

# Лабораторная работа №4

Основы информационной безопасности

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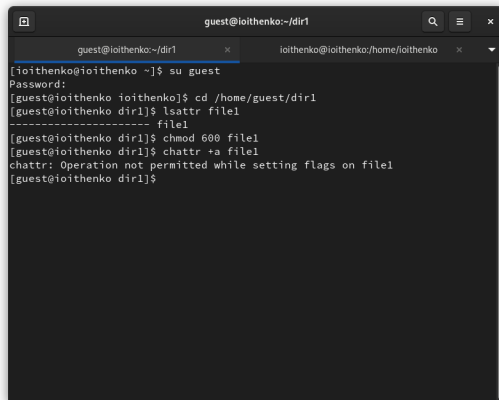
- Ищенко Ирина Олеговна
- НПИбд-02-22

Получение практических навыков работы в консоли с расширенными атрибутами файлов.

## Выполнение лабораторной работы

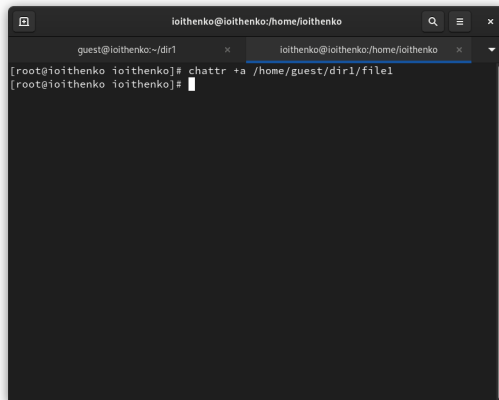
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# Неудачное добавление атрибута



```
guest@ioithenko:~/dir1
[ioithenko@ioithenko ~]$ su guest
Password:
[guest@ioithenko ioithenko]$ cd /home/guest/dir1
[guest@ioithenko dir1]$ lsattr file1
----- file1
[guest@ioithenko dir1]$ chmod 600 file1
[guest@ioithenko dir1]$ chattr +a file1
chattr: Operation not permitted while setting flags on file1
[guest@ioithenko dir1]$
```

Рис. 1: Отказ добавления атрибута

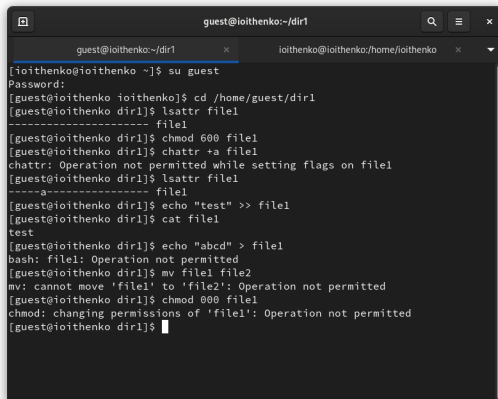


A terminal window with a dark background. The title bar shows 'ioithenko@ioithenko:/home/ioithenko'. There are two tabs: 'guest@ioithenko:~/dir1' and 'ioithenko@ioithenko:/home/ioithenko'. The active tab is the second one. The terminal shows the following commands and output:

```
[root@ioithenko ioithenko]# chattr +a /home/guest/dir1/file1  
[root@ioithenko ioithenko]#
```

