

№ 6

: : : -02-20 2021 . #####
 : > Linux, , (),
 . ##### :
 , 1. ~/abc1 april
 may. abc1, «touch abc1»,
 «cp abc1 april» «cp abc1 may». 2. april may
 monthly, «mkdir monthly» — monthly «cp april
 may monthly» — . 3. monthly/may june.
 «cp monthly/may monthly/june» «ls monthly» ().
 4. monthly monthly.00. monthly.00
 «mkdir monthly.00» , «cp -r monthly monthly.00»
 (cp r (recursive)).
 5. monthly.00 /tmp, «cp -r monthly.00 /tmp».

```

marc@ismael:~$ cd
marc@ismael:~$ touch abc1
marc@ismael:~$ cp abc1 april
marc@ismael:~$ cp abc1 may
marc@ismael:~$ mkdir monthly
marc@ismael:~$ cp abc1 april may monthly
marc@ismael:~$ cp monthly/may monthly/june
marc@ismael:~$ ls monthly
abc1 april june may
marc@ismael:~$
  
```

1. april july , «mv april july».
2. july monthly.00 «mv july monthly.00».
«ls monthly.00».
3. monthly.00 monthly.01, «mv monthly.00
monthly.01».
4. monthly.01 reports. reports
«mkdir reports» «mv monthly.01 reports».
5. reports/monthly.01 reports/monthly «mv re-

- ports/monthly.01 reports/monthly».
6. ~/may : «touch
may» (), «ls -l may» (), «chmod u+x may»
(), «ls -l may».
 7. ~/may , : «chmod u-x may» (),
), «ls -l may» ().
 8. monthly .
 : «mkdir monthly» (), «chmod go-r monthly» ().
 9. ~/abc1 , : «touch abc1» ().

```

marc@ismael:~$ cd
marc@ismael:~$ mkdir monthly.00
marc@ismael:~$ cp -r monthly montly.00
marc@ismael:~$ cp -r monthly.00 /tmp
marc@ismael:~$ cd
marc@ismael:~$ mv april july
marc@ismael:~$ mv july monthly.00
marc@ismael:~$ ls monthly.00
july
marc@ismael:~$ ls monthly
abc1 april june may
marc@ismael:~$ mv monthly.00 monthly.01
marc@ismael:~$ mkdir reports
marc@ismael:~$ mv monthly.01 reports
marc@ismael:~$ mv reports/monthly.01 reports/monthly
marc@ismael:~$

```

), «chmod g+w abc1» ().

```

marc@ismael:~$ cd
marc@ismael:~$ touch may
marc@ismael:~$ ls -l may
-rw-rw-r-- 1 marc marc 0 мая 15 07:08 may
marc@ismael:~$ chmod u+x may
marc@ismael:~$ ls -l may
-rwxrwx-r-- 1 marc marc 0 мая 15 07:08 may
marc@ismael:~$ chmod u-x may
marc@ismael:~$ ls -l may
-rw-rw-r-- 1 marc marc 0 мая 15 07:08 may
marc@ismael:~$

```

```

marc@ismael:~$ cd
marc@ismael:~$ mkdir monthly
mkdir: cannot create directory 'monthly': File exists
marc@ismael:~$ chmod g-r monthly
marc@ismael:~$ chmod o-r monthly
marc@ismael:~$ cd
marc@ismael:~$ touch abcd1
marc@ismael:~$ chmod g+w abc1
marc@ismael:~$

```

- 2) , :
1. /usr/include/aio.h () /usr/include/sys/,
 /usr/include/) («cp
/usr/include/aio.h ~») equipment («mv aio.h equip-
ment»).
2. ~/ski.plases («mkdir ski.plases»).
3. equipment ~/ski.plases («mv equipment ski.plases»).
4. ~/ski.plases/equipment ~/ski.plases/equiplist («mv
ski.plases/equipment ski.plases/equiplist»).
5. abc1 («touch abc1») ~/ski.plases
(«cp abc1 ski.plases»), equiplist2 («mv ski.plases/abc1

