

Лабораторная работа №2

Управление пользователями и группами

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Цель работы

Основная цель

Получить представление о работе с учётными записями пользователей и группами пользователей в Linux, а также освоить базовые команды администрирования.

Ход выполнения работы

Переключение учётных записей



The screenshot shows a terminal window titled "sigamberdov@sigamberdov:~". The terminal content is as follows:

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

Рис. 1: Переключение к root и проверка идентификаторов

Работа с sudo и группой wheel



The screenshot shows a terminal window titled "sigamberdov@sigamberdov:~ – sudo -i visudo". The window contains the contents of the /etc/sudoers file. The text is color-coded: blue for comments (##), green for users (user, root, %wheel, #wheel), purple for groups (MACHINE=COMMANDS, ALL=(ALL)), and orange for paths (cdrom, /sbin/mount, /mnt/cdrom, /sbin/umount, /mnt/cdrom). The configuration includes sections for root command execution, sys group permissions, wheel group permissions, NOPASSWD access, user group mounting, and shutdown permissions.

```
## 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, LOCATE, DRIVERS

## 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
#
## Read drop-in files from /etc/sudoers.d (the # here does not mean a comment)
#includedir /etc/sudoers.d
```

Создание пользователей

```
sigamberdov@sigamberdov:~$  
sigamberdov@sigamberdov:~$ sudo -i useradd -G wheel alice  
sigamberdov@sigamberdov:~$ id alice  
uid=1001(alice) gid=1001(alice) groups=1001(alice),10(wheel)  
sigamberdov@sigamberdov:~$ sudo -i passwd alice  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: password updated successfully  
sigamberdov@sigamberdov:~$ su alice  
Password:  
alice@sigamberdov:/home/sigamberdov$ 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@sigamberdov:/home/sigamberdov$ sudo passwd bob  
'New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: password updated successfully  
alice@sigamberdov:/home/sigamberdov$ id bob  
uid=1002(bob) gid=1002(bob) groups=1002(bob)  
alice@sigamberdov:/home/sigamberdov$ █
```

Настройка параметров пользователей



The screenshot shows a terminal window titled "alice@sigamberdov:/home/sigamberdov - vim /etc/login.defs". The window contains the following configuration file content:

```
# 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

#
# 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
-- INSERT --
```

Настройка шаблонов профиля



The screenshot shows a terminal window titled "alice@sigamberdov:/etc/skel – vim .bashrc" with the command "/etc/skel" in the path bar. The window has a red header bar and a white body. It displays the contents of the .bashrc file in a monospaced font. The file includes code for sourcing /etc/bashrc, setting the PATH environment variable, exporting PATH, and defining user-specific aliases and functions. A cursor is visible at the end of the line "export EDITOR=/usr/bin/vim".

```
# .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/vim
```

Создание новых пользователей

```
root@sigamberdov:~/home/sigamberdov# cd /et/skel
bash: cd: /et/skel: No such file or directory
root@sigamberdov:~/home/sigamberdov# cd /etc/skel
root@sigamberdov:/etc/skel# mkdir Pictures
root@sigamberdov:/etc/skel# mkdir Documents
root@sigamberdov:/etc/skel# vim .bashrc
root@sigamberdov:/etc/skel# su alice
alice@sigamberdov:/etc/skel$ sudo -i useradd carol
alice@sigamberdov:/etc/skel$ sudo passwd carol
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
alice@sigamberdov:/etc/skel$ su carol
Password:
carol@sigamberdov:/etc/skel$ id
uid=1003(carol) gid=100(users) groups=100(users) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c10
23
carol@sigamberdov:/etc/skel$ cd
carol@sigamberdov:~$ ls -
ls: cannot access '-': No such file or directory
carol@sigamberdov:~$ 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 549 Sep 17 13:33 .bashrc
drwxr-xr-x 2 carol users 6 Sep 17 13:32 Documents
drwxr-xr-x 4 carol users 39 Sep 17 12:58 .mozilla
drwxr-xr-x 2 carol users 6 Sep 17 13:32 Pictures
carol@sigamberdov:~$
```

Управление паролями

```
carol@sigamberdov:~$ su alice
Password:
alice@sigamberdov:/home/carol$ sudo cat /etc/shadow | grep carol
[sudo] password for alice:
carol:$y$j9T$6uIX3.9gGwfVWQoPxjBLI/$YEN6v737ImScGK9F99PyVgDEjVOREYE0hqjW5Yli97.:20348:0:99999:7:::
alice@sigamberdov:/home/carol$ sudo passwd -n 30 -w 3 -x 90 carol
passwd: password changed.
alice@sigamberdov:/home/carol$ sudo cat /etc/shadow | grep carol
carol:$y$j9T$6uIX3.9gGwfVWQoPxjBLI/$YEN6v737ImScGK9F99PyVgDEjVOREYE0hqjW5Yli97.:20348:30:90:3:::
alice@sigamberdov:/home/carol$
alice@sigamberdov:/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$4bmoD7R2MMTi8lEZLjqA/$n0olz85ZSTy6xyyskfeXiPCKRDiAJMvnGqSnMc65ppB:20348:0:99999:7:
::
/etc/group:wheel:x:10:sigamberdov,alice
/etc/group:alice:x:1001:
alice@sigamberdov:/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$6uIX3.9gGwfVWQoPxjBLI/$YEN6v737ImScGK9F99PyVgDEjVOREYE0hqjW5Yli97.:20348:30:90:3:::
alice@sigamberdov:/home/carol$
```

Рис. 7: Просмотр и изменение записи пароля пользователя carol

Управление группами

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

Рис. 8: Проверка добавления carol в группу third

Итоги работы

Вывод

В ходе работы были изучены приёмы управления пользователями и группами в Linux: создание и настройка учётных записей, работа с конфигурационными файлами, контроль параметров паролей и предоставление прав через группу wheel.