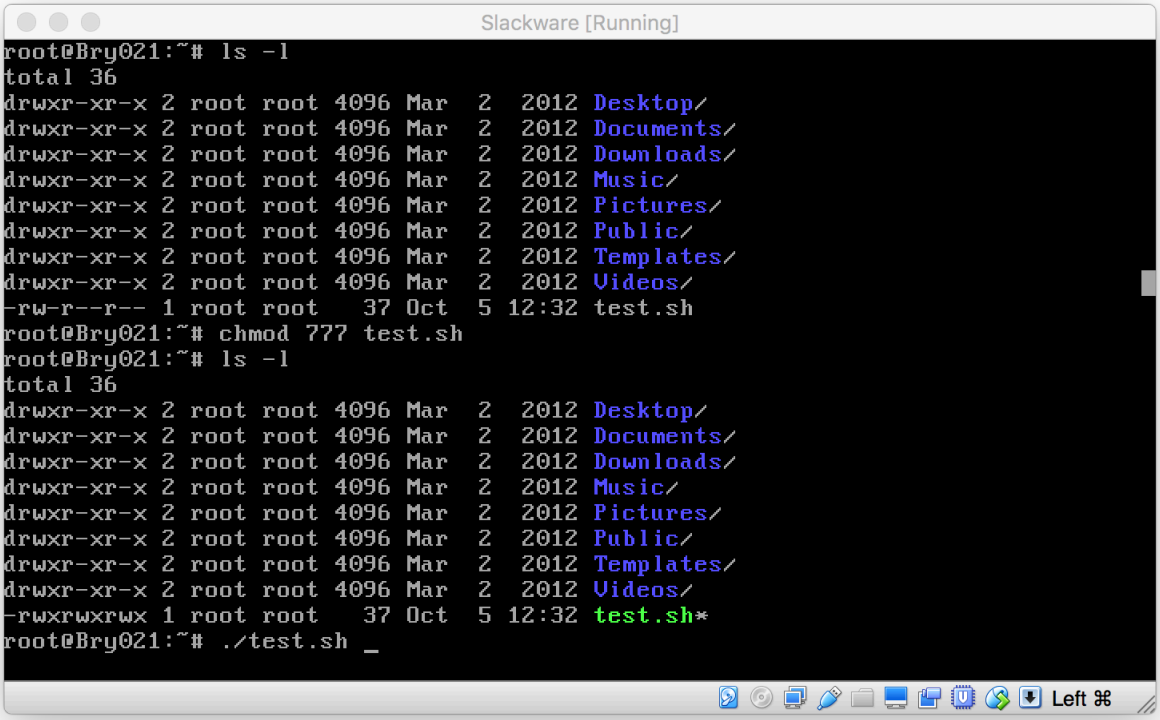
Lab 3 : Linux systems and shell scripting

