

Лабораторная работа 3

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Задача

1. Прочитайте справочное описание man по командам ls, su, chgrp, chmod, getfacl, setfacl.

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3. Выполните действия по управлению специальными разрешениями для групп пользователей (раздел 3.3.2).
4. Выполните действия по управлению расширенными разрешениями с использованием списков ACL для групп пользователей (раздел 3.3.3).

Выполнение

LS(1)	User Commands	LS(1)	SU(1)	User Commands	SU(1)	CHGRP(1)	User Commands	CHGRP(1)
NAME	ls - list directory contents	NAME	su - run a command with substitute user and group ID	NAME	chgrp - change group ownership	NAME	chgrp - change group ownership	
SYNOPSIS	ls [OPTION]... [FILE]...	SYNOPSIS	su [options] [-] [user [argument...]]	SYNOPSIS	chgrp [OPTION]... GROUP FILE... chgrp [OPTION]... --reference=RFILE FILE...	SYNOPSIS	chgrp [OPTION]... GROUP FILE... chgrp [OPTION]... --reference=RFILE FILE...	
DESCRIPTION	List information about the FILES (the current directory by default). Sort entries alphabetically if none of <code>-eftuSIX</code> nor <code>--sort</code> is specified. Mandatory arguments to long options are mandatory for short options too. -a, --all do not ignore entries starting with . -A, --almost-all do not list implied . and ..	DESCRIPTION	su allows commands to be run with a substitute user and group ID. When called with no user specified, su defaults to running an interactive shell as root. When user is specified, additional arguments can be supplied, in which case they are passed to the shell. For backward compatibility, su defaults to not change the current directory and to only set the environment variables HOME and SHELL	DESCRIPTION	Change the group of each FILE to GROUP. With --reference, change the group of each FILE to that of RFILE. -c, --changes like verbose but report only when a change is made -f, --silent, --quiet suppress most error messages -v, --verbose	DESCRIPTION	Change the group of each FILE to GROUP. With --reference, change the group of each FILE to that of RFILE. -c, --changes like verbose but report only when a change is made -f, --silent, --quiet suppress most error messages -v, --verbose	
1 page ls(1) line 1 (press h for help or q to quit)		11 page su(1) line 1 (press h for help or q to quit)		16 page chgrp(1) line 1 (press h for help or q to quit)				
(2) [dmgencrlo@dmgencrlo:~] 1,1		Top (1) [dmgencrlo@dmgencrlo:~] 1,1		Top (4) [dmgencrlo@dmgencrlo:~] 1,1		Top (5) [dmgencrlo@dmgencrlo:~] 1,1		Top (5) [dmgencrlo@dmgencrlo:~] 1,1
CHMOD(1)	User Commands	CHMOD(1)	GETFACL(1)	Access Control Lists	GETFACL(1)	SETFACL(1)	Access Control Lists	SETFACL(1)
NAME	chmod - change file mode bits	NAME	getfacl - get file access control lists	NAME	setfacl - set file access control lists	NAME	setfacl - set file access control lists	
SYNOPSIS	chmod [OPTION]... MODE[,MODE]... FILE... chmod [OPTION]... OCTAL-MODE FILE... chmod [OPTION]... --reference=RFILE FILE...	SYNOPSIS	getfacl [-aceEsRLtpndvhl] file ... getfacl [-aceEsRLtpndvhl] -	SYNOPSIS	setfacl [-bkndELPvh] [-m -x] acl_spec [-M -X] acl_file file ... setfacl --restore=file	SYNOPSIS	setfacl [-bkndELPvh] [-m -x] acl_spec [-M -X] acl_file file ... setfacl --restore=file	
DESCRIPTION	This manual page documents the GNU version of chmod. chmod changes the file mode bits of each given file according to mode, which can be either a symbolic representation of changes to make, or an octal number representing the bit pattern for the new mode bits. The format of a symbolic mode is [ugoa...][[+- =]perms...], where perms is either zero or more letters from the set rwxst, or a single letter from the set ugo.	DESCRIPTION	For each file, getfacl displays the file name, owner, the group, and the Access Control List (ACL). If a directory has a default ACL, getfacl also displays the default ACL. Non-directories cannot have default ACLs. If getfacl is used on a file system that does not support ACLs, getfacl displays the access permissions defined by the traditional file mode permission bits.	DESCRIPTION	This utility sets Access Control Lists (ACLs) of files and directories. On the command line, a sequence of commands is followed by a sequence of files (which in turn can be followed by another sequence of commands, ...). The -m and -x options expect an ACL on the command line. Multiple ACL entries are separated by comma characters (','), The -M and -X options read an ACL from a file or	DESCRIPTION	This utility sets Access Control Lists (ACLs) of files and directories. On the command line, a sequence of commands is followed by a sequence of files (which in turn can be followed by another sequence of commands, ...). The -m and -x options expect an ACL on the command line. Multiple ACL entries are separated by comma characters (','), The -M and -X options read an ACL from a file or	
1 page chmod(1) line 1 (press h for help or q to quit)		16 page getfacl(1) line 1 (press h for help or q to quit)		16 page setfacl(1) line 1 (press h for help or q to quit)				
(5) [dmgencrlo@dmgencrlo:~] 1,1		Top (4) [dmgencrlo@dmgencrlo:~] 1,1		Top (5) [dmgencrlo@dmgencrlo:~] 1,1				

