- 1 root root 629690 Aug 16 09:58 dpkg.log
```

```
drwxr-xr-x  2 root    root      4096 Aug 16 09:58 apt
-rw-r----- 1 syslog  adm       17836 Aug 17 09:05 auth.log
```

d director | - folder
[rwx] read, write, execute
first rwx for user
second for group
third for other

root:root owners: user:group
17836 - size
Aug... - Creation/Modified date
apt/auth.log - file or directory name.

12) What access rights exist and for whom (i. e., describe the main roles)? Briefly describe the acronym for access rights.

A screenshot of a terminal window with a menu bar at the top containing 'Session', 'Servers', 'Tools', 'Games', 'Sessions', 'View', 'Split', 'MultitExec', 'Tunneling', 'Packages', 'Settings', and 'Help'. Below the menu bar is a search bar with the text 'Quick connect...'. The terminal shows a shell prompt 'root@master:/home/master#' followed by the command 'chown masteryoda:master file && ls -l'. The output of the command is displayed on the next line: 'total 4' followed by a file listing: '-rw-r--r-- 1 masteryoda master 13 Aug 16 10:07 file'. The prompt returns to 'root@master:/home/master#' with a cursor.

```

root@master:/home/master# chown masteryoda:master file && ls -l
total 4
-rw-r--r-- 1 masteryoda master 13 Aug 16 10:07 file
root@master:/home/master#

```

For example:

User masteryoda can read and write

Group master can read

Others can read

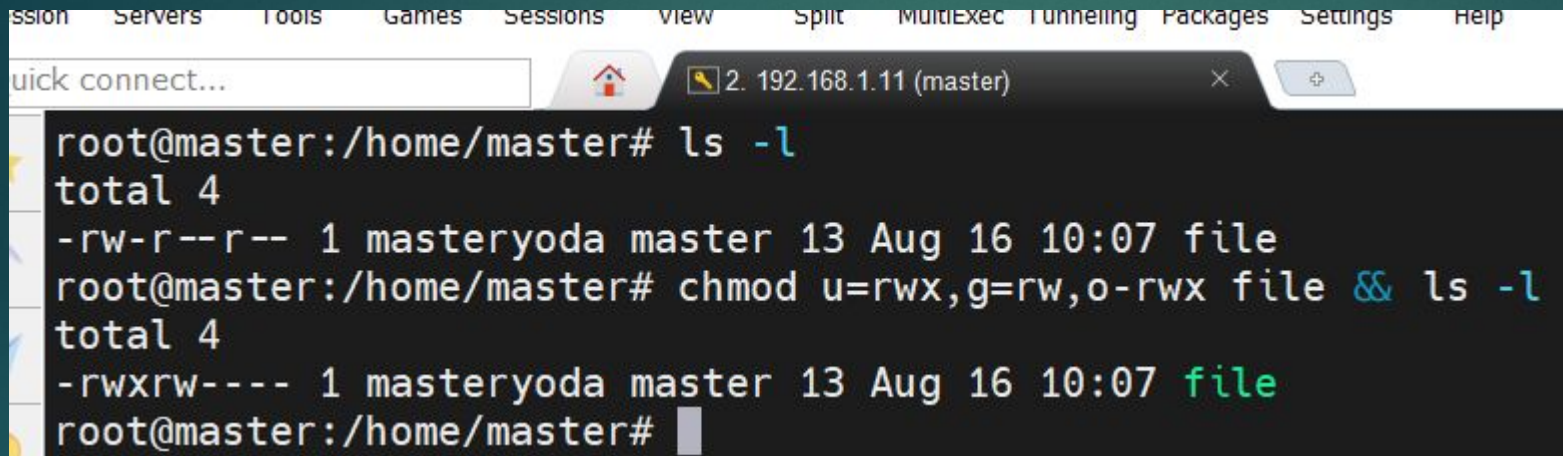
We also can use:
Role Based Access Control
SELinux
Kerberos
Etc.

13) What is the sequence of defining the relationship between the file and the user?

A screenshot of a terminal window with a menu bar at the top containing 'Session', 'Servers', 'Tools', 'Games', 'Sessions', 'View', 'Split', 'MultiExec', 'Tunneling', and 'Package'. Below the menu bar is a search bar with the text 'quick connect...'. The terminal window has a tab labeled '2. 192.168.1.11 (master)' with a home icon and a close button. The terminal content shows the command 'chown masteryoda:master' being executed from the root user at the master machine, with the prompt 'root@master:/home/master#'.

```
Session Servers Tools Games Sessions View Split MultiExec Tunneling Package
quick connect...
root@master:/home/master# chown masteryoda:master
```

14) What commands are used to change the owner of a file (directory), as well as the mode of access to the file? Give examples, demonstrate on the terminal.

A screenshot of a terminal window with a dark background. The window has a menu bar at the top with options: Session, Servers, Tools, Games, Sessions, View, Split, MultiExec, Tunneling, Packages, Settings, and Help. Below the menu bar is a search bar labeled "quick connect...". The terminal shows a shell prompt "root@master:/home/master#" followed by the command "ls -l". The output is "total 4" and "-rw-r--r-- 1 masteryoda master 13 Aug 16 10:07 file". Then, the command "chmod u=rwx,g=rw,o=rwx file & ls -l" is entered. The output is "total 4" and "-rwxrw---- 1 masteryoda master 13 Aug 16 10:07 file". The terminal ends with the prompt "root@master:/home/master#" and a cursor.

```
root@master:/home/master# ls -l
total 4
-rw-r--r-- 1 masteryoda master 13 Aug 16 10:07 file
root@master:/home/master# chmod u=rwx,g=rw,o=rwx file & ls -l
total 4
-rwxrw---- 1 masteryoda master 13 Aug 16 10:07 file
root@master:/home/master#
```

Or chmod 644 filename

15) What is an example of octal representation of access rights?
Describe the umask command.

For example:

User rw -> $4 + 2 + 0 = 6$

Group r -> $4 + 0 + 0 = 4$

Other r -> $4 + 0 + 0 = 4$

16) Give definitions of sticky bits and mechanism of identifier substitution. Give an example of files and directories with these attributes.

```
root@master:/home/master# chmod 1757 file && ls -l
total 8
-rwxr-xrwt 1 masteryoda master   13 Aug 16 10:07 file
drwxr-xrwt 2 root      root    4096 Aug 17 09:44 testfolder
root@master:/home/master#
```

```
root@master:/home/master# chmod 1757 testfolder/ && ls -l
total 8
-rwxrw---- 1 masteryoda master   13 Aug 16 10:07 file
drwxr-xrwt 2 root      root    4096 Aug 17 09:44 testfolder
root@master:/home/master#
```

17) What file attributes should be present in the command script?

If we talk about bash you need put `#!/bin/bash` on the top of script.