

Command Summary for mh¹ and mailx

Task	mh Command	mailx Command
Start mailx		mailx
Message: create edit current include file	comp -editor vi Use vi commands Use the vi :r command	m <i>address</i> ~e ~r <i>filename</i>
edit header	Use vi commands	~h
incorporate to read	inc	
read current	show	Press Return
read next	next	+
read previous	prev	-
reply to	repl	R (Sender only) r (Sender and all recipients)
forward	forw	f
file	refile + foldername	s [+] <i>foldername</i>
delete	rmm[<i>msg-number</i>]	d[<i>msg-number</i>]
undelete	scan +wastebasket refile [<i>msg-num</i>] [+ <i>folder</i>]	u[<i>msg-number</i>]
Display a list of folders	scan	h
Leave mailx: update mailbox		quit
without updating mailbox		exit

¹ Use these commands at the system prompt to perform the same tasks you perform with the DECwindows dxmail program

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Rules for Forming Basic Regular Expressions

Expression	Rule
0-9, A-Z, a-z, most punctuation	Matches itself.
.	Matches any single character.
<code>\char</code>	Matches the character following the backslash regardless of whether that character is a regular expression operator.
*	Matches any number of occurrences of the preceding expression, including none.
<code>[chars]</code>	Matches any one of the characters within the brackets. Ranges of characters can be abbreviated.
\$	Matches the end of a line when used at the end of a regular expression. Otherwise, matches itself.
^	Matches the beginning of a line when used at the beginning of an expression. When used as the first character inside brackets, excludes the bracketed characters from being matched. Otherwise, matches itself.
<code>\{i,j\}</code>	Matches the specified number of occurrences of the preceding simple expression. For example, <code>ab\{3\}c</code> matches <code>abbbc</code> .
<code>expr expr ...</code>	Forms a compound expression that matches any string which matches the first simple expression, then the second, and so on.
<code>\(expr\)</code>	Matches <code>expr</code> , causing regular expression operators to treat it as a unit. For example, <code>a(bc)\{2\}d</code> matches <code>abcbcd</code> .

Command Summary for vi and emacs

Task	vi Command	emacs Command
Start the editor	<code>vi [file]</code>	<code>emacs</code>
Read a file	<code>:r file</code>	<code>C-x C-f</code>
Move the cursor by:		
character	<code>l, h</code>	<code>c-b, C-f</code>
word	<code>w, W</code>	<code>M-b, M-f</code>
line	<code>j, k</code>	<code>C-p, C-n</code>
sentence	<code>), (</code>	<code>M-a, M-e</code>
screen	<code>Ctrl/b, Ctrl/f</code>	<code>C-v, M-v</code>
Insert text:		
after cursor	<code>a</code>	Position the cursor where the text is needed and enter the text.
at end of line	<code>A</code>	
before cursor	<code>i</code>	
at beginning of line	<code>I</code>	
Delete text:		
a character	<code>x, X</code>	<code>DEL, C-d</code>
a word	<code>dw, dW</code>	
a line	<code>dd</code>	
to a mark	<code>d'letter</code>	
Kill text:		
a word		<code>M-DEL, M-d</code>
a line		
to a mark		
Search text:		
forward	<code>/pattern</code>	<code>C-s</code>
backward	<code>?pattern</code>	<code>C-r</code>
repeat	<code>n, N</code>	<code>C-s, C-r</code>
Set a mark	<code>m letter</code>	<code>C-@, C-SPC</code>
Put text (yank for emacs):		
before cursor	<code>p</code>	<code>C-y</code>
after cursor	<code>P</code>	
Recover lost edits	<code>vi -rfile</code>	<code>M-x</code>
Redraw the screen	<code>Ctrl/l</code>	<code>C-l</code>
Write out a file	<code>:w file</code>	<code>C-x, C-s</code>
Leave the editor:		
saving changes	<code>:wq</code>	<code>C-x, C-c</code>
without saving changes	<code>:q!</code>	

