

## Операционные системы - 4

```
serhio@DESKTOP-QKU9C7M: ~  
serhio@DESKTOP-QKU9C7M:~$ man -h  
Usage: man [OPTION...] [SECTION] PAGE...  
  
-C, --config-file=FILE      use this user configuration file  
-d, --debug                  emit debugging messages  
-D, --default                reset all options to their default values  
    --warnings[=WARNINGS]   enable warnings from groff  
  
Main modes of operation:  
-f, --whatis                 equivalent to whatis  
-k, --apropos                equivalent to apropos  
-K, --global-apropos         search for text in all pages  
-l, --local-file             interpret PAGE argument(s) as local filename(s)  
-w, --where, --path, --location  
                             print physical location of man page(s)  
-W, --where-cat, --location-cat  
                             print physical location of cat file(s)  
  
-c, --catman                 used by catman to reformat out of date cat pages  
-R, --recode=ENCODING        output source page encoded in ENCODING  
  
Finding manual pages:  
-L, --locale=LOCALE          define the locale for this particular man search
```

Which

```
serhio@DESKTOP-QKU9C7M: ~/x  
serhio@DESKTOP-QKU9C7M:~/x$ which -h  
Illegal option -h  
Usage: /usr/bin/which [-a] args
```

Fg

```
serhio@DESKTOP-QKU9C7M: ~/x  
serhio@DESKTOP-QKU9C7M:~/x$ fg --help  
fg: fg [job_spec]  
Move job to the foreground.  
  
Place the job identified by JOB_SPEC in the foreground, making it the  
current job. If JOB_SPEC is not present, the shell's notion of the  
current job is used.  
  
Exit Status:  
Status of command placed in foreground, or failure if an error occurs.  
serhio@DESKTOP-QKU9C7M:~/x$
```

Bg

```
serhio@DESKTOP-QKU9C7M:~/x$ bg --help
bg: bg [job_spec ...]
    Move jobs to the background.

    Place the jobs identified by each JOB_SPEC in the background, as if they
    had been started with `&'.  If JOB_SPEC is not present, the shell's notion
    of the current job is used.

    Exit Status:
    Returns success unless job control is not enabled or an error occurs.
serhio@DESKTOP-QKU9C7M:~/x$
```

Ps

```
serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ ps --help

Usage:
ps [options]

Try 'ps --help <simple|list|output|threads|misc|all>'
or 'ps --help <s|l|o|t|m|a>'
for additional help text.

For more details see ps(1).
serhio@DESKTOP-QKU9C7M:~/x$
```

Ln

```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ ln --help
Usage: ln [OPTION]... [-T] TARGET LINK_NAME
  or: ln [OPTION]... TARGET
  or: ln [OPTION]... TARGET... DIRECTORY
  or: ln [OPTION]... -t DIRECTORY TARGET...
In the 1st form, create a link to TARGET with the name LINK_NAME.
In the 2nd form, create a link to TARGET in the current directory.
In the 3rd and 4th forms, create links to each TARGET in DIRECTORY.
Create hard links by default, symbolic links with --symbolic.
By default, each destination (name of new link) should not already exist.
When creating hard links, each TARGET must exist. Symbolic links
can hold arbitrary text; if later resolved, a relative link is
interpreted in relation to its parent directory.

Mandatory arguments to long options are mandatory for short options too.
  --backup[=CONTROL]  make a backup of each existing destination file
  -b                  like --backup but does not accept an argument
  -d, -F, --directory allow the superuser to attempt to hard link
                       directories (note: will probably fail due to
                       system restrictions, even for the superuser)
  -f, --force          remove existing destination files
  -i, --interactive   prompt whether to remove destinations
  -L, --logical        dereference TARGETs that are symbolic links
  -n, --no-dereference treat LINK_NAME as a normal file if
                       it is a symbolic link to a directory
  -P, --physical       make hard links directly to symbolic links
  -r, --relative       create symbolic links relative to link location
  -s, --symbolic       make symbolic links instead of hard links
  -S, --suffix=SUFFIX  override the usual backup suffix
  -t, --target-directory=DIRECTORY specify the DIRECTORY in which to create
                               the links
  -T, --no-target-directory treat LINK_NAME as a normal file always
  -v, --verbose        print name of each linked file
  --help              display this help and exit
  --version            output version information and exit