Смена группы для директории

```
ldmgeneralov@ldmgeneralov ~]$ su -  
Password:  
Last login: Sat Nov 12 12:24:00 MSK 2022 on tty1  
[root@ldmgeneralov ~]# mkdir -p /data/main /data/third  
[root@ldmgeneralov ~]# ls -Al /data  
total 0  
drwxr-xr-x. 2 root root 6 Nov 18 19:37 main  
drwxr-xr-x. 2 root root 6 Nov 18 19:37 third  
[root@ldmgeneralov ~]# chgrp main /data/main  
[root@ldmgeneralov ~]# chgrp third /data/third  
[root@ldmgeneralov ~]# ls -Al /data  
total 0  
drwxr-xr-x. 2 root main 6 Nov 18 19:37 main  
drwxr-xr-x. 2 root third 6 Nov 18 19:37 third  
[root@ldmgeneralov ~]# chmod 770 /data/main  
[root@ldmgeneralov ~]# chmod 770 /data/third  
[root@ldmgeneralov ~]# ls -Al /data  
total 0  
drwxrwx---. 2 root main 6 Nov 18 19:37 main  
drwxrwx---. 2 root third 6 Nov 18 19:37 third  
[root@ldmgeneralov ~]#
```

Рис. 2: chgrp

```
Rocky Linux 9.0 (Blue Onyx)
Kernel 5.14.0-70.13.1.el9_0.x86_64 on an x86_64

dmgeneralov login: bob
Password:
[boB@dmgeneralov ~]$ cd /data/main
[boB@dmgeneralov main]$ touch emptyfile
[boB@dmgeneralov main]$ ls -lah
total 0
drwxrwx---. 2 root main 23 Nov 18 19:40 .
drwxr-xr-x. 4 root root 31 Nov 18 19:37 ..
-rw-r--r--. 1 bob  bob   0 Nov 18 19:40 emptyfile
[boB@dmgeneralov main]$ cd ../third
-bash: cd: ../third: Permission denied
[boB@dmgeneralov main]$ touch /data/third/emptyfile
touch: cannot touch '/data/third/emptyfile': Permission denied
[boB@dmgeneralov main]$ _
```

Рис. 3: touch

Удаление чужих файлов

```
[bob@dmgeneralov main]$ ls -lha
total 0
drwxrwx---. 2 root  main  51 Nov 18 19:44 .
drwxr-xr-x. 4 root  root  31 Nov 18 19:37 ..
-rw-r--r--. 1 alice alice  0 Nov 18 19:44 alice1
-rw-r--r--. 1 alice alice  0 Nov 18 19:44 alice2
-rw-r--r--. 1 bob   bob    0 Nov 18 19:40 emptyfile
[bob@dmgeneralov main]$ rm -f alice*
[bob@dmgeneralov main]$ ls -lha
total 0
drwxrwx---. 2 root  main  23 Nov 18 19:46 .
drwxr-xr-x. 4 root  root  31 Nov 18 19:37 ..
-rw-r--r--. 1 bob   bob    0 Nov 18 19:40 emptyfile
[bob@dmgeneralov main]$ touch bob1
[bob@dmgeneralov main]$ touch bob2
[bob@dmgeneralov main]$ ls -lha
total 0
drwxrwx---. 2 root  main  47 Nov 18 19:46 .
drwxr-xr-x. 4 root  root  31 Nov 18 19:37 ..
-rw-r--r--. 1 bob   bob    0 Nov 18 19:46 bob1
-rw-r--r--. 1 bob   bob    0 Nov 18 19:46 bob2
-rw-r--r--. 1 bob   bob    0 Nov 18 19:40 emptyfile
[bob@dmgeneralov main]$
```

```
[root@dmgeneralov ~]# chmod g+s,o+t /data/main
[root@dmgeneralov ~]# ls -lha /data
total 8
drwxr-xr-x.  4 root root   31 Nov 18 19:37 .
dr-xr-xr-x. 19 root root  247 Nov 18 19:37 ..
drwxrws--T.  2 root main   47 Nov 18 19:46 main
drwxrwx---.  2 root third   6 Nov 18 19:37 third
[root@dmgeneralov ~]#
```