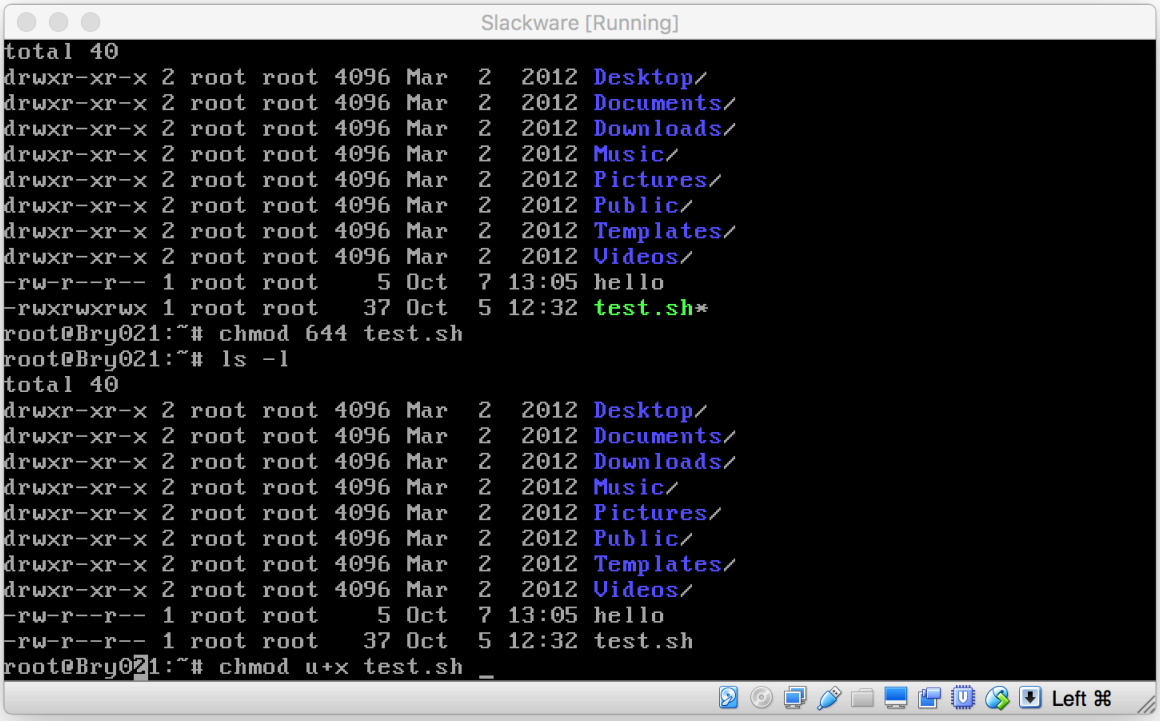
Exercise 1. Creating an executable bash script.

1.1. Create test.sh in your home directory. Make sure that the script is executable.

When a file is first created, group and other members can only read it (rw-.r- -.r- -).



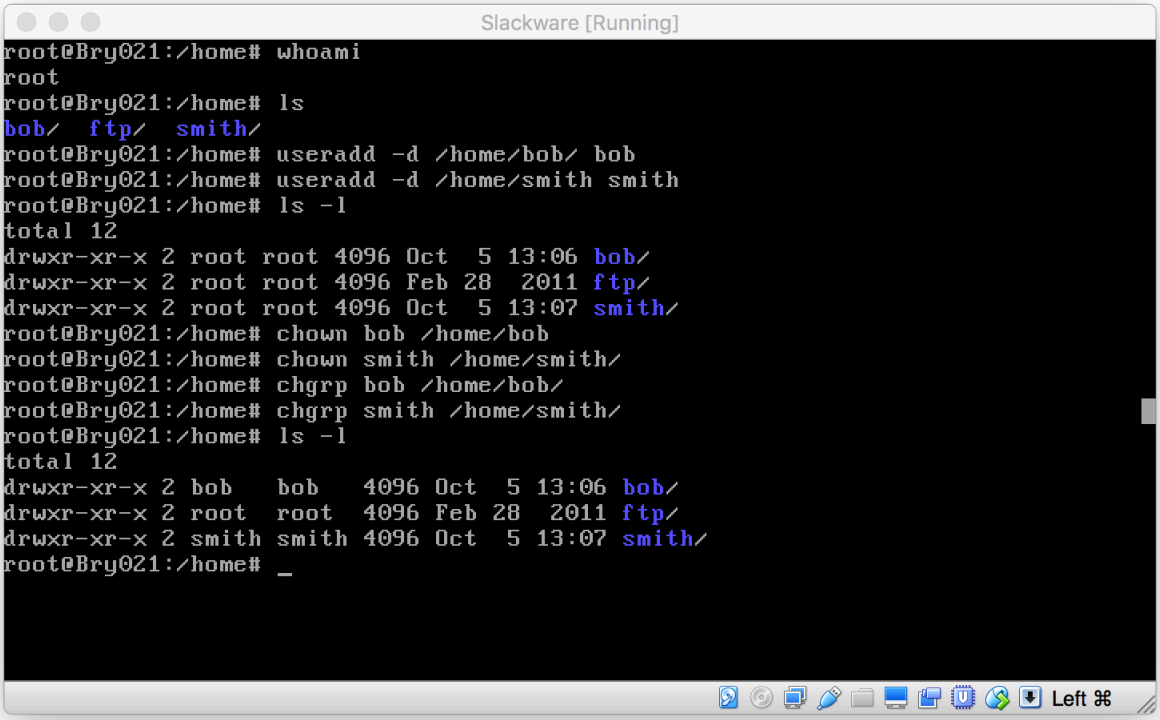
1.2. An student execute "chmod 777**". Explain why giving those permissions is a bad idea.**



