

# Дискреционное разграничение прав в Linux. Основные атрибуты

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# Цели и задачи работы

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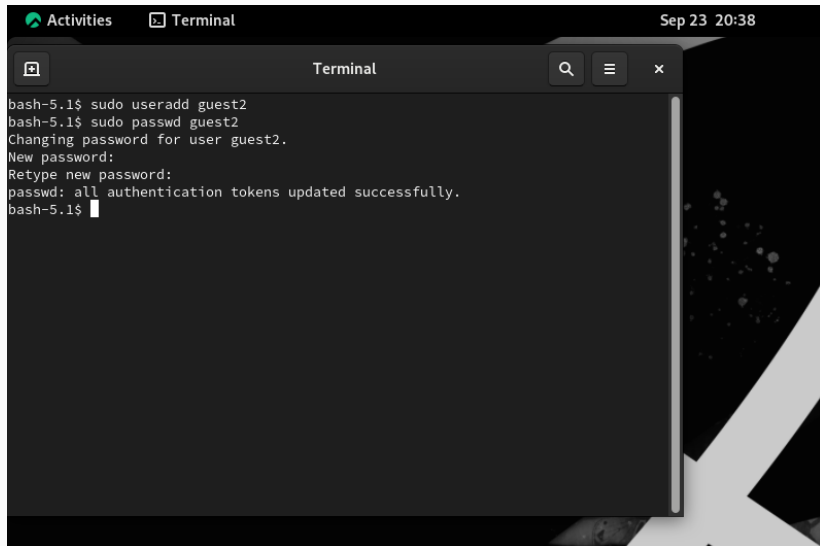
## Цель лабораторной работы

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

# **Процесс выполнения лабораторной работы**

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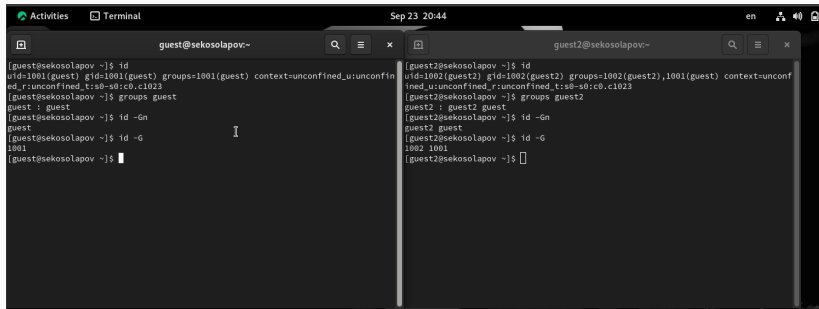
# Создаём нового пользователя



The image shows a terminal window titled "Terminal" with a search icon, a menu icon, and a close icon. The terminal output is as follows:

```
bash-5.1$ sudo useradd guest2
bash-5.1$ sudo passwd guest2
Changing password for user guest2.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
bash-5.1$
```

# Определяем UID и группу двух пользователей



The image shows two terminal windows side-by-side. The left window is titled 'guest@sekosolapov:~' and the right window is titled 'guest2@sekosolapov:~'. Both windows show the output of the 'id' and 'groups' commands for their respective users.

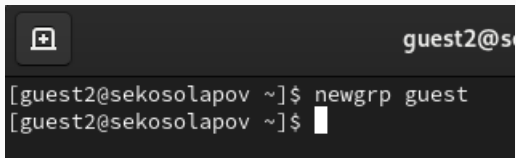
```
guest@sekosolapov ~]$ id
uid=1001(guest) gid=1001(guest) groups=1001(guest) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
guest@sekosolapov ~]$ groups guest
guest : guest
guest@sekosolapov ~]$ id -Gn
guest
guest@sekosolapov ~]$ id -G
1001
guest@sekosolapov ~]$
```

```
guest2@sekosolapov ~]$ id
uid=1002(guest2) gid=1002(guest2) groups=1002(guest2),1001(guest) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
guest2@sekosolapov ~]$ groups guest2
guest2 : guest2 guest
guest2@sekosolapov ~]$ id -Gn
guest2 guest
guest2@sekosolapov ~]$ id -G
1002 1001
guest2@sekosolapov ~]$
```

