

UNIX Quick Reference

This card represents a brief summary of some of the more frequently used UNIX commands that all users should be at least somewhat familiar with. Some commands listed have much more functionality than can be included on this card. Please consult their respective manual pages for more information (`man command`).

Filesystem Management

<code>ls</code>	List “normal” files.
<code>ls file</code>	List only <i>file</i> .
<code>ls -a</code>	List all files.
<code>ls -l</code>	Verbosely list “normal” files.
<code>ls -al</code>	Verbosely list all files.
<code>ls -al file</code>	Verbosely list only <i>file</i> .
<code>rm file</code>	Remove <i>file</i> .
<code>rm -r dir</code>	Remove <i>dir</i> and all subdirs.
<code>mv file1 file2</code>	Move/Rename <i>file1</i> to <i>file2</i> .
<code>mv dir1 dir2</code>	Move/Rename <i>dir1</i> to <i>dir2</i> .
<code>cp file1 file2</code>	Copy <i>file1</i> to <i>file2</i> .
<code>cd dir</code>	Change directory to <i>dir</i> .
<code>mkdir dir</code>	Make a directory <i>dir</i> .
<code>rmdir dir</code>	Remove the directory <i>dir</i> .
<code>chown user file</code>	Change owner of <i>file</i> to <i>user</i> .
<code>chgrp group file</code>	Change group of <i>file</i> to <i>group</i> .
<code>chmod nnn file</code>	Change permissions on <i>file</i> to
	755 <code>rw-r--r--</code>
	700 <code>rw-r-----</code>
	644 <code>rw-r--r--</code>
	600 <code>rw-r-----</code>
<code>locate file</code>	Find <i>file</i> (fast, not reliable).
<code>find dir -name file</code>	Find <i>file</i> in subdir of <i>dir</i> (very slow, reliable).

Account Management

<code>passwd</code>	Change your password.
<code>chsh</code>	Change your login shell.
<code>chfn</code>	Change your f inger info.
<code>who</code>	Show who is logged on.
<code>w</code>	Show who is doing what.
<code>quota -v</code>	Show your disk quota info.
<code>du -k dir</code>	Show disk usage of <i>dir</i> .
<code>df -k</code>	Show filesystem usage.

File Manipulation

<code>vi file</code>	Edit <i>file</i> with <code>vi</code> editor.
<code>pico file</code>	Edit <i>file</i> with <code>pico</code> editor.
<code>wc file</code>	Count words/lines in <i>file</i> .
<code>more file</code>	Show contents of <i>file</i> .
<code>head -n file</code>	Show first <i>n</i> lines of <i>file</i> .
<code>tail -n file</code>	Show last <i>n</i> lines of <i>file</i> .
<code>grep pattern file</code>	Search <i>file</i> for <i>pattern</i> .
<code>cat file1 file2 > file3</code>	Append <i>file2</i> to <i>file1</i> and save results as <i>file3</i> .

Process (Job) Manangement

<code>top</code>	Show the top cpu processes.
<code>ps -elf</code>	Show info about all processes.
<code>kill pid</code>	Kill process <i>pid</i> .
<code>kill -9 pid</code>	Kill stubborn process <i>pid</i> .
<code>^C</code>	Interrupt a foreground process.
<code>^Z</code>	Suspend a foreground process.
<code>jobs</code>	Show jobs from this session.
<code>bg</code>	Send process to background.
<code>fg</code>	Bring process to foreground.
<code>nice command</code>	Run <i>command</i> at lower priority.
<code>renice -n n pid</code>	Lower priority of <i>pid</i> by <i>n</i> .
<code>time command</code>	Time the execution of <i>command</i> .

Archiving and Compression

<code>tar cf file.tar files</code>	Archive <i>files</i> as <i>file.tar</i>
<code>tar xf file.tar</code>	Extract archive <i>file.tar</i> .
<code>gzip file</code>	Compress <i>file</i> to <i>file.gz</i> .
<code>gzip -d file.gz</code>	Uncompress <i>file.gz</i> .
<code>compress file</code>	Compress <i>file</i> to <i>file.Z</i> .
<code>uncompress file.Z</code>	Uncompress <i>file.Z</i> .

Printing

<code>lpr file</code>	Print <i>file</i> to default printer.
<code>lpr -Pprinter file</code>	Print <i>file</i> to <i>printer</i> .
<code>lpq</code>	Show default print queue.
<code>lpq -Pprinter</code>	Show <i>printer</i> print queue.
<code>lprm -</code>	Purge default printer.
<code>lprm -Pprinter -</code>	Purge <i>printer</i> .
<code>lprm job</code>	Remove <i>job</i> on default printer.
<code>lprm -Pprinter job</code>	Remove <i>job</i> on <i>printer</i> .

