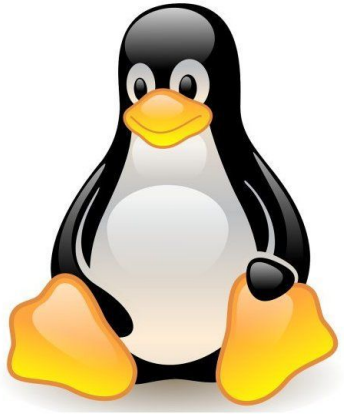
Linux Plus for AWS and DevOps Session -3



CLARUSWAY
WAY TO REINVENT YOURSELF

Managing Users and Groups

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“sudo” command

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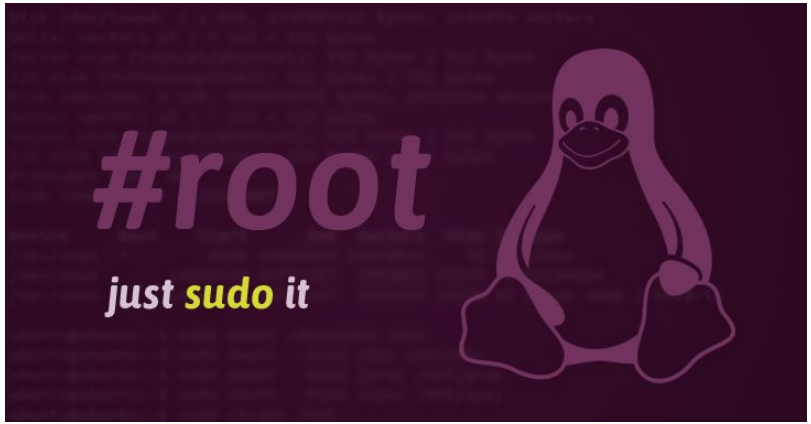


sudo Command

The sudo (superuser do) command gives some **admin privileges** to non-admin users. It enables users to run programs with the security privileges of another user, by default the superuser.

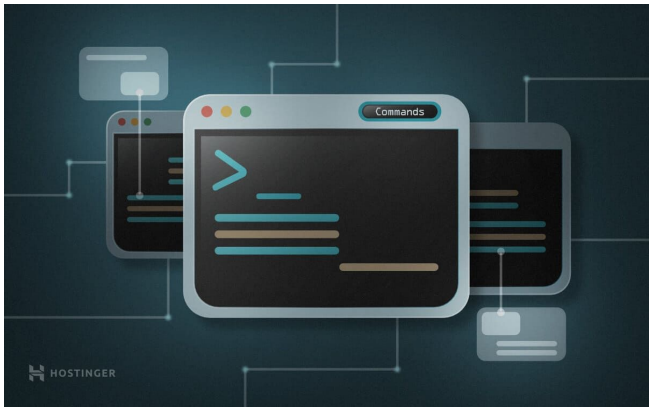
When you put sudo in front of any command in terminal, that command runs with **elevated privileges**.

If you're not sure if you're using sudo or su, look at the trailing character on the command line. If it's a pound sign (#), you're logged in as root.

sudo Command

Commands	Meaning
sudo -l	List available commands.
sudo command	**Run command as root.**
sudo -u root command	Run command as root.
sudo -u user command	Run command as user.
sudo su	**Switch to the superuser account.**
sudo su -	**Switch to the superuser account with root's environment.**
sudo su - username	Switch to the username's account with the username's environment.
sudo -s	Start a shell as root
sudo -u root -s	Same as above.
sudo -u user -s	Start a shell as user.