```

Stat

```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ stat --help
Usage: stat [OPTION]... FILE...
Display file or file system status.

Mandatory arguments to long options are mandatory for short options too.
  -L, --dereference      follow links
  -f, --file-system      display file system status instead of file status
                        --cached=MODE      specify how to use cached attributes;
                        useful on remote file systems. See MODE below
  -c --format=FORMAT     use the specified FORMAT instead of the default;
                        output a newline after each use of FORMAT
                        --printf=FORMAT    like --format, but interpret backslash escapes,
                        and do not output a mandatory trailing newline;
                        if you want a newline, include \n in FORMAT
  -t, --terse            print the information in terse form
  --help                display this help and exit
  --version              output version information and exit

The --cached MODE argument can be; always, never, or default.
`always` will use cached attributes if available, while
`never` will try to synchronize with the latest attributes, and
`default` will leave it up to the underlying file system.

The valid format sequences for files (without --file-system):

  %a  permission bits in octal (note '#' and '0' printf flags)
  %A  permission bits and file type in human readable form

```

## Ping

```

serhio@DESKTOP-QKU9C7M: ~/x

Options:
  <destination>    dns name or ip address
  -a              use audible ping
  -A              use adaptive ping
  -B              sticky source address
  -c <count>      stop after <count> replies
  -D              print timestamps
  -d              use SO_DEBUG socket option
  -f              flood ping
  -h              print help and exit
  -I <interface>  either interface name or address
  -i <interval>   seconds between sending each packet
  -L              suppress loopback of multicast packets
  -l <preload>    send <preload> number of packages while waiting replies
  -m <mark>       tag the packets going out
  -M <pmtud opt>  define mtu discovery, can be one of <do|dont|want>
  -n              no dns name resolution
  -O              report outstanding replies
  -p <pattern>    contents of padding byte
  -q              quiet output
  -Q <tclass>     use quality of service <tclass> bits
  -s <size>       use <size> as number of data bytes to be sent
  -S <size>       use <size> as SO_SNDBUF socket option value
  -t <ttl>        define time to live
  -U              print user-to-user latency
  -v              verbose output
  -V              print version and exit

```

## Chmod

```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ chmod --help
Usage: chmod [OPTION]... MODE[,MODE]... FILE...
       or: chmod [OPTION]... OCTAL-MODE FILE...
       or: chmod [OPTION]... --reference=RFILE FILE...
Change the mode of each FILE to MODE.
With --reference, change the mode 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          output a diagnostic for every file processed
      --no-preserve-root  do not treat '/' specially (the default)
      --preserve-root     fail to operate recursively on '/'
      --reference=RFILE   use RFILE's mode instead of MODE values
  -R, --recursive        change files and directories recursively
      --help             display this help and exit
      --version          output version information and exit

Each MODE is of the form '[ugoa]*([-+]=([rwxXst]*|[ugo]))+|[-+]=[0-7]+'

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Report any translation bugs to <https://translationproject.org/team/>
Full documentation <https://www.gnu.org/software/coreutils/chmod>
or available locally via: info '(coreutils) chmod invocation'
serhio@DESKTOP-QKU9C7M:~/x$

```

## Chown

```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ chown --help
Usage: chown [OPTION]... [OWNER][:[GROUP]] FILE...
       or: chown [OPTION]... --reference=RFILE FILE...
Change the owner and/or group of each FILE to OWNER and/or GROUP.
With --reference, change the owner and group of each FILE to those of RFILE.

  -c, --changes          like verbose but report only when a change is made
  -f, --silent, --quiet  suppress most error messages
  -v, --verbose          output a diagnostic for every file processed
      --dereference       affect the referent of each symbolic link (this is
                          the default), rather than the symbolic link itself
  -h, --no-dereference   affect symbolic links instead of any referenced file
                          (useful only on systems that can change the
                          ownership of a symlink)
      --from=CURRENT_OWNER:CURRENT_GROUP
                          change the owner and/or group of each file only if
                          its current owner and/or group match those specified
                          here. Either may be omitted, in which case a match
                          is not required for the omitted attribute
      --no-preserve-root  do not treat '/' specially (the default)
      --preserve-root     fail to operate recursively on '/'
      --reference=RFILE   use RFILE's owner and group rather than
                          specifying OWNER:GROUP values
  -R, --recursive        operate on files and directories recursively

The following options modify how a hierarchy is traversed when the -R
option is also specified. If more than one is specified, only the final
one takes effect.

```

dd

```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ dd --help
Usage: dd [OPERAND]...
      or: dd OPTION
Copy a file, converting and formatting according to the operands.

  bs=BYTES      read and write up to BYTES bytes at a time (default: 512);
                  overrides ibs and obs
  cbs=BYTES      convert BYTES bytes at a time
  conv=CONVS     convert the file as per the comma separated symbol list
  count=N        copy only N input blocks
  ibs=BYTES      read up to BYTES bytes at a time (default: 512)
  if=FILE        read from FILE instead of stdin
  iflag=FLAGS     read as per the comma separated symbol list
  obs=BYTES      write BYTES bytes at a time (default: 512)
  of=FILE        write to FILE instead of stdout
  oflag=FLAGS     write as per the comma separated symbol list
  seek=N         skip N obs-sized blocks at start of output
  skip=N         skip N ibs-sized blocks at start of input
  status=LEVEL    The LEVEL of information to print to stderr;
                  'none' suppresses everything but error messages,
                  'noxfer' suppresses the final transfer statistics,
                  'progress' shows periodic transfer statistics

N and BYTES may be followed by the following multiplicative suffixes:
c=1, w=2, b=512, kB=1000, K=1024, MB=1000*1000, M=1024*1024, xM=M,
GB=1000*1000*1000, G=1024*1024*1024, and so on for T, P, E, Z, Y.
Binary prefixes can be used, too: KiB=K, MiB=M, and so on.

Each CONV symbol may be:

```

Yes

```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ yes --help
Usage: yes [STRING]...
      or: yes OPTION
Repeatedly output a line with all specified STRING(s), or 'y'.

  --help      display this help and exit
  --version   output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Report any translation bugs to <https://translationproject.org/team/>
Full documentation <https://www.gnu.org/software/coreutils/yes>
or available locally via: info '(coreutils) yes invocation'
serhio@DESKTOP-QKU9C7M:~/x$ _

```

uname



```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ uname --help
Usage: uname [OPTION]...
Print certain system information.  With no OPTION, same as -s.

  -a, --all                print all information, in the following order,
                           except omit -p and -i if unknown:
  -s, --kernel-name        print the kernel name
  -n, --nodename            print the network node hostname
  -r, --kernel-release     print the kernel release
  -v, --kernel-version     print the kernel version
  -m, --machine             print the machine hardware name
  -p, --processor           print the processor type (non-portable)
  -i, --hardware-platform  print the hardware platform (non-portable)
  -o, --operating-system   print the operating system
  --help                  display this help and exit
  --version               output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Report any translation bugs to <https://translationproject.org/team/>
Full documentation <https://www.gnu.org/software/coreutils/uname>
or available locally via: info '(coreutils) uname invocation'
serhio@DESKTOP-QKU9C7M:~/x$

```

## grep

```

serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ grep --help
Usage: grep [OPTION]... PATTERNS [FILE]...
Search for PATTERNS in each FILE.
Example: grep -i 'hello world' menu.h main.c
PATTERNS can contain multiple patterns separated by newlines.

Pattern selection and interpretation:
  -E, --extended-regexp  PATTERNS are extended regular expressions
  -F, --fixed-strings     PATTERNS are strings
  -G, --basic-regexp     PATTERNS are basic regular expressions
  -P, --perl-regexp      PATTERNS are Perl regular expressions
  -e, --regexp=PATTERNS  use PATTERNS for matching
  -f, --file=FILE        take PATTERNS from FILE
  -i, --ignore-case       ignore case distinctions in patterns and data
  --no-ignore-case       do not ignore case distinctions (default)
  -w, --word-regexp      match only whole words
  -x, --line-regexp      match only whole lines
  -z, --null-data        a data line ends in 0 byte, not newline

Miscellaneous:
  -s, --no-messages      suppress error messages
  -v, --invert-match      select non-matching lines
  -V, --version           display version information and exit
  --help                display this help text and exit

Output control:
  -m, --max-count=NUM    stop after NUM selected lines
  -b, --byte-offset      print the byte offset with output lines

```

## exit

```

Выбрать serhio@DESKTOP-QKU9C7M: ~/x
serhio@DESKTOP-QKU9C7M:~/x$ exit --help
exit: exit [n]
      Exit the shell.

      Exits the shell with a status of N.  If N is omitted, the exit status
      is that of the last command executed.
serhio@DESKTOP-QKU9C7M:~/x$

```

Создание директивы и переход в нее

```

serhio@DESKTOP-QKU9C7M:~$ mkdir dir
serhio@DESKTOP-QKU9C7M:~$ cd dir

```

Определяем версию

```

serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ uname --version
uname (GNU coreutils) 8.32
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Written by David MacKenzie.
serhio@DESKTOP-QKU9C7M:~/dir$

```

Запись в файл

```

serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ touch file
serhio@DESKTOP-QKU9C7M:~/dir$ uname --version >> file
serhio@DESKTOP-QKU9C7M:~/dir$ cat file
uname (GNU coreutils) 8.32
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Written by David MacKenzie.
serhio@DESKTOP-QKU9C7M:~/dir$

```

PATH

запись в файл

```

serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ echo %PATH >> file
serhio@DESKTOP-QKU9C7M:~/dir$ cat file
uname (GNU coreutils) 8.32
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Written by David MacKenzie.
%PATH
serhio@DESKTOP-QKU9C7M:~/dir$

```



определение архитектуры процессора

```
serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ uname > file
serhio@DESKTOP-QKU9C7M:~/dir$ cat file
Linux
serhio@DESKTOP-QKU9C7M:~/dir$
```

