Made by Linus Torvalds in 1991, Apple uses zsh, Use secure shell (ssh) to access a remote system

| **Location** | **Purpose** |
| --- | --- |
| /boot | Files to start the boot process. |
| /dev | Special device files that the system uses to access hardware. |
| /etc | System-specific configuration files. |
| /home | Home directory, where regular users store their data and configuration files. |
| /root | Home directory for the administrative superuser, root. |
| /run | Runtime data for processes that started since the last boot. This data includes process ID files and lock files. The contents of this directory are re-created on reboot. This directory consolidates the /var/run and /var/lock directories from earlier versions of Red Hat Enterprise Linux. |
| /tmp | A world-writable space for temporary files. Files that are not accessed, changed, or modified for 10 days are deleted from this directory automatically. The /﻿var/﻿tmp directory is also a temporary directory, in which files that are not accessed, changed, or modified in more than 30 days are deleted automatically. |
| /usr | Installed software, shared libraries, including files, and read-only program data. Significant subdirectories include:   * /usr/bin: User commands * /usr/sbin: System administration commands * /usr/local: Locally customized software |
| /var | System-specific variable data should persist between boots. Files that dynamically change, such as databases, cache directories, log files, printer-spooled documents, and website content, might be found under /var. |

| **Section** | **Content type** | **Description** |
| --- | --- | --- |
| 1 | User commands | Both executable and shell programs. |
| 2 | System calls | Kernel routines invoked from user space. |
| 3 | Library functions | Provided by program libraries. |
| 4 | Special files | Such as device files. |
| 5 | File formats | For many configuration files and structures. |
| 6 | Games and screensavers | Historical section for amusing programs. |
| 7 | Conventions, standards, and miscellaneous | Protocols, file systems. |
| 8 | System administration and privileged commands | Maintenance tasks. |
| 9 | Linux kernel API | Internal kernel calls. |

==================================== DON’T DELETE ====================================

$ = normal user, # = root user

Command Substitution = $(command)

| **Shortcut** | **Description** |
| --- | --- |
| **Ctrl**+**A** | Jump to the beginning of the command line. |
| **Ctrl**+**E** | Jump to the end of the command line. |
| **Ctrl**+**U** | Clear from the cursor to the beginning of the command line. |
| **Ctrl**+**K** | Clear from the cursor to the end of the command line. |
| **Ctrl**+**LeftArrow** | Jump to the beginning of the previous word on the command line. |
| **Ctrl**+**RightArrow** | Jump to the end of the next word on the command line. |
| **Ctrl**+**R** | Search the history list of commands for a pattern. |
| **ESC+** | Copies last arg of previous command |

Metacharacters:

\* use ; to run separate commands for unconditional execution, && and || for conditional

\* use ^ to replace certain word in previous command and run, !! to run previous command

\* use \ to write multi-line commands or escape characters

\* use “” to interpret text with substitution, ‘’ to interpret literally

\* use > to redirect output to overwrite file, >> to append file, 2> to redirect error, >/dev/null to discard, &> file OR > file 2>&1 to redirect out and err to same file

| **Pattern** | **Matches** |
| --- | --- |
| \* | Any string of zero or more characters. |
| ? | Any single character. |
| [*abc…​*] | Any one character in the enclosed class (between the square brackets). |
| [!*abc…​*] | Any one character *not* in the enclosed class. |
| [^*abc…​*] | Any one character *not* in the enclosed class. |
| [[:alpha:]] | Any alphabetic character. |
| [[:lower:]] | Any lowercase character. |
| [[:upper:]] | Any uppercase character. |
| [[:alnum:]] | Any alphabetic character or digit. |
| [[:punct:]] | Any printable character that is not a space or alphanumeric. |
| [[:digit:]] | Any single digit from 0 to 9. |
| [[:space:]] | Any single white space character, which might include tabs, newlines, carriage returns, form feeds, or spaces. |
| {} | Discretionary string of characters via comma-separated list  Can use .. to expand sequence |
| Varname = value | Assign variable a value |

Options 🡪 1 dash = abbrev form, each letter separate, 2 dash = word considered as single word

1 Tab = autocomplete, 2 Tab = show possible autocompletes

Commands:

|  |  |  |
| --- | --- | --- |
| **Command** | **Description** | **Options** |
| history | Show history of terminal commands  !string = expand last command with string  !number = expand command at number  HISTFILE = change which file to save to  HISTFILESIZE = number of cmds to save  HISTTIMEFORMAT = how cmds are saved |  |
| man | Display system documentation  Navigation: forward, back  PgDn, PgUp = 1 screen  DnArr, UpArr = 1 line  D, U = 1 half-screen  /string = search fwd for string in page  N, Shift+N = repeat prev search  G, Shift+G = start, end of man page  Includes:  Name, Synopsis, Description, Options, Examples, Files, See Also, Bugs, Author | -k = search keyword in titles and descriptions  -K = search keyword in full-text page, titles, and descriptions  args: [section] [topic] |
| useradd | Create a user in the system |  |
| su | Switch to another user in terminal |  |
| whoami | Returns current logged-in user |  |
| whereis | Find binary, source, and manual pages | args: command |
| passwd | Changes a user’s password | -l = lock password |
| exit  CTRL+D | Logout of remote session |  |
| date | Show datetime  (defaults current datetime) | args:  +X = string format  %R=time only, %x=date only |
| file | Display file’s type |  |
| cat | Create, view, and concatenate a file’s contents |  |
| less | Displays one page of a file |  |
| head | Displays the first lines of a file  (defaults 10 lines) | -n = number of lines |
| tail | Displays the last lines of a file  (defaults 10 lines) | -n = number of lines |
| wc | Counts lines, words, and characters in a file | -l = just lines  -w = just words  -c = just characters |
| pwd | Display pathname of CWD |  |
| ls | List a directory’s contents  (defaults CWD) | -l = long-listing  -a = all  -R = recursive  -i = display inode numbers |
| cd | Navigate to a directory  (defaults to home directory) | -P = go to soft-linked location  args:  - = previous working directory  .. = parent directory |
| df | Lists directories on different file systems |  |
| touch | Updates timestamp of a file  Creates file if does not exist |  |
| mkdir | Create a directory | -p = create parent directory |
| cp | Copies file into a directory  \*ignores all but last directories in argument | -r = copy directory and its contents  args:  . = end multiple copies |
| mv | Moves file to new location | -v = detailed output of operations |
| rm | Removes file | -r = delete directories and its contents  -i = prompt confirmation |
| rmdir | remove empty directory | -r = delete non-empty directory |
| ln | Create hard link to existing file  \*Must be in same file system | -s = create symbolic link (shortcut)  args: filepath newfilepath |
| echo | Display value | args:  var = var  $var = value |
| | | Create a pipeline |  |
| tee | Copies pipeline stdin to stdout and redirects stdout to files |  |
| vim  vi | Open file in vim editor  Lightweight