

Лабораторная работа №2

Управление пользователями и группами

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Цели и задачи

- Получить представление о работе с учётными записями пользователей и группами пользователей в операционной системе типа Linux.
1. Прочитайте справочное описание man по командам ls, whoami, id, groups, su, sudo, passwd, vi, visudo, useradd, usermod, userdel, groupadd, groupdel.
 2. Выполните действия по переключению между учётными записями пользователей, по управлению учётными записями пользователей (раздел 2.4.1).
 3. Выполните действия по созданию пользователей и управлению их учётными записями (раздел 2.4.2).
 4. Выполните действия по работе с группами пользователей (раздел 2.4.3).

Материалы и методы

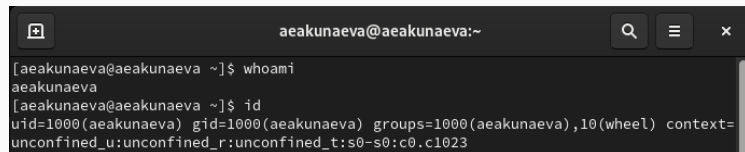
- Linux (дистрибутив Rocky 9.6)
- Linux Fedora Workstation (Markdown)
- Oracle VirtualBox

Выполнение лабораторной работы

Определение информации об учётной записи пользователя

whoami

id

A terminal window titled 'aeakunaeva@aeakunaeva:~' with search, menu, and close icons. It shows the execution of 'whoami' and 'id' commands. The 'whoami' command outputs 'aeakunaeva'. The 'id' command outputs 'uid=1000(aeakunaeva) gid=1000(aeakunaeva) groups=1000(aeakunaeva),10(wheel) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023'.

```
[aeakunaeva@aeakunaeva ~]$ whoami
aeakunaeva
[aeakunaeva@aeakunaeva ~]$ id
uid=1000(aeakunaeva) gid=1000(aeakunaeva) groups=1000(aeakunaeva),10(wheel) context=
unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
```

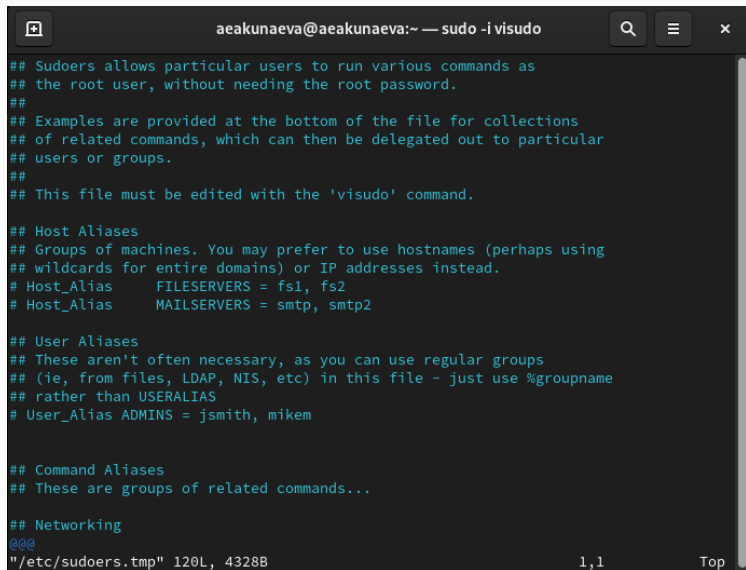
su

id

su aeakunaeva

```
[aeakunaeva@aeakunaeva ~]$ su
Password:
[root@aeakunaeva aeakunaeva]# id
uid=0(root) gid=0(root) groups=0(root) context=unconfined_u:unconfined_r:unconfined_
t:s0-s0:c0.c1023
[root@aeakunaeva aeakunaeva]# su aeakunaeva
[aeakunaeva@aeakunaeva ~]$ sudo -i visudo
```