Compilation

(Fortran)	<code>f77 options file1.f ... fileN.f</code>
(C)	<code>cc options file1.c ... fileN.c</code>
(C++)	<code>CC options file1.C ... fileN.C</code>

Some of the more important compiler options are summarised below. Please note that some compilers are slightly different than others, the options included here are common to most compilers.

<code>-o file.x</code>	Create executable called <i>file.x</i> .
<code>-g</code>	Include info for debugging.
<code>-c</code>	Compile, but do not link objects.
<code>-ON</code>	Optimize executable ($1 \leq N \leq 3$).
<code>-lfoo</code>	Include library <i>libfoo.a</i> .

The dbx Debugger

<code>dbx file.x</code>	Start debugger with <i>file.x</i> .
<code>rerun</code>	Rerun from beginning.
<code>stop in sub</code>	Set breakpoint in <i>subroutine</i> .
<code>stop at N</code>	Set breakpoint at line <i>N</i> .
<code>trace var</code>	Set a tracewatch on <i>variable</i> .
<code>status</code>	Show breakpoints and traces.
<code>delete N</code>	Delete <i>N</i> 'th breakpoint/trace.
<code>delete all</code>	Delete all breakpoints/traces.
<code>cont</code>	Continue running (after a <code>stop</code>).
<code>step</code>	Execute the next line and stop.
<code>next</code>	Same as <code>step</code> , but steps over calls.
<code>list</code>	List 10 lines of source.
<code>list N</code>	List 10 lines from line <i>N</i> .
<code>print var</code>	Print the value of <i>variable</i> .
<code>dump</code>	Print the value of all variables.
<code>quit</code>	Quit the debugger.

Getting Help

`man command` Show the manual for *command*.
`man -k keyword` Search man pages for *keyword*.

I/O Redirection

`< file` Redirect *file* to STDIN.
`> file` Redirect STDOUT to *file*.
`>! file` Redirect STDOUT to *file* (overwrite).
`>> file` Redirect STDOUT to *file* (append).
`>& file` Redirect STDOUT & STDERR to *file*.
`| tee file` Show STDOUT and copy to *file*.
`|` Redirect STDOUT of one command to
STDIN of another (ie: `ls | more`).

Environment Variables (csh/tcsh)

`echo $var` Show value of *var*.
`printenv` Show value of all variables.
`setenv var value` Set value of *var* to *val*.
`unsetenv var` Remove the variable *var*.

Aliases (csh/tcsh)

`alias` Show all aliases.
`alias name` Show alias *name*.
`alias name "command"` Create an alias called
name for *command*.

The vi Editor (Basics)

`<Esc>` Return to command mode.
`:q` Quit.
`:q!` Quit and discard changes.
`:w` Save.
`:w file` Save as *file*.
`:wq` Save and quit.
`:wq!` Save and quit (for readonly files).
`ZZ` Save and quit.
`i` Insert text mode.
`a` Append text mode.
`R` Replace text mode.
`u` Undo last action.
`U` Redo last action.
`.` Repeat last command.

The vi Editor (Editing)

- o Insert new line below cursor.
- O Insert new line above cursor.
- r Replace character.
- Nx Delete *N* characters.
- dNd Delete *N* lines.
- dw Delete word (punctuation excluded).
- dW Delete word (punctuation included).
- D Delete here to end of line.
- yNy Yank *N* lines to buffer.
- p Paste buffer after cursor.
- P Paste buffer before cursor.
- J Join current and next line.

The vi Editor (Movement and Searching)

- ∅ Go to start of line.
- \$ Go to end of line.
- G Go to last line.
- Ng Go to *N*th line.
- ^f Page down.
- ^b Page up.
- % Find matching brackets.
- /*pattern* Search forward for *pattern*.
- ?*pattern* Search backward for *pattern*.
- n Go to next *pattern*.
- N Go back to previous *pattern*.
- :1,\$s/*pat1*/*pat2*/g Replace all *pat1* with *pat2*.

The vi Editor (vim Extensions)

- ^V Visual block mode.
- :center Center current line.
- :left Left-align current line.
- :right Right-align current line.
- :set ruler Show the cursor position.
- :syntax on Enable syntax highlighting.
- :help Additional help.
- :set wrapmargin=*n* Wrap line when $< n$ columns remain.

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