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Common unix commands and utilities

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This page was created to list commonly used Unix commands and useful utilities that were available on a time-sharing Tru64 Unix system operated by the School of Earth Sciences in the early 2000s.

This page was edited in 2010 to remove special programs that were only available on the School's system, which is no longer in use. The remaining commands and utilities listed here should be available for all varieties of Unix and Linux, including Mac OS X (from the Terminal application).

Program listings are organized by general subject categories. Keys preceded by a ^ character are `CONTROL` key combinations. Access the online manual with the `man` program to get more information on these programs, for example,

    man cp

To find a program not on this list (and there are hundreds), try the `man` program with the `-k` option followed by a keyword, for example,

    man -k tape

to find all on-line manual entries that refer to programs that work with tapes.

Terminal control characters for C-shell (`csh`)

(^ is the control key)

`^h`, `backspace`	erase previously typed character
`^u`	erase entire line of input so far typed
`^d`	end-of-input for programs reading from terminal
`^s`	suspend writing to terminal (freezes terminal)
`^q`	continue writing to terminal
`^z`	suspend currently running job; restart with bg or fg
`^c`	kill currently running program and allow clean-up before exiting
`^\`	emergency kill of currently running program with no chance of cleanup

Also see a list of special characters that should not be used in filenames.

Login and authentication

`login`	access computer; start interactive session
`logout`	disconnect terminal session
`passwd`	change local login password; you **must** set a strong password that is not easily guessed
`kinit`	obtain kerberos ticket for connections to other kerberized computers
`kdestroy`	destroy kerberos tickets (authorizations)

Information

`date`	show date and time
`history`	list of previously executed commands
`man`	show online documentation by program name
`info`	online documentation for GNU programs

`w`, `who`	who is on the system and what they are doing
`whoami`	who is logged onto this terminal
`top`	show system stats and top CPU using processes
`uptime`	show one line summary of system status

File management

`cat`	combine files
`cp`	copy files
`ls`	list files in a directory and their attributes
`mv`	change file name or directory location
`rm`	remove files
`ln`	create another link (name) to a file
`chmod`	set file permissions
`crypt`	encode/decode a file with a private key
`gzip`, `gunzip`	compress/decompress a file
`find`	find files that match specific criteria

Display contents of files

`cat`	copy files to display device
`more`	show text file on display terminal with paging control
`head`	show first few lines of a file(s)
`tail`	show last few lines of a file; or reverse line order
`vi`	full-featured screen editor for modifying text files
`pico`	simple screen editor for modifying text files
`grep`	display lines that match a pattern
`lpr`	send file to printer
`pr`	format file with page headers, multiple columns, etc.
`diff`	compare two files and show differences
`cmp`	compare two binary files and report if different
`comm`	compare two files; show common or unique lines
`od`	display binary files as eqivalent octal/hex codes
`strings`	show printable text embedded in binary files
`file`	examine file(s) and guess type: text, data, program, etc.
`wc`	count characters, words, and lines in a file

Directories

`cd`	change to new directory
`mkdir`	create new directory
`rmdir`	remove empty directory (you must remove files first)
`mv`	change name of directory
`pwd`	show current directory

Disks

df	summarize free space on disk filesystems
du	show disk space used by files or directories

Special character handling for C-shell (See `man csh`)

*	match any characters in a file name
~user	shorthand for home directory of `user`
$name	substitute value of variable `name`
\	turn off special meaning of character that follows
'	in pairs, quote string with special chars, except !
"	in pairs, quote string with special chars, except !, $
`	in pairs, substitute output from enclosed command

Controlling program execution for C-shell (See `man csh`)

&	run job in background
^c	kill job in foreground
^z	suspend job in foreground
fg	restart suspended job in foreground
bg	run suspended job in background
;	delimit commands on same line
()	group commands on same line
!	re-run earlier commands from history list
jobs	list current jobs
ps	show process information
kill	kill background job or previous process
nice	run program at lower priority
at	run program at a later time
crontab	run program at specified intervals
limit	see or set resource limits for programs
alias	create alias name for program (normally used in `.login` file)
sh, csh	execute command file