visudo и текстовый редактор vi



The screenshot shows a terminal window with the title bar "aeakunaeva@aeakunaeva:~ — sudo -i visudo". The window contains the text of the sudoers file, which defines permissions for various users and groups. The text is as follows:

```
## Sudoers allows particular users to run various commands as
## the root user, without needing the root password.
##
## Examples are provided at the bottom of the file for collections
## of related commands, which can then be delegated out to particular
## users or groups.
##
## This file must be edited with the 'visudo' command.

## Host Aliases
## Groups of machines. You may prefer to use hostnames (perhaps using
## wildcards for entire domains) or IP addresses instead.
# Host_Alias      FILESERVERS = fs1, fs2
# Host_Alias      MAILSERVERS = smtp, smtp2

## User Aliases
## These aren't often necessary, as you can use regular groups
## (ie, from files, LDAP, NIS, etc) in this file - just use %groupname
## rather than USERALIASES
# User_Alias      ADMINS = jsmith, mikem

## Command Aliases
## These are groups of related commands...

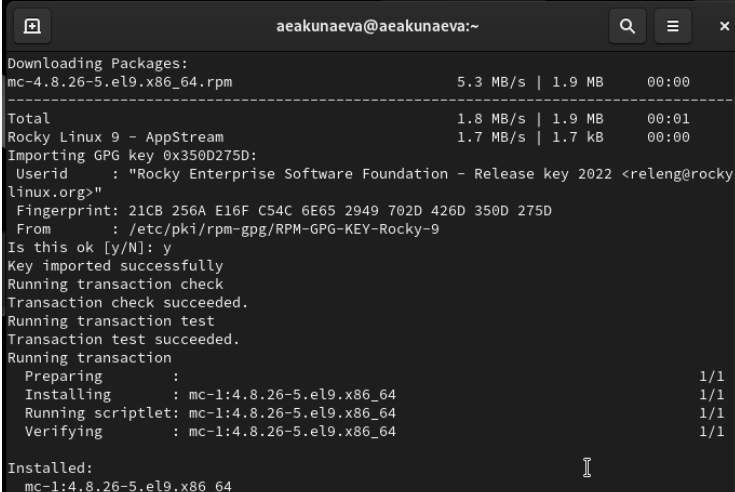
## Networking
@@@
```

At the bottom of the terminal window, the status bar shows the file path and line/character count: `"/etc/sudoers.tmp" 120L, 4328B`. On the right side of the status bar, the cursor position is shown as `1,1` and the word `Top` is displayed.

Установка mcedit и открытие visudo

```
sudo -i visudo
```

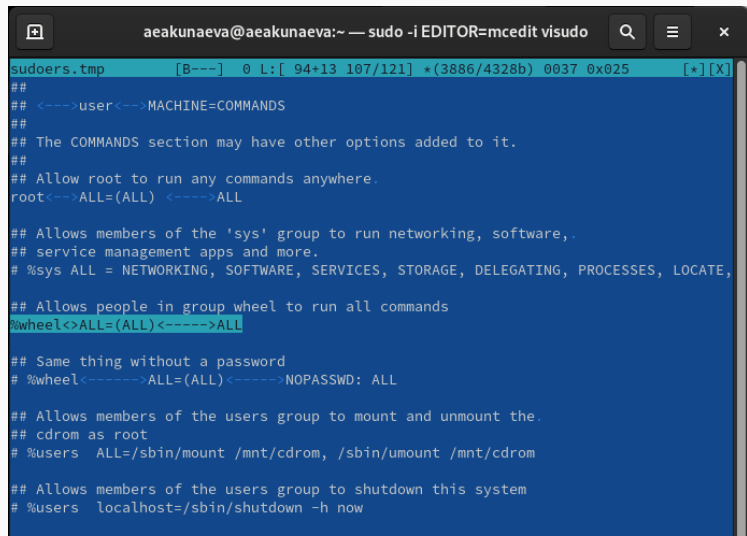
```
sudo -i EDITOR=mcedit visudo
```



```
aeakunaeva@aeakunaeva:~  
Downloading Packages:  
mc-4.8.26-5.el9.x86_64.rpm          5.3 MB/s | 1.9 MB      00:00  
-----  
Total                             1.8 MB/s | 1.9 MB      00:01  
Rocky Linux 9 - AppStream          1.7 MB/s | 1.7 kB      00:00  
Importing GPG key 0x350D275D:  
  Userid   : "Rocky Enterprise Software Foundation - Release key 2022 <releng@rocky  
linux.org>"  
  Fingerprint: 21CB 256A E16F C54C 6E65 2949 702D 426D 350D 275D  
  From      : /etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-9  
Is this ok [y/N]: y  
Key imported successfully  
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
  Preparing      :                                1/1  
  Installing     : mc-1:4.8.26-5.el9.x86_64      1/1  
  Running scriptlet: mc-1:4.8.26-5.el9.x86_64      1/1  
  Verifying      : mc-1:4.8.26-5.el9.x86_64      1/1  
  
Installed:  
mc-1:4.8.26-5.el9.x86_64
```

