

Презентация по лабораторной работе №2.

Основы информационной безопасности.

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Информация

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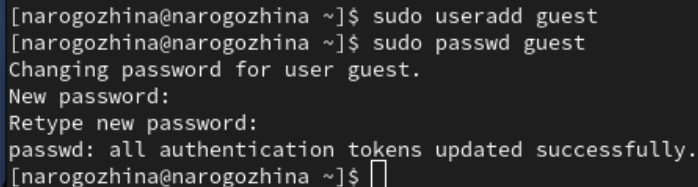
Вводная часть

- Умение работать в консоли с атрибутами файлов, а также знание основ разграничения доступа в современных системах с открытым кодом на базе ОС Linux значительно улучшит и упростит понимание и работу с безопасностью данных.

- Права доступа к каталогам и файлам

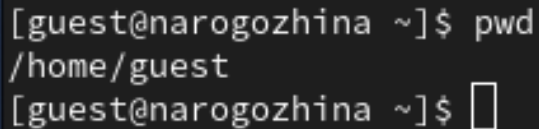
- Научиться работать с правами доступа через консоль
- Понимать разницу между доступом владельца, группы, всех пользователей

Содержание лабораторной работы

A terminal window with a dark background and light gray text. The prompt is [narogozhina@narogozhina ~]\$. The user enters 'sudo useradd guest'. The prompt changes to [narogozhina@narogozhina ~]\$. The user enters 'sudo passwd guest'. The terminal shows 'Changing password for user guest.', 'New password:', 'Retype new password:', and 'passwd: all authentication tokens updated successfully.'. The prompt returns to [narogozhina@narogozhina ~]\$.

```
[narogozhina@narogozhina ~]$ sudo useradd guest
[narogozhina@narogozhina ~]$ sudo passwd guest
Changing password for user guest.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[narogozhina@narogozhina ~]$
```

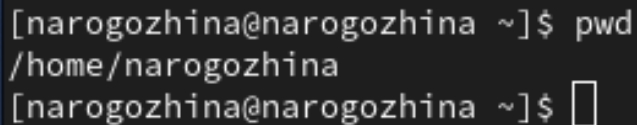
Рис. 1: Добавление нового пользователя



```
[guest@narogozhina ~]$ pwd  
/home/guest  
[guest@narogozhina ~]$
```

A terminal window with a dark background and a blue title bar. The prompt is [guest@narogozhina ~]\$. The command pwd is entered, and the output /home/guest is displayed on the next line. The prompt is then shown again with a cursor.

Рис. 2: guest:pwd

A terminal window with a dark background and a blue vertical bar on the left. The prompt is [narogozhina@narogozhina ~]\$ and the command pwd has been entered. The output is /home/narogozhina. The prompt is repeated on the next line with a cursor box.

```
[narogozhina@narogozhina ~]$ pwd  
/home/narogozhina  
[narogozhina@narogozhina ~]$
```

Рис. 3: narogozhina:pwd

```
guest
[guest@narogozhina ~]$ id
uid=1001(guest) gid=1001(guest) groups=1001(guest) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
[guest@narogozhina ~]$ groups
guest
[guest@narogozhina ~]$
```

Рис. 4: guest:id+groups

```
guest@x.1001.1001:~/home/guest: /bin/bash
[guest@narogozhina ~]$ ls -l /home
total 4
drwx-----.  4 guest      guest      112 Mar  1 13:21 guest
drwx-----. 14 narogozhina narogozhina 4096 Mar  1 12:22 narogozhina
[guest@narogozhina ~]$
```

Рис. 5: guest:ls -l /home

```
[narogozhina@narogozhina ~]$ ls -l /home
total 4
drwx-----.  4 guest      guest      112 Mar  1 13:21 guest
drwx-----. 14 narogozhina narogozhina 4096 Mar  1 12:22 narogozhina
[narogozhina@narogozhina ~]$ ls -l /home/
total 4
drwx-----.  4 guest      guest      112 Mar  1 13:21 guest
drwx-----. 14 narogozhina narogozhina 4096 Mar  1 12:22 narogozhina
[narogozhina@narogozhina ~]$
```