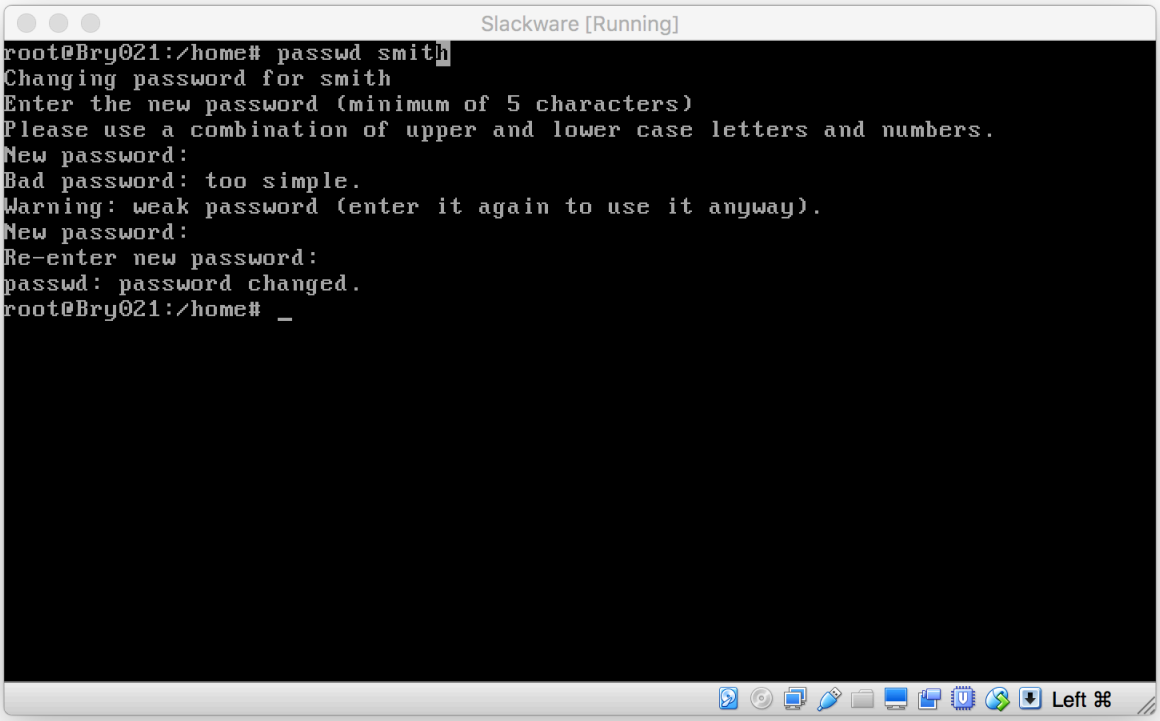
The command "**chmod 777**" allows anybody not only execute the file but also write or delete it (rwx.rwx.rwx). This is dangerous as the script should be only modified or executed by its owner.

In conclusion, the right option would be "**chmod u+x**".

