**File permissions in Linux**

**Project description**

I am a security professional at a large organization and I was tasked to examine existing permissions on the file system. I will change the permissions for files in the “projects” directory.

**Check file and directory details**

Obraz zawierający tekst, zrzut ekranu, Czcionka

Opis wygenerowany automatycznie

Firstly, using *ls* command I checked for the directory files. Then *using cd projects* I entered into projects directory. With the help of *ls -la* I displayed all the files and directories in *projects* directory with their permissions. I found out that there are four normal projects and one hidden project called *.project\_x.txt*. There is also one directory *drafts*.

**Describe the permissions string**

The 10-character string tells us what permissions every group has. The first character tells us if this is a file or directory. If there is a *d* it’s a directory and if there is a *hyphen* it’s a normal file. The characters 2-4 shows us a permissions that are user’s permissions. The characters 5-7 tells us the permissions for the group and characters 8-10 help us determine what permission the others have.

There are 3 types of permission:

* r - read permission – allows reading a content of file or directory
* w - write permission – allows changing the content of a file or directory
* x – execute permission – allows executing of a file. For directory it allows to enter the directory and to access any of its files

**Change file permissions**

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Opis wygenerowany automatycznie

The organization does not allow other to have write access to any files. To achieve that I checked the files and found out that that only file “project\_k.txt” has the write permission for the other. So with the help of command *chmod o-w project\_k.txt* I removed the write permission for the other. Using *ls -la* I displayed the changed permissions and we can see that permission is removed.

**Change file permissions on a hidden file**

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Opis wygenerowany automatycznie

The research team has archived .project\_x.txt, which is why it’s a hidden file. This file should not have write permissions for anyone, but the user and group should be able to read the file. I found out that users had permission for writing and reading. Group had a permission for writing. I had to remove writing permission for both users and group and add a read permission for the group.

I achieved that with command *chmod u-w, g-w, g+r .projects\_x.txt.*

**Change directory permissions**

The files and directories in the projects directory belong to the researcher2 user. Only researcher2 should be allowed to access the drafts directory and its contents.

Here’s a following code I used to achieve this.

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Opis wygenerowany automatycznie

With the help of command *chmod g-x drafts* I removed permission for the group and completed my goal to make a *researcher2* an only user to access this file.

**Summary**

I completed multiple tasks to match the level of authorization my organization set for both files and directories. I mainly used *chmod* command to change the permissions of file or directory and *ls -la* to control the progression of this process.