

## Лабораторная работа №2

### Управление пользователями и группами

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## Цель работы

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## Основная цель

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

## Ход выполнения работы

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## Проверка пользователя и группы wheel

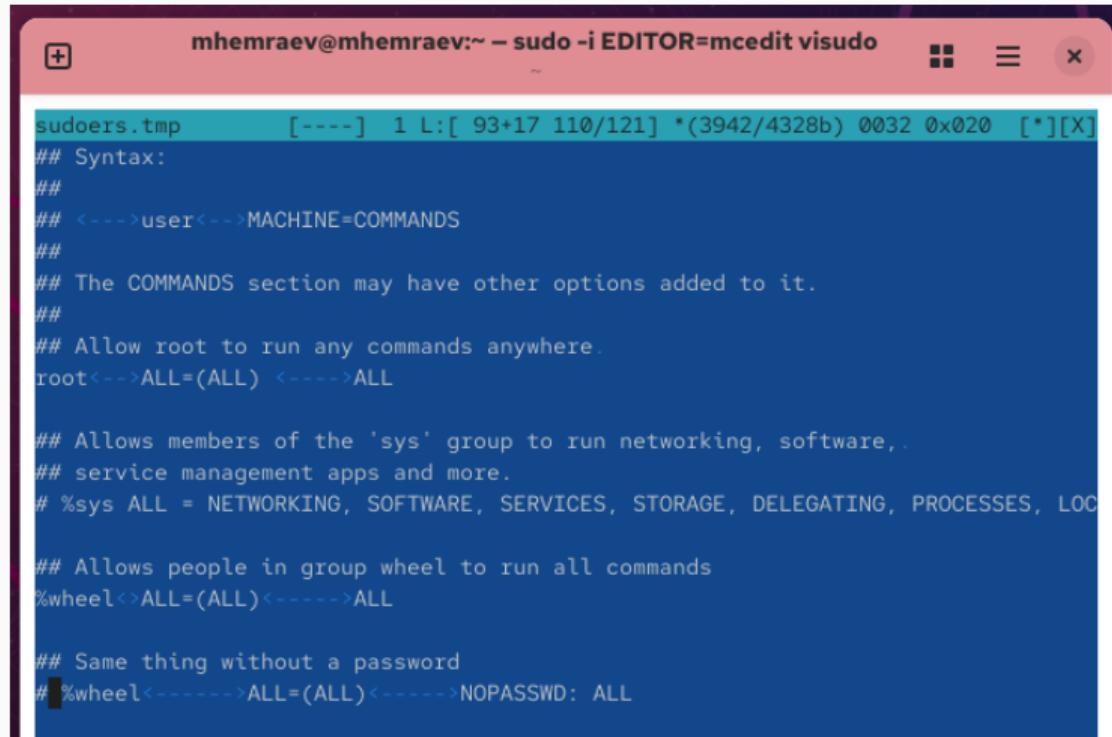
- Вход под пользователем **mhemraev**
- Определение UID, GID и принадлежности к группе **wheel**

```
mhemraev@mhemraev:~$ whoami
mhemraev
mhemraev@mhemraev:~$ id
uid=1000(mhemraev) gid=1000(mhemraev) groups=1000(mhemraev),10(wheel) context=un
confined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
mhemraev@mhemraev:~$ su
Password:
root@mhemraev:/home/mhemraev# id
uid=0(root) gid=0(root) groups=0(root) context=unconfined_u:unconfined_r:unconfi
ned_t:s0-s0:c0.c1023
root@mhemraev:/home/mhemraev#
exit
mhemraev@mhemraev:~$
```

Рис. 1: Проверка пользователя mhemraev

## Переход к суперпользователю

- Выполнен вход под `root`
- Проверка подтверждает максимальные права



mhemraev@mhemraev:~ – sudo -i EDITOR=mcedit visudo

```
sudoers.tmp      [----]  1 L:[ 93+17 110/121] *(3942/4328b) 0032 0x020  [*][X]
## Syntax:
##
## <-->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, LOC

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

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

# Настройка sudoers

- Использована команда `visudo`
- В файле разрешено выполнение команд для группы `wheel`

```
mhemraev@mhemraev:~ - sudo -i EDITOR=mcedit visudo

sudoers.tmp      [----]  1 L:[ 93+17 110/121] *(3942/4328b) 0032 0x020  [*][X]
## Syntax:
##
## <-->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, LOC

