Лабораторная работа №2

Управление пользователями и группами

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Цель работы

Получить практические навыки управления учётными записями пользователей и группами пользователей в операционной системе Linux, а также изучить механизмы разграничения прав доступа.

Ход выполнения

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

Рис. 1: Определение пользователя и групп

```
# commands via sudo.
#
# Defaults    env_keep += "HOME"

Defaults    secure_path = /sbin:/bin:/usr/sbin:/usr/bin

## Next comes the main part: which users can run what software on
## which machines (the sudoers file can be shared between multiple
## systems).
## 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
```

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

Файл login.defs

```
# 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


#
# 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
```

```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/vim
~
```

Рис. 5: Настройка /etc/skel

```
root@mlabsi:/home/mlabsi# cd /etc/skel/
root@mlabsi:/etc/skel# mkdir Pictures Documents
root@mlabsi:/etc/skel# vim .bashrc
root@mlabsi:/etc/skel#
root@mlabsi:/etc/skel# su alice
alice@mlabsi:/etc/skel$ sudo -i useradd carol
alice@mlabsi:/etc/skel$ sudo passwd carol
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
alice@mlabsi:/etc/skel$ su carol
Password:
carol@mlabsi:/etc/skel$ id
uid=1003(carol) gid=100(users) groups=100(users) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
carol@mlabsi:/etc/skel$ cd
carol@mlabsi:~$ 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 Dec 12 13:46 .bashrc
drwxr-xr-x. 2 carol users   6 Dec 12 13:44 Documents
drwxr-xr-x. 4 carol users  39 Oct 11 09:20 .mozilla
drwxr-xr-x. 2 carol users   6 Dec 12 13:44 Pictures
carol@mlabsi:~$
```

Рис. 6: Домашний каталог carol

Рис. 7: Настройка пароля carol

Рис. 8: Проверка групп пользователей

```
mlabsi@mlabsi:~$ su
Password:
root@mlabsi:/home/mlabsi# mkdir -p /data/main /data/third
root@mlabsi:/home/mlabsi# ls -Al /data
total 0
drwxr-xr-x. 2 root root 6 Dec 12 14:05 main
drwxr-xr-x. 2 root root 6 Dec  8 13:26 raid
drwxr-xr-x. 2 root root 6 Dec 12 14:05 third
root@mlabsi:/home/mlabsi# chgrp main /data/main
root@mlabsi:/home/mlabsi# chgrp third /data/third
root@mlabsi:/home/mlabsi# ls -Al /data
total 0
drwxr-xr-x. 2 root main  6 Dec 12 14:05 main
drwxr-xr-x. 2 root root  6 Dec  8 13:26 raid
drwxr-xr-x. 2 root third 6 Dec 12 14:05 third
root@mlabsi:/home/mlabsi# chmod 770 /data/main
root@mlabsi:/home/mlabsi# chmod 770 /data/third
root@mlabsi:/home/mlabsi# ls -Al /data
total 0
drwxrwx---. 2 root main  6 Dec 12 14:05 main
drwxr-xr-x. 2 root root  6 Dec  8 13:26 raid
drwxrwx---. 2 root third 6 Dec 12 14:05 third
root@mlabsi:/home/mlabsi# su bob
bob@mlabsi:/home/mlabsi$ cd /data/main/
bob@mlabsi:/data/main$ touch emptyfile
bob@mlabsi:/data/main$ ls -Al
total 0
-rw-r--r--. 1 bob bob 0 Dec 12 14:07 emptyfile
bob@mlabsi:/data/main$ cd /data/third/
bash: cd: /data/third/: Permission denied
bob@mlabsi:/data/main$ 
```

Итоги работы

Заключение

Получены практические навыки администрирования пользователей и групп в Linux. Работа показала принципы управления доступом, настройки безопасности и централизованного администрирования в многопользовательской системе.