Exercise 2. Create new users



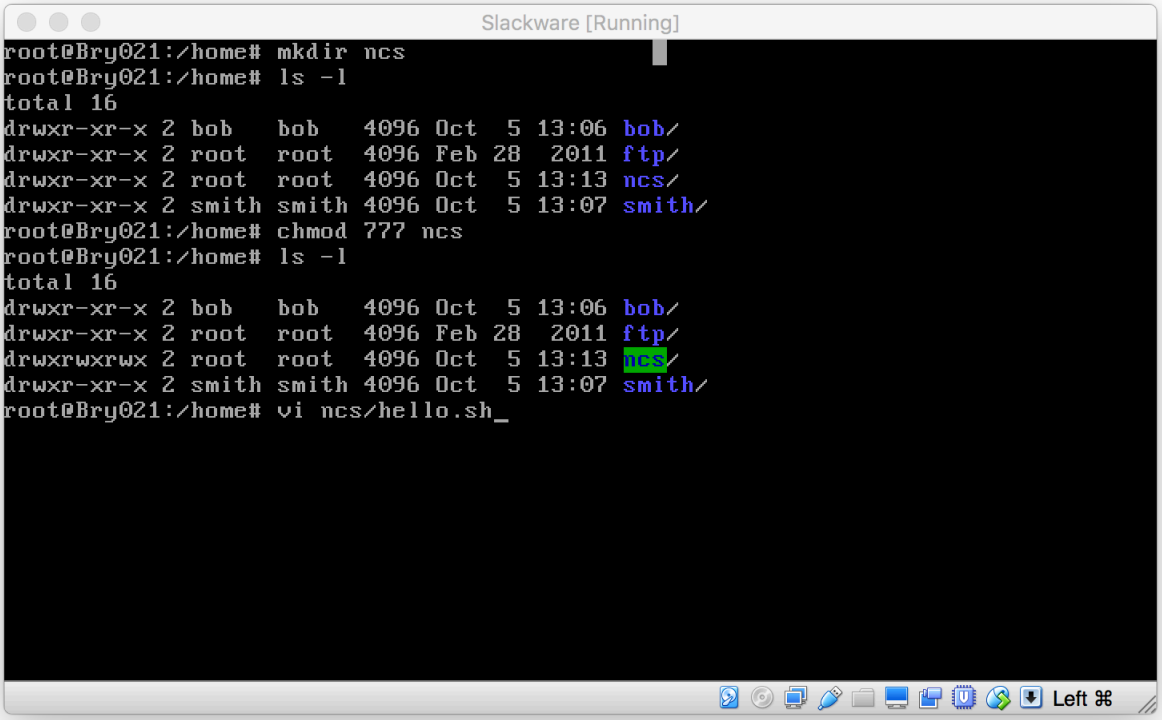
The commands **useradd** and **passwd** are required to manage new user accounts. Let's create the password for smith (smith):



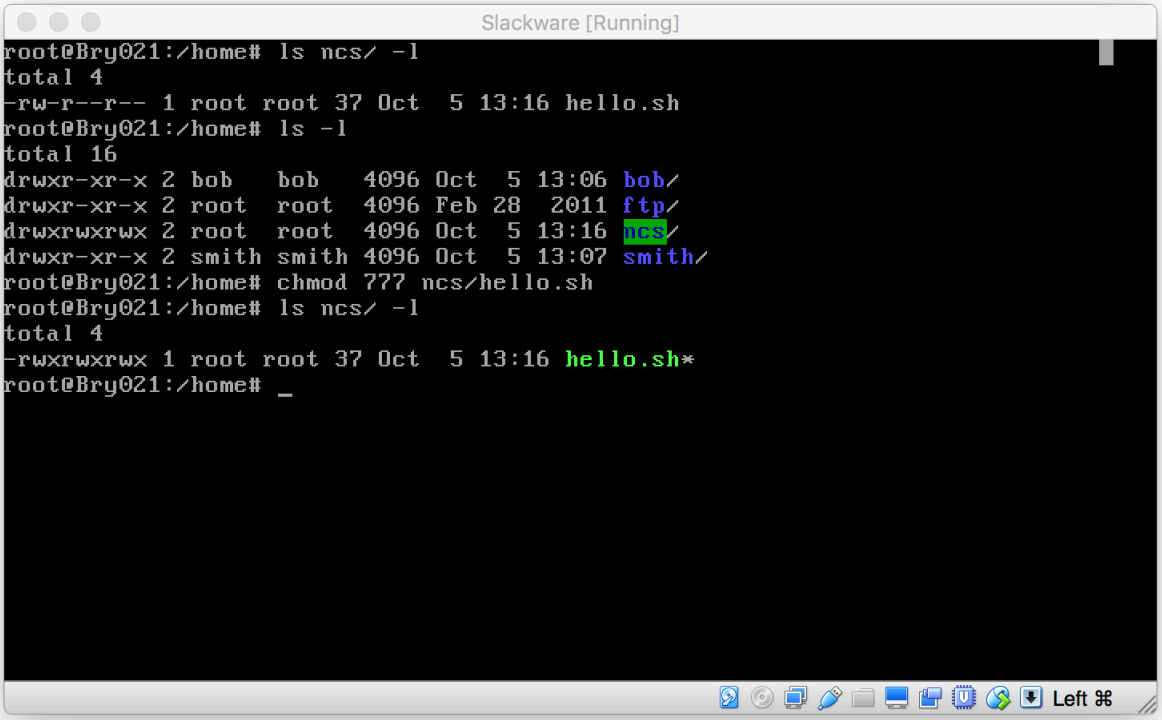
Exercise 3. Create a shared executable script