Рис. 2: Информация о пользователях

```
guest:x:1001:guest2  
guest2:x:1002:  
[guest@sekosolapov ~]$
```

**Рис. 3:** Содержимое файла /etc/group

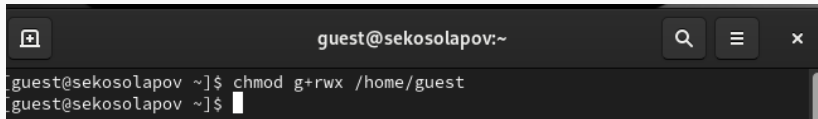


```
guest2@s  
[guest2@sekosolapov ~]$ newgrp guest  
[guest2@sekosolapov ~]$
```

**Рис. 4:** Регистрация в группе



# Атрибуты директории

A terminal window with a dark background. The title bar shows a window icon, the text 'guest@sekosolapov:~', and search, menu, and close buttons. The terminal content shows two lines: 'guest@sekosolapov ~]\$ chmod g+rwX /home/guest' and 'guest@sekosolapov ~]\$' followed by a cursor.

```
guest@sekosolapov ~]$ chmod g+rwX /home/guest
guest@sekosolapov ~]$
```

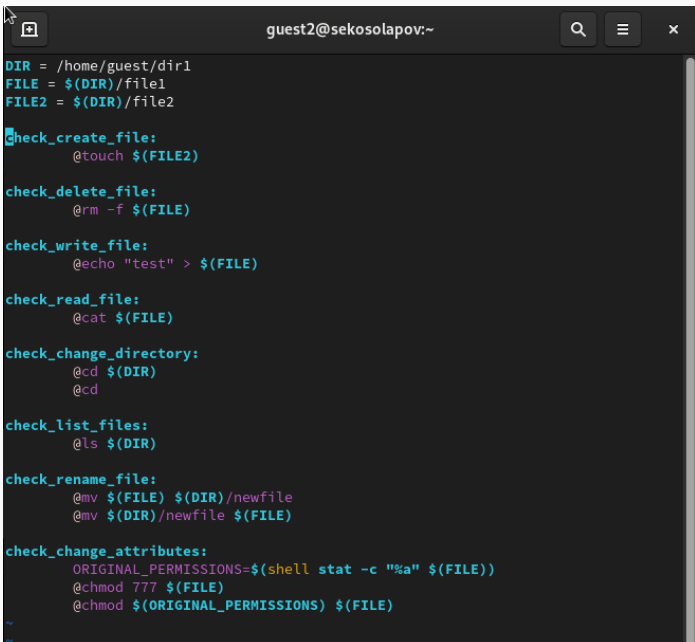
**Рис. 5:** Добавление атрибутов в директории

# Makefile 1

```
guest@sekosolapov:~  
DIR=/home/guest/dir1  
FILE=$(DIR)/file1  
D_P=  
F_P=  
  
create:  
    chmod 777 $(DIR)  
    rm -rf $(DIR)  
    mkdir $(DIR)  
    touch $(FILE)  
    chmod $(F_P) $(FILE)  
    ls -al /home/guest/dir1 | grep file1  
    chmod $(D_P) $(DIR)  
    ls -al /home/guest | grep dir1
```