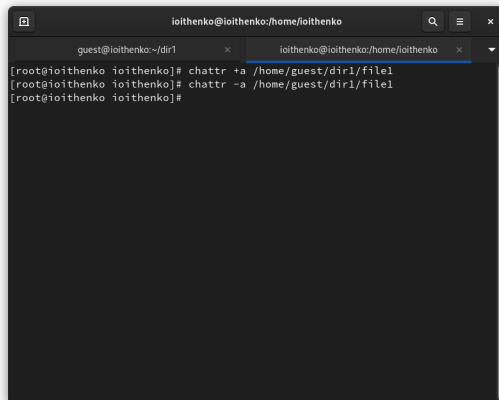
Рис. 2: Добавление атрибута

# Выполнимые и невыполнимые команды

A terminal window with a dark background and light text. The title bar shows 'guest@ioithenko:~/dir1'. There are two tabs: 'guest@ioithenko:~/dir1' (active) and 'ioithenko@ioithenko:/home/ioithenko'. The terminal shows a sequence of commands and their outputs. The user switches to 'guest' using 'su guest', enters a password, and then runs several commands in the '/home/guest/dir1' directory. The commands include 'lsattr file1', 'chmod 600 file1', 'chattr +a file1' (which fails), 'cat file1', 'echo "test" >> file1', 'echo "abcd" > file1' (which fails), 'mv file1 file2' (which fails), and 'chmod 000 file1' (which fails).

```
guest@ioithenko:~/dir1
[ioithenko@ioithenko ~]$ su guest
Password:
[guest@ioithenko ioithenko]$ cd /home/guest/dir1
[guest@ioithenko dir1]$ lsattr file1
----- file1
[guest@ioithenko dir1]$ chmod 600 file1
[guest@ioithenko dir1]$ chattr +a file1
chattr: Operation not permitted while setting flags on file1
[guest@ioithenko dir1]$ lsattr file1
----a----- file1
[guest@ioithenko dir1]$ echo "test" >> file1
[guest@ioithenko dir1]$ cat file1
test
[guest@ioithenko dir1]$ echo "abcd" > file1
bash: file1: Operation not permitted
[guest@ioithenko dir1]$ mv file1 file2
mv: cannot move 'file1' to 'file2': Operation not permitted
[guest@ioithenko dir1]$ chmod 000 file1
chmod: changing permissions of 'file1': Operation not permitted
[guest@ioithenko dir1]$
```

Рис. 3: Выполнение команд



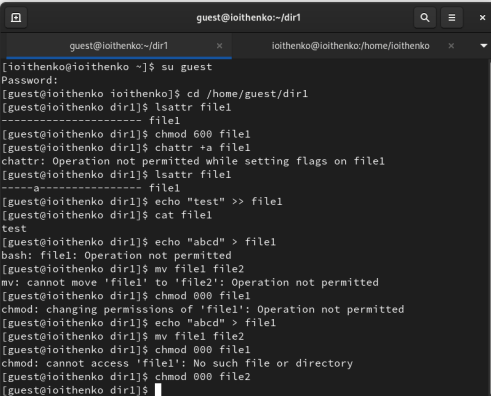
A terminal window with two tabs. The active tab is titled 'ioithenko@ioithenko:/home/ioithenko'. The terminal shows the following commands and output:

```
guest@ioithenko:~/dir1 x ioithenko@ioithenko:/home/ioithenko x
[root@ioithenko ioithenko]# chattr +a /home/guest/dir1/file1
[root@ioithenko ioithenko]# chattr -a /home/guest/dir1/file1
[root@ioithenko ioithenko]#
```

Рис. 4: Удаление атрибута

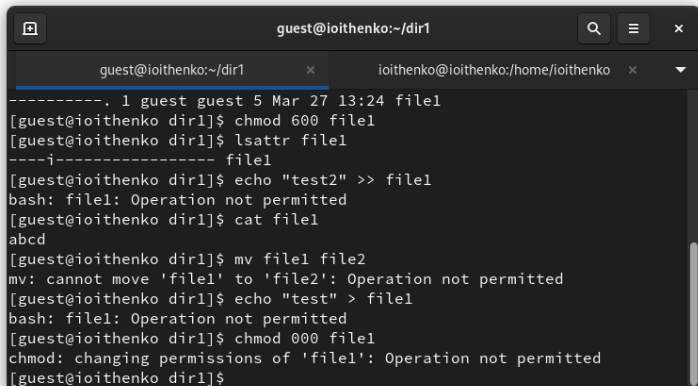


## Выполнение команд без атрибута



```
guest@ioithenko:~/dir1
guest@ioithenko:~/dir1 x ioithenko@ioithenko:/home/ioithenko
[ioithenko@ioithenko ~]$ su guest
Password:
[guest@ioithenko ioithenko]$ cd /home/guest/dir1
[guest@ioithenko dir1]$ lsattr file1
----- file1
[guest@ioithenko dir1]$ chmod 600 file1
[guest@ioithenko dir1]$ chatter +a file1
chattr: Operation not permitted while setting flags on file1
[guest@ioithenko dir1]$ lsattr file1
-----a----- file1
[guest@ioithenko dir1]$ echo "test" >> file1
[guest@ioithenko dir1]$ cat file1
test
[guest@ioithenko dir1]$ echo "abcd" > file1
bash: file1: Operation not permitted
[guest@ioithenko dir1]$ mv file1 file2
mv: cannot move 'file1' to 'file2': Operation not permitted
[guest@ioithenko dir1]$ chmod 000 file1
chmod: changing permissions of 'file1': Operation not permitted
[guest@ioithenko dir1]$ echo "abcd" > file1
[guest@ioithenko dir1]$ mv file1 file2
[guest@ioithenko dir1]$ chmod 000 file1
chmod: cannot access 'file1': No such file or directory
[guest@ioithenko dir1]$ chmod 000 file2
[guest@ioithenko dir1]$
```