3.1. Create a public directory /home/ncs and a script called "hello.sh**" to print a message.**

A file has been created in a public folder /home/ncs/ but apparently it doesn't inherit the permissions given to the folder (644 by default).



In this case we should change the permission to 777 as the folder **/home/ncs/** is a public folder.



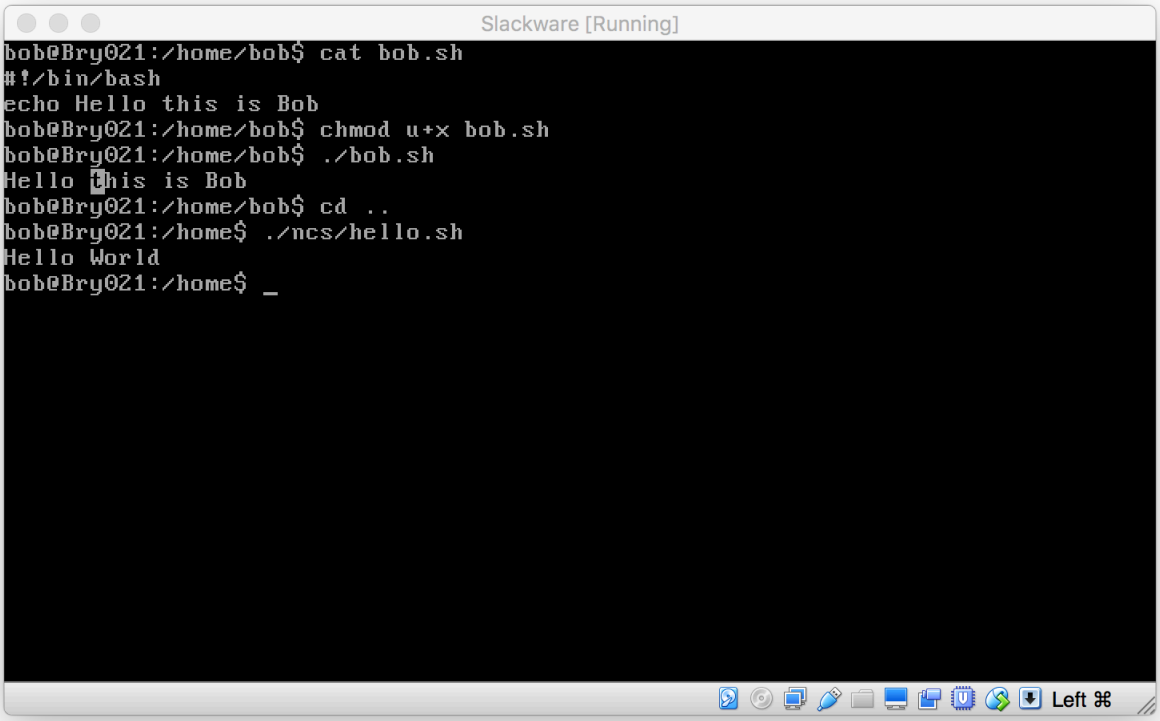
3.2. Execute the script and note down the owner/group ownership and the file permissions of his script

The permissions of this script have changed from 644 (rw-.r- -.r- -) to 777 (rwx.rwx.rwx). Now not only the owner could modify it but also everybody else in the group and outside the group.