Рис. 6: narogozhina:ls -l /home

```
guest@narogozhina:~$ lsattr /home
lsattr: Permission denied while reading flags on /home/narogozhina
----- /home/guest
[guest@narogozhina ~]$
```

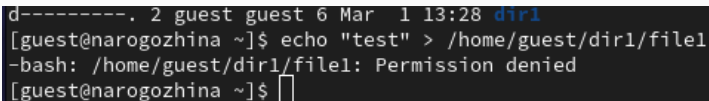
Рис. 7: guest:lsattr /home

```
drwx-----. 14 narogozhina narogozhina 4096 Mar  1 12:22 narogozhina
[narogozhina@narogozhina ~]$ lsattr /home
----- /home/narogozhina
lsattr: Permission denied While reading flags on /home/guest
[narogozhina@narogozhina ~]$
```

Рис. 8: narogozhina:lsattr /home


```
[guest@narogozhina ~]$ mkdir dir1
[guest@narogozhina ~]$ ls -l /home/guest/dir1
total 0
[guest@narogozhina ~]$ lsattr /home/guest/dir1
[guest@narogozhina ~]$ chmod 000 dir1
[guest@narogozhina ~]$ ls -l
total 0
d------. 2 guest guest 6 Mar  1 13:28 dir1
[guest@narogozhina ~]$
```

Рис. 9: Создание каталога dir1, его атрибуты



```
d----- . 2 guest guest 6 Mar  1 13:28 dir1
[guest@narogozhina ~]$ echo "test" > /home/guest/dir1/file1
-bash: /home/guest/dir1/file1: Permission denied
[guest@narogozhina ~]$
```

Рис. 10: Попытка создать файл

```
-bash: /home/guest/dir1/file1: Permission denied  
[guest@narogozhina ~]$ ls -l /home/guest/dir1  
ls: cannot open directory '/home/guest/dir1': Permission denied  
[guest@narogozhina ~]$
```

Рис. 11: Проверка командой

```
[guest@narogozhina ~]$ chmod u+x dir1
[guest@narogozhina ~]$ cd dir1
[guest@narogozhina dir1]$ ls
ls: cannot open directory '.': Permission denied
[guest@narogozhina dir1]$ touch ex1.txt
touch: cannot touch 'ex1.txt': Permission denied
[guest@narogozhina dir1]$ chmod u+r example.txt
[guest@narogozhina dir1]$ ls
ls: cannot open directory '.': Permission denied
[guest@narogozhina dir1]$ cat example.txt
hello
hello
[guest@narogozhina dir1]$ chmod u-r exmaple.txt
chmod: cannot access 'exmaple.txt': No such file or directory
[guest@narogozhina dir1]$ chmod u-r example.txt
[guest@narogozhina dir1]$ cat example.txt
cat: example.txt: Permission denied
[guest@narogozhina dir1]$
```