Built-in C Shell Variables

Variable	Description
autologout	Logs you out of the system automatically if your account is idle for a specified period of time.
cdpath	Specifies alternate directories to be searched by the system when locating subdirectories with the <code>cd</code> , <code>chdir</code> , or <code>push</code> commands.
home	Contains the pathname of your home directory.
ignoreeof	Specifies whether Ctrl/c can be used to log out of the system.
noclobber	Specifies whether a file can be overwritten.
notify	Specifies whether you are notified when a background process has completed.
path	Specifies the search path that the shell uses to find commands.
prompt	Customizes your C shell prompt.
shell	Specifies the shell to create when a program creates a subshell.

Environment Variables

Variable	Description
DISPLAY	Specifies the default display name for X applications.
EDITOR	Specifies the default editor for command line editing at the shell prompt for file name completion. (Korn shell only)
PRINTER	Specifies the default printer to which print jobs are queued.

Meanings for Octal Permissions

Octal Number	Permissions	Description
0	None	No permission.
1	--x	Execute permission.
2	-w-	Write permission.
3	-wx	Write and execute permission.
4	r--	Read permission.
5	r-x	Read and execute permission.
6	rw-	Read and write permission.
7	rwx	Read, write, and execute permission.

Important Files in Your Home Directory

File Name	Purpose of the File
<code>.cshrc</code>	Defines your C shell environment with the <code>.login</code> file. (Read each time you start a new shell.)
<code>default.DECterm</code>	Stores customization information for DECterm windows.
<code>.kshrc</code>	Defines your Korn shell environment with the <code>.profile</code> file. (Read each time you start a new shell.)
<code>.login</code>	Defines your C shell environment. (Read only when you log in to the system.)
<code>.mh_profile</code>	Defines the environment for MH.
<code>.mailrc</code>	Defines the environment for <code>mailx</code> (Mail) and <code>mail</code> (binmail).
<code>.mwmrc</code>	Defines workspace menus and key bindings.
<code>.profile</code>	Defines your Korn and Bourne shell environments. (Read only when you log in to the system.)
<code>.X11Startup</code>	Controls which applications are invoked when you start a workstation session.
<code>.XDefaults</code>	Records Session Manager customizations.

Shell Metacharacters

Metacharacter	Description
Input/Output	
<	Redirects input.
>	Redirects output to a specified file.
<<	Redirects input and specifies that the shell should read input up to a specified line.
>>	Redirects output and specifies that the shell should add output to the end of a file.
2>	Redirects diagnostic output to a specified file. (Bourne shell only)
>!	Redirects output and specifies that if the <code>noclobber</code> variable is set, it should be ignored so that the files can be overwritten. (C shell only)
>&	Redirects diagnostic and standard output and appends them to a file. (C and Korn shells only)
>>&	Redirects diagnostic and standard output to the end of an existing file. (C shell only)
Expansion/Substitution	
\$	Specifies variable substitution. (C shell only)
!	Specifies history substitution. (C shell only)
:	Precedes substitution modifiers. (C shell only)
^	Used in special kinds of history substitution. (C shell only)
'	Specifies command substitution. (C shell only)
\${...}	Specifies variable substitution. (Bourne and Korn shells only)
%	Specifies job number substitution. (Korn shell only)
'...'	Specifies command output substitution. (Korn shell only)
'...'	Specifies command output substitution. (Bourne shell only)

Shell Metacharacters (Continued)

Metacharacter	Description
Syntactic	
;	Separates commands that should be executed sequentially.
	Separates commands that are part of a pipeline.
&&	Runs the next command if the current command succeeds.
	Runs the next command if the current command fails.
::	Separates elements of a case construct. (Bourne and Korn shells only)
&	Runs a command in the background.
()	Groups commands to run as a separate process in a subshell.
{ }	Groups commands without creating a subshell. (Korn shell only)
File Name	
/	Separates the parts of a file's pathname.
?	Matches any single character except a leading dot (.).
*	Matches any sequence of characters except a leading dot (.).
[]	Matches any of the enclosed characters.
~	Specifies a home directory when used at the beginning of a pathname. (C and Korn shells only)
Quotation	
\	Specifies that the following character should be interpreted literally; that is, without its special meaning to the shell.
'...'	Specifies that any of the enclosed characters (except for single quote (') in Korn and C shells, and ampersand single quote (&') in Bourne shell) should be interpreted literally; that is, without their special meaning to the shell.
"..."	Provides a special form of quoting. Specifies that the dollar sign (\$), grave accent (`), and backslash (\) characters keep their special meaning, while all other enclosed characters are interpreted literally, that is, without their special meaning to the shell.