- ski.plases/equiplist2»).
6. equipment ~/ski.plases («mkdir ski.plases/equipment»).
 7. ~/ski.plases/equiplist equiplist2 ~/ski.plases/equipment («mv ski.plases/equiolist ski.plases/equiplist2 ski.plases/equipment»).
 8. («mkdir newdir») ~/newdir ~/ski.plases («mv newdir ski.plases») plans («mv ski.plases/newdir

```

marc@ismael:~$ cd
marc@ismael:~$ cp /usr/include/aio.h ~
marc@ismael:~$ mv aio.h equipment
marc@ismael:~$ mkdir ski.plases
marc@ismael:~$ mv equipment ski.plases
marc@ismael:~$ mv ski.plases/equipment ski.plases/equiplist
marc@ismael:~$ touch abc1
marc@ismael:~$ cp abc1 ski.plases
marc@ismael:~$ mv ski.plases/abc1 ski.plases/equiplist2
marc@ismael:~$ mkdir ski.plases/equipment
ski.plases/plans»).
marc@ismael:~$ mv ski.plases/equiplist ski.plases/equiplist2 ski.plases/equipmen
t
marc@ismael:~$ mkdir newdir
marc@ismael:~$ mv newdir ski.plases
marc@ismael:~$ mv ski.plases/newdir ski.plases/plans
marc@ismael:~$

```

- 3) chmod, , , : «mkdir australia», «mkdir play», «touch my_os», «touch feathers».
- ```

marc@ismael:~$ mkdir australia
marc@ismael:~$ mkdir play
marc@ismael:~$ touch my_os
marc@ismael:~$ touch feathers
marc@ismael:~$

```
- . drwxr-r- ... australia: «chmod 744 australia» ( , ) (
  - 8). . drwx-x-x ... play: «chmod 711 play» ( , ) ( 8). .
  - r-xr-r- ... my\_os: «chmod 544 my\_os» ( , ) . . . -rw-rw-r- ... feathers:
  - «chmod 664 feathers» ( , ) . «ls -l» .

```

marc@ismael: ~
marc@ismael:~$ chmod 744 australia
marc@ismael:~$ chmod 711 play
marc@ismael:~$ chmod 544 my_os
marc@ismael:~$ chmod 664 feathers
marc@ismael:~$ ls -l
total 5892
-rw-rw-r-- 1 marc marc 0 мая 15 07:48 abc1
-rw-rw-r-- 1 marc marc 0 мая 15 07:12 abcd1
drwxr--r-- 2 marc marc 4096 мая 15 08:00 australia
drwxr-xr-x 2 marc marc 4096 мая 13 17:05 Desktop
drwxr-xr-x 2 marc marc 4096 мая 5 10:25 Documents
drwxr-xr-x 2 marc marc 4096 мая 15 03:52 Downloads
-rw-rw-r-- 1 marc marc 0 мая 15 08:01 feathers
drwxrwxr-x 2 marc marc 4096 мая 13 16:17 GMail
drwxrwxr-x 2 marc marc 4096 мая 13 17:06 Lab03
-rw-rw-r-- 1 marc marc 3258257 мая 15 02:35 Lab04.docx
-rw-rw-r-- 1 marc marc 12804 мая 14 02:01 Lab04.md
-rw-rw-r-- 1 marc marc 2674751 мая 15 02:40 Lab04.pdf
drwxrwxr-x 2 marc marc 4096 мая 13 18:14 Lab5
-rw-rw-r-- 1 marc marc 0 мая 15 07:08 may
drwx-wx--x 2 marc marc 4096 мая 15 07:00 monthly
drwxrwxr-x 2 marc marc 4096 мая 15 07:02 montly.00
drwxr-xr-x 2 marc marc 4096 мая 5 10:25 Music
-r-xr--r-- 1 marc marc 0 мая 15 08:01 my_os

```

- 1
- 4) , 9 10:
1. /etc/passwd ( «cat /etc/passwd»).
2. ~/feathers ~/file.old ( «cp feathers file.old»).
3. ~/file.old ~/play ( «mv file.ord play»).
4. ~/play ~/fun ( «cp -r play fun»).
5. ~/fun ~/play ( «mv fun play») games
- ( «mv play/fun play/games»).
6. ~/feathers ( «chmod u-r feathers»).
7. ~/feathers cat, , ..
8. ~/feathers, , monthly,
9. , , ~/feathers ( «chmod u+r feathers»).
10. ~/play ( «chmod u-x play»).
11. ~/play ( «cd play»). , ..
12. ~/play ( «chmod u+x play»).

```

marc@ismael: ~
marc@ismael:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin

marc@ismael:~$ cp feathers file.old
marc@ismael:~$ mv file.old play
marc@ismael:~$ cp -r play fun
marc@ismael:~$ mv fun play
marc@ismael:~$ mv play/fun play/games
marc@ismael:~$ chmod u-r feathers
marc@ismael:~$ cat feathers
cat: feathers: Permission denied
marc@ismael:~$ cp feathers monthly
cp: cannot open 'feathers' for reading: Permission denied
marc@ismael:~$ chmod u+r feathers
marc@ismael:~$ chmod u-x play
marc@ismael:~$ cd play
bash: cd: play: Permission denied
marc@ismael:~$ chmod u+x play