Файл /etc/sudoers и группа wheel

```
%wheel  ALL=(ALL)  ALL
```



```
aeakunaeva@aeakunaeva:~ — sudo -i EDITOR=mcedit visudo
sudoers.tmp [B---] 0 L:[ 94+13 107/121] *(3886/4328b) 0037 0x025 [*][X]
##
## <--->user<--->MACHINE=COMMANDS
##
## The COMMANDS section may have other options added to it.
##
## Allow root to run any commands anywhere.
root<-->ALL=(ALL) <---->ALL

## Allows members of the 'sys' group to run networking, software,
## service management apps and more.
# %sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LOCATE,

## Allows people in group wheel to run all commands
%wheel<>ALL=(ALL)<----->ALL

## Same thing without a password
# %wheel<----->ALL=(ALL)<----->NOPASSWD: ALL

## Allows members of the users group to mount and unmount the
## cdrom as root
# %users ALL=/sbin/mount /mnt/cdrom, /sbin/umount /mnt/cdrom

## Allows members of the users group to shutdown this system
# %users localhost=/sbin/shutdown -h now
```

Создание нового пользователя alice

```
bob@aeakunaeva:/home/aeakunaeva
[aeakunaeva@aeakunaeva ~]$ sudo -i useradd -G wheel alice
[aeakunaeva@aeakunaeva ~]$ id alice
uid=1001(alice) gid=1001(alice) groups=1001(alice),10(wheel)
[aeakunaeva@aeakunaeva ~]$ sudo -i passwd alice
Changing password for user alice.
New password:
BAD PASSWORD: The password is a palindrome
Retype new password:
passwd: all authentication tokens updated successfully.
[aeakunaeva@aeakunaeva ~]$ su alice
Password:
[alice@aeakunaeva aeakunaeva]$ sudo useradd bob
```

Создание пользователя bob вне wheel

```
[alice@aeakunaeva aeakunaeva]$ sudo useradd bob
```

```
We trust you have received the usual lecture from the local System Administrator. It usually boils down to these three things:
```

- #1) Respect the privacy of others.
- #2) Think before you type.
- #3) With great power comes great responsibility.

```
[sudo] password for alice:
```

```
[alice@aeakunaeva aeakunaeva]$ sudo passwd bob
```

```
Changing password for user bob.
```

```
New password:
```

```
BAD PASSWORD: The password is a palindrome
```

```
Retype new password:
```

```
passwd: all authentication tokens updated successfully.
```

```
[alice@aeakunaeva aeakunaeva]$ id bob
```

```
uid=1002(bob) gid=1002(bob) groups=1002(bob)
```

```
[alice@aeakunaeva aeakunaeva]$ su bob
```

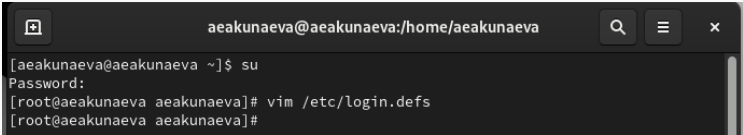
```
Password:
```

```
[bob@aeakunaeva aeakunaeva]$
```