rwho - identifies users logged in to hosts on the local network

rwho [-a] [*user ...*]

-a Displays information about all users. Without this flag, **rwho** omits information about users whose sessions have been idle for an hour or more.

sort - sorts or merges files

sort [-m] [-Abdfinru] [-o *output-file*] [-k *keydef*] ... [-t *character*] [-T *directory*] [-y [*kilobytes*]] [-z *record-size*] ... *file ...*

sort -c [-u] [-Abdfinru] [-k *keydef*] ... [-t *character*] [-T *directory*] [-y [*kilobytes*]] [-z *record_size*] ... *file ...*

-m Merges only (assumes sorted output).
-o *output-file* Directs output to the named file, rather than to standard output.
-r Reverses the order of the sort.

tail - displays the end of a file

tail [-f | -r] [-c *number* | -n *lines*] [*file*]
tail [+*number* | -*number*{*unit*} -f | -r] [*file*]

-n *lines* Specifies the number of *lines* to display.
The default is 10.

telnet - provides the TELNET interface for logging in to a remote host

telnet [-d] [-l *user*] [-n *trace-file*] [*host*] [*port*]

uucp - copies files from one UNIX system to another UNIX system

uucp [-d | -f] [-ggrade] [-cCjmr] [-n*user*] [-sfile] [-xdebug-level] *source ... destination*

-j Displays the job number of the transfer operation.
-m Sends you mail when the transfer to a remote host is complete.

uuencode, uudecode - encodes or decodes binary files

uuencode [*file*] *remotefile*
uudecode [*file...*]

uustat - reports status of and provides job control for remote file transfer

uustat [-a | -k *job-number* | -m | -p | -q | -r *job-number*] [-s *system*] [-u *user*]

-k *job-number* Cancels the specified **uucp** or **uux** job. This flag cancels the job only on the local computer. Once execution on the remote computer begins, this flag has no effect.
-u *user* Displays information about the specified user's jobs.

uux - runs a command on another host

uux [-c | -C] [-n | -z] [-l | -p][*-auser*] [*-brj*] [*-ggrade*] [*-sfile*] [*-xdebug-level*] *command-string*

-j Displays the job number of the process running the command on the remote host.

wc - counts the bytes, lines, characters, and words in a file

wc [-clmw] [*file...*]

-l Counts only lines.
-m Counts only characters.
-w Counts only words.

whatis - describes the command, function, or file

whatis [-M *pathname*] *keyword*

whereis - locates source, binary, and reference page files for programs

whereis [-bms] [-u][*-BMS directory ... -f*] *program ...*

which - locates a program file, including aliases and paths

which *program ...*

who - identifies users currently logged in

who [-a] [-A*file*] [-bdhHlMppqrstTu] [*file*]
who am i

write - sends messages to other users

write [-r] [-n *node*] *user* [*line*]
write *user@node* [*line*]
write -h *handle,reply*
write -q [-n *node*]

mv - moves files and directories

mv [-i | -f] [--] *file1 file2*

mv [-i | -f] [--] *file1 ... directory*

mv [-i | -f] [--] *directory1 ... directory2*

-i Queries you when the **mv** command would overwrite an existing file. You answer affirmatively (by default, yes) or negatively (by default, no).

passwd, chfn, chsh - changes password file information

passwd [-f | -s] *user*

chfn [*user*]

chsh [*user*]

pax - portable archive interchange

pax [-cdvn] [-f *archive*] [-s *replacement-string ...*] *pattern ...*

pax -r [-cdiknuvyz] [-f *archive*] [-p *string ...*]
[-s *replacement-string ...*] [*pattern ...*]

pax -w [-adituvXY] [-b *blocksize*] [-f *archive*]
[-s *replacement-string ...*] [-x *format*] [*file ...*]

pax -r -w [-dikltuvXY] [-p *string ...*]
[-s *replacement-string ...*] [*file ...*] *directory*

Required Flags

no flag Lists the names of the files in the archive.