2 Basic User Commands



Basic User Commands

whoami

displays the username of the currently logged in user

whoami

```
clarusway@DESKTOP-UN6T2ES:~$ whoami
clarusway
clarusway@DESKTOP-UN6T2ES:~$
```

Basic User Commands

who

provide with details about **who is logged on the system.**

who

```
clarusway@DESKTOP-UN6T2ES:~$ who
root pts/0 2019-11-10 23:07 (10.104.33.101)
james pts/1 2019-11-10 23:30 (10.104.33.101)
john pts/2 2019-11-10 23:34 (10.104.33.96)
clarusway pts/3 2019-11-10 23:39 (10.104.33.91)
clarusway@DESKTOP-UN6T2ES:~$
```

Basic User Commands

w

inform who is logged on and what they are doing.

w

```
clarusway@DESKTOP-UN6T2ES:~$ w
 14:22:38 up  1:52,  0 users,  load average: 0.52, 0.58, 0.59
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
root pts/0 14:07 15.00s 0.01s 0.01s top
clarusway@DESKTOP-UN6T2ES:~$
```

Basic User Commands

id — Display user id, your primary group id, and a list of the groups you belong to.

id [username]

eg: id root, id user1

```
clarusway@DESKTOP-UN6T2ES:~$ id
uid=1000(clarusway) gid=1000(clarusway) groups=1000(clarusway)
```

Unix-like operating systems identify a user by a value called a user identifier (UID) and Identify group by a group identifier (GID), are used to determine which system resources a user or group can access.

Basic User Commands

su — enables a shell to be run as another user.

su [username]

```
clarusway@DESKTOP-UN6T2ES:~$ su oliver
Password:
oliver@DESKTOP-UN6T2ES:/home/clarusway$
```

Basic User Commands

su - To become another user and also get the environment of the target user.

su - [username]

```
clarusway@DESKTOP-UN6T2ES:~$ su - oliver
Password:
oliver@DESKTOP-UN6T2ES:~$
```

Basic User Commands

sudo su

The root user does not have a password set on some Linux systems like Ubuntu and Xubuntu. On these Linux systems, You can become root user via sudo su command.

sudo su

sudo su -

```
clarusway@DESKTOP-UN6T2ES:~$ sudo su
root@DESKTOP-UN6T2ES:/home/clarusway#
```

User management

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User management

etc/passwd

On Linux, the local user database is /etc/passwd.

```
clarusway@DESKTOP-UN6T2ES:~$ tail -5 /etc/passwd
clarusway:x:1000:1000:,,,:/home/clarusway:/bin/bash
john:x:1002:1002:john,room,work,home,other:/home/john:/bin/bash
oliver:x:1003:1003:oliver,room_1,work_1,home_1:/home/oliver:/bin/bash
aaron:x:1001:1001:aaron,,,:/home/aaron:/bin/bash
james:x:1005:1009:james,,,:/home/james:/bin/bash
clarusway@DESKTOP-UN6T2ES:~$
```

User management

useradd useradd command is used for creating a new user.

useradd [username]

```
root@DESKTOP-UN6T2ES:~# useradd -m -d /home/walter -c "walter clarus" walter
root@DESKTOP-UN6T2ES:~# tail -1 /etc/passwd
walter:x:1006:1006:walter clarus:/home/walter:/bin/sh
root@DESKTOP-UN6T2ES:~#
```

-m is used for forcing the creation of the home directory
-d is used for setting the name of the home directory
-c is used for setting a description

User management

userdel

Delete a user. userdel command will not remove the user's home directory from the file system. If you want to remove the home directory, you need to use the -r in the command line.

userdel [username]

```
root@DESKTOP-UN6T2ES:~# userdel -r raymond
```

User management

usermod

Modify a user's properties. The example below modifies the description of the user walter.

usermod -[option][value][username]

```
root@DESKTOP-UN6T2ES:~# tail -1 /etc/passwd
walter:x:1004:1004:walter clarus:/home/walter:/bin/sh
root@DESKTOP-UN6T2ES:~# usermod -c 'aws solution architect' walter
root@DESKTOP-UN6T2ES:~# tail -1 /etc/passwd
walter:x:1004:1004:aws solution architect:/home/walter:/bin/sh
root@DESKTOP-UN6T2ES:~#
```

