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| Bahrain Polytechnic |
| Unix Systems |
| Lab Session 4 |
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# Lab session 4 – User Management and Permissions

## Introduction

The lab work consists of theory and practical tasks. All answers to tasks should be uploaded to Moodle.

You must submit the following:

* Theory : A single text document uploaded to Moodle.
* Practical : A single zip file uploaded to Moodle.

**Note: Each Lab session is worth 1% of your final mark**

### **Learning Outcomes Assessed**

The following learning outcomes are being assessed in this lab session:

* Use the command-line on a UNIX system
* Manage a Linux server system (including files, processes, users)

## Lab 4 – Theory questions

**Please submit your answers to the following theory questions in a text document on Moodle under the link “Lab 4 Theory Upload”.**

1a. What command is used to change the password of a user.

b. What are the requirements of a good UNIX password.

2. Explain the following:

1. user
2. group
3. permission

3. Can a user be part of multiple goups?

4. What are the 2 things that the command *userdel USER\_NAME* do ?

5. What is the main advantage to using the Command Line Interface to manage users ?

6. What does the /etc/passwd file contain ?

## Lab 4 – Practical tasks

1. Use the appropriate command to:
   1. View the current attributes of the files in your home directory

Redirect the output to a file named ‘lab4\_q1.txt’.

**Ls -l > lab4\_q1.txt**

* 1. View the /etc/yum.conf file

**more /etc/yum.conf**

* 1. Create a copy (/etc/yum.conf\_COPY) of the /etc/yum.conf file in the same directory

Using VI, edit the ‘lab4\_q1.txt’ file and add one line at the end of the text explaining the output of question ‘1c’.

**Cp /etc/yum.conf /etc/yum.conf\_COPY (you will get an error cause you cant edit /etc (you cant edit outside your home directory))**

**Vi lab4\_q1.txt**

**Shift G (it will take you to the last line)**

**Type: I could not create a copy of yum.conf in the etc directory because I don’t have the permission on the directory to do so.**

**:wq**

* 1. Create a copy (yum.conf\_COPY) of the /etc/yum.conf file in your HOME directory

Cp /etc/yum.conf /etc/yum.conf\_COPY

**Cp /etc/yum.conf yum.conf\_COPY (make sure that your in your home directory)**

The output to ‘1a’ and ‘1c’ should be placed in a text file named ‘lab4\_q1.txt’ (see above).

1. File ownership.

Before attempting the tasks below, form a group of two with a person sitting close to you.

* 1. Create a file called my\_USERID\_file.txt in your home directory. Add your firstname in the file you created using echo and redirect.

**Echo Alaa > my\_202201043\_file.txt**

* 1. Check to see if you can view the file contents of the other person in your group. Explain why there is such a result.

Type the answer to ‘2b’ in a text file named ‘lab4\_q2.txt’ (use echo or vi).

**Cd /home**

**Ls /home/A202201042 (permission denied)**

**Ls -l (you can see that the owner has all permissions but groups and others have no permissions so we cannot access another persons directory)**

**Cd ~**

**Vi lab4\_q2.txt**

**Type: 2b) I was not able to view the file content of the other person in the group because I donnt have any permissions on their home directory to be able to view the file.**

**:wq**

* 1. Move the my\_USERID\_file.txt file to the /home/SharedFiles directory

**Mv my\_202201043\_file.txt /home/SharedFiles**

**Ls -l /home/ShredFiles**

* 1. Check to see if you can view the file contents of the other person in your group. Explain why there is such a result. Provide a detailed answer describing permissions of directories and files involved.

Add the answer to ‘2d’ in a text file named ‘lab4\_q2.txt’ (use echo or vi).

**Cd /home/SharedFiles**

**More my\_202201042\_file.txt (you will see the text within the file) (if you don’t have the execute permission you cannot see or view a directory)**

**Vi lab4\_q2.txt**

**Type: 2d) I was able to view the file content of the other person in the group because I have the read permission on the file and I have the execute permission on the directory SharedFiles which allows me to cd into the directory.**

**:wq**

Type the answers to ‘2b and 2d’ in a text file named ‘lab4\_q2.txt’ in your home directory (see above).

*[More over the page]*

1. File permissions

Before attempting the tasks below, form a group of two with a person sitting close to you.

1. Both members of the group should create a file called my\_USERID\_READONLY\_file.txt in /home/SharedFiles directory. Add your firstname to the file you create using echo and append. Make sure you can view the contents of your group members file. What are the permissions of this file?

