Controlling Access to Files, and Managing Packages using Commands

Task#1

Create 3 user accounts (user1, user2, user3) and add 2groups (gr1, gr2). add user1 to gr1 and add user2 to gr2. Check user ID (UID) and group ID (GID) by listing file /etc/passwd. Find lines with added user. What is the UID and GID for these accounts?

```
sam@sam-VirtualBox:~/Desktop$ adduser
adduser: Only root may add a user or group to the system.
sam@sam-VirtualBox:~/Desktop$ sudo adduser user1
[sudo] password for sam:
Sorry, try again.
[sudo] password for sam:
Adding user `user1' ...
Adding new group `user1' (1001) ...
Adding new user `user1' (1001) with group `user1' ...
Creating home directory `/home/user1' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
No password supplied
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
Try again? [y/N] y
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user1
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
```

```
sam@sam-VirtualBox:~/Desktop$ sudo adduser user2
Adding user `user2' ...
Adding new group `user2' (1002) ...
Adding new user `user2' (1002) with group `user2' ...
Creating home directory `/home/user2' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user2
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
sam@sam-VirtualBox:~/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ sudo adduser user3
Adding user `user3' ...
Adding new group `user3' (1003) ...
Adding new user `user3' (1003) with group `user3' ...
Creating home directory `/home/user3' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user3
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
sam@sam-VirtualBox:~/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ sudo usermod -a -G gr1 user1
sam@sam-VirtualBox:~/Desktop$ sudo usermod -a -G gr2 user2
sam@sam-VirtualBox:~/Desktop$ su user1
Password:
user1@sam-VirtualBox:/home/sam/Desktop$ id
uid=1001(user1) gid=1001(user1) groups=1001(user1),1004(gr1)
user1@sam-VirtualBox:/home/sam/Desktop$ exit
exit
sam@sam-VirtualBox:~/Desktop$ su user2
Password:
user2@sam-VirtualBox:/home/sam/Desktop$ id
uid=1002(user2) gid=1002(user2) groups=1002(user2),1005(gr2)
user2@sam-VirtualBox:/home/sam/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ sudo groupadd gr1
sam@sam-VirtualBox:~/Desktop$ sudo groupadd gr2
```

```
user1@sam-VirtualBox:/home/sam/Desktop$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologi
n
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/n
ologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbi
n/nologin
messagebus:x:103:106::/nonexistent:/usr/sbin/nologin
syslog:x:104:110::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:114::/run/uuidd:/usr/sbin/nologin
tcpdump:x:108:115::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/
nologin
usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper
:/usr/sbin/nologin
speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/fals
e
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
kernoops:x:116:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:117:123::/var/lib/saned:/usr/sbin/nologin
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin
/nologin
hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false
whoopsie:x:120:125::/nonexistent:/bin/false
colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/no
login
geoclue:x:122:127::/var/lib/geoclue:/usr/sbin/nologin
```