Рис. 12: d-x---

```
[guest@narogozhina ~]$ chmod u+r dir1
[guest@narogozhina ~]$ ls -l
total 0
dr-----. 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ ls
dir1
[guest@narogozhina ~]$ cd dir1
-bash: cd: dir1: Permission denied
[guest@narogozhina ~]$ echo "test" > /home/guest/dir1/file3
-bash: /home/guest/dir1/file3: Permission denied
[guest@narogozhina ~]$ ls dir1
ls: cannot access 'dir1/file1': Permission denied
ls: cannot access 'dir1/file2': Permission denied
ls: cannot access 'dir1/example.txt': Permission denied
ls: cannot access 'dir1/example2.txt': Permission denied
example2.txt example.txt file1 file2
[guest@narogozhina ~]$ ls -l dir1
ls: cannot access 'dir1/file1': Permission denied
ls: cannot access 'dir1/file2': Permission denied
ls: cannot access 'dir1/example.txt': Permission denied
ls: cannot access 'dir1/example2.txt': Permission denied
total 0
-???????? ? ? ? ? ? ? ? ? ? example2.txt
-???????? ? ? ? ? ? ? ? ? ? example.txt
-???????? ? ? ? ? ? ? ? ? ? file1
-???????? ? ? ? ? ? ? ? ? ? file2
[guest@narogozhina ~]$ ls /home/guest/dir1/
ls: cannot access '/home/guest/dir1/file1': Permission denied
ls: cannot access '/home/guest/dir1/file2': Permission denied
ls: cannot access '/home/guest/dir1/example.txt': Permission denied
ls: cannot access '/home/guest/dir1/example2.txt': Permission denied
example2.txt example.txt file1 file2
[guest@narogozhina ~]$ mv /home/guest/dir1/example.txt /home/guest/dir1/exmaple3.txt
mv: failed to access '/home/guest/dir1/exmaple3.txt': Permission denied
[guest@narogozhina ~]$ chmod u+r /home/guest/dir1/exmaple.txt
chmod: cannot access '/home/guest/dir1/exmaple.txt': Permission denied
[guest@narogozhina ~]$
```

```
[guest@narogozhina ~]$ chmod u-r dir1
[guest@narogozhina ~]$ chmod u+w dir`
> `
chmod: cannot access 'dir': No such file or directory
[guest@narogozhina ~]$ chmod u+w dir1
[guest@narogozhina ~]$ ls -l
total 0
d-w-----. 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ cd dir1
-bash: cd: dir1: Permission denied
[guest@narogozhina ~]$ ls dir1
ls: cannot open directory 'dir1': Permission denied
[guest@narogozhina ~]$ ls /home/guest/dir1/
ls: cannot open directory '/home/guest/dir1/': Permission denied
[guest@narogozhina ~]$ mv /home/guest/dir1/file1 /home/guest/dir1/file11
mv: failed to access '/home/guest/dir1/file11': Permission denied
[guest@narogozhina ~]$ chmod u+r /home/huest/dir1/file1
chmod: cannot access '/home/huest/dir1/file1': No such file or directory
[guest@narogozhina ~]$ chmod u+r /home/guest/dir1/file1
chmod: cannot access '/home/guest/dir1/file1': Permission denied
[guest@narogozhina ~]$ cat /home/guest/dir1/file1
cat: /home/guest/dir1/file1: Permission denied
[guest@narogozhina ~]$ touch /home/guest/dir1/file3
touch: cannot touch '/home/guest/dir1/file3': Permission denied
[guest@narogozhina ~]$ rm /home/guest/dir1/file3
rm: cannot remove '/home/guest/dir1/file3': Permission denied
[guest@narogozhina ~]$ echo "test2" >> /home/guest/dir1/file1
-bash: /home/guest/dir1/file1: Permission denied
```

```
-bash: /home/guest/dir1/file1: Permission denied
[guest@narogozhina ~]$ ls -l
total 0
d-w-----. 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ chmod u+r dir1
[guest@narogozhina ~]$ ls -l
total 0
drw-----. 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ cd dir1
-bash: cd: dir1: Permission denied
[guest@narogozhina ~]$ ls dir1
ls: cannot access 'dir1/file1': Permission denied
ls: cannot access 'dir1/file2': Permission denied
ls: cannot access 'dir1/example.txt': Permission denied
ls: cannot access 'dir1/example2.txt': Permission denied
example2.txt example.txt file1 file2
[guest@narogozhina ~]$ touch /home/dir1/file3