Controlling program input/output for C-shell (See `man csh`)

		pipe output to input
>	redirect output to a storage file
<	redirect input from a storage file
>>	append redirected output to a storage file
tee	copy input to both file and next program in pipe
script	make file record of all terminal activity

Email and communication

msgs	read system bulletin board messages
mailx	send/read email; can be run by other programs to send exisiting files via email
uuencode uudecode	encode/decode a binary file for transmission via email
rn	read USENET news groups

Editors and formatting utilities

sed	programmable text editor for data streams
vi	full-featured editor for character terminals
emacs	GNU emacs editor for character terminals
xemacs	GNU emacs editor for X Window terminals
pico	very simple text editor
fmt	fill and break lines to make all same length
fold	break long lines to specified length

X Window client programs (output to X terminal or server)

xterm	provide login shell window
xauth	manipulate authorization files
xload	show system load
xman	full screen online manual viewer
xemacs	GNU emacs editor
gv	interface to contol gs to display PostScript or PDF files on screen
xdvi	display DVI files on X Window (screen preview)
gnuplot	interactive data plotting on screen

TeX typesetting system

tex	process TeX files to DVI (device independent) output
latex	process LaTeX files to DVI
dvips	print DVI files on Postscript laser printer
xdvi	display DVI files on X Window (screen preview)
latex2html	translate LaTeX files to HTML (for web pages)

Printing (BSD based)

lpr	send file to print queue
lpq	examine status of files in print queue
lprm	remove a file from print queue
enscript	convert text files to PostScript format for printing

Interpreted languages and data manipulation utilities

sed	programmable text editor for data streams
awk	pattern scanning and processing language
perl	Practical Extraction and Report Language
sort	sort or merge lines in a file(s) by specified fields

`tr`	translate characters
`cut`	cut out columns from a file
`paste`	paste columns into a file
`dd`	copy data between devices; reblock; convert EBCDIC

Graphics and mapping

`gnuplot`	interactive data plotting; outputs to PostScript or X Window
`gs`	"ghostscript" converter displays PostScript files on X Window displays or other devices

Networking/communications

`ssh`	remote login/command execution; encrypted
`scp`	remote non-interactive file copy; encrypted
`sftp`	remote interactive file copy; encrypted
`telnet`	remote network login; plain text password - **not recommended**
`ftp`	network file transfer program; plain text password - **not recommended**
`host`	find IP address for given host name, or vice versa
`lynx`	web browser for character based (text-only) terminals
`gzip`, `gunzip`	compress/decompress a file
`tar`	combine multiple files/dirs into single archive
`uuencode` `uudecode`	encode/decode a binary file for transmission via email

Compilers, interpreters and programming tools

`csh`	command language interpreter (C-shell scripts)
`ksh`	command language interpreter (Korn-shell scripts)
`sh`	command language interpreter (Borne-shell scripts)
`f77`	Fortran 77 compiler
`f2c`	convert fortran source code to C source code
`gcc`	GNU C compiler
`g++`	GNU C++ compiler
`dbx`	command-line symbolic debugger for compiled C or Fortran
`make`	recompile programs from modified source
`cflow`	generate C flow graph

Programming libraries (see `man library_name`)

`lapack`	Fortran 77 routines for numerical linear algebra (supersedes LINPACK and EISPACK)
`X`	routines to interface with X window system (no man page -- get the X Toolkit book)
`dbm`	database routines
`xdr`	library routines for external data representation
`netcdf`	routines for machine independent data representation

Tape manipulation and archiving

`mt`	manipulate tape drive and position tape

`dd`	unformatted tape read and write; file conversion
`tar`	archive disk files on tape or disk
`ltf`	read/write ANSI standard label tapes

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