Assignment:5

Task:3

User and Group Management

Task: Create a set of user accounts and groups with specific permissions. Develop a scenario where different users need different access to certain directories. Document the user-group permissions and provide examples of commands used to achieve this.

Managing user accounts and groups with specific permissions is a common task in Linux system administration. Below is an example scenario where different users need different access to certain directories. The provided examples include commands to create users, groups, and set permissions accordingly.

Scenario:

Requirements:

Create three users: manager, developer, and intern.

Create two groups: development and interns.

The manager should have read and write access to the entire /project directory.

The developer should have read, write, and execute access to /project/source directory.

The intern should have read-only access to /project/source directory.

The development group should include manager and developer, while the interns group should include only intern.

Create Groups:

sudo groupadd development

sudo groupadd interns

Create Users:

sudo useradd -m -G development manager

sudo useradd -m -G development developer

sudo useradd -m -G interns intern

mkdir -p /home/sunny28/assignment/source

sudo mkdir -p /assignment/source

Set Permissions:

Set permissions for /project directory

sudo chown :development /assignment

sudo chmod 770 /assignment

Set permissions for /assignment/source directory

sudo chown :development /assignment/source

sudo chmod 770 /assignment/source

Set specific permissions for users and groups

sudo setfacl -m u:manager:rwX /assignment

sudo setfacl -m u:developer:rwX /assignment/source

sudo setfacl -m u:intern:r-- /assignment/source

```
sunny28@Linux:~/Desktop/Assigment$ mkdir -p /assignment/source
mkdir: cannot create directory ‘/assignment’: Permission denied
sunny28@Linux:~/Desktop/Assigment$ mkdir -p /Assignment/source
mkdir: cannot create directory ‘/Assignment’: Permission denied
sunny28@Linux:~/Desktop/Assigment$ mkdir -p /home/sunny2/assignment/source
mkdir: cannot create directory ‘/home/sunny2’: Permission denied
sunny28@Linux:~/Desktop/Assigment$ mkdir -p /home/sunny28/assignment/source
sunny28@Linux:~/Desktop/Assigment$ sudo mkdir -p /assignment/source
sunny28@Linux:~/Desktop/Assigment$ sudo chown ;development/ /assignment
chown: missing operand
Try 'chown --help' for more information.
bash: development/: No such file or directory
sunny28@Linux:~/Desktop/Assigment$ sudo chown :development /assignment
sunny28@Linux:~/Desktop/Assigment$ sudo chmod 770 /assignment
sunny28@Linux:~/Desktop/Assigment$ sudo chown :development /assignment/source
sunny28@Linux:~/Desktop/Assigment$ sudo chmod 770 /assignment/source
sunny28@Linux:~/Desktop/Assigment$ sudo setfacl -m u:manager:rwX /assignment
sunny28@Linux:~/Desktop/Assigment$ sudo setfacl -m u:developer:rwX /assignment/source
sunny28@Linux:~/Desktop/Assigment$ sudo setfacl -m u:intern:-- /assignment/source
sunny28@Linux:~/Desktop/Assigment$
```

Verify Permissions:

Display ACL (Access Control List) for /assignment and /assignment/source

getfacl /assignment

getfacl /assignment/source

```
sunny28@Linux:~/Desktop/Assigment$ getfacl /assignment
getfacl: Removing leading '/' from absolute path names
# file: assignment
# owner: root
# group: development
user::rwx
user:manager:rwx
group::rwx
mask::rwx
other::---

sunny28@Linux:~/Desktop/Assigment$ getfacl /assignment/source
getfacl: /assignment/source: Permission denied
sunny28@Linux:~/Desktop/Assigment$
```

The groupadd command creates the necessary groups (development and interns).

The useradd command adds user accounts (manager, developer, and intern), and the -m option creates their home directories.

chown and chmod commands are used to set basic permissions on directories.

setfacl is used to set specific access control rules. For example, u:manager:rwX grants read and write (and execute if it's a directory) permissions to the user manager.

The getfacl command is used to verify the ACL (Access Control List) for directories