touch: cannot touch '/home/dir1/file3': No such file or directory
[guest@narogozhina ~]$ echo

[guest@narogozhina ~]$ echo "test" > /home/guest/dir1/file3
-bash: /home/guest/dir1/file3: Permission denied
[guest@narogozhina ~]$ cat /home/guest/dir1/example2.txt
cat: /home/guest/dir1/example2.txt: Permission denied
[guest@narogozhina ~]$ cat /home/guest/dir1/examle.txt
cat: /home/guest/dir1/examle.txt: Permission denied
[guest@narogozhina ~]$ cat /home/guest/dir1/file1
cat: /home/guest/dir1/file1: Permission denied
[guest@narogozhina ~]$ rm /home/guest/dir1/file1
rm: cannot remove '/home/guest/dir1/file1': Permission denied
[guest@narogozhina ~]$ touch /home/guest/dir1/file3
touch: cannot touch '/home/guest/dir1/file3': Permission denied
[guest@narogozhina ~]$ mv /home/guest/dir1/file1 /home/guest/dir1/file3
mv: failed to access '/home/guest/dir1/file3': Permission denied
[guest@narogozhina ~]$ chmod u+r /home/guest/dir1/example.txt
chmod: cannot access '/home/guest/dir1/example.txt': Permission denied
[guest@narogozhina ~]$ □
```

```
[guest@narogozhina ~]$ cd ~
[guest@narogozhina ~]$ chmod u-r dir1
[guest@narogozhina ~]$ chmod u+x dir1
[guest@narogozhina ~]$ ls -l
total 0
d-wx-----, 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ chmod u-x dir1
[guest@narogozhina ~]$ chmod u+x dir1
[guest@narogozhina ~]$ chmod u-w dir1
[guest@narogozhina ~]$ chmod u+r dir1
[guest@narogozhina ~]$ ls -l
total 0
dr-x-----, 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ cd dir1
[guest@narogozhina dir1]$ ls
example2.txt example.txt file1 file2
[guest@narogozhina dir1]$ touch file3
touch: cannot touch 'file3': Permission denied
[guest@narogozhina dir1]$ rm file1
rm: cannot remove 'file1': Permission denied
[guest@narogozhina dir1]$ echo "test" >> example.txt
[guest@narogozhina dir1]$ cat example.txt
cat: example.txt: Permission denied
[guest@narogozhina dir1]$ ls -l
total 12
-rw-r--r--, 1 guest guest  0 Mar  1 13:56 example2.txt
--w-r--r--, 1 guest guest 17 Mar  1 14:24 example.txt
-rw-r--r--, 1 guest guest  5 Mar  1 13:33 file1
-rw-r--r--, 1 guest guest  6 Mar  1 13:48 file2
[guest@narogozhina dir1]$ cat example2.txt
hello
hello
test
[guest@narogozhina dir1]$ mv file1 vile1
mv: cannot move 'file1' to 'vile1': Permission denied
[guest@narogozhina dir1]$ ls
example2.txt example.txt file1 file2
[guest@narogozhina dir1]$ mv /home/guest/dir1/file1 /home/guest/dir1/file3
mv: cannot move '/home/guest/dir1/file1' to '/home/guest/dir1/file3': Permission denied
[guest@narogozhina dir1]$ cd ~
[guest@narogozhina ~]$
```



```
[guest@narogozhina dir1]$ cd ~
[guest@narogozhina ~]$ ls -l
total 0
dr-x-----. 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ chmod u-r dir1
[guest@narogozhina ~]$ chmod u+w dir1
[guest@narogozhina ~]$ ls -l
total 0
d-wx-----. 2 guest guest 71 Mar  1 14:00 dir1
[guest@narogozhina ~]$ cd dir1
[guest@narogozhina dir1]$ ls
ls: cannot open directory '.': Permission denied
[guest@narogozhina dir1]$ touch file3
[guest@narogozhina dir1]$ rm file3
[guest@narogozhina dir1]$ touch file3
[guest@narogozhina dir1]$ echo "test" >> file3
[guest@narogozhina dir1]$ cat file3
test
[guest@narogozhina dir1]$ mv file3 file33
[guest@narogozhina dir1]$ ls -l
ls: cannot open directory '.': Permission denied
[guest@narogozhina dir1]$ chmod g+r file3
chmod: cannot access 'file3': No such file or directory
[guest@narogozhina dir1]$ chmod g+r file33
[guest@narogozhina dir1]$ rm file33
[guest@narogozhina dir1]$
```

Выводы

В ходе выполнения работы мы получили практические навыки работы в консоли с атрибутами файлов и закрепили теоретические основы разграничения доступа в современных системах с открытым кодом на базе ОС Linux.