

# Лабораторная работа №2

Дисcretionное разграничение прав в Linux. Основные атрибуты

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Ким М. А.

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Российский университет дружбы народов, Москва, Россия

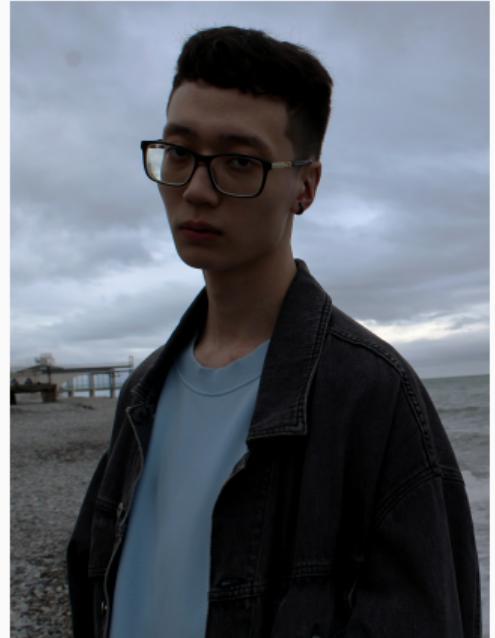
# Информация

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# Докладчик

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- Ким Михаил Алексеевич
- студент уч. группы НФИбд-01-20
- Российский университет дружбы народов
- 1032201664@pfur.ru
- <https://github.com/exmanka>



## **Вводная часть**

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## Актуальность

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- Необходимость навыков работы с различными ОС, git, Markdown.

## Объект и предмет исследования

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- Операционная система Rocky Linux
- Атрибуты файлов и директорий в Linux
- Язык разметки Markdown

## Цели и задачи

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- Получить практических навыков работы в консоли с атрибутами файлов, закрепление теоретических основ дискреционного разграничения доступа в современных системах с открытым кодом на базе ОС Linux.

## **Процесс выполнения работы**

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## **Выполнение заданий. 1**

```
[root@localhost ~]# /usr/bin/mkinitram -i5 sudo useradd guest
creating /etc/passwd File exists
[root@localhost ~]# /usr/bin/mkinitram -i5 sudo passwd guest
Changing password for user guest.
New password:
BAD PASSWORD: The password contains the user name in some form
try again-->
Sorry, password do not match.
passwd: Authentication token manipulation error
[root@localhost ~]# /usr/bin/mkinitram -i5 sudo passwd guest
Changing password for user guest.
New password:
BAD PASSWORD: The password failed the dictionary check - it is based on a dictionary
any word
try again-->
New password:
[root@localhost ~]# /usr/bin/mkinitram -i5 sudo passwd guest
Changing password for user guest.
New password:
BAD PASSWORD: The password failed the dictionary check - it is based on a dictionary
any word
try again-->
New password:
[root@localhost ~]# /usr/bin/mkinitram -i5
[root@localhost ~]#
```

```
[root@rhel ~]# ps aux | grep guest  
root      1  0.0  0.0  1000  100 S+ 10:00 0:00 [grep] guest  
[root@rhel ~]# ls -l /proc/1000/task/1000/guest  
ls: cannot access '/proc/1000/task/1000/guest': No such file or directory  
[root@rhel ~]# lsof -c guest  
[root@rhel ~]#
```

```
[guest@makim ~]$ ll /home
total 8
drwx----. 14 guest guest 4096 Sep 16 18:29 guest
drwx----. 17 makim makim 4096 Sep 16 18:29 makim
[guest@makim ~]$ lsattr /home
lsattr: Permission denied while reading flags on /home/makim
-----/home/guest
```