The syntax to rename username : **usermod -l login-name old-name**

User Passwords

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User Passwords

passwd

User passwords can be set with the passwd command.

passwd [username]

```
oliver@DESKTOP-UN6T2ES:~$ passwd
Changing password for oliver.
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
Bad: new password is too simple
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
oliver@DESKTOP-UN6T2ES:~$
```

User Passwords

etc/shadow

User passwords are encrypted and stored in /etc/shadow file.
The /etc/shadow file is only read and can be accessed by root only.

```
clarusway@DESKTOP-UN6T2ES:~$ tail -4 /etc/shadow
tail: cannot open '/etc/shadow' for reading: Permission denied
clarusway@DESKTOP-UN6T2ES:~$ sudo su -
root@DESKTOP-UN6T2ES:~# tail -4 /etc/shadow
clarusway:$6$c2IXDMI2$B9GPOjcYyGLctUmTDP7tfNEBIXGo2YAUF
    /Y5NNIDkumJuP5uyxW1xHDMobWPFx0wfOh1C4iBj9PvP4XnP/Uv10:18323:0
    :99999:7:::
john:$6$ITd.yBmK$MxMz9wm7.1DxdQx7At.0VB6ch1XU22BMXhTbPkWjdk0B
    .SmnwjYR922DmCeAzP8WFyIhGoHP10Dqt6MO7rxON0:18333:0:99999:7:::
oliver:$6$tTRbLfc5$j1NMBc9tvBotwCtFMt0Qq2K0nbQW2zBv
    /zwufBwOnhUs7UMoczD.m/5Tnz1uCKymhISOSzZbdSCRKkLF.wSD00:18333:0
    :99999:7:::
walter:$6$aMR4T5iB$7ZJzvy2VCEaOnPZIbaofUSLQp
    .aeIOCZgDeNug5hWcIkSnAjA6n6V.tR3IAJY5IScImcn15K/ZMFug1D2gK6L
    /:18333:0:99999:7:::
root@DESKTOP-UN6T2ES:~#
```

User Passwords

etc/login.defs

The /etc/login.defs file includes some default user password settings, such as password aging and length settings.

```
clarusway@DESKTOP-UN6T2ES:~$ grep ^PASS /etc/login.defs
PASS_MAX_DAYS   99999
PASS_MIN_DAYS   0
PASS_WARN_AGE   7
clarusway@DESKTOP-UN6T2ES:~$
```

HomeWork Exercise 1

Create a user named **devops**
Set **devops** user password as **clarusway**
Change devops user description as **the best cloud engineer**
Switch to **devops** user
Display information of **devops** user
Go back to previous user
Delete **devops** user with home directory

Group Management

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Group Management

In Linux, groups provide a convenient way for a set of users to share files and directories with each other. Linux admins use groups to assign access to files and other resources. Every group has a unique ID listed in the /etc/group file, along with the group name and members.There are two types of groups: primary groups and secondary groups.

- **Group**: A group is a collection of users who can share files and other system resources
- **Primary Group**: Specifies a group that the operating system assigns to files that the user creates. Naturally, each user must belong to a primary group
- **Secondary Group**: Specifies one or more groups to which a user also belongs. In addition, users can belong to up to 15 secondary groups

When we create a new user in Linux, a new group with the same name as the user will also be created and associated with the user. This new group is the user's primary group.