Открытие файла в vim через суперпользователя

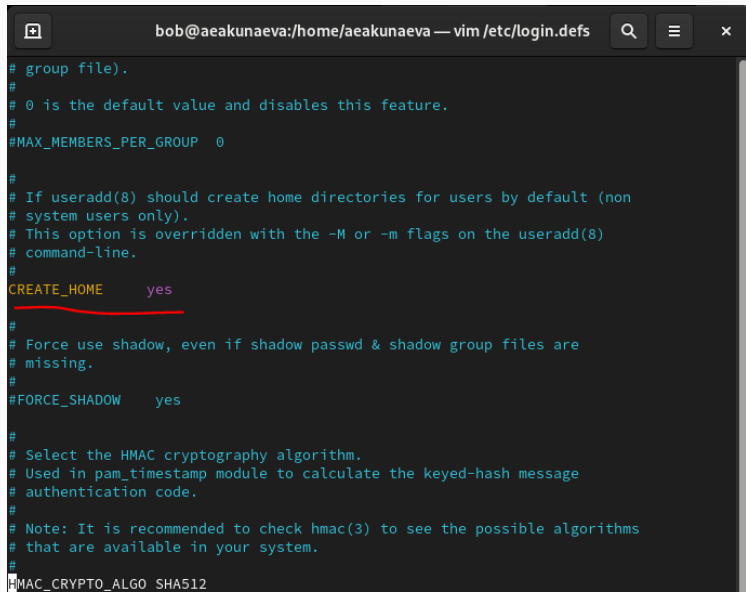
su

vim /etc/login.defs

A terminal window with a dark background. The title bar shows 'aeakunaeva@aeakunaeva:/home/aeakunaeva' and standard window controls. The terminal content shows a user switching to root with 'su', entering a password, and then running 'vim /etc/login.defs' as root.

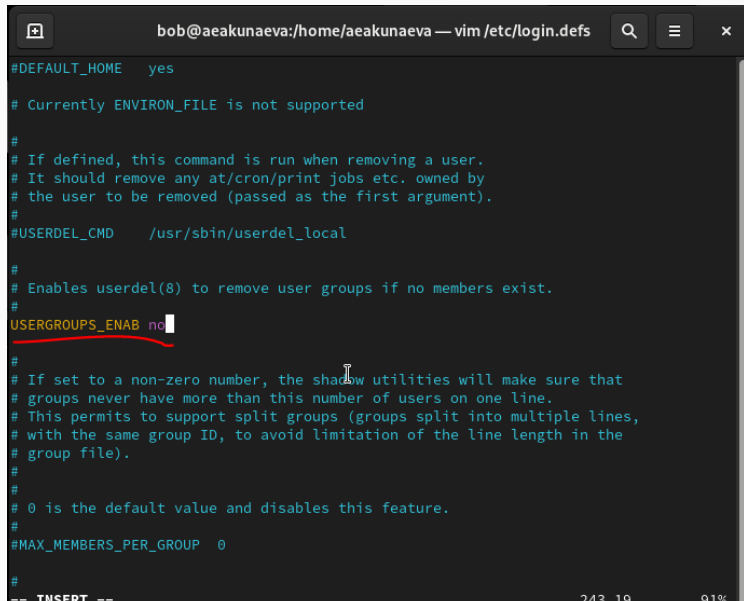
```
aeakunaeva@aeakunaeva:/home/aeakunaeva
[aeakunaeva@aeakunaeva ~]$ su
Password:
[root@aeakunaeva aeakunaeva]# vim /etc/login.defs
[root@aeakunaeva aeakunaeva]#
```


Редактирование файла /etc/login.defs: CREATE_HOME yes



```
bob@aeakunaeva:/home/aeakunaeva — vim /etc/login.defs
# group file).
#
# 0 is the default value and disables this feature.
#
#MAX_MEMBERS_PER_GROUP 0
#
# If useradd(8) should create home directories for users by default (non
# system users only).
# This option is overridden with the -M or -m flags on the useradd(8)
# command-line.
#
CREATE_HOME      yes
#
# Force use shadow, even if shadow passwd & shadow group files are
# missing.
#
#FORCE_SHADOW    yes
#
# Select the HMAC cryptography algorithm.
# Used in pam_timestamp module to calculate the keyed-hash message
# authentication code.
#
# Note: It is recommended to check hmac(3) to see the possible algorithms
# that are available in your system.
#
HMAC_CRYPT0_ALGO SHA512
```

