Creating User Accounts in Linux:

When we run 'useradd' command in Linux terminal, it performs following major things:

It edits /etc/passwd, /etc/shadow, /etc/group and /etc/gshadow files for the newly created User account.
Creates and populate a home directory for the new user.
Sets permissions and ownerships to home directory.

Basic syntax of command is:

`useradd [options] username`

In this article we will show you the most used 15 useradd commands with their practical examples in Linux. We have divided the section into two parts from Basic to Advance usage of command.

Part I: Basic usage with 10 examples
Part II: Advance usage with 5 examples

Part I – 10 Basic Usage of useradd Commands

1. How to Add a New User in Linux

To add/create a new user, all you've to follow the command 'useradd' or 'adduser' with 'username'. The 'username' is a user login name, that is used by user to login into the system.

Only one user can be added and that username must be unique (different from other username already exists on the system).

For example, to add a new user called 'solider', use the following command.

[root@localhost ~]# useradd solider

When we add a new user in Linux with 'useradd' command it gets created in locked state and to unlock that user account, we need to set a password for that account with 'passwd' command.

[root@localhost ~]# passwd solider
Changing password for user solider.
New LINUX password:
Retype new LINUX password:
passwd: all authentication tokens updated successfully.

Once a new user created, it's entry automatically added to the '/etc/passwd' file. The file is used to store users information and the entry should be.

solider:x:504:504:solider:/home/solider:/bin/bash

The above entry contains a set of seven colon-separated fields, each field has it's own meaning. Let's see what are these fields:

Username: User login name used to login into system. It should be between 1 to 32 charcters long.
Password: User password (or x character) stored in /etc/shadow file in encrypted format.
User ID (UID): Every user must have a User ID (UID) User Identification Number. By default UID 0 is reserved for root user and UID's ranging from 1-99 are reserved for other predefined accounts. Further UID's ranging from 100-999 are reserved for system accounts and groups.
Group ID (GID): The primary Group ID (GID) Group Identification Number stored in /etc/group file.
User Info: This field is optional and allow you to define extra information about the user. For example, user full name. This field is filled by 'finger' command.
Home Directory: The absolute location of user's home directory.
Shell: The absolute location of a user's shell i.e. /bin/bash.

2. Create a User with Different Home Directory

By default 'useradd' command creates a user's home directory under /home directory with username. Thus, for example, we've seen above the default home directory for the user 'solider' is '/home/solider'.

However, this action can be changed by using '-d' option along with the location of new home directory (i.e. /home/newusers). For example, the following command will create a user 'solider' with a home directory '/home/newusers'.

[root@localhost ~]# useradd -d /home/newusers solider

You can see the user home directory and other user related information like user id, group id, shell and comments.

[root@localhost ~]# cat /etc/passwd | grep solider
solider:x:505:505::/home/newusers:/bin/bash

3. Create a User with Specific User ID

In Linux, every user has its own UID (Unique Identification Number). By default, whenever we create a new user accounts in Linux, it assigns userid 500, 501, 502 and so on…

But, we can create user's with custom userid with '-u' option. For example, the following command will create a user 'navin' with custom userid '999'.

[root@localhost ~]# useradd -u 999 navin

Now, let's verify that the user created with a defined userid (999) using following command.

[root@localhost ~]# cat /etc/passwd | grep solider
navin:x:999:999::/home/solider:/bin/bash

NOTE: Make sure the value of a user ID must be unique from any other already created users on the system.
4. Create a User with Specific Group ID

Similarly, every user has its own GID (Group Identification Number). We can create users with specific group ID's as well with -g option.

Here in this example, we will add a user 'tarunika' with a specific UID and GID simultaneously with the help of '-u' and '-g' options.

[root@localhost ~]# useradd -u 1000 -g 500 tarunika

Now, see the assigned user id and group id in '/etc/passwd' file.

[root@localhost ~]# cat /etc/passwd | grep tarunika
tarunika:x:1000:500::/home/tarunika:/bin/bash

5. Add a User to Multiple Groups

The '-G' option is used to add a user to additional groups. Each group name is separated by a comma, with no intervening spaces.

Here in this example, we are adding a user 'solider' into multiple groups like admins, webadmin and developer.

[root@localhost ~]# useradd -G admins,webadmin,developers solider

Next, verify that the multiple groups assigned to the user with id command.

[root@localhost ~]# id solider
uid=1001(solider) gid=1001(solider)
groups=1001(solider),500(admins),501(webadmin),502(developers)
context=root:system_r:unconfined_t:SystemLow-SystemHigh

6. Add a User without Home Directory

In some situations, where we don't want to assign a home directories for a user's, due to some security reasons. In such situation, when a user logs into a system that has just restarted, its home directory will be root. When such user uses su command, its login directory will be the previous user home directory.

To create user's without their home directories, '-M' is used. For example, the following command will create a user 'shilpi' without a home directory.

[root@localhost ~]# useradd -M shilpi

Now, let's verify that the user is created without home directory, using ls command.

[root@localhost ~]# ls -l /home/shilpi
ls: cannot access /home/shilpi: No such file or directory

7. Create a User with Account Expiry Date

By default, when we add user's with 'useradd' command user account never get expires i.e their expiry date is set to 0 (means never expired).

However, we can set the expiry date using '-e' option, that sets date in YYYY-MM-DD format. This is helpful for creating temporary accounts for a specific period of time.

Here in this example, we create a user 'aparna' with account expiry date i.e. 27th April 2014 in YYYY-MM-DD format.