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

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

# Создание пользователей alice и bob

- Создан пользователь **alice**, добавлен в группу *wheel*
- Под **alice** создан пользователь **bob**

```
mhemraev@mhemraev:~$ sudo -i useradd -G wheel alice
mhemraev@mhemraev:~$ id alice
uid=1001(alice) gid=1001(alice) groups=1001(alice),10(wheel)
mhemraev@mhemraev:~$ sudo -i passwd alice
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
mhemraev@mhemraev:~$ su alice
Password:
alice@mhemraev:/home/mhemraev$ 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.

For security reasons, the password you type will not be visible.

[sudo] password for alice:
alice@mhemraev:/home/mhemraev$ sudo passwd bob
New password:
BAD PASSWORD: The password is shorter than 8 characters
```

## Настройка login.defs

- **CREATE\_HOME=yes** — создание домашней директории
- **USERGROUPS\_ENAB=no** — новые пользователи помещаются в группу *users*

```
alice@mhemraev:/home/mhemraev - mcedit /etc/login.defs
login.defs      [-M--] 18 L:[275+ 5 280/316] *(7925/8887b) 0010 0x00A
[*][X]

#USERDEL_CMD<-->/usr/sbin/userdel_local

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

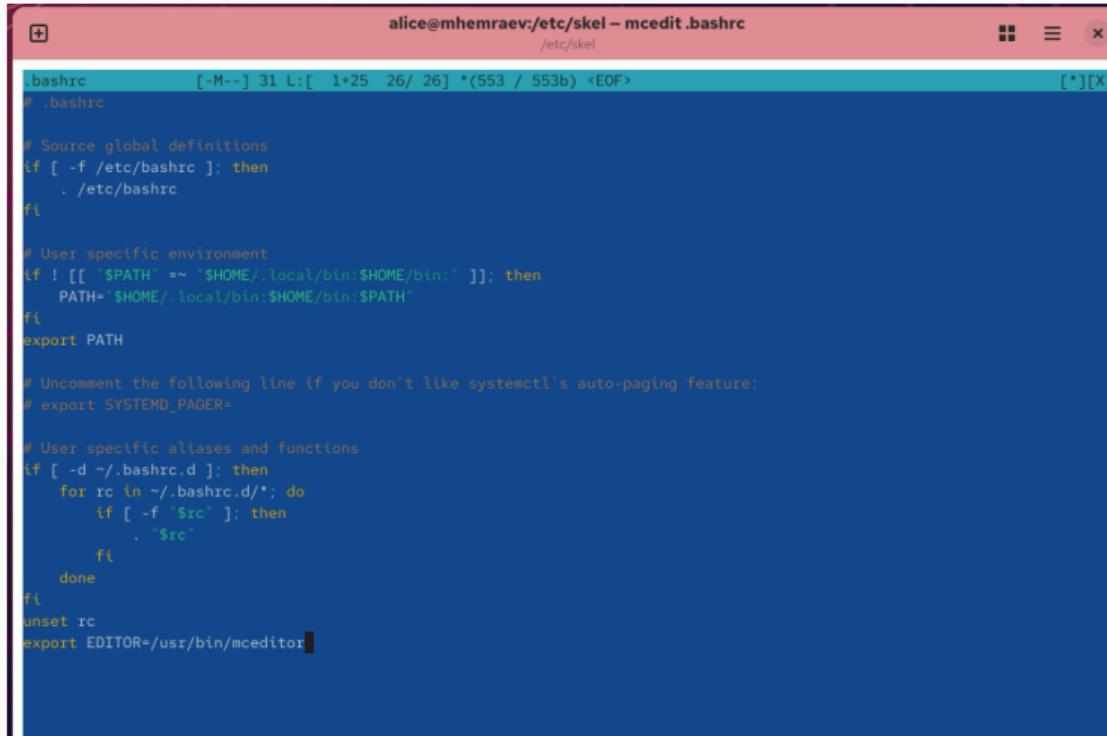
#
# If set to a non-zero number, the shadow utilities will make sure that
# groups never have more than this number of users on one line.
# This permits to support split groups (groups split into multiple lines,
# with the same group ID, to avoid limitation of the line length in the
# group file).
#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

#
# 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
```

## Настройка .bashrc и /etc/skel

- В /etc/skel добавлены папки *Pictures* и *Documents*
- В .bashrc установлен редактор **vim** по умолчанию



The screenshot shows a terminal window titled "alice@mhemraev:/etc/skel – mcedit.bashrc". The window displays the contents of the .bashrc file. The file starts with a shebang "#!/bin/bash" and includes logic to source /etc/bashrc if it exists. It then sets the PATH variable to include \$HOME/.local/bin and \$HOME/bin. A comment indicates that # export SYSTEMD\_PAGER can be uncommented if desired. The file ends with a loop to source files in the .bashrc.d directory and an export statement for the EDITOR variable.

```
#!/bin/bash
# .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

# 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
unset rc
export EDITOR=/usr/bin/mceditor
```