Рис. 5: chmod

```
[alice@dmgeneralov main]$ touch alice3
[alice@dmgeneralov main]$ touch alice4
[alice@dmgeneralov main]$ ls -lha
total 0
drwxrws--T. 2 root  main 75 Nov 18 19:53 .
drwxr-xr-x. 4 root  root 31 Nov 18 19:37 ..
-rw-r--r--. 1 alice main 0 Nov 18 19:53 alice3
-rw-r--r--. 1 alice main 0 Nov 18 19:53 alice4
-rw-r--r--. 1 bob   bob   0 Nov 18 19:46 bob1
-rw-r--r--. 1 bob   bob   0 Nov 18 19:46 bob2
-rw-r--r--. 1 bob   bob   0 Nov 18 19:48 emptyfile
[alice@dmgeneralov main]$ rm -rf bob*
rm: cannot remove 'bob1': Operation not permitted
rm: cannot remove 'bob2': Operation not permitted
[alice@dmgeneralov main]$ _
```

Рис. 6: rm

Установка ACL для директории

```
[root@dmgeneralov ~]# setfacl -m g:third:rx /data/main
[root@dmgeneralov ~]# setfacl -m g:main:rx /data/third
[root@dmgeneralov ~]# getfacl /data/main
getfacl: Removing leading '/' from absolute path names
# file: data/main
# owner: root
# group: main
# flags: -st
user::rwx
group::rwx
group:third:r-x
mask::rwx
other:---
default:user::rwx
default:group::rwx
default:group:third:rwx
default:mask::rwx
default:other:---

[root@dmgeneralov ~]# getfacl /data/third
getfacl: Removing leading '/' from absolute path names
# file: data/third
# owner: root
# group: third
user::rwx
group::rwx
group:main:r-x
mask::rwx
other:---
default:user::rwx
default:group::rwx
default:group:main:rwx
default:mask::rwx
default:other:---

[root@dmgeneralov ~]# _
```

Установка ACL по умолчанию

```
[root@dmgeneralov ~]# touch /data/main/newfile1
[root@dmgeneralov ~]# getfacl /data/main/newfile1
getfacl: Removing leading '/' from absolute path names
# file: data/main/newfile1
# owner: root
# group: main
user::rw-
group::r--
other::r--

[root@dmgeneralov ~]# touch /data/main/newfile1
[root@dmgeneralov ~]# touch /data/third/newfile1
[root@dmgeneralov ~]# getfacl /data/third/newfile1
getfacl: Removing leading '/' from absolute path names
# file: data/third/newfile1
# owner: root
# group: root
user::rw-
group::r--
other::r--

[root@dmgeneralov ~]# setfacl -m d:g:third:rw- /data/main
[root@dmgeneralov ~]# setfacl -m d:g:main:rw- /data/third
[root@dmgeneralov ~]# touch /data/main/newfile2
[root@dmgeneralov ~]# getfacl /data/main/newfile2
getfacl: Removing leading '/' from absolute path names
# file: data/main/newfile2
# owner: root
# group: main
user::rw-
group::rw-
group:third:rw-
mask::rw-
other::---
#effective:rw-
#effective:rw-

[root@dmgeneralov ~]# _
```

```
[root@dmgeneralov ~]# setfacl -m d:g:third:rwx /data/main
[root@dmgeneralov ~]# setfacl -m d:g:main:rwx /data/third
[root@dmgeneralov ~]# touch /data/main/newfile2
[root@dmgeneralov ~]# getfacl /data/main/newfile2
getfacl: Removing leading '/' from absolute path names
# file: data/main/newfile2
# owner: root
# group: main
user::rw-
group::rwx                                #effective:rwx-
group:third:rwx                            #effective:rwx-
mask::rw-
other::---
```



```
[root@dmgeneralov ~]# su -
Last login: Fri Nov 18 19:36:47 MSK 2022 on tty1
[root@dmgeneralov ~]# su - carol
[carol@dmgeneralov ~]# rm /data/main/newfile1
rm: remove write-protected regular empty file '/data/main/newfile1'? y
rm: cannot remove '/data/main/newfile1': Permission denied
[carol@dmgeneralov ~]# rm /data/main/newfile2
rm: cannot remove '/data/main/newfile2': Permission denied
[carol@dmgeneralov ~]# echo "Hello, world" >> /data/main/newfile1
-bash: /data/main/newfile1: Permission denied
[carol@dmgeneralov ~]# echo "Hello, world" >> /data/main/newfile2
[carol@dmgeneralov ~]# cat /data/main/newfile1
[carol@dmgeneralov ~]# cat /data/main/newfile2
Hello, world
[carol@dmgeneralov ~]#
```


Я получил опыт работы с разрешениями файлов и директорий в Linux.