-r Extracts files from the archive.

-w Writes files to the archive.

-r -w Writes files to the archive and then extracts the written files.

Optional Flags

-v Displays the pathnames of files being read or written, or generates a detailed list of files in the archive.

ps - displays current process state

ps [-aAdefjlm] [-oO *format*][=*header*], ... [-g *grouplist*]
[-n *namelist*] [-p *proclist*] [-t *termlist*] [-u *userlist*]
[-U *userlist*]

pwd - displays the pathname of the current directory

pwd

rcp - copies files between a local and a remote host or two remote hosts

rcp [-pr] *source destination*

-r Copies recursively. This flag can be specified only with directories.

rlogin - connects the local host with a remote host

rlogin [-8] [-e*character*] [-*user*] *remote-host*

-l *user* Specifies that **rlogin** log in to *remote-host* as the specified *user*, rather than the local username.

rm - removes (unlinks) files or directories

rm [-efirR] [--] *file ...*

-i Queries you before deleting each file. You answer affirmatively (by default, yes) or negatively (by default, no).

-R Removes directories, including any files or other directories contained in the directory you name on the command line.

rmdir - removes a directory

rmdir [-p] *directory ...*

rsh - executes the specified command at the remote host or logs in to the remote host

rsh [-dn] [-l *user*] *remote-host* [*command*] [*argument ...*]

-l *user* Specifies that **rsh** log in to *remote-host* as the specified *user*, rather than the local username.

runtime - displays the status of hosts on the network

runtime [-ar] [-l | -t | -u] [*machine-name*]

kill - sends a message to, and often stops, a running process

kill [-*signal-name* | -*signal-number*] *process-id* ...

kill -l

lpq - displays information about files queued to printers

lpq [+] [*number*] [-l] [-P*printer*] [*request-ID* ...] [*user* ...]

-l Displays information about each of the files composing the print request.

-P Displays information about only the named printer.

lpr - sends files to the printer queue for printing

lpr [-hjmrsx] [*filetype-flag*] [-A "*option-list*"] [-C *class*]
[-i [*number*]] [-l*tray*] [-J *name*] [-K*sides*] [-N*number*]
[-o*number*] [-O*orientation*] [-P*printer*] [-T *title*] [-w*number*]
[-#*number*] [-1 *font* | -2 *font* | -3 *font* | -4 *font*] *file* ... | -

-h Suppresses the printing of the cover page for the print job.

-J *name* Specifies the name to appear on the cover page for the print job.

-K*sides* Prints the pages of the job as specified by *sides*. Specify 2 for two-sided printing as it appears in a bound book.

-m Sends mail upon completion of the print job.

-N*number* Prints more than one page on a sheet of paper. The *number* argument can be from 1 to 100.

-P*printer* Sends the file to the specified *printer*.

-#*number* Produces the specified *number* of copies.

lprm - removes print jobs from the printer queue

lprm [-P*printer*] [-] [*job_ID* ...] [*user* ...]

-P*printer* Removes the job from the specified *printer* queue.

- Removes all print jobs that you own.

ls - lists and generates information about files

ls [-aAbcCdFgijLmnoPqrRstux1] [*file* ... | *directory* ...]

-a Lists all entries in a directory, including entries that begin with a dot (.).

-F Puts a slash (/) after each file name if the file is a directory, an asterisk (*) if the file can be executed, an equal sign (=) if the file is a socket, an at sign (@) if the file is a symbolic link, and a vertical bar (|) if the file is a FIFO.