Group Management

etc/group

Users can belong to several groups. Group membership is specified via the /etc/group file.

```
root@DESKTOP-UN6T2ES:/home/clarusway# tail -3 /etc/group
linux:x:1006:john,james,aaron
aws:x:1007:walter
python:x:1008:oliver
root@DESKTOP-UN6T2ES:/home/clarusway#
```

Group Management

groups groups command is used to display a list of groups to which the user belongs.

groups [username]

```
john@DESKTOP-UN6T2ES:~$ groups
john linux
john@DESKTOP-UN6T2ES:~$
```

Group Management

groupadd

groupadd command is used to create a new group.

groupadd [groupname]

```
root@DESKTOP-UN6T2ES:~# groupadd linux
root@DESKTOP-UN6T2ES:~# groupadd aws
root@DESKTOP-UN6T2ES:~# groupadd python
```

Group Management

usermod

You can change primary group membership with the usermod command.

usermod -g [groupname] [username]

usermod

You can change secondary group membership with the usermod command.

usermod -a -G [groupname] [username]

```
root@DESKTOP-UN6T2ES:~# usermod -a -G linux james
root@DESKTOP-UN6T2ES:~# usermod -a -G linux aaron
```

(-a keeps already existing secondary groups intact otherwise they'll be removed)

Group Management

groupmod groupmod command can be used to change the group name.

groupmod -n [newname] [oldname]

```
root@DESKTOP-UN6T2ES:~# groupmod -n ubuntu linux
root@DESKTOP-UN6T2ES:~# tail -3 /etc/group
aws:x:1007:walter
python:x:1008:oliver
ubuntu:x:1006:john,james,aaron
root@DESKTOP-UN6T2ES:~#
```

Group Management

groupdel groupdel command is used to delete a group.

groupdel [groupname]

```
root@DESKTOP-UN6T2ES:~# groupdel ubuntu
root@DESKTOP-UN6T2ES:~#
```

Group Management

gpasswd

With the gpasswd command, we can add a user to a group and to remove a user from a group. In the example below:

- We add john to aws group with gpasswd -a command.
- We remove walter from aws group with gpasswd -d command.

gpasswd –[option][username][groupname]

```
root@DESKTOP-UN6T2ES:~# gpasswd -a john aws
Adding user john to group aws
root@DESKTOP-UN6T2ES:~# gpasswd -d walter aws
Removing user walter from group aws
root@DESKTOP-UN6T2ES:~#
```

HomeWork Exercise 2

Create a user named **devops**
Create two groups named **cloud** and **aws**
Add **devops** user to the group **cloud**
Display **groups** that **devops** user belongs to
Add **devops** user to the group **aws**
Remove **devops** user from **cloud** group
Delete **cloud** group
Rename **aws** group name as **aws-cloud**
Display **groups** that **devops** user belongs to

HomeWork Exercise 3

Create users: **Jason, Bruce, Victor, Mark, Jack, Tyler, Tomy, Edward, Eric**
Create groups: **Asia, Europe, America, Africa**

Add users: **Jason, Bruce, Victor** to the **Asia** group
Add users: **Jason, Mark, Jack, Tyler** to the **Europe** group
Add users: **Jason, Tomy, Edward** to the **America** group
Add users: **Jason, Bruce, Mark, Edward, Jack, Tyler, Eric** to the **Africa** group

Display groups that **Jason** belongs to;

Display groups that **Edward** belongs to

Remove **Bruce** from **Africa** group;

Remove **Jason** from **all** groups

Delete **Europe** group

Rename **Africa** group as Australia

Sudoers File

- Sudo means, “super user do”, “su” means, “super user”.
- This command indicates that you want to be granted a super user and gain super user/root privileges.
- Linux then checks a special file and sees if you are allowed to be granted root privileges, similar to a VIP CLUB.
- If your name is not on the list, no rights.
- The sudoers file is a file Linux and Unix administrators use to allocate system rights to system users.
- This allows the administrator to control who does what.
- Remember, Linux is built with security in mind.
- When you want to run a command that requires root rights, Linux checks your username against the sudoers file.
- This happens when you type the command “sudo”.
- If it determines, that your username is not on the list, you cannot run the command/program logged in as that user.
- You can find the sudoers file in “***/etc/sudoers***”

THANKS!

Any questions?

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