Изменение прав

полные сведения

```
serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ cat file2
serhio@DESKTOP-QKU9C7M:~/dir$ echo xd >> file2
serhio@DESKTOP-QKU9C7M:~/dir$ cat file2
xd
serhio@DESKTOP-QKU9C7M:~/dir$ ls -l
total 8
-rw-r--r-- 1 serhio serhio 6 Dec 21 01:29 file
-rw-r--r-- 1 serhio serhio 3 Dec 21 01:31 file2
-rw-r--r-- 1 serhio serhio 0 Dec 21 01:31 file3
serhio@DESKTOP-QKU9C7M:~/dir$ chmod o-r file3
serhio@DESKTOP-QKU9C7M:~/dir$ ls -l
total 8
-rw-r--r-- 1 serhio serhio 6 Dec 21 01:29 file
-rw-r--r-- 1 serhio serhio 3 Dec 21 01:31 file2
-rw-r----- 1 serhio serhio 0 Dec 21 01:31 file3
serhio@DESKTOP-QKU9C7M:~/dir$ _
```

кол-во процессоров

```
serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ ps
  PID TTY          TIME CMD
   10 pts/0        00:00:00 bash
  210 pts/0        00:00:00 ps
serhio@DESKTOP-QKU9C7M:~/dir$
```

Сведения

```
serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ ls
file  file2  file3
```

Help

```

serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ help
GNU bash, version 5.1.16(1)-release (x86_64-pc-linux-gnu)
These shell commands are defined internally.  Type `help' to see this list.
Type `help name' to find out more about the function `name'.
Use `info bash' to find out more about the shell in general.
Use `man -k' or `info' to find out more about commands not in this list.

A star (*) next to a name means that the command is disabled.

job_spec [&]                                history [-c] [-d of
(( expression ))                            if COMMANDS; then C
. filename [arguments]                      jobs [-lnprs] [jobs
:                                           kill [-s sigspec |
[ arg... ]                                let arg [arg ...]
[[ expression ]]                          local [option] name
alias [-p] [name[=value] ... ]           logout [n]
bg [job_spec ...]                        mapfile [-d delim]
bind [-lpsvPSVX] [-m keymap] [-f filename] [-q name] [-u > popd [-n] [+N | -N]
break [n]                                printf [-v var] for

```

## if-for-while

```

serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ help if
if: if COMMANDS; then COMMANDS; [ elif COMMANDS; then COMMANDS; ]... [ else COMMANDS; ] fi
Execute commands based on conditional.

The `if COMMANDS' list is executed.  If its exit status is zero, then the
`then COMMANDS' list is executed.  Otherwise, each `elif COMMANDS' list is
executed in turn, and if its exit status is zero, the corresponding
`then COMMANDS' list is executed and the if command completes.  Otherwise,
the `else COMMANDS' list is executed, if present.  The exit status of the
entire construct is the exit status of the last command executed, or zero
if no condition tested true.

Exit Status:
Returns the status of the last command executed.
serhio@DESKTOP-QKU9C7M:~/dir$ help for
for: for NAME [in WORDS ... ] ; do COMMANDS; done
Execute commands for each member in a list.

The `for' loop executes a sequence of commands for each member in a
list of items.  If `in WORDS ...;' is not present, then `in "$@"' is
assumed.  For each element in WORDS, NAME is set to that element, and
the COMMANDS are executed.

Exit Status:
Returns the status of the last command executed.
serhio@DESKTOP-QKU9C7M:~/dir$ help while
while: while COMMANDS; do COMMANDS; done
Execute commands as long as a test succeeds.

Expand and execute COMMANDS as long as the final command in the
`while' COMMANDS has an exit status of zero.

Exit Status:
Returns the status of the last command executed.
serhio@DESKTOP-QKU9C7M:~/dir$

```

## Присвоение значения

```
serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ echo hello
hello
serhio@DESKTOP-QKU9C7M:~/dir$ hello="hello world!"
serhio@DESKTOP-QKU9C7M:~/dir$ echo %hello
%hello
serhio@DESKTOP-QKU9C7M:~/dir$ _
```

## Рандом

```
serhio@DESKTOP-QKU9C7M: ~/dir
serhio@DESKTOP-QKU9C7M:~/dir$ echo $RANDOM
19069
serhio@DESKTOP-QKU9C7M:~/dir$ _
```

## Удаление директории

```
serhio@DESKTOP-QKU9C7M: ~
serhio@DESKTOP-QKU9C7M:~/dir$ cd ..
serhio@DESKTOP-QKU9C7M:~$ rm -rf dir
serhio@DESKTOP-QKU9C7M:~$ ls
x
serhio@DESKTOP-QKU9C7M:~$ _
```