## Создание пользователя carol

- Создана учётная запись **carol**
- Проверены группы и наличие папок в домашнем каталоге

```
root@hemraev:/etc/skel# su alice
alice@hemraev:/etc/skel$ sudo -i useradd carol
[sudo] password for alice:
alice@hemraev:/etc/skel$ sudo passwd carol
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
alice@hemraev:/etc/skel$ su carol
Password:
carol@hemraev:/etc/skel$ id
uid=1003(carol) gid=100(users) groups=100(users) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
carol@hemraev:/etc/skel$ cd
carol@hemraev:~$ ls -Al
total 12
-rw-r--r--. 1 carol users 18 Oct 29 2024 .bash_logout
-rw-r--r--. 1 carol users 144 Oct 29 2024 .bash_profile
-rw-r--r--. 1 carol users 553 Sep 9 11:22 .bashrc
drwxr-xr-x. 2 carol users 6 Sep 9 11:21 Documents
drwxr-xr-x. 4 carol users 39 Sep 5 10:15 .mozilla
drwxr-xr-x. 2 carol users 6 Sep 9 11:21 Pictures
carol@hemraev:~$ █
```

Рис. 7: Создание пользователя carol

## Настройка срока действия пароля

- Для carol установлен срок действия пароля — 90 дней
- Минимальный срок — 30 дней, предупреждение за 3 дня

```
[sudo] password for carol:  
carol is not in the sudoers file.  
carol@mhemraev:~$ su alice  
Password:  
alice@mhemraev:/home/carol$  
alice@mhemraev:/home/carol$ sudo cat /etc/shadow | grep carol  
carol:$y$j9T$hij05KVk0i7RivVa8ld//$/yYAwLM6PrNKfamVBULZVobu21QNbWSpJbwXaHyI1hP7:20340:0:99999:7:::  
alice@mhemraev:/home/carol$ sudo passwd -n 30 -w 3 -x 90 carol  
passwd: password changed.  
alice@mhemraev:/home/carol$ sudo cat /etc/shadow | grep carol  
carol:$y$j9T$hij05KVk0i7RivVa8ld//$/yYAwLM6PrNKfamVBULZVobu21QNbWSpJbwXaHyI1hP7:20340:30:90:3:::  
alice@mhemraev:/home/carol$ sudo grep alice /etc/passwd /etc/shadow /etc/group  
/etc/passwd:alice:x:1001:1001:/home/alice:/bin/bash  
/etc/shadow:alice:$y$j9T$5nFoKTU7jQ024ebXsTLPX/$LLsf3q4mx4qcGa9eG5vjq4VU89DrReucDVEvvCQrY/D:20340:0:99999:7:::  
/etc/group:wheel:x:10:mhemraev,alice  
/etc/group:alice:x:1001:  
alice@mhemraev:/home/carol$ sudo grep carol /etc/passwd /etc/shadow /etc/group  
/etc/passwd:carol:x:1003:100:::/home/carol:/bin/bash  
/etc/shadow:carol:$y$j9T$hij05KVk0i7RivVa8ld//$/yYAwLM6PrNKfamVBULZVobu21QNbWSpJbwXaHyI1hP7:20340:30:90:3:::  
alice@mhemraev:/home/carol$ '
```

Рис. 8: Настройка срока действия пароля

## Работа с группами

- Созданы группы *main* и *third*
- Добавлены пользователи: alice, bob → main; carol → third

```
alice@mhemraev:/home/carol$  
alice@mhemraev:/home/carol$ sudo groupadd main  
alice@mhemraev:/home/carol$ sudo groupadd third  
alice@mhemraev:/home/carol$  
alice@mhemraev:/home/carol$ sudo usermod -aG main alice  
alice@mhemraev:/home/carol$ sudo usermod -aG main bob  
alice@mhemraev:/home/carol$ sudo usermod -aG third carol  
alice@mhemraev:/home/carol$ id carol  
uid=1003(carol) gid=100(users) groups=100(users),1004(third)  
alice@mhemraev:/home/carol$ id bob  
uid=1002(bob) gid=1002(bob) groups=1002(bob),1003(main)  
alice@mhemraev:/home/carol$ id alice  
uid=1001(alice) gid=1001(alice) groups=1001(alice),10(wheel),1003(main)  
alice@mhemraev:/home/carol$
```

Рис. 9: Работа с группами

## Итоги работы

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## Вывод

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В ходе работы изучены основы управления пользователями и группами в Linux:

- Создание учётных записей
- Настройка паролей и сроков их действия
- Работа с конфигурацией sudoers
- Управление группами пользователей