-l Displays more information about the file, including the mode, number of links, owner, group, size (in bytes), and time of last modification.

-R Lists all subdirectories and their contents.

man - displays reference pages

man [-] [-Ml-P *search-path*] [-l] [-t] {*section*[*suffix*] *title* ...} ...

man [-Ml-P *search-path*] -k *keyword* ...

man [-Ml-P *search-path*] -f *title* ...

-f *title* Describes the command, function, or file specified by *title* if the *what.is* database exists.

-k Locates reference pages by keywords if the *what.is* database exists.

-M *pathname* Specifies an alternate location where the *man* command should search for reference pages.

mkdir - makes a directory

mkdir [-m *mode*] [-p] *directory* ...

-m*mode* Creates a directory and sets the file permissions to *mode*, a symbolic string as defined for the *chmod* command.

-P Creates intermediate directories, as necessary.

more, page - displays a file one screenful at a time

more [-cdefhirsuvz] [-n *number*] [+*line-number* |
[-t *tagstring*] +/*pattern*] [*file* ...]

page [-cdefhirsuvz] [-n *number*] [+*line-number* |
+/*pattern*] [-t *tagstring*] [*file* ...]

+*line-number* Begins displaying at the specified *line-number*.

+/*pattern* Begins displaying at the line containing the regular expression *pattern*.

-n *number* Sets the number of lines in the display window to *number*.

apropos - finds reference pages by keyword

`apropos keyword ...`

bg - runs job in the background

`bg [job_id ...]`

cat - concatenates or displays files

`cat [-benrstuv] file ... | -`

-n Displays output lines preceded by a line number.

cd - changes the current directory

`cd [directory]`

clear - clears the terminal screen

`clear`

chmod - changes permission codes

`chmod [-fR] [who] +permission | -permission
| =[permission] ... file ... | directory ...`

`chmod [-fR] absolute-mode file ... | directory ...`

-R Sets the permission code on each file in the specified directory. If the directory contains other directories, `chmod` sets the permission codes on those directories and their contents. This process continues until the command reaches the bottom of the directory tree.

compress, uncompress, zcat - compresses
and uncompresses data

`compress [-cCdfnqvV] [-b bits] [file ...]`

`uncompress [-cCfFnqvV] [file ...]`

`zcat [-n] [file ...]`

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cp - copies files

`cp [-fhlp] [--] source-file destination-file`

`cp [-fhlp] [--] source-file... destination-directory`

`cp [-fhlp] [--] [-r] [-R] [source-file | source directory] ...
destination-directory`

-i Queries you when the `cp` command will overwrite an existing file. You answer affirmatively (by default, yes) or negatively (by default, no).

-R When the source is a directory, copies the directory and the entire subtree to the new location.

date - displays or sets the date

`date [-u] [+field-descriptor ...]`

df - displays statistics on free disk space

`df [-eiknP] [-t fstype] [file | filesystem ...] (default)`

`df [-eiknPt] [-F fstype] [file | filesystem ...] (XPG4)`

-k Reports statistics in kilobytes, rather than 512-byte blocks.

diff - compares text files

`diff [-c | -C lines | -e | -f | -h | -n] [-bitw] file1 file2`

`diff [-c | -C lines | -e | -f | -h | -n] [-bitw] [-S file] directory1
directory2`

`diff [-Dstring] [-bitw] file1 file2`

-b Ignores trailing spaces and tabs and considers all other strings of spaces and tabs to be identical.

-Clines Produces a `diff` listing with the specified number of lines displayed around the different line. The default is three lines.

-i Ignores the case (uppercase or lowercase) of letters.

-w Ignores spaces and tabs.

du - displays a summary of disk usage

`du [-a | -s] [-kirx] [file ...] [directory ...]`

-a Displays the size, in number of blocks, of files in the specified directory tree. If you omit this flag, `du` reports only on files you name on the command line.

-s Displays only the total number of blocks used by the specified files or directories.

exit - causes the shell to exit

`exit (all shells)`