

# AINUX

— TASTE OF LINUX —

WELCOME TO THE WORLD OF  
LINUX

DAY - 4

# Access Control Lists (ALCS)

Standard Linux permission has some limitations, Access Control lists (ACLs) allows you to fine-grained the permission to resolve that limitations.

1. Access Control list allows you to set the permission more than one user and group on a file or directories, where as Linux standard permission allows you set the permission to a single user and single group and other on a file or directories.
2. We can set the default permission for newly created files and directories.
3. If you want to set ALC, then The ACL mount option needs to be set.
  1. **'/etc/fstab'** or **'systemd'**
  2. **'tune2fs'** for **'EXT'** file systems
  3. In **'XFS'** file system it is a default mount option.
4. Use **'setfacl'** to set and **'getfacl'** to show **ACL**.

## There are two types of ALCs

1. **Access ACL** :- An Access ACL is used for directory and files.
2. **Default ACL** :- Default ACL is used only for directories.

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## ACL Settings

The '**setfacl**' utility sets ALC for files and directories. Use '**-m**' option to add or modify the ACL of a file and directory.

**# setfacl -m rule 'file-name'**

## Rules must be specified in the following formats:

1. Set the access ACL for users.  
# setfacl -m u:uid:permission 'directory-name'
2. Set the access ACL for groups.  
# setfacl -m g:gid:permission 'directory-name'
3. Set the access ACL for others.  
# setfacl -m o:permission 'directory-name'

Note:- You can use '**-R**' option before '**-m**' option for applying ACL recursively.

Example: - # setfacl -R -m u:uid:permission 'directory-name'

Options: -

- m : to add or modify acl.
- R : to apply acl recursively to a directory.
- x : to remove single entry.
- b : to remove entire newly applied acl.

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Example: -

# setfacl -m u:subha:rwX /data/sales-data [subha is an user, sales-data is a directory]

# setfacl -m g:accounts:rwX /data/sales-data [accounts is a group]

# setfacl -m o::rwX /data/sales-data

# setfacl -m u:subha:rwX , g:accounts:rwX, o::rwX /data/sales-data

The top of the image features a decorative header with a wavy, flowing design. The colors transition from a bright yellow on the left, through orange and red, to a vibrant green and blue on the right. Below this, the background is a solid black.

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THANK YOU