Exercise 4. Accessing files form different user accounts

a) Log in as bob in terminal TTY2

4.1. Execute ./bob/bob.sh and ./ncs/hello.sh.

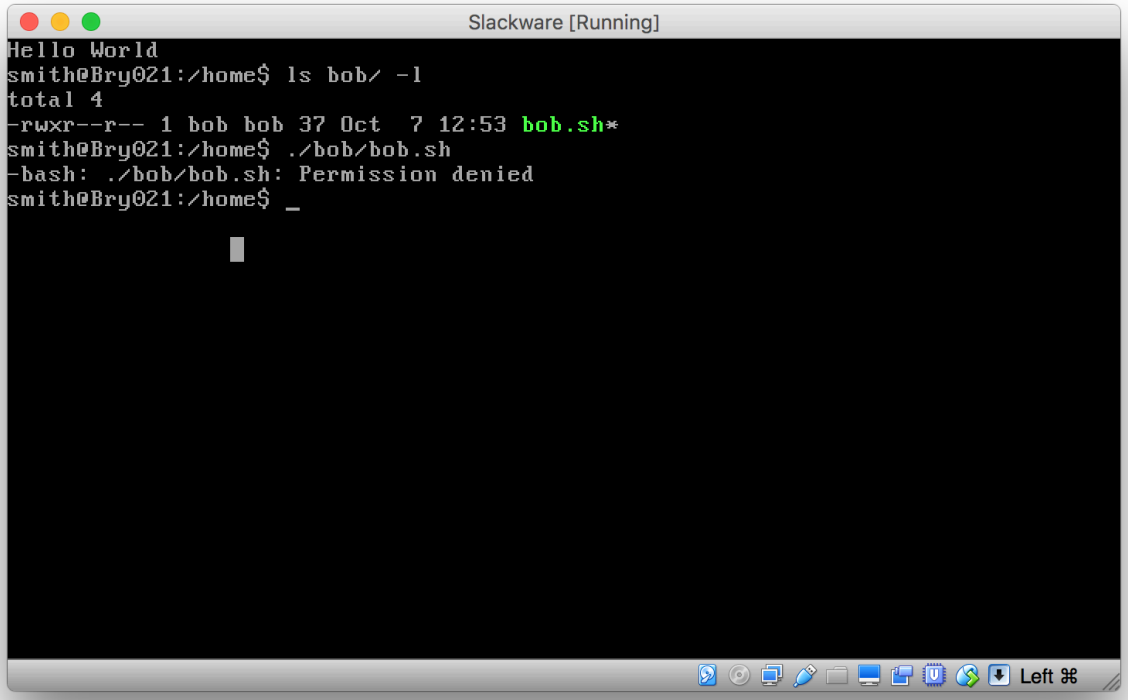


Bob can run his script as the permission has been modified to “u+x”. The script in the public folder /home/ncs/ is also accessible for him.

b) Log in as smith in terminal TTY3

4.2. Execute ./bob/bob.sh and ./ncs/hello.sh. Explain the results you get.

The script hello.sh does work (public folder) but not bob.sh (permission denied) as smith is not bob, obviously.