Task#2

Create 3 files with touch command: file1, file2, file3. • Write the command line by using letters with chmod to set the following permissions: rwxrwxr-x for file1 r-x—x—x for file2 ——xrwx for file3 • Write the command line by using numbers with chmod to set the following permissions: -w for file4 (you have to prepare this file) rwx--x—x for folder1 (you have to prepare this folder)

```
sam@sam-VirtualBox:~/Desktop$ touch file1.txt file2.txt file3.txt
sam@sam-VirtualBox:~/Desktop$ chmod u=rwx file1.txt
sam@sam-VirtualBox:~/Desktop$ chmod g=rwx file1.txt
sam@sam-VirtualBox:~/Desktop$ chmod o=rx file1.txt
sam@sam-VirtualBox:~/Desktop$ ls -l file1.txt
-rwxrwxr-x 1 sam sam 0 16:17 26  ستمبر file1.txt
sam@sam-VirtualBox:~/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ chmod u=rx file2
chmod: cannot access 'file2': No such file or directory
sam@sam-VirtualBox:~/Desktop$ chmod u=rx file2.txt
sam@sam-VirtualBox:~/Desktop$ chmod g=x file2.txt
sam@sam-VirtualBox:~/Desktop$ chmod o=x file2.txt
sam@sam-VirtualBox:~/Desktop$ ls -l file2.txt
-r-x--x--x 1 sam sam 0 16:17 26  ستمبر file2.txt
sam@sam-VirtualBox:~/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ chmod u-rwx file3.txt
sam@sam-VirtualBox:~/Desktop$ chmod g-rw file3.txt
sam@sam-VirtualBox:~/Desktop$ chmod o=rwx file3.txt
sam@sam-VirtualBox:~/Desktop$ ls -l file3.txt
-------rwx 1 sam sam 0 16:17 26  ستمبر file3.txt
sam@sam-VirtualBox:~/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ touch file4.txt chmod 222 file4.txt
sam@sam-VirtualBox:~/Desktop$ ls -l file4.txt
-rw-rw-r-- 1 sam sam 0 16:34 26  ستمبر file4.txt
sam@sam-VirtualBox:~/Desktop$ chmod 222 file4.txt
sam@sam-VirtualBox:~/Desktop$ ls -l file4.txt
--w--w--w- 1 sam sam 0 16:34 26  ستمبر file4.txt
sam@sam-VirtualBox:~/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ mkdir folder1
sam@sam-VirtualBox:~/Desktop$ chmod 711 folder1
sam@sam-VirtualBox:~/Desktop$ ls -l folder1
total 0
sam@sam-VirtualBox:~/Desktop$ ls -a -l filder1
ls: cannot access 'filder1': No such file or directory
sam@sam-VirtualBox:~/Desktop$ ls -l folder1
total 0
sam@sam-VirtualBox:~/Desktop$ ls -l
total 4
-rwxrwxr-x 1 sam sam    0 16:17 26 سبتمبر file1.txt
-r-x--x--x 1 sam sam    0 16:17 26 سبتمبر file2.txt
-------rwx 1 sam sam    0 16:17 26 سبتمبر file3.txt
--w--w--w- 1 sam sam    0 16:34 26 سبتمبر file4.txt
drwx--x--x 2 sam sam 4096 16:36 26 سبتمبر folder1
sam@sam-VirtualBox:~/Desktop$ 
```

