Lab 2 – Linux permissions

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#1)
      sudo useradd -m user1
      sudo useradd -m user2
      sudo useradd -m user3
      sudo cat /etc/passwd
#2)
      sudo groupadd gr1
      sudo groupadd gr2
      sudo cat /etc/group | grep gr1  #GID: 1004
      sudo cat /etc/group | grep gr2  #GID: 1005
#3)
      sudo usermod user1 -a -G gr1
      sudo usermod user2 -a -G gr2
      sudo su user1
      groups      #groups: user1 gr1
      exit
      sudo su user2
      groups      #groups: user2 gr2
      exit
      sudo su user3
      groups      #groups: user3
      exit
#4)
    #a)
      sudo su
      su user1
      cp /bin/ls /home/user1/myls
    #b)
      chmod 0710 /home/user1/myls
      #The permissions 0710 mean that the file will have rwx permission for
      #     the owner, x permission for the owner group and no permissions
      #     for others
    #c)
      su user2
      /home/user1/myls /home/user2
      #It does not work because this user does not belong to the owner's
      #     group and others don't have permissions to execute the file
    #d)
      sudo su
      groupadd lab
      usermod user1 -a -G lab
      usermod user2 -a -G lab
      chown -v user1:lab /home/user1/myls
      su user2
      /home/user1/myls /home/user2
      #It works, as user2 belongs to the owner group of the file
#5)
    #a)
      sudo su
      mkdir /home/lab-text
    #b)
      chown -v :lab /home/lab-text    #As root
    #c)
      chmod -v g+w /home/lab-text     #As root
    #d)
      chmod -v o-x /home/lab-text     #As root
    #e)
```

```
    su user1
    touch /home/lab-text/user1file.txt
    chmod -v g+rw /home/lab-text/user1file.txt
    exit  #Exit user1
  #f)
    su user2
    umask       #Display current mask: 022
    umask 027   #Will create a file with the permissions: g::r--, o::---
    touch /home/lab-text/test       #We create a file to test the mask set
    getfacl /home/lab-text/test     #Permissions: u::rw-, g::r--, o::---
    exit
#6)
  #a)
    su user3
    touch /home/user3/foo.txt
  #b)
    chmod -v u+x,g-rx,o-rx /home/user3
  #c)
    exit  #To become root again
    cp /bin/ls /tmp/myls
    chown -v user3:user3 /tmp/myls
    chmod -v u+x,g+x,o+x /tmp/myls  #Ensure it's executable for everyone
  #d)
    su user1
    /tmp/myls /home/user3
    #It doesn't work, as the user does not have permissions to list the
    #     contents of the directory
    exit
  #e)
    chmod -v u+s /tmp/myls    #We set the file in setuid
    #Test it
    su user1
    /tmp/myls /home/user3     #It works
    exit
#7)
  #a)
    usermod user3 -a -G lab #As sudo
  #b)
    su user3
    touch /home/lab-text/bar.txt
    chown -v :lab /home/lab-text/bar.txt
    exit
    #test
    su user1
    cat /home/lab-text/bar.txt      #Works
    exit
  #c)
    setfacl -m u:user1:w /home/lab-text/bar.txt
    #test
    getfacl /home/lab-text/bar.txt  #The mask has an additional entry for
                                    #     user1 with only 'w' permission
    #It has changed, as we have added an entry for user1 so that it can
    #     only write in the file (I did not remove this permission as it
    #     was not specified in the exercise).
```