Лабораторная работа №2

Управление пользователями и группами

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Цель работы

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

Ход выполнения работы

```
ivschemelev@ivschemelev:~$ whoami
ivschemelev
ivschemelev@ivschemelev:~$ id
uid=1000(ivschemelev) gid=1000(ivschemelev) groups=1000(ivschemelev),10(wheel) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1
023
ivschemelev@ivschemelev:~$ su
Password:
root@ivschemelev:/home/ivschemelev# id
uid=0(root) gid=0(root) groups=0(root) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
root@ivschemelev:/home/ivschemelev#
exit
ivschemelev@ivschemelev:~$
```

Рис. 1: Определение текущего пользователя и вывод id, переключение su

ivschemelev@ivschemelev:~ — sudo -i visudo

```
## 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 USERALIAS
# User_Alias ADMINS = jsmith, mikem


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

## Networking
# Cmnd_Alias NETWORKING = /sbin/route, /sbin/ifconfig, /bin/ping, /sbin/dhclient, /usr/bin/net, /sbin/iptables, /usr/bin/rfcomm, /usr/bin
/wvdial, /sbin/iwconfig, /sbin/mii-tool

## Installation and management of software
# Cmnd_Alias SOFTWARE = /bin/rpm, /usr/bin/up2date, /usr/bin/yum

## Services
# Cmnd_Alias SERVICES = /sbin/service, /sbin/chkconfig, /usr/bin/systemctl start, /usr/bin/systemctl stop, /usr/bin/systemctl reload, /us
r/bin/systemctl restart, /usr/bin/systemctl status, /usr/bin/systemctl enable, /usr/bin/systemctl disable

## Updating the locate database
"/etc/sudoers.tmp" 120L, 4328B                                                                          1,1            Top
```

```
# 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
```

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

```
# 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

#
# 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
```

```
# .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
~
~
```

```
root@ivschemelev:/home/ivschemelev# vim /etc/login.defs
root@ivschemelev:/home/ivschemelev#
root@ivschemelev:/home/ivschemelev# cd /etc/skel
root@ivschemelev:/etc/skel# mkdir Pictures
root@ivschemelev:/etc/skel# mkdir Documents
root@ivschemelev:/etc/skel# vim .bashrc
root@ivschemelev:/etc/skel#
root@ivschemelev:/etc/skel# su alice
alice@ivschemelev:/etc/skel$ sudo -i useradd carol
[sudo] password for alice:
alice@ivschemelev:/etc/skel$ sudo passwd carol
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
alice@ivschemelev:/etc/skel$ su carol
Password:
carol@ivschemelev:/etc/skel$ id
uid=1003(carol) gid=100(users) groups=100(users) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
carol@ivschemelev:/etc/skel$ cd
carol@ivschemelev:~$ 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 Jan 15 12:13 .bashrc
drwxr-xr-x. 2 carol users   6 Jan 15 12:12 Documents
drwxr-xr-x. 4 carol users  39 Jan 15 11:40 .mozilla
drwxr-xr-x. 2 carol users   6 Jan 15 12:12 Pictures
carol@ivschemelev:~$
```

```
alice@ivschemelev:/etc/skel$
alice@ivschemelev:/etc/skel$ sudo cat /etc/shadow | grep carol
carol:$y$j9T$QJi8zONoW3H6hqF0nX5QT.$tAcR9Mz.ntobcnCZJEzRMTO0Tk6UQe2t.duyiUJd849:20468:0:99999:7:::
alice@ivschemelev:/etc/skel$ sudo passwd -n 30 -w 3 -x 90 carol
passwd: password changed.
alice@ivschemelev:/etc/skel$ sudo cat /etc/shadow | grep carol
carol:$y$j9T$QJi8zONoW3H6hqF0nX5QT.$tAcR9Mz.ntobcnCZJEzRMTO0Tk6UQe2t.duyiUJd849:20468:30:90:3:::
alice@ivschemelev:/etc/skel$ sudo grep alice /etc/passwd /etc/shadow /etc/group
/etc/passwd:alice:x:1001:1001::/home/alice:/bin/bash
/etc/shadow:alice:$y$j9T$GKKlgM4BB6kB9Glcx7g8d0$fUWsIkb0qPYbejZIfaI17G624lixAg7r8MLr6QWXUE0:20468:0:99999:7:::
/etc/group:wheel:x:10:ivschemelev,alice
/etc/group:alice:x:1001:
alice@ivschemelev:/etc/skel$ sudo grep carol /etc/passwd /etc/shadow /etc/group
/etc/passwd:carol:x:1003:100::/home/carol:/bin/bash
/etc/shadow:carol:$y$j9T$QJi8zONoW3H6hqF0nX5QT.$tAcR9Mz.ntobcnCZJEzRMTO0Tk6UQe2t.duyiUJd849:20468:30:90:3:::
alice@ivschemelev:/etc/skel$
```

Рис. 8: Просмотр записи carol в /etc/shadow и изменение срока действия пароля

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

Рис. 9: Создание групп main/third, usermod и проверка id пользователей

Итоги работы

Заключение

В ходе лабораторной работы выполнены переключение учётных записей и анализ UID/GID, изучены принципы предоставления прав через sudo и группа wheel. Созданы пользователи и группы, изменены параметры их создания с использованием /etc/login.defs и /etc/skel, а также рассмотрены механизмы хранения данных в /etc/passwd, /etc/shadow и /etc/group. Отработано управление политикой паролей и назначение пользователей в дополнительные группы.