Task#3

Create two user accounts: test1 and test2 • Logging in id: test1 (group users, with bash shell, home directory /home/test1) • Logging in id: test2 (group public, with bash shell, home directory home/test2) • For the two accounts set a password. • Logging in as test1 and copy /bin/ls into test1 home directory as "myls" file. • Change the owner of myls totest1 and the permissions to 0710. What does this permission value mean? • Logging in as test2 and try to use /home/test1/myls to list your current directory. Does it work? • Create a new group lab3 with test1 and test2. Change the owner group of myls file to lab3. Try again from test2 account to execute /home/test1/myls to list your current directory. Does it work

```
sam@sam-VirtualBox:~/Desktop$ sudo adduser test1
[sudo] password for sam:
Adding user `test1' ...
Adding new group `test1' (1006) ...
Adding new user `test1' (1004) with group `test1' ...
Creating home directory `/home/test1' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for test1
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
sam@sam-VirtualBox:~/Desktop$ sudo adduser test2
Adding user `test2' ...
Adding new group `test2' (1007) ...
Adding new user `test2' (1005) with group `test2' ...
The home directory `/home/test2' already exists.  Not copying from `/etc/skel'.
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for test2
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
sam@sam-VirtualBox:~/Desktop$
```

```
sam@sam-VirtualBox:~/Desktop$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,sam
tty:x:5:syslog
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:
fax:x:21:
voice:x:22:
cdrom:x:24:sam
floppy:x:25:
tape:x:26:
sudo:x:27:sam
audio:x:29:pulse
dip:x:30:sam
www-data:x:33:
backup:x:34:
operator:x:37:
list:x:38:
irc:x:39:
src:x:40:
gnats:x:41:
shadow:x:42:
utmp:x:43:
video:x:44:
sasl:x:45:
plugdev:x:46:sam
staff:x:50:
games:x:60:
users:x:100:
nogroup:x:65534:
systemd-journal:x:101:
systemd-network:x:102:
systemd-resolve:x:103:
systemd-timesync:x:104:
crontab:x:105:
messagebus:x:106:
```

```
syslog:x:110:
tss:x:111:
bluetooth:x:112:
ssl-cert:x:113:
uuidd:x:114:
tcpdump:x:115:
avahi-autoipd:x:116:
rtkit:x:117:
ssh:x:118:
netdev:x:119:
lpadmin:x:120:sam
avahi:x:121:
scanner:x:122:saned
saned:x:123:
nm-openvpn:x:124:
whoopsie:x:125:
colord:x:126:
geoclue:x:127:
pulse:x:128:
pulse-access:x:129:
gdm:x:130:
sssd:x:131:
lxd:x:132:sam
sam:x:1000:
sambashare:x:133:sam
systemd-coredump:x:999:
user1:x:1001:
user2:x:1002:
user3:x:1003:
gr1:x:1004:user1,test1
gr2:x:1005:user2,test2
test3:x:1008:
test1:x:1006:
test2:x:1007:
sam@sam-VirtualBox:~/Desktop$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
```

```
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologi
n
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/n
ologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbi
n/nologin
messagebus:x:103:106::/nonexistent:/usr/sbin/nologin
syslog:x:104:110::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:114::/run/uuidd:/usr/sbin/nologin
tcpdump:x:108:115::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/
nologin
usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper
:/usr/sbin/nologin
speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/fals
e
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
kernoops:x:116:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:117:123::/var/lib/saned:/usr/sbin/nologin
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin
/nologin
hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false
whoopsie:x:120:125::/nonexistent:/bin/false
colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/no
login
geoclue:x:122:127::/var/lib/geoclue:/usr/sbin/nologin
pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:124:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
sssd:x:126:131:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
sam:x:1000:1000:Sam,,,:/home/sam:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
user1:x:1001:1001:,,,:/home/user1:/bin/bash
user2:x:1002:1002:,,,:/home/user2:/bin/bash
user3:x:1003:1003:,,,:/home/user3:/bin/bash
test3:x:1006:1008:,,,:/home/test3:/bin/bash
test1:x:1004:1006:,,,:/home/test1:/bin/bash
test2:x:1005:1007:,,,:/home/test2:/bin/bash
sam@sam-VirtualBox:~/Desktop$ touch file1
```

```
sam@sam-VirtualBox:~/Desktop$ touch file1
sam@sam-VirtualBox:~/Desktop$ touch file2
sam@sam-VirtualBox:~/Desktop$ chmod ug=rwx,o+x file1
sam@sam-VirtualBox:~/Desktop$ ls -l file1
-rwxrwxr-x 1 sam sam 0 22:47 12 أكتوبر  file1
sam@sam-VirtualBox:~/Desktop$ chmod u=rx,go=x file2
sam@sam-VirtualBox:~/Desktop$ ls -l file2
-r-x--x--x 1 sam sam 0 22:47 12 أكتوبر  file2
sam@sam-VirtualBox:~/Desktop$ touch file4
sam@sam-VirtualBox:~/Desktop$ chmod 777 file4
sam@sam-VirtualBox:~/Desktop$ ls -l file4
-rwxrwxrwx 1 sam sam 0 22:49 12 أكتوبر  file4
sam@sam-VirtualBox:~/Desktop$ chmod 711 folder1
chmod: cannot access 'folder1': No such file or directory
sam@sam-VirtualBox:~/Desktop$ mkdir folder1
sam@sam-VirtualBox:~/Desktop$ chmod 711 folder1
sam@sam-VirtualBox:~/Desktop$ ls -la folder1
total 8
drwx--x--x 2 sam sam 4096 22:50 12 أكتوبر .
drwxr-xr-x 3 sam sam 4096 22:50 12 أكتوبر ..
sam@sam-VirtualBox:~/Desktop$
```