```

- 5) «man mount», «man fsck», «man mkfs», «man kill»,  
 . . . mount:  
 . , Unix , ,  
 ( ) ( ).  
 /. . mount  
 .  
 mount : «mount -t vfstype device dir»  
 ( ) vfstype,  
 device, dir, .

```

marc@ismael: ~
MOUNT(8) System Administration MOUNT(8)

NAME
 mount - mount a filesystem

SYNOPSIS
 mount [-l|-h|-V]

 mount -a [-fFnrsvw] [-t fstype] [-O optlist]

 mount [-fnrsvw] [-o options] device|dir

 mount [-fnrsvw] [-t fstype] [-o options] device dir

DESCRIPTION
 All files accessible in a Unix system are arranged in one big tree, the
 file hierarchy, rooted at /. These files can be spread out over sev-
 eral devices. The mount command serves to attach the filesystem found
 on some device to the big file tree. Conversely, the umount(8) command
 will detach it again. The filesystem is used to control how data is
 stored on the device or provided in a virtual way by network or another
 services.

Manual page mount(8) line 1 (press h for help or q to quit)

```

. fsck: , Linux. ,  
 fsck : fsck  
 [ ] - [ ] [ . . . ] , (« »)  
 /dev/sdb2, : «sudo fsck -y  
 /dev/sdb2» -y , . .

```

marc@ismael: ~
FSCK(8) System Administration FSCK(8)

NAME
 fsck - check and repair a Linux filesystem

SYNOPSIS
 fsck [-lsAVRTMNP] [-r [fd]] [-C [fd]] [-t fstype] [filesystem...] [--]
 [fs-specific-options]

DESCRIPTION
 fsck is used to check and optionally repair one or more Linux filesys-
 tems. filesystems can be a device name (e.g. /dev/hdc1, /dev/sdb2), a
 mount point (e.g. /, /usr, /home), or an filesystem label or UUID
 specifier (e.g. UUID=8868abf6-88c5-4a83-98b8-bfc24057f7bd or LA-
 BEL=root). Normally, the fsck program will try to handle filesystems
 on different physical disk drives in parallel to reduce the total
 amount of time needed to check all of them.

 If no filesystems are specified on the command line, and the -A option
 is not specified, fsck will default to checking filesystems in
 /etc/fstab serially. This is equivalent to the -As options.

 The exit code returned by fsck is the sum of the following conditions:

Manual page fsck(8) line 1 (press h for help or q to quit)

```

. mkfs: Linux. : mkfs [-V  
 ] [-t fstype] [ fs-options ] filesystem [ blocks ] mkfs  
 Linux ,  
 filesystems ( , /dev/hda1,

/dev/sdb2) ( , /, /usr, /home). blocks

mkfs 0 - , 1 - «mkfs -t  
ext2 /dev/hdb1» ext2 /dev/hdb1 ( ).

```

marc@ismael: ~
MKFS(8) System Administration MKFS(8)

NAME
 mkfs - build a Linux filesystem

SYNOPSIS
 mkfs [options] [-t type] [fs-options] device [size]

DESCRIPTION
 This mkfs frontend is deprecated in favour of filesystem specific
 mkfs.<type> utils.

 mkfs is used to build a Linux filesystem on a device, usually a hard
 disk partition. The device argument is either the device name (e.g.
 /dev/hda1, /dev/sdb2), or a regular file that shall contain the
 filesystem. The size argument is the number of blocks to be used for
 the filesystem.

 The exit code returned by mkfs is 0 on success and 1 on failure.

 In actuality, mkfs is simply a front-end for the various filesystem
 builders (mkfs.fstype) available under Linux. The filesystem-specific
 builder is searched for via your PATH environment setting only. Please
 Manual page mkfs(8) line 1 (press h for help or q to quit)

```

kill:

kill [ ] PID, PID - PID ( ) PID

3121» KILL PID 3121, «kill -KILL

```

marc@ismael: ~
KILL(1) User Commands KILL(1)

NAME
 kill - send a signal to a process

SYNOPSIS
 kill [options] <pid> [...]

DESCRIPTION
 The default signal for kill is TERM. Use -l or -L to list available
 signals. Particularly useful signals include HUP, INT, KILL, STOP,
 CONT, and 0. Alternate signals may be specified in three ways: -9,
 -SIGKILL or -KILL. Negative PID values may be used to choose whole
 process groups; see the PGID column in ps command output. A PID of -1
 is special; it indicates all processes except the kill process itself
 and init.

OPTIONS
 <pid> [...]
 Send signal to every <pid> listed.

 -<signal>
 -s <signal>
 Manual page kill(1) line 1 (press h for help or q to quit)

```

: Linux,

( ),

:

1. «df -Th»  
 ( 15). : devtmpfs,  
 tmpfs, ext4, iso9660. devtmpfs tmpfs devtmpfs

/ devtmpfs. devtmpfs /dev  
 . tmpfs —

Unix-  
 RAM  
 /tmp  
 tmpfs  
 ( ).