Редактирование файла /etc/login.defs: USERGROUPS_ENAB no



```
bob@aeakunaeva:/home/aeakunaeva — vim /etc/login.defs
#DEFAULT_HOME    yes

# Currently ENVIRON_FILE is not supported

#
# If defined, this command is run when removing a user.
# It should remove any at/cron/print jobs etc. owned by
# the user to be removed (passed as the first argument).
#
#USERDEL_CMD     /usr/sbin/userdel_local

#
# Enables userdel(8) to remove user groups if no members exist.
#
USERGROUPS_ENAB no

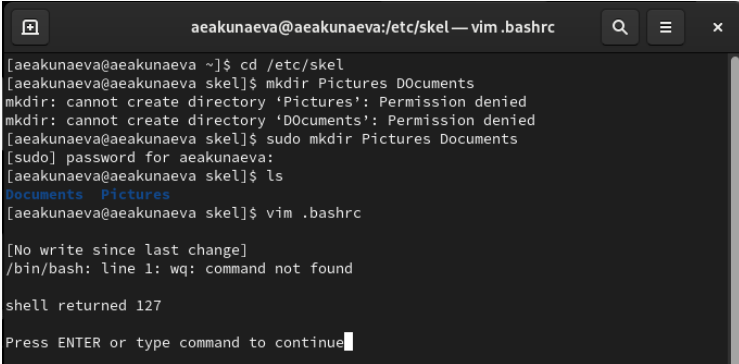
#
# If set to a non-zero number, the shadow utilities will make sure that
# groups never have more than this number of users on one line.
# This permits to support split groups (groups split into multiple lines,
# with the same group ID, to avoid limitation of the line length in the
# group file).
#
#
# 0 is the default value and disables this feature.
#
#MAX_MEMBERS_PER_GROUP 0

#
-- INSERT --
243, 19
91%
```

Добавление каталогов в домашние каталоги пользователей по умолчанию

```
sudo mkdir Pictures
```

```
sudo mkdir Documents
```



```
aeakunaeva@aeakunaeva:/etc/skel — vim .bashrc

[aeakunaeva@aeakunaeva ~]$ cd /etc/skel
[aeakunaeva@aeakunaeva skel]$ mkdir Pictures D0cuments
mkdir: cannot create directory 'Pictures': Permission denied
mkdir: cannot create directory 'D0cuments': Permission denied
[aeakunaeva@aeakunaeva skel]$ sudo mkdir Pictures Documents
[sudo] password for aeakunaeva:
[aeakunaeva@aeakunaeva skel]$ ls
Documents Pictures
[aeakunaeva@aeakunaeva skel]$ vim .bashrc

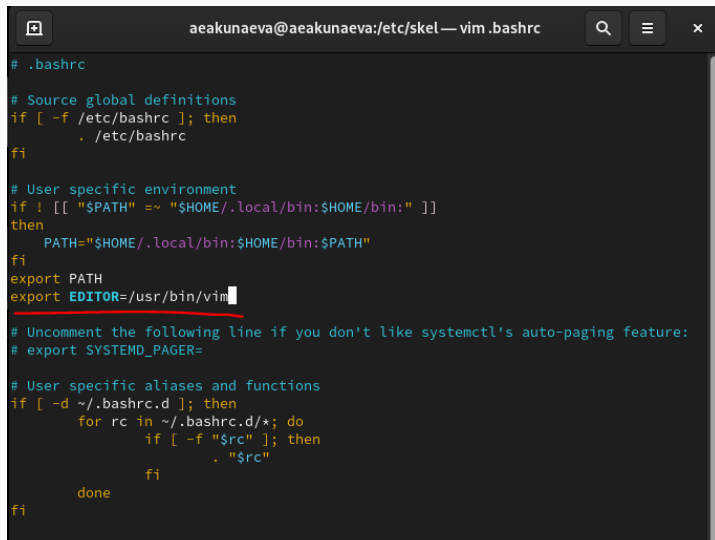
[No write since last change]
/bin/bash: line 1: wq: command not found

shell returned 127

Press ENTER or type command to continue
```

