Cyber Warriors: A Comprehensive Introduction to Cybersecurity Tools and Techniques

Lab 4 – Access Control in Linux

Lab Description and Instructions:

We learn how to check and change Linux file permissions for users and groups. To better understand we will first another user using the following interactive command in the Terminal (skip this step if you have already done it during Lab 3, and simply use one of the users from Lab 3):

`sudo adduser username` (replace username with a unique name)

Next, we will create a text file named *abc.txt* using the Terminal command:

`nano abc.txt`

Type in any text such as "Hello World" and close the nano editor using Ctrl+X and confirm saving by pressing "Y" when prompted. To make sure the file was saved, check using:

`cat abc.txt`

We can check the default permissions of *abc.txt* using:

`ls abc.txt -l`

Try to view and edit the contents of *abc.txt* as another user (created earlier), by using the following commands in a new Terminal:

`su userame` (e.g. `su wayne`, and give in wayne's password)
`cat abc.txt` (you may have to navigate to the location of *abc.txt* using the `cd` command)
`nano abc.txt`

Next, we will use the `chmod` command to change the file permissions of *abc.txt*:

`sudo chmod 777 abc.txt`

We can again verify the permissions change of *abc.txt* using:

`ls abc.txt -l`

Retry to view and edit the contents of *abc.txt* as another user, by using the following commands in a new Terminal:

`su userame` (e.g. `su wayne`, and give in wayne's password)
`cat abc.txt` (you may have to navigate to the location of *abc.txt* using the `cd` command)
`nano abc.txt`

Next, we will use the `chmod` command to once again change the file permissions of *abc.txt*:

```
sudo chmod 770 abc.txt
```

We can again verify the permissions change of *abc.txt* using:

```
ls abc.txt -l
```

Retry to view and edit the contents of *abc.txt* as another user, by using the following commands in a new Terminal:

`su userame` (e.g. `su wayne`, and give in wayne's password)
`cat abc.txt` (you may have to navigate to the location of *abc.txt* using the `cd` command)
`nano abc.txt`

Now we will hand over ownership of abc.txt to the other user as follows:

`sudo chown username:groupname abc.txt` (e.g `sudo chown wayne:wayne abc.txt`)

Now try to view and edit the contents of *abc.txt* as student, by using the following commands:

```
cat abc.txt
nano abc.txt
```

Homework:
Try all the above steps in your VM. Additionally, create a new group called "friends" and add both users (student and e.g. wayne) to this group. Change ownership of *abc.txt* to the "friends" group and check if both users can view/edit *abc.txt*. Submit a PDF with a screenshot showing the members of the group *friends* and another screenshot showing the new permissions of *abc.txt* here by 9 AM Thursday: https://cloud.secretlab.page/s/CTaqostR7nWdpti