## Выполнение заданий. 2

```
[guest@makim ~]$ mkdir dir1
[guest@makim ~]$ ll
total 0
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Desktop
drwxr-xr-x. 2 guest guest 6 Sep 16 18:35 dir1
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Documents
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Downloads
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Music
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Pictures
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Public
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Templates
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Videos
[guest@makim ~]$ ll /home/guest/
total 8
drwx-----. 15 guest guest 4096 Sep 16 18:35 guest
drwx-----. 17 makim makim 4096 Sep 16 18:29 makim
[guest@makim ~]$ ll /home/guest/
total 0
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Desktop
drwxr-xr-x. 2 guest guest 6 Sep 16 18:35 dir1
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Documents
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Downloads
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Music
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Pictures
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Public
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Templates
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Videos
[guest@makim ~]$ lsattr
----- ./Desktop
----- ./Downloads
----- ./Templates
----- ./Public
----- ./Documents
----- ./Music
----- ./Pictures
----- ./Videos
----- ./dir1
```

```
[guest@makim ~]$ chmod 600 dir1
[guest@makim ~]$ ll
total 0
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Desktop
drwxr-xr-x. 2 guest guest 6 Sep 16 18:35 dir1
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Documents
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Downloads
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Music
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Pictures
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Public
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Templates
drwxr-xr-x. 2 guest guest 6 Sep 16 18:29 Videos
[guest@makim ~]$ echo "test" > /home/guest/dir1/file1
[guest@makim ~]$ ll /home/guest/dir1
total 0
```

```
[guest@makim ~]$ su -
Password:
[root@makim ~]# ll /home/guest/dir1
total 0
```

```
[guest@makim ~]$ chmod 700 dir1
[guest@makim ~]$ echo "test" > /home/guest/dir1/file1
bash: /home/guest/dir1/file1: No such file or directory
[guest@makim ~]$ echo "test" > /home/guest/dir1/file1
[guest@makim ~]$ ll /home/guest/dir1
total 4
----- 1 guest guest 5 Sep 16 21:18 file1
[guest@makim ~]$ ll /home/guest/dir1
[guest@makim ~]$ chmod 600 dir1/file1
[guest@makim ~]$ ll /home/guest/dir1
total 4
----- 1 guest guest 5 Sep 16 21:18 file1
[guest@makim ~]$
```

# Bash-скрипт

```
GNU nano 5.6.1                                         script_lab02.sh

#!/bin/bash

echo "Starting makim's script for checking file usability"

read -p "Enter file1 chmod current numeric code: " filelnum
echo "====="
echo "1. Trying to create file..."
(umask 777; touch /home/guest/dir1/file_temp1)
echo "====="
echo "2. Trying to remove file..."
rm /home/guest/dir1/file_temp1
echo "====="
echo "3. Trying to write to file..."
echo "test" > /home/guest/dir1/file1
echo "====="
echo "4. Trying to read file..."
cat /home/guest/dir1/file1
echo "====="
echo "5. Trying to change directory..."
cd /home/guest/dir1
echo "====="
echo "6. Trying to view files in direcotry..."
ls -l /home/guest/dir1
echo "====="
echo "7. Trying to rename file..."
(umask 777; mv /home/guest/dir1/file1 /home/guest/dir1/file_temp2)
(umask 777; mv /home/guest/dir1/file_temp2 /home/guest/dir1/file1)
echo "====="
echo "8. Trying to change attributes..."
chmod $filelnum /home/guest/dir1/file1
echo "=====
```