Установка текстового редактора по умолчанию

vim .bashrc



```
# .bashrc

# Source global definitions
if [ -f /etc/bashrc ]; then
    . /etc/bashrc
fi

# User specific environment
if ! [[ "$PATH" =~ "$HOME/.local/bin:$HOME/bin:" ]]
then
    PATH="$HOME/.local/bin:$HOME/bin:$PATH"
fi
export PATH
export EDITOR=/usr/bin/vim

# Uncomment the following line if you don't like systemctl's auto-paging feature:
# export SYSTEMD_PAGER=

# User specific aliases and functions
if [ -d ~/.bashrc.d ]; then
    for rc in ~/.bashrc.d/*; do
        if [ -f "$rc" ]; then
            . "$rc"
        fi
    done
fi
```

Создание пользователя carol и проверка информации о нём

```
alice@aeakunaeva:/home/carol

[root@aeakunaeva aeakunaeva]# su alice
[alice@aeakunaeva aeakunaeva]$ sudo -i useradd carol
[sudo] password for alice:
[alice@aeakunaeva aeakunaeva]$ sudo passwd carol
Changing password for user carol.
New password:
BAD PASSWORD: The password is a palindrome
Retype new password:
passwd: all authentication tokens updated successfully.
[alice@aeakunaeva aeakunaeva]$ su carol
Password:
[carol@aeakunaeva aeakunaeva]$ id
uid=1003(carol) gid=1003(carol) groups=1003(carol) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
[carol@aeakunaeva aeakunaeva]$ cd
[carol@aeakunaeva ~]$ ls -Al
total 12
-rw-r--r--. 1 carol carol  18 Apr 30  2024 .bash_logout
-rw-r--r--. 1 carol carol 141 Apr 30  2024 .bash_profile
-rw-r--r--. 1 carol carol 492 Apr 30  2024 .bashrc
drwxr-xr-x. 2 carol carol   6 Sep 13 20:15 Documents
drwxr-xr-x. 4 carol carol  39 Sep 13 19:37 .mozilla
drwxr-xr-x. 2 carol carol   6 Sep 13 20:15 Pictures
[carol@aeakunaeva ~]$ su alice
Password:
[alice@aeakunaeva carol]$ sudo cat /etc/shadow | grep carol
```

```
[alice@aeakunaeva carol]$ sudo cat /etc/shadow | grep carol
carol:$6$rounds=100000$5sxYazhTE34K8J03$7kes2GEnFMpgeoBzTPFjXv9HsIf2D1m/CeVXH4G5WTxBq4kdurnLnFeXTeeHaZddvJjs4nczp93UZbpZX9PKh/:20344:0:99999:7:::
[alice@aeakunaeva carol]$ sudo passwd -n 30 -w 3 -x 90 carol
Adjusting aging data for user carol.
passwd: Success
[alice@aeakunaeva carol]$ sudo cat /etc/shadow | grep carol
carol:$6$rounds=100000$5sxYazhTE34K8J03$7kes2GEnFMpgeoBzTPFjXv9HsIf2D1m/CeVXH4G5WTxBq4kdurnLnFeXTeeHaZddvJjs4nczp93UZbpZX9PKh/:20344:30:90:3:::
```