[root@localhost ~]# useradd -e 2014-03-27 aparna

Next, verify the age of account and password with 'chage' command for user 'aparna' after setting account expiry date.

[root@localhost ~]# chage -l aparna
Last password change   : Mar 28, 2014
Password expires   : never
Password inactive   : never
Account expires   : Mar 27, 2014
Minimum number of days between password change   : 0
Maximum number of days between password change   : 99999
Number of days of warning before password expires   : 7

8. Create a User with Password Expiry Date

The '-f' argument is used to define the number of days after a password expires. A value of 0 inactive the user account as soon as the password has expired. By default, the password expiry value set to -1 means never expire.

Here in this example, we will set a account password expiry date i.e. 45 days on a user 'solider' using '-e' and '-f' options.

[root@localhost ~]# useradd -e 2014-04-27 -f 45 solider

9. Add a User with Custom Comments

The '-c' option allows you to add custom comments, such as user's full name, phone number, etc to /etc/passwd file. The comment can be added as a single line without any spaces.

For example, the following command will add a user 'mansi' and would insert that user's full name, Manis Khurana, into the comment field.

[root@localhost ~]# useradd -c "Manis Khurana" mansi

You can see your comments in '/etc/passwd' file in comments section.

[root@localhost ~]# tail -1 /etc/passwd
mansi:x:1006:1008:Manis Khurana:/home/mansi:/bin/sh

10. Change User Login Shell:

Sometimes, we add users which has nothing to do with login shell or sometimes we require to assign different shells to our users. We can assign different login shells to a each user with '-s' option.

Here in this example, will add a user 'solider' without login shell i.e. '/sbin/nologin' shell.

[root@localhost ~]# useradd -s /sbin/nologin solider

You can check assigned shell to the user in '/etc/passwd' file.

[root@localhost ~]# tail -1 /etc/passwd
solider:x:1002:1002::/home/solider:/sbin/nologin

Part II – 5 Advance Usage of useradd Commands
11. Add a User with Specific Home Directory, Default Shell and Custom Comment

The following command will create a user 'ravi' with home directory '/var/www/solider', default shell /bin/bash and adds extra information about user.

[root@localhost ~]# useradd -m -d /var/www/ravi -s /bin/bash -c "Solider Owner" -U ravi

In the above command '-m -d' option creates a user with specified home directory and the '-s' option set the user's default shell i.e. /bin/bash. The '-c' option adds the extra information about user and '-U' argument create/adds a group with the same name as the user.

12. Add a User with Home Directory, Custom Shell, Custom Comment and UID/GID

The command is very similar to above, but here we defining shell as '/bin/zsh' and custom UID and GID to a user 'tarunika'. Where '-u' defines new user's UID (i.e. 1000) and whereas '-g' defines GID (i.e. 1000).

[root@localhost ~]# useradd -m -d /var/www/tarunika -s /bin/zsh -c "Solider Technical Writer" -u 1000 -g 1000 tarunika

13. Add a User with Home Directory, No Shell, Custom Comment and User ID

The following command is very much similar to above two commands, the only difference is here, that we disabling login shell to a user called 'avishek' with custom User ID (i.e. 1019).

Here '-s' option adds the default shell /bin/bash, but in this case we set login to '/usr/sbin/nologin'. That means user 'avishek' will not able to login into the system.

[root@localhost ~]# useradd -m -d /var/www/avishek -s /usr/sbin/nologin -c "Solider Sr. Technical Writer" -u 1019 avishek

14. Add a User with Home Directory, Shell, Custom Skell/Comment and User ID

The only change in this command is, we used '-k' option to set custom skeleton directory i.e. /etc/custom.skell, not the default one /etc/skel. We also used '-s' option to define different shell i.e. /bin/tcsh to user 'navin'.

[root@localhost ~]# useradd -m -d /var/www/navin -k /etc/custom.skell -s /bin/tcsh -c "No Active Member of Solider" -u 1027 navin

15. Add a User without Home Directory, No Shell, No Group and Custom Comment

This following command is very different than the other commands explained above. Here we used '-M' option to create user without user's home directory and '-N' argument is used that tells the system to only create username (without group). The '-r' arguments is for creating a system user.

[root@localhost ~]# useradd -M -N -r -s /bin/false -c "Disabled Solider Member" clayton

For more information and options about useradd, run 'useradd' command on the terminal to see available options.

Read Also: 15 usermod Command Examples

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Ravi Saive

I am Ravi Saive, creator of Solider. A Computer Geek and Linux Guru who loves to share tricks and tips on Internet. Most Of My Servers runs on Open Source Platform called Linux. Follow Me: Twitter, Facebook and Google+

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Decontee K Sawyer
October 26, 2017 at 6:29 pm

Hi Ravi. Your suggestion to go directly to the source documentation to understand the requirements and details is an exceedingly excellent one. You have obviously done so, and translated the English it is written in, into whatever your native language is. A link to your interpretation, in your native language would be more helpful than the confusing broken English found here.
Reply
Anuj
October 16, 2017 at 4:01 pm

Hi Ravi,

I have one problem, from client side I have a request to add a new user with username having space, I mean username of two words.

For example,

adduser "ravi gen"
adduser: invalid user name 'ravi gen'

Reply
Ravi Saive
October 25, 2017 at 11:52 am

@Anuj,

That's not possible, add underscore or dash, like ravi_gen or ravi-gen.

Reply
oscar javier guerrero
October 6, 2017 at 9:19 pm

Hi Ravi, I have a question, If use: su "user" type the password and the system say: su: System Error, why is this message?
Reply

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