"Makefile" 14L, 233B 14,31-38 All

## Makefile 2

A terminal window with a dark background and light-colored text. The title bar at the top shows 'guest2@sekosolapov:~' and standard window controls (search, menu, close). The terminal content displays several Makefile rules, each starting with a target name followed by a colon and then a list of commands indented with tabs. The rules are: 'check\_create\_file' with '@touch \$(FILE2)', 'check\_delete\_file' with '@rm -f \$(FILE)', 'check\_write\_file' with '@echo "test" > \$(FILE)', 'check\_read\_file' with '@cat \$(FILE)', 'check\_change\_directory' with '@cd \$(DIR)' and '@cd', 'check\_list\_files' with '@ls \$(DIR)', 'check\_rename\_file' with '@mv \$(FILE) \$(DIR)/newfile' and '@mv \$(DIR)/newfile \$(FILE)', and 'check\_change\_attributes' with 'ORIGINAL\_PERMISSIONS=\$(shell stat -c "%a" \$(FILE))', '@chmod 777 \$(FILE)', and '@chmod \$(ORIGINAL\_PERMISSIONS) \$(FILE)'.

```
DIR = /home/guest/dir1
FILE = $(DIR)/file1
FILE2 = $(DIR)/file2

check_create_file:
    @touch $(FILE2)

check_delete_file:
    @rm -f $(FILE)

check_write_file:
    @echo "test" > $(FILE)

check_read_file:
    @cat $(FILE)

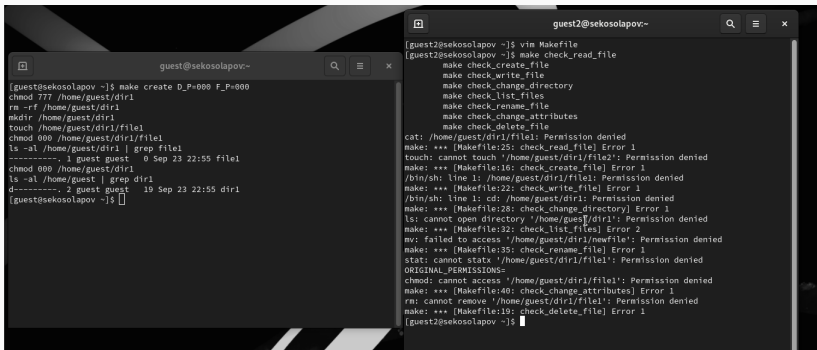
check_change_directory:
    @cd $(DIR)
    @cd

check_list_files:
    @ls $(DIR)

check_rename_file:
    @mv $(FILE) $(DIR)/newfile
    @mv $(DIR)/newfile $(FILE)

check_change_attributes:
    ORIGINAL_PERMISSIONS=$(shell stat -c "%a" $(FILE))
    @chmod 777 $(FILE)
    @chmod $(ORIGINAL_PERMISSIONS) $(FILE)
```

# Определяем права для группы



The image shows two terminal windows from the user 'guest2@sekosolapov'. The left window shows the creation of a directory structure and the execution of a 'make' command. The right window shows the output of the 'make' command, which includes a list of checks and several 'Permission denied' errors.

```
guest@sekosolapov:~$ make create D_P=000 F_P=000
chmod 777 /home/guest/dir1
rm -rf /home/guest/dir1
mkdir /home/guest/dir1
touch /home/guest/dir1/file1
chmod 000 /home/guest/dir1/file1
ls -al /home/guest/dir1 | grep file1
-----, 1 guest guest  0 Sep 23 22:55 file1
chmod 000 /home/guest/dir1
ls -al /home/guest | grep dir1
d-----, 2 guest guest 19 Sep 23 22:55 dir1
[guest@sekosolapov ~]$
```

```
guest2@sekosolapov:~$ vim Makefile
[guest2@sekosolapov ~]$ make check_read_file
make check_create_file
make check_write_file
make check_change_directory
make check_list_files
make check_rename_file
make check_change_attributes
make check_delete_file
cat: /home/guest/dir1/file1: Permission denied
make: *** [Makefile:25: check_read_file] Error 1
touch: cannot touch '/home/guest/dir1/file2': Permission denied
make: *** [Makefile:16: check_create_file] Error 1
/bin/sh: line 1: /home/guest/dir1/file1: Permission denied
make: *** [Makefile:22: check_write_file] Error 1
/bin/sh: line 1: cd: /home/guest/dir1: Permission denied
make: *** [Makefile:28: check_change_directory] Error 1
ls: cannot open directory '/home/guest/dir1': Permission denied
make: *** [Makefile:32: check_list_files] Error 2
mv: failed to access '/home/guest/dir1/newfile': Permission denied
make: *** [Makefile:35: check_rename_file] Error 1
stat: cannot statx '/home/guest/dir1/file1': Permission denied
ORIGINAL_PERMISSIONS=
chmod: cannot access '/home/guest/dir1/file1': Permission denied
make: *** [Makefile:40: check_change_attributes] Error 1
rm: cannot remove '/home/guest/dir1/file1': Permission denied
make: *** [Makefile:19: check_delete_file] Error 1
[guest2@sekosolapov ~]$
```

Рис. 8: Проверка прав для группы

# Заполнение таблицы

Операция	права на директорию	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)

Рис. 9: Минимальные права

## **Выводы по проделанной работе**

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