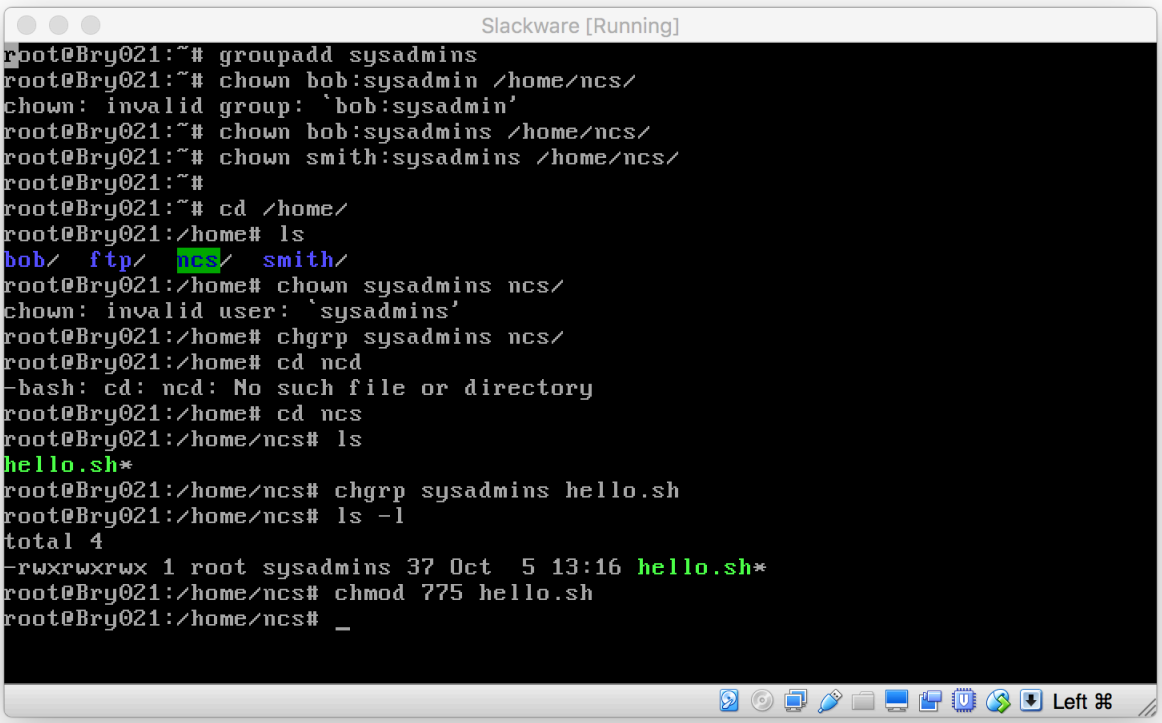


A possible solution would be to make the script accessible to the group members and include smith in the same group as bob. Actually, a similar solution is presented below (exercise 5).

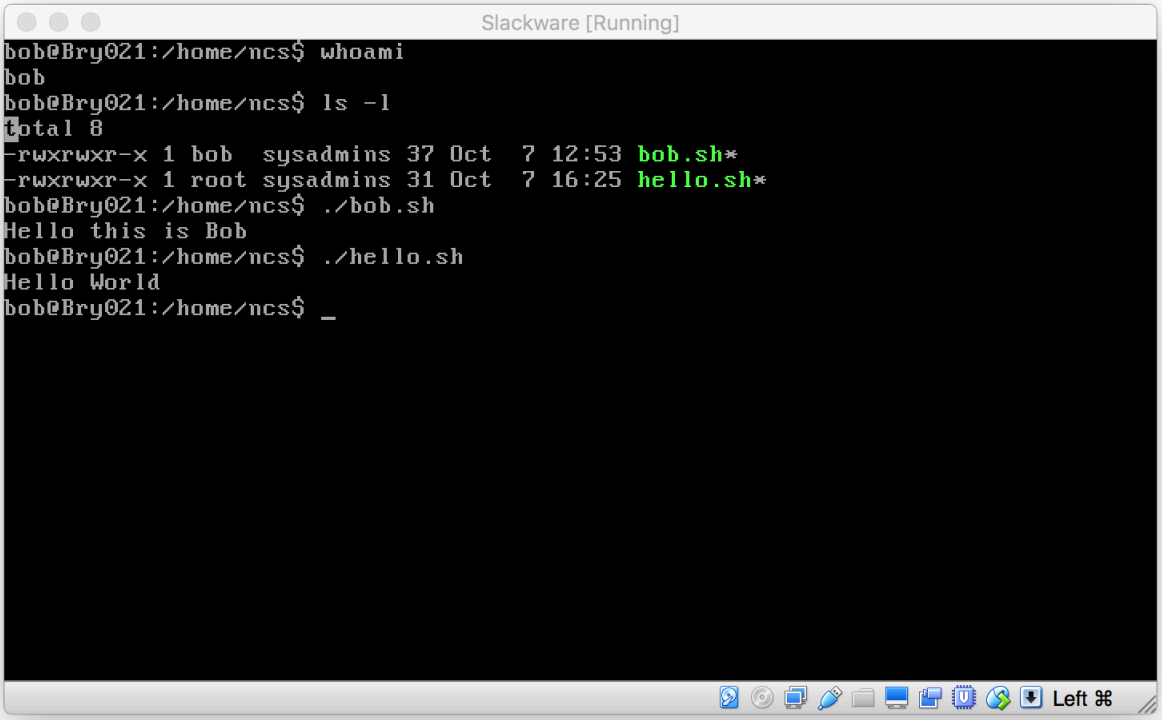
Exercise 5 (optional)