Рис. 5: Выполнение команд без атрибута



A terminal window titled "guest@ioithenko:~/dir1" with search, menu, and close buttons. It contains two tabs: "guest@ioithenko:~/dir1" (active) and "ioithenko@ioithenko:/home/ioithenko". The terminal output shows a series of commands and their results:

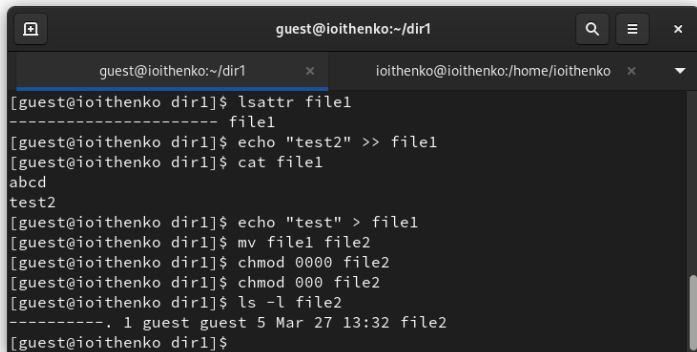
```
-----. 1 guest guest 5 Mar 27 13:24 file1
[guest@ioithenko dir1]$ chmod 600 file1
[guest@ioithenko dir1]$ lsattr file1
----i----- file1
[guest@ioithenko dir1]$ echo "test2" >> file1
bash: file1: Operation not permitted
[guest@ioithenko dir1]$ cat file1
abcd
[guest@ioithenko dir1]$ mv file1 file2
mv: cannot move 'file1' to 'file2': Operation not permitted
[guest@ioithenko dir1]$ echo "test" > file1
bash: file1: Operation not permitted
[guest@ioithenko dir1]$ chmod 000 file1
chmod: changing permissions of 'file1': Operation not permitted
[guest@ioithenko dir1]$
```

Рис. 6: Выполнение команд с атрибутом



```
ioithenko@ioithenko:/home/ioithenko
guest@ioithenko:~/dir1
ioithenko@ioithenko:/home/ioithenko
[root@ioithenko ioithenko]# chattr +i /home/guest/dir1/file1
[root@ioithenko ioithenko]# chattr -i /home/guest/dir1/file1
[root@ioithenko ioithenko]#
```

Рис. 7: Изменение атрибута

A terminal window with a dark background. The title bar shows 'guest@ioithenko:~/dir1' and standard window controls. Below the title bar, there are two tabs: 'guest@ioithenko:~/dir1' (active) and 'ioithenko@ioithenko:/home/ioithenko'. The terminal content shows a series of commands and their outputs: 'lsattr file1' followed by '----- file1', 'echo "test2" >> file1', 'cat file1' showing 'abcd' and 'test2' on separate lines, 'echo "test" > file1', 'mv file1 file2', 'chmod 0000 file2', 'chmod 000 file2', 'ls -l file2' showing a file with permissions '-rwxr-xr-x', and finally '-----, 1 guest guest 5 Mar 27 13:32 file2'.

```
guest@ioithenko:~/dir1
[guest@ioithenko dir1]$ lsattr file1
----- file1
[guest@ioithenko dir1]$ echo "test2" >> file1
[guest@ioithenko dir1]$ cat file1
abcd
test2
[guest@ioithenko dir1]$ echo "test" > file1
[guest@ioithenko dir1]$ mv file1 file2
[guest@ioithenko dir1]$ chmod 0000 file2
[guest@ioithenko dir1]$ chmod 000 file2
[guest@ioithenko dir1]$ ls -l file2
-rwxr-xr-x. 1 guest guest 5 Mar 27 13:32 file2
[guest@ioithenko dir1]$
```

Рис. 8: Выполнение команд без атрибута

В результате выполнения работы я повысила свои навыки использования интерфейса командой строки (CLI), познакомились на примерах с тем, как используются основные и расширенные атрибуты при разграничении доступа. Имела возможность связать теорию дискреционного разделения доступа (дискреционная политика безопасности) с её реализацией на практике в ОС Linux. Опробовала действие на практике расширенных атрибутов «a» и «i».