HDD . ext4 —  
 2008 « » Ext, «extent file system»,  
 , Ext4 (delayed allocation — delalloc),  
 CPU.

: 16 TB; . : 16 TB; .  
 : 255 . : . SSD; .  
 Etx ; .  
 , Ext3. ISO 9660 —  
 , CDROM.  
 CDFS (Compact Disc File System).

, , Unix, Mac OS, Windows.

```

marc@ismael: ~
marc@ismael:~$ man mkfs
marc@ismael:~$ man kill
marc@ismael:~$ df -Th
Filesystem Type Size Used Avail Use% Mounted on
udev devtmpfs 462M 0 462M 0% /dev
tmpfs tmpfs 99M 1,4M 97M 2% /run
/dev/sda5 ext4 39G 11G 26G 30% /
tmpfs tmpfs 491M 0 491M 0% /dev/shm
tmpfs tmpfs 5,0M 4,0K 5,0M 1% /run/lock
tmpfs tmpfs 491M 0 491M 0% /sys/fs/cgroup
/dev/loop0 squashfs 208M 208M 0 100% /snap/code/64
/dev/loop2 squashfs 99M 99M 0 100% /snap/core/11081
/dev/loop3 squashfs 56M 56M 0 100% /snap/core18/1988
/dev/loop1 squashfs 208M 208M 0 100% /snap/code/65
/dev/loop4 squashfs 56M 56M 0 100% /snap/core18/1997
/dev/loop5 squashfs 22M 22M 0 100% /snap/flow/710
/dev/loop6 squashfs 219M 219M 0 100% /snap/gnome-3-34-1804/66
/dev/loop7 squashfs 65M 65M 0 100% /snap/gtk-common-themes/1514
/dev/loop8 squashfs 66M 66M 0 100% /snap/gtk-common-themes/1515
/dev/loop9 squashfs 52M 52M 0 100% /snap/snap-store/518
/dev/loop10 squashfs 33M 33M 0 100% /snap/snapd/11588
/dev/loop11 squashfs 33M 33M 0 100% /snap/snapd/11841
tmpfs tmpfs 99M 52K 99M 1% /run/user/1000

```

2. Linux/UNIX



```

 , - 1024, 2048, 4096 8120 .
 . Linux - / (
 root,). ()
 “ ” (16). (16) . / -
 Linux. , Linux. ,
 ,
 root . . /BIN -
 .
 . . /SBIN - , /bin,
 , , /usr.
 , . . /ETC -
 ,
 , Init Scripts,
 . . /DEV - Linux ,
 - /dev/.
 . . /PROC - , ,
 , Pid, , ,
 . . /VAR -
 /var , ,
 . . /TMP - , ,
 . . /USR -
 , , , . . /HOME -
 ,
 . . . /BOOT -
 vmlinuz, initrd, , /boot/grub.
 . /LIB -
 /bin /sbin. . /OPT -
 ,
 . /MNT -
 . . /MEDIA -
 -USB , . . /SRV -
 . . /RUN - PID ,
 /var/run, , TMPFS,
 .
3.
mount.
4. - , -
 /
 fsck.
5. , mkfs. 5)
 .
6. : . at cat -
 : cat [] 1

```

```

2 ... : -b - -E - $
 -n - -s - -T -
^I -h - -v - . nl nl cat,
 . . less C
 ,
 ,
 cat. : -g -
 () -N - . head head
 (- 10)
 ,
 -c (-bytes) - , -n (-lines) -
 10, -q (-quiet, -silent) -
 , -v (-verbose) - -z
 (-zero-terminated) - . tail
 ,
 cat. : -c -
 -f - -n -
 -pid - -f,
 -q - -retry -
 -v -
7. cp . C : cp [] -
 -
 ,
 : -attributes-only -
 -f, -force -
 -i, -interactive - , -L -
 , -P -
 -r - Linux -s -
Linux, -u - -x -
 -p -
 -t -
8. mv ()
 : mv [-] -
 -help - -version - mv -b -
 , -f -
 , -i -
 -n - -strip-trailing-slashes
 / -t [] -
 -u -
 -v -
 : rename [] -
 -n -
9. ,
 (,)
 ,
 chmod. ()

```

: chmod — :=

- 
- r w x u (user) g (group) ,  
o (others)