

Дискреционное разграничение прав в Linux. Основные атрибуты

Иванова Ольга Игоревна НФИбд-01-18¹

13 октября, 2021, Москва, Россия

¹Российский Университет Дружбы Народов

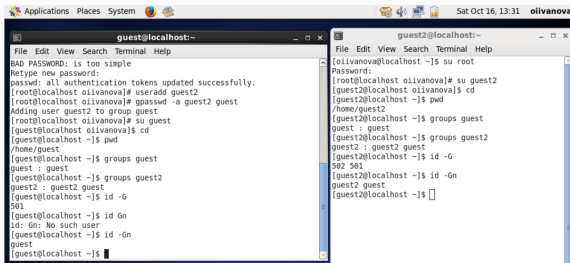
Цели и задачи работы

Цель лабораторной работы

Получение практических навыков работы в консоли с атрибутами файлов для групп пользователей.

Процесс выполнения лабораторной работы

Определяем UID и группу двух пользователей



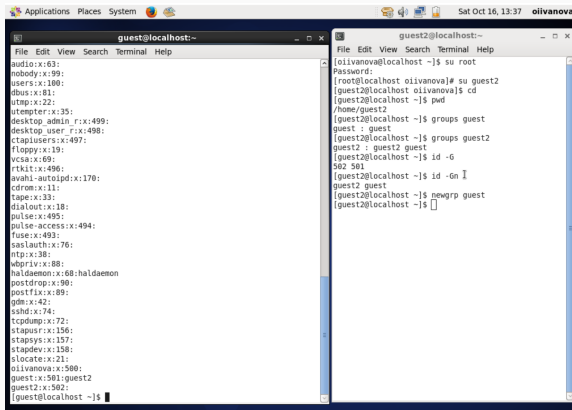
The image shows two terminal windows side-by-side. The left window is titled 'guest@localhost:~' and shows the process of creating a user 'guest' and adding it to the 'guest' group. The right window is titled 'guest2@localhost:~' and shows the process of creating a user 'guest2' and adding it to the 'guest2' group. Both windows show the output of various system commands.

```
guest@localhost:~  
File Edit View Search Terminal Help  
BAD PASSWORD: is too simple  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[root@localhost oiiivanova]# useradd guest2  
[root@localhost oiiivanova]# gpasswd -a guest2 guest  
Adding user guest2 to group guest  
[root@localhost oiiivanova]# su guest  
[guest@localhost oiiivanova]$ cd  
[guest@localhost ~]$ pwd  
/home/guest  
[guest@localhost ~]$ groups guest  
guest : guest  
[guest@localhost ~]$ groups guest2  
guest2 : guest2 guest  
[guest@localhost ~]$ id -G  
501  
[guest@localhost ~]$ id -Gn  
id: Gn: No such user  
[guest@localhost ~]$ id -Gn  
guest  
[guest@localhost ~]$
```

```
guest2@localhost:~  
File Edit View Search Terminal Help  
[oiiivanova@localhost ~]$ su root  
Password:  
[root@localhost oiiivanova]# su guest2  
[guest2@localhost oiiivanova]$ cd  
[guest2@localhost ~]$ pwd  
/home/guest2  
[guest2@localhost ~]$ groups guest2  
guest2 : guest2  
[guest2@localhost ~]$ groups guest2  
guest2 : guest2 guest  
[guest2@localhost ~]$ id -G  
502 501  
[guest2@localhost ~]$ id -Gn  
guest2 guest  
[guest2@localhost ~]$
```

Figure 1: Информация о пользователях

Файл с данными о пользователях



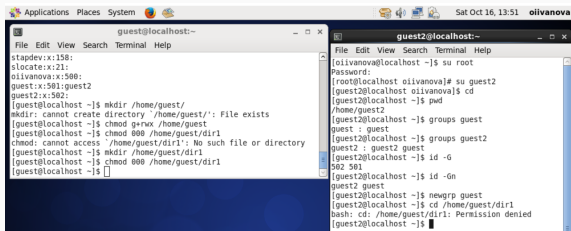
The image shows two terminal windows side-by-side. The left window, titled 'guest@localhost:~', displays the contents of the /etc/passwd file, listing system users (audio, nobody, users, dbus, utmp, utempter) and regular users (desktop_admin, desktop_user, ctapiusers, floppy, vcsa, rtkit, avahi-autoipd, cdrom, tape, dialout, pulse, pulse-access, fuse, sasauth, ntp, wbrpriv, haldaemon, postdrop, postfix, gdm, sshd, tcpdump, stapusr, stapsys, stapdev, slocate, oiivanova, guest, guest2). The right window, titled 'guest2@localhost:~', shows the user switching to root with 'su root', then to guest2 with 'su guest2', and finally running 'groups guest' which shows 'guest : guest'. It then runs 'groups guest2' showing 'guest2 : guest2 guest', 'id -G' showing '502 501', 'id -Gn' showing 'guest2 guest', and 'newgrp guest'.

```
guest@localhost:~  
File Edit View Search Terminal Help  
audio:x:63:  
nobody:x:99:  
users:x:100:  
dbus:x:81:  
utmp:x:22:  
utempter:x:35:  
desktop_admin_r:x:499:  
desktop_user_r:x:498:  
ctapiusers:x:497:  
floppy:x:19:  
vcsa:x:69:  
rtkit:x:496:  
avahi-autoipd:x:170:  
cdrom:x:11:  
tape:x:33:  
dialout:x:18:  
pulse:x:495:  
pulse-access:x:494:  
fuse:x:493:  
sasauth:x:76:  
ntp:x:38:  
wbrpriv:x:88:  
haldaemon:x:68:haldaemon  
postdrop:x:90:  
postfix:x:89:  
gdm:x:42:  
sshd:x:74:  
tcpdump:x:72:  
stapusr:x:156:  
stapsys:x:157:  
stapdev:x:158:  
slocate:x:21:  
oiivanova:x:500:  
guest:x:501:guest2  
guest2:x:502:  
guest@localhost ~$
```

```
guest2@localhost:~  
File Edit View Search Terminal Help  
[oiivanova@localhost ~]$ su root  
Password:  
[root@localhost oiivanova]# su guest2  
[guest2@localhost oiivanova]$ cd  
[guest2@localhost ~]$ pwd  
/home/guest2  
[guest2@localhost ~]$ groups guest  
guest : guest  
[guest2@localhost ~]$ groups guest2  
guest2 : guest2 guest  
[guest2@localhost ~]$ id -G  
502 501  
[guest2@localhost ~]$ id -Gn  
guest2 guest  
[guest2@localhost ~]$ newgrp guest  
[guest2@localhost ~]$
```