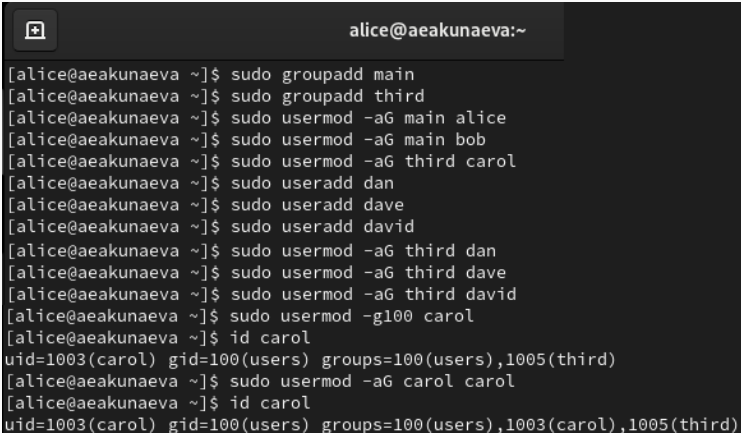
Идентификаторы alice и carol в разных файлах

```
[alice@aeakunaeva carol]$ grep alice /etc/passwd /etc/shadow /etc/group
/etc/passwd:alice:x:1001:1001::/home/alice:/bin/bash
grep: /etc/shadow: Permission denied
/etc/group:wheel:x:10:aeakunaeva,alice
/etc/group:alice:x:1001:
[alice@aeakunaeva carol]$ sudo grep alice /etc/passwd /etc/shadow /etc/group
/etc/passwd:alice:x:1001:1001::/home/alice:/bin/bash
/etc/shadow:alice:$6$rounds=100000$dE4yaVx8ijaK4Knk$8GdCBvmOVUzgMmqtd0RIGk6TPvLC9J4
MMaNSNUH0xL59eV7l6H5q.DRVV27.esfUviW5BsTA4ZAUf1aJHeC12/:20344:0:99999:7:::
/etc/group:wheel:x:10:aeakunaeva,alice
/etc/group:alice:x:1001:
[alice@aeakunaeva carol]$ sudo grep carol /etc/passwd /etc/shadow /etc/group
/etc/passwd:carol:x:1003:1003::/home/carol:/bin/bash
/etc/shadow:carol:$6$rounds=100000$5sxYazhTE34K8J03$7kes2GEnFMpgeoBzTPFjXv9HsIf2D1m
/CeVXH4G5WTxBq4kdurnLnFeXTeeHaZddvJjs4nczp93UZbpZX9PKh/:20344:30:90:3:::
/etc/group:carol:x:1003:
[alice@aeakunaeva carol]$
```

Добавление пользователей в группы

```
sudo groupadd main
```

```
sudo groupadd third
```



A terminal window titled "alice@aeakunaeva:~" with a terminal icon in the top-left corner. The window displays a series of commands and their outputs. The commands are: `sudo groupadd main`, `sudo groupadd third`, `sudo usermod -aG main alice`, `sudo usermod -aG main bob`, `sudo usermod -aG third carol`, `sudo useradd dan`, `sudo useradd dave`, `sudo useradd david`, `sudo usermod -aG third dan`, `sudo usermod -aG third dave`, `sudo usermod -aG third david`, `sudo usermod -g100 carol`, `id carol`, `sudo usermod -aG carol carol`, and `id carol`. The output of the final `id carol` command shows that Carol is now a member of the 'third' group.

```
alice@aeakunaeva:~$ sudo groupadd main
alice@aeakunaeva:~$ sudo groupadd third
alice@aeakunaeva:~$ sudo usermod -aG main alice
alice@aeakunaeva:~$ sudo usermod -aG main bob
alice@aeakunaeva:~$ sudo usermod -aG third carol
alice@aeakunaeva:~$ sudo useradd dan
alice@aeakunaeva:~$ sudo useradd dave
alice@aeakunaeva:~$ sudo useradd david
alice@aeakunaeva:~$ sudo usermod -aG third dan
alice@aeakunaeva:~$ sudo usermod -aG third dave
alice@aeakunaeva:~$ sudo usermod -aG third david
alice@aeakunaeva:~$ sudo usermod -g100 carol
alice@aeakunaeva:~$ id carol
uid=1003(carol) gid=100(users) groups=100(users),1005(third)
alice@aeakunaeva:~$ sudo usermod -aG carol carol
alice@aeakunaeva:~$ id carol
uid=1003(carol) gid=100(users) groups=100(users),1003(carol),1005(third)
```


id dan

id dave

id david

```
[alice@aeakunaeva ~]$ id dan
uid=1004(dan) gid=1006(dan) groups=1006(dan),1005(third)
[alice@aeakunaeva ~]$ id dave
uid=1005(dave) gid=1007(dave) groups=1007(dave),1005(third)
[alice@aeakunaeva ~]$ id david
uid=1006(david) gid=1008(david) groups=1008(david),1005(third)
```

Выводы

Я получила представление о работе с учётными записями пользователей и группами пользователей в операционной системе типа Linux.