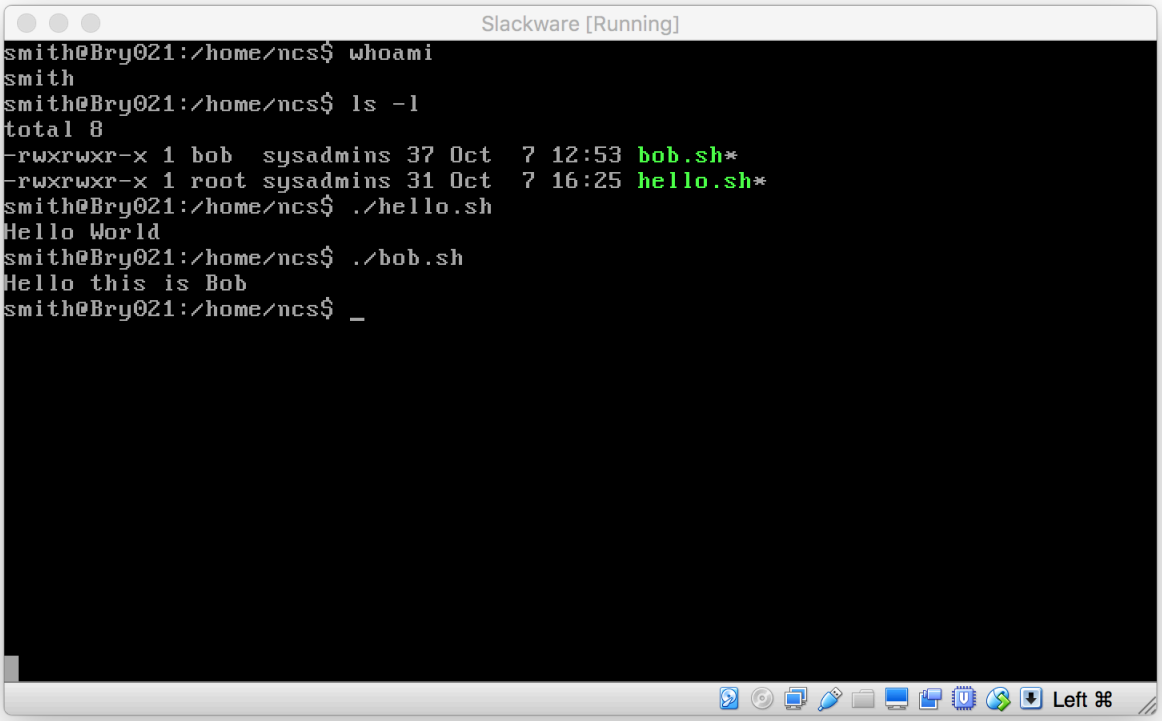
5.1. Create a group (sysadmins) and add bob and smith as members.

The command **groupadd** adds a new group in the system. To change the owner of a file, the command **chown** is used but to change the group owner, the command **chgrp** is required.



For bob and smith it is possible to run both scripts as expected. Notice that the permission have been updated to 775 (rwx.r-x.r-x) as it didn't work for 754 (rwx.r-x.r—)





5.2. Disable smith's user account

The command **userdel** only deletes users login details but not his home directory (1001:1001)