Figure 2: Содержимое файла /etc/group

Атрибуты директории



The image shows two terminal windows side-by-side. The left window is titled 'guest@localhost:~' and shows a series of commands and outputs: 'stapdev:x:150:', 'slocate:x:21:', 'oiivanova:x:500:', 'guest:x:501:guest2', 'guest2:x:502:'. Then, 'mkdir /home/guest/' is executed, followed by 'chmod g+rxw /home/guest'. Next, 'chmod 000 /home/guest/dir1' is run, resulting in the error 'chmod: cannot access '/home/guest/dir1': No such file or directory'. Finally, 'mkdir /home/guest/dir1' is executed, followed by 'chmod 000 /home/guest/dir1'. The right window is titled 'guest2@localhost:~' and shows a sequence of commands: 'su root', 'passwd:', '[root@localhost oiivanova]# su guest2', '[guest2@localhost oiivanova]\$ cd /home/guest2', '[guest2@localhost ~]\$ pwd', '[guest2@localhost ~]\$ groups guest', '[guest2@localhost ~]\$ groups guest2', '[guest2@localhost ~]\$ id -G', '[guest2@localhost ~]\$ id -Gn', '[guest2@localhost ~]\$ newgrp guest', '[guest2@localhost ~]\$ cd /home/guest/dir1', and finally 'bash: cd: /home/guest/dir1: Permission denied'.

```
guest@localhost:~  
File Edit View Search Terminal Help  
stapdev:x:150:  
slocate:x:21:  
oiivanova:x:500:  
guest:x:501:guest2  
guest2:x:502:  
[guest@localhost ~]$ mkdir /home/guest/  
mkdir: cannot create directory '/home/guest/': File exists  
[guest@localhost ~]$ chmod g+rxw /home/guest  
[guest@localhost ~]$ chmod 000 /home/guest/dir1  
chmod: cannot access '/home/guest/dir1': No such file or directory  
[guest@localhost ~]$ mkdir /home/guest/dir1  
[guest@localhost ~]$ chmod 000 /home/guest/dir1  
[guest@localhost ~]$  
  
guest2@localhost:~  
File Edit View Search Terminal Help  
[oiivanova@localhost ~]$ su root  
Password:  
[root@localhost oiivanova]# su guest2  
[guest2@localhost oiivanova]$ cd /home/guest2  
[guest2@localhost ~]$ pwd  
/home/guest2  
[guest2@localhost ~]$ groups guest  
guest : guest  
[guest2@localhost ~]$ groups guest2  
guest2 : guest2 guest  
[guest2@localhost ~]$ id -G  
502 501  
[guest2@localhost ~]$ id -Gn  
guest2 guest  
[guest2@localhost ~]$ newgrp guest  
[guest2@localhost ~]$ cd /home/guest/dir1  
bash: cd: /home/guest/dir1: Permission denied  
[guest2@localhost ~]$
```

Figure 3: Снятие атрибутов с директории

Права и разрешённые действия

Операция	Минимальные права на директорию	Минимальные права на файл
Создание файла	d---wx--- (030)	----- (000)
Удаление файла	d---wx--- (030)	----- (000)
Чтение файла	d----x--- (010)	---r----- (040)
Запись в файл	d-----x--- (010)	-----w---- (020)
Переименование файла	d---wx--- (030)	----- (000)
Создание поддиректории	d---wx--- (030)	----- (000)
Удаление поддиректории	d---wx--- (030)	----- (000)

Figure 4: Минимальные права для совершения операций

Выводы по проделанной работе

В ходе выполнения работы, мы смогли приобрести практические навыки работы в консоли с атрибутами файлов для групп пользователей.