

### General Advice

💡 **Use the tab-completion:** Tab and double Tab  
 💡 **Use the history:** ↑ and ↓ and `ctrl+r`  
*CMD* = any command  
*TXT* = any text; escape special chars with \ or " or ''  
*FILE* = any file name including the path (full/relative) to this file  
*PATH* = a *FILE* or a directory accordingly  
*[]* = an argument to a *CMD* which is optional

### Get Help

**whatis** *CMD* display one-line descriptions of *CMD*  
*CMD* -h (or -?, -help, --help, --usage) displays the help message of *CMD*  
**man** *CMD* displays the manual pages of *CMD* ⓘ  
**info** *CMD* displays the info documents of *CMD* ⓘ  
**help** *CMD* display information about the builtin *CMD*  
**apropos** *TEXT* search the man pages for *TEXT*  
**groups** *USER* shows all groups of *USER* (default is own)

### Show File Content

**head** *FILE* print the first 10 lines of each *FILE*  
**head -n X** *FILE* print the first X lines  
**tail** *FILE* print the last 10 lines of each *FILE*  
**tail -n X** *FILE* print the last X  
**less** *FILE* display *FILE* on a page-by-page basis ⓘ  
**| less** display STDIN on a page-by-page basis ⓘ  
**cat** *FILE* prints whole *FILE*  
**cat** *FILE1 FILE2 > FILE3* cats *FILE1* and *FILE2* and prints them to *FILE3*

### Rediretcs & Pipes & Subshell

**CMD > FILE** prints standard output of *CMD* to *FILE*, replacing it  
**CMD >> FILE** prints standard output of *CMD* to *FILE*, appending it  
**CMD1 | CMD2** 'pipes' standard out of *CMD1* as standard input to *CMD2*  
**CMD > out.log** runs *CMD* in background, prints standard out to *out.log* &  
**2> err.log** and standard error to *err.log*

### Searching

**grep** *TXT FILES* search for pattern *TXT* in *FILES* (line-wise)  
**grep -r** *TXT PATH* searches all files in *PATH* recursively  
**grep -v** *TXT PATH* show lines not containing *TXT*  
**grep -c** *TXT PATH* count matching lines instead of showing them  
**find** [*PATH*] -name "*TXT*" finds all files named *TXT* in *PATH* (default .)  
**find** [*PATH*] -iname "*\*\*TXT\*\**" finds all files matching *TXT* case insensitive

### Operate On Filesystem

**pwd** prints current directory  
**ls** [*PATH*] list directory contents  
**ls -lart** [*PATH*] long + hidden + reverse order + sort last modified  
**cd** changes to HOME directory  
**cd** *PATH* changes to *PATH* directory  
**mkdir** *PATH* creates a directory  
**mkdir -p** *PATH* creates also parents as needed  
**cp** *FILE PATH* copies *FILE* to *PATH*  
**cp -r** *PATH1 PATH2* cp recursively whole directory *PATH1* to *PATH2*  
**mv** *PATH1 PATH2* moves file or dir *PATH1* to *PATH2*  
**rm** *FILE* removes *FILE*  
**rm -r** *PATH* removes files and dirs under *PATH* recursively  
**ln -s** *PATH1* creates link of *PATH* with same name  
**ln -s** *PATH1 TXT* creates link of *PATH* with new name *TXT*



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### Helpers

alias <i>TXT</i> =' <i>CMD</i>	abbreviate <i>CMD</i> with <i>TXT</i>
★	alias ..='cd ..'
★	alias l='ls -lah'
<i>CMD</i>   wc -l	prints number of lines <i>CMD</i> generates as output
<i>CMD</i>   sort	sorts output of <i>CMD</i> alphabetical
<i>CMD</i>   sort -n -k 3	sorts output of <i>CMD</i> numerical based on 3rd column
<i>CMD</i>   uniq	only prints unique lines of <i>CMD</i> output

### Archives & Compression

gunzip <i>FILE.gz</i>	uncompresses the <i>FILE.gz</i> in-place
unzip <i>FILE.zip</i>	uncompress and extracts the ZIP archive <i>FILE.zip</i>
tar -xvzf <i>FILE.tgz</i>	extracts + uncompress (gzip) the tarball <i>FILE.tgz</i>
tar -xvf <i>FILE.tar</i>	extracts the tarball <i>FILE.tar</i>
tar -cvzf <i>FILE.tgz</i> <i>PATH</i>	archives and compresses <i>PATH</i> into <i>FILE.tgz</i>

### Permissions

<b>chmod</b>	change the permissions of FILE (or directory) to OCTAL
OCTAL	seperately for user, group and world by summing:
<i>FILE</i>	<ul style="list-style-type: none"> <li>⊕4 - read (r)</li> <li>⊕2 - write (w)</li> <li>⊕1 - execute (x)</li> </ul>
	<b>Example:</b> chmod 750 == rwx for owner, rx for group, none for world

### Process Control

top	displays realtime information about the top cpu processes
ps	report snapshot of processes (in current shell)
ps -lfu <i>USER</i>	show all processes of <i>USER</i> in details
kill <i>PID</i>	terminate the process with the process ID <i>PID</i>

### Shortcuts

Ctrl + c	Interrupt/Kill whatever you are running (SIGINT)
Ctrl + z	Suspends current task (SIGTSTP).
fg + Enter	: resume process
bg + Enter	: continue process in background
Shift + PageUp	Scroll terminal window up
Shift + PageDown	Scroll terminal window down

### Shortcuts (cursor movement)

Ctrl + a / Home	Go to beginning of the line
Ctrl + e / End	Go to the End of the line
Ctrl + f / →	Forward one character
Ctrl + b / ←	Backward one character
Ctrl + a	Delete current character
← Backspace	Delete previous character
Shift + Insert	Paste text

### Wildcards

*	replaces arbitrary number of characters
?	replaces exactly one character
[abc]	replaces exactly for a, b or c
[a-z]	replaces for any char from a to z

### Navigation (less, man, ...)

h	display help message
q	quit
space-bar   PageDown	one page down
b   PageUp	one page up
q	quit
/ <i>TXT</i>	search forward for <i>TXT</i>
? <i>TXT</i>	search backward for <i>TXT</i>
n	repeat previous search
N	repeat previous search in reverse direction
G	Go to last line
g	Go to first line



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