**Echo Alaa > /home/SharedFiles/my\_202201043\_READONLY\_file.txt**

**Ls -l /home/SharedFiles**

**-rw-rw-r-- (the other person can read the file but they cant edit it)**

1. Check to see if you can edit the file contents of the READONLY file of the other person in your group. Explain why there is such a result.

Provide a detailed answer describing permissions of directories and files involved.

Type the answer to ‘3b’ in a text file named ‘lab4\_q3.txt’ (use echo or vi).

**Vi my\_202201042\_READONLY\_file.txt**

**Vi lab4\_q3.txt**

**Type: 3b) I was not able to edit the file of the group member because I don’t have the write permission on the file to do so)**

1. Modify the permissions of the file “my\_USERID\_READONLY\_file.txt” so that the other member of your group can edit the file contents. Do so by modifying the mimimum number of permissions.

Write the command you used to modify the permissions of the file along with an explanation of the command under section ‘3c’ in the text file named ‘lab4\_q3.txt’ (use echo or vi).

**Chmod 764 /home/SharedFiles/my\_202201043\_READONLY\_file.txt**

**Ls -l /home/SharedFiles**

**Vi lab4\_q3.txt**

**Type: 3c) chmod 764 /home/SharedFiles/my\_202201043\_READONLY\_file.txt**

**This command provides all permissions for the user/owner class, read and write permissions for the group class and read only permission for the other class**

**:wq**

1. Delete the file your group member created from the SharedFiles folder. What is the result of this command? Explain the result under section ‘3d’ of the file named ‘lab4\_q3.txt’. (Make sure to delete all files you created in the SharedFiles directory)

**Rm my\_202201042\_file.txt (you will get a warning, press y and you can delete the file)**

**Vi lab4\_q3.txt**

**Type: 3d) I was able to delete the file because I had write permission on the file and all permissions on the SharedFiles directory**

**Rm /home/ShredFiles/my\_202201043\_file.txt**

**Rm /home/ShredFiles/my\_202201043­\_READONLY\_file.txt**

Type the answers to ‘3b, 3c and 3d’ in a text file named ‘lab4\_q3.txt’ in your home directory (see above).

1. Using only one command, set all the files with an extention .txt in your home folder with:
   1. All permission of the owner
   2. Read and write permission for members of the group
   3. Read only access for everyone else

HINT: you need to use wildcard characters

Place the command you used in question 4 into a text file named ‘lab4\_q4.txt’

**Chmod 764 \*.txt**

**Ls -l**

**Vi lab4\_q4.txt**

**Type: chmod 764 \*.txt**

**:wq**

1. Output the following line “My Account details” to a file named ‘lab4\_q5.txt’.

Next, run a command to get the line describing your user account from the ***passwd*** file and append the output of the command to the file ‘lab4\_q5.txt’.

Append the line “All Student Account details” to the same file.

Get all the user account details of all students (ONLY student accounts) from the ***passwd*** file and append the result to the ‘lab4\_q5.txt’.

**Echo My Account details > lab4\_q5.txt**

**Grep A202201043 /etc/passwd >> lab4\_q5.txt**

**More lab4\_q5.txt**

**Echo All Student Account details >> lab4\_q5.txt**

**Grep “A” /etc/passed >> lab4\_q5.txt**

**More lab4\_q5.txt**

Lastly, append the text “Users currently logged in” to the file, followed by the list of all users currently logged in to the system.

**Echo Users currently logged in >> lab4\_q5.txt**

**Who >> lab4\_q5.txt**

**More lab4\_q5.txt**

## Lab4 – What you need to submit

1. Submit your answers to the theory questions in a text document on Moodle under the link “Lab 4 Theory Upload”
2. Create a tar file containing the files listed below named Lab4\_studentID.tar.
   1. Lab4\_q1.txt
   2. Lab4\_q2.txt
   3. Lab4\_q3.txt
   4. Lab4\_q4.txt
   5. Lab4\_q5.txt

**Tar cvf lab4\_202201043.tar lab4\_q1.txt lab4\_q2.txt lab4\_q3.txt lab4\_q4.txt lab4\_q5.txt**

Create a zip file named ‘Lab4\_*studentID.zip*’ that will contain the tar file.

**Zip lab4\_202201043.zip lab4\_202201043.tar**

1. Use **ftp** to get this zip file from the Linux server and upload the file to Moodle.

**Open psftp**

**Open student2.bptest.cloud**

**A202201043**

**041112253**

**Lcd C:\Users\USER\Documents**

**Get lab4\_202201043.zip**

Connect to Moodle using the standard web browser (<http://www.tinyurl.com/moodlepoly>) or (http://webdev.polytechnic.bh/moodle) and then upload the saved document to the ‘Lab4 file upload’ area in the Unix Systems Moodle course.