File Permissions in Linux

Project Description

As a security professional at a large organization, my role involves managing user permissions to ensure system security. Through the use of Linux commands, I analyze existing file permissions, make necessary modifications, and ensure that users have the appropriate level of access based on their roles.

Check File and Directory Details

To check file permissions, I used the command:

```
ls -la
```

This command lists all files and directories in the current directory, including hidden files, along with their permissions, ownership, and size.

Current Permissions

The output of the command reveals a 10-character string representing the permissions. For example:

```
drwxrw-r--
```

Describe the Permissions String

The 10-character string can be broken down as follows:

- The first character indicates the file type (e.g., `d` for directory, `-` for a regular file).

- The next three characters represent the owner's permissions (read, write, execute).

- The following three characters represent the group's permissions.

- The last three characters represent permissions for others.

For example, in **`drwxrw-r--`:**

- `d`: directory

- **`rwx`:** owner has read, write, and execute permissions

- **`rw-`:** group has read and write permissions

- **`r--`:** others have read permissions only

Change File Permissions

To update file permissions, I used the command:

```

**chmod g+w access.txt**

```

This command adds write permissions for the group on the file `access.txt`.

Change File Permissions on a Hidden File

To change permissions on a hidden file, I would use:

```

**chmod u+x .hiddenfile**

```

This command adds execute permissions for the user on the hidden file named `.hiddenfile`.

Change Directory Permissions

To add execute permissions for the group on a directory named `projects`, I used:

```

**chmod g+x projects**

```

This command updates the permissions to allow group members to enter the directory.

Summary

In this activity, I learned how to manage file and directory permissions using Linux commands. By employing commands such as `ls -la` to check permissions and `chmod` to modify them, I ensured that users have the correct authorization based on their roles. This process is vital for maintaining security within the organization.