## Bash-скрипт. Выполнение. 1

```
[guest@makim ~]$ chmod 0rwx dir1  
[guest@makim ~]$ ls -l  
total 4  
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 desktop  
drwxr-xr-x 2 guest guest 6 Sep 16 23:14 dir1  
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 documents  
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 downloads  
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Music  
drwxr-xr-x 2 guest guest 53 Sep 16 18:26 Pictures  
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Public  
drwxr-xr-x 2 guest guest 1289 Sep 16 20:14 script_lab02.sh  
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Templates  
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Videos  
[guest@makim ~]$ ./script_lab02.sh  
Starting makim's script for checking file usability:  
Enter file chmod current numeric code: 000  
=====
 0. Trying to create file...
touch: cannot touch '/home/guest/dir1/file_temp1': Permission denied  
=====
 2. Trying to remove file...
rm: cannot remove '/home/guest/dir1/file_temp1': Permission denied  
=====
 3. Trying to write to file...
script_lab02.sh: line 18: /home/guest/dir1/file1: Permission denied  
=====
 4. Trying to read file...
cat: /home/guest/dir1/file1: Permission denied  
=====
 5. Trying to change directory...
script_lab02.sh: line 20: cd: /home/guest/dir1: Permission denied  
=====
 6. Trying to view files in directory...
ls: cannot open directory '/home/guest/dir1': Permission denied  
=====
 7. Trying to rename file...
mv: failed to access '/home/guest/dir1/file_temp2': Permission denied  
mv: failed to move '/home/guest/dir1/file1' to '/home/guest/dir1/file1': Permission denied  
=====
 8. Trying to change attributes...
chmod: cannot access '/home/guest/dir1/file1': Permission denied
```

```
[guest@mkmain ~]$ chmod 400 dir1
[guest@mkmain ~]$ ll
total 4
drwxr-x-- 2 guest guest 6 Sep 16 18:29 Desktop
drwxr-x-- 2 guest guest 10 Sep 16 22:14 dir1
drwxr-x-- 2 guest guest 6 Sep 16 18:29 Documents
drwxr-x-- 2 guest guest 6 Sep 16 18:29 Downloads
drwxr-x-- 2 guest guest 6 Sep 16 18:29 Music
drwxr-x-- 2 guest guest 188 Sep 16 22:13 Pictures
drwxr-x-- 2 guest guest 6 Sep 16 18:29 Public
drwxr-x-- 1 guest guest 109 Sep 16 23:14 script_lab02.sh
drwxr-x-- 2 guest guest 6 Sep 16 18:29 Templates
drwxr-x-- 2 guest guest 6 Sep 16 18:29 Videos
[guest@mkmain ~]$ ./script_lab02.sh
Starting main's script for checking file usability:
1. Checking if file exist
2. Checking if file is numeric code 000
=====
1. Trying to create file...
touch: cannot touch '/home/guest/dir1/file_temp1': Permission denied
=====
2. Trying to remove file...
rm: cannot remove '/home/guest/dir1/file_temp1': Permission denied
=====
3. Trying to write to file...
./script_lab02.sh: line 14: /home/guest/dir1/file1: Permission denied
=====
4. Trying to read file...
cat: /home/guest/dir1/file1: Permission denied
=====
5. Trying to change directory...
./script_lab02.sh: line 20: cd '/home/guest/dir1': Permission denied
=====
6. Trying to view files in directory...
ls: cannot access '/home/guest/dir1/file1': Permission denied
total 0
=====
7. Trying to rename file...
mv: failed to access '/home/guest/dir1/file_temp2': Permission denied
mv: failed to access '/home/guest/dir1/file1': Permission denied
=====
8. Trying to change ownership...
chown: cannot access '/home/guest/dir1/file1': Permission denied
```

```
[questionmarkm-35] chmod 200 dir1
[questionmarkm-35] ll
total 4
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Desktop
d-w----- 2 guest guest 19 Sep 16 21:14 dir1
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Documents
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Downloads
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Music
drwxr-xr-x 2 guest guest 108 Sep 16 21:21 Pictures
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Public
-rw-r--r-- 1 guest guest 1209 Sep 16 21:14 public_lab02.sh
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Templates
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Videos
[questionmarkm-35] ./public_lab02.sh
Starting makin's script for checking file usability:
Enter file: chmod current numeric code: 066
=====
1. Trying to create file...
touch: cannot touch '/home/guest/dir1/file_temp1': Permission denied
=====
2. Trying to remove file...
rm: cannot remove '/home/guest/dir1/file_temp1': Permission denied
=====
3. Trying to write to file...
./script_lab02.sh: line 14: /home/guest/dir1/file1: Permission denied
=====
4. Trying to read file...
cat: /home/guest/dir1/file1: Permission denied
=====
5. Trying to change directory...
./script_lab02.sh: line 28: cd: /home/guest/dir1: Permission denied
=====
6. Trying to view files in directory...
ls: cannot open directory '/home/guest/dir1': Permission denied
=====
7. Trying to rename file...
mv: failed to access '/home/guest/dir1/file_temp2': Permission denied
mv: failed to access '/home/guest/dir1/file1': Permission denied
=====
8. Trying to change attributes...
chmod: cannot access '/home/guest/dir1/file1': Permission denied
=====
```

## Bash-скрипт. Выполнение. 2

```
guest@guest-mak: ~ $ chmod 600 dir1
[guest@guest-mak: ~]$ ll
total 4
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Desktop
drwxr-xr-x 2 guest guest 19 Sep 16 21:14 dir1
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Documents
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Downloads
drwxr-xr-x 2 guest guest 100 Sep 16 21:21 Pictures
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Public
-rwx--w--w- 1 guest guest 1299 Sep 16 21:14 _script_lab02.sh
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Templates
drwxr-xr-x 2 guest guest 6 Sep 16 18:29 Videos
[guest@guest: ~]$ ./script_lab02.sh
cat: /home/guest/dir1/file1: Permission denied
cat: trying to check for shellcode: Permission denied
file: file1 chmod denied numeric code: 000
=====
L. Trying to create file...
touch: cannot touch '/home/guest/dir1/file_temp1': Permission denied
=====
M. Trying to remove file...
rm: cannot remove '/home/guest/dir1/file_temp1': Permission denied
=====
N. Trying to write to file...
./script_lab02.sh: line 14: /home/guest/dir1/file1: Permission denied
=====
O. Trying to read file...
cat: /home/guest/dir1/file1: Permission denied
=====
P. Trying to change directory...
./script_lab02.sh: line 20: cd /home/guest/dir1: Permission denied
=====
Q. Trying to view files in directory...
ls: cannot access '/home/guest/dir1/file1': Permission denied
total 0
=====
R. Trying to rename file...
mv: failed to access '/home/guest/dir1/file_temp2': Permission denied
mv: failed to access '/home/guest/dir1/file1': Permission denied
=====
S. Trying to change attributes...
chmod: cannot access '/home/guest/dir1/file1': Permission denied
=====
```

```
[guest@makim ~]$ chmod 400 dir1/file1
[guest@makim ~]$ ll dir1
total 4
-r-----. 1 guest guest 5 Sep 16 21:18 file1
[guest@makim ~]$ chmod 000 dir1
[guest@makim ~]$ ll
total 4
drwxr-x--x 2 guest guest 6 Sep 16 18:29 Desktop
drwxr-x--x 2 guest guest 6 Sep 16 21:20 dir1
drwxr-x--x 2 guest guest 6 Sep 16 18:29 Documents
drwxr-x--x 2 guest guest 6 Sep 16 18:29 Downloads
drwxr-x--x 2 guest guest 188 Sep 16 21:21 Pictures
drwxr-x--x 2 guest guest 6 Sep 16 18:29 Public
drwxr-x--x 1 guest guest 6 Sep 16 21:14 script_lab02.sh
drwxr-x--x 2 guest guest 6 Sep 16 18:29 Templates
drwxr-x--x 2 guest guest 6 Sep 16 18:29 Videos
[guest@makim ~]$ ./script_lab02.sh
Starting makim's script for checking file usability:
Enter file chmod current numeric code: 400
=====
1. Trying to create file...
touch: cannot touch '/home/guest/dir1/file_temp1': Permission denied
=====
2. Trying to remove file...
rm: cannot remove '/home/guest/dir1/file_temp1': Permission denied
=====
3. Trying to write to file...
./script_lab02.sh: line 14: /home/guest/dir1/file1: Permission denied
=====
4. Trying to read file...
cat: /home/guest/dir1/file1: Permission denied
=====
5. Trying to change directory...
./script_lab02.sh: line 20: cd: /home/guest/dir1: Permission denied
=====
6. Trying to open file in directory...
ls: cannot open directory '/home/guest/dir1': Permission denied
=====
7. Trying to rename file...
mv: failed to access '/home/guest/dir1/file_temp2': Permission denied
mv: failed to access '/home/guest/dir1/file1': Permission denied
=====
8. Trying to change attributes...
chmod: cannot access '/home/guest/dir1/file1': Permission denied
```

## Результирующая таблица 1.

Пра- ва д.	Пра- ва ф.	Со- зда- ние ф.	Уда- ле- ние ф.	За- пись в ф.	Чте- ние ф.	Сме- на д.	Про- смотр ф. в д.	Пере- име- нов. д.	Сме- на ф.
d----	----	-	-	-	-	-	-	-	-
(000)	(000)								
d----	-x--	-	-	-	-	-	-	-	-
(000)	(100)								
d----	-	-	-	-	-	-	-	-	-
(000)	w---								
	(200)								
d----	-	-	-	-	-	-	-	-	-
(000)	wx--								
	(300)								

## Результирующая таблица 2.

Операция	Мин. права на д.	Мин. права на ф.
Создание файла	d-wx-- (300)	---- (000)
Удаление файла	d-wx-- (300)	---- (000)
Чтение файла	d-x-- (100)	r--- (400)
Запись в файл	d-x-- (100)	-w--- (200)
Переименование файла	d-wx-- (300)	---- (000)
Создание поддиректории	d-wx-- (300)	---- (000)
Удаление поддиректории	d-wx-- (300)	---- (000)

## Результаты

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# Результаты

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- Выполнены все необходимые действия.

## Вывод

Получил практические навыки работы в консоли с атрибутами файлов, закрепил теоретические основы дискреционного разграничения доступа в современных системах с открытым кодом на базе ОС Linux.