Recourses:

VirtualBox Graphical User Interface. Version 6.1.18 r142142 (Qt5.6.2)

mv Ubuntu 20

sb\_release -a

No LSB modules are available.

Distributor ID: Ubuntu

Description: Ubuntu 20.04.2 LTS

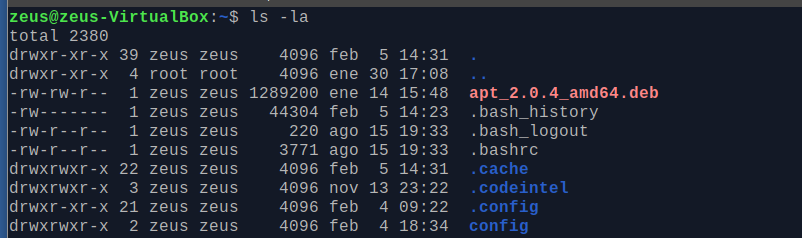
Release: 20.04

Codename: focal

**Exercises about file and directory permission**

1. List the permissions in your current directory, including hidden files.

ls -la

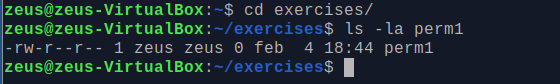


1. Create a file called perm1. Now, check the default permissions and user and group ownership

touch perm1

cd exercises/

ls -la perm1



1. Change permissions of perm1 so that everyone can read and only the owner user can write. Specify the command in all possible ways.

chmod 644 perm1

ls -l perm1

chmod u=rw,go=r perm1

ls -l perm1

chmod a=r,u=rw perm1

ls -l perm1

chmod a=r,u+w perm1 # adding all read permission and user also write permission

ls -l perm1

1. Create a file called script1.sh, including the content below. List the default permissions.

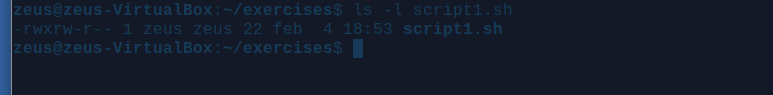
#!/bin/bash

clear who

nano script1.sh

cat script1.sh

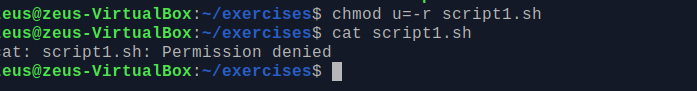
ls -l script1.sh



1. Remove the read permission from the owner and try to open the file

chmod u=-r script1.sh

cat script1.sh



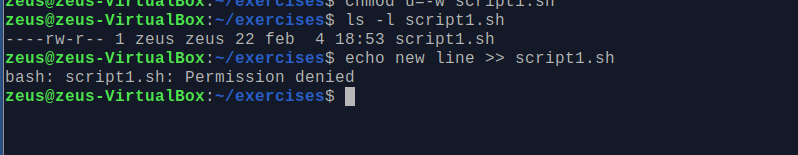
1. Remove the write permission from the owner on the file script.sh. Add the line below. Is it possible? Why?

new line

chmod u=-w script1.sh

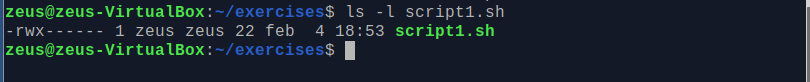
ls -l script1.sh

echo new line >> script1.sh



1. Change the permissions on the file script1.sh so that the owner can read, write and execute, but you deny all the permissions from the group and others.

chmod 700 script1.sh

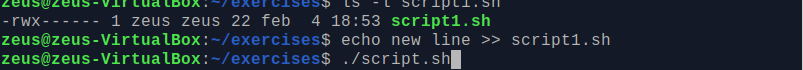


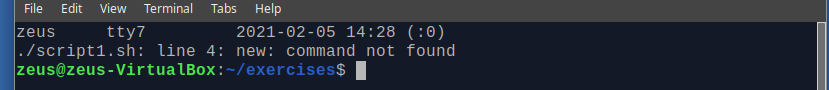
1. Add the line indicated in exercise 6, in case it was not possible. Try to run the file like a command.

ls -l script1.sh

echo new line >> script1.sh

./script.sh

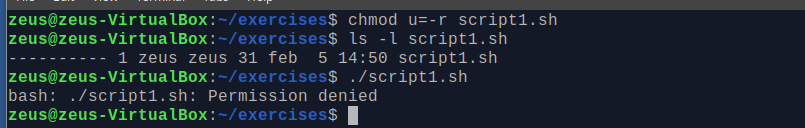




1. Remove the read permission from the owner on the file script1.sh. Try to run the file. Is it possible?

chmod u=-r script1.sh

ls -l script1.sh



No

1. Create a directory called “systems”. Remove the write permission from it and try to copy script1.sh inside.

mkdir systems

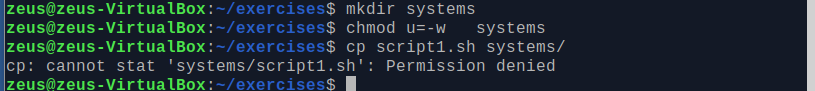
chmod u=-w systems # removing only write

cp scripts systems/\*

1. If you were not able to copy the file, add the write permission again and copy the file inside.

chmod u+w script1.sh

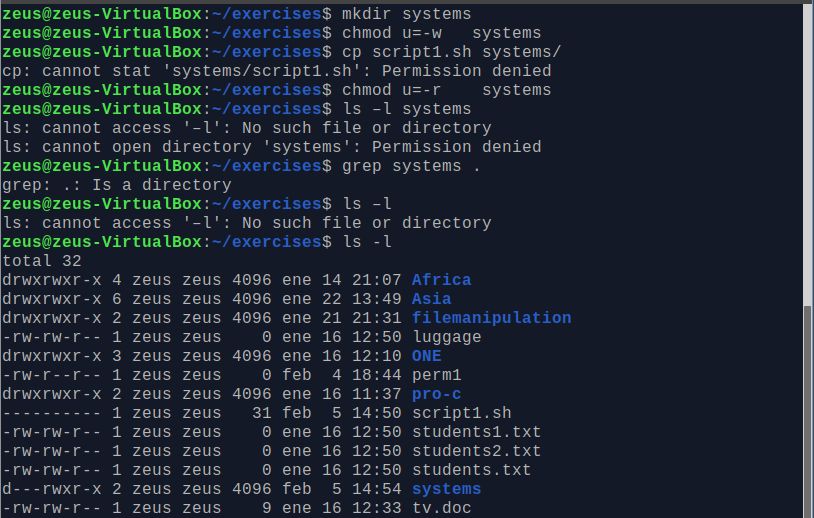
cp scr ipts systems/\*



1. Remove the read permission from the user on the directory “systems” and try to list its contents.

chmod u-r script1.sh

ls –l systems //for lis if systems exists in the present directory

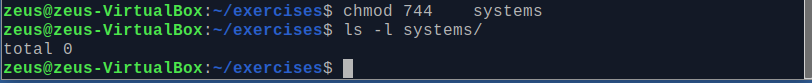


1. Change the permissions from “sytems” so that the owner can read, write and execute, but the group and others can only read.

chmod 744 systems

ls –l systems

drwxr--r-- 2 zeus zeus 4096 feb 6 09:57 systems

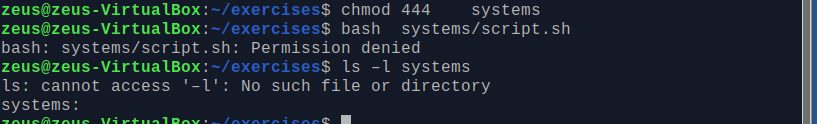


1. Remove the execute permission from “systems”. Can you execute systems/script1.sh? Is it possible to acces the directory to execute the file?

chmod 444 systems/script.sh

bash systems/script.sh

ls –l systems

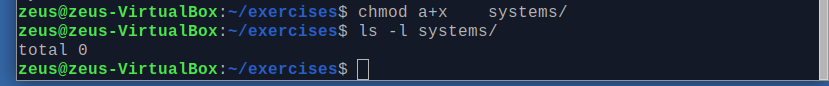


1. Assign the execute permission to the directory again

chmod a+x systems

ls -ld systems

drwxr-xr-x 2 zeus zeus 4096 feb 6 09:57 systems



1. Create two files called “lucy” and “charles” into “systems”. Change permissions of “charles”, so that others can write and execute.

touch systems {lucy, charles}

ls -l systems

-rw-rw-r-- 1 zeus zeus 0 feb 5 15:04 charles

-rw-rw-r-- 1 zeus zeus 18 feb 6 09:57 lucy

chmod o+wx systems/Charles

ls -ld systems/ charles

total 4

-rw-rw-rwx 1 zeus zeus 0 feb 5 15:04 charles

1. Change permissions of “lucy” so that the owner can read and execute, the group can read and write and others can only write. Specify the command in all possible ways.

-rw-rw-r-- 1 zeus zeus 18 feb 6 09:57 lucy

chmod u=rx,g=rw,o=w systems/lucy

ls -ld systems/lucy

-r-xrw--w- 1 zeus zeus 18 feb 6 09:57 systems/lucy

chmod 562 systems/lucy

chmod 562 systems/lucy

chmod u+rx-w,g=rw,o+w-r systems/lucy

1. Log in as root. Change the ownership of “charles” to “root”. Exit the root session. Now, try to change the permission so that others cannot read and execute. Is it possible? No Why? Because only owner can set permissions

ls -l systems

-rw-rw-r-- 1 zeus zeus 0 feb 5 15:04 charles

sudo chown root systems/charles

ls -l systems/

chmod: changing permissions of 'systems/charles': Operation not permitted

1. Change the permissions of “charles” so that everybody can do everything

sudo chown zeus:zeus systems/charles

ls -l charles

-rw-rw-r-- 1 zeus zeus 0 feb 5 15:04 charles

chmod 777 systems/charles # chmod a=rwx systems/charles

ls -l charles

-rwxrwxrwx 1 zeus zeus 0 feb 5 15:04 charles

1. Change the permissions of “lucy” so that the group can read and write, but the owner and others cannot do anything. Can you open the file? No

sudo chmod 060 systems/lucy

ls -l systems/lucy

----rw---- 1 zeus zeus 18 feb 6 09:57 systems/lucy

cat systems/lucy

cat: systems/lucy: Permission denied

1. Create a group called “newgroup”. Set the group as the owner of the file “lucy” and “root” as the owner user.

sudo addgroup newgroup

Adding group `newgroup' (GID 1002) ...

Done.

chgrp newgroup systems/lucy

ls -l systems/lucy

----rw---- 1 zeus newgroup 18 feb 6 09:57 systems/lucy

chown root systems/lucy

chown: changing ownership of 'lucy': Operation not permitted

sudo chown root systems/lucy

ls -l

total 0

-rwxrwxrwx 1 zeus zeus 0 feb 5 15:04 charles

----rw---- 1 root newgroup 18 feb 6 09:57 systems/lucy

1. Add your user to the secondary group “newgroup”. Try to open the file “lucy” now. Is it possible? Yes

sudo usermod -G newgroup -a zeus

id zeus

uid=1000(zeus) gid=1000(zeus) groups=1000(zeus),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),121(lpadmin),131(lxd),132(sambashare),998(vboxsf),1002(newgroup)

cat systems/lucy

Lucy is available

1. Change permissions of “lucy” so that everybody can read.

sudo chmod o+r systems/lucy

cat systems/lucy

----rw-r-- 1 root newgroup 18 feb 6 09:57 systems/lucy

1. Do exercise 13 again, but this time granting permissions to the folder “systems” including files and subfolders

chmod 777 -R systems/

chmod: changing permissions of 'systems/lucy': Operation not permitted

1. Change the group owner of “systems” to “root” including files and subfolders.

chgrp root -R systems/

chgrp: changing group of 'systems/lucy': Operation not permitted

chgrp: changing group of 'systems/charles': Operation not permitted

chgrp: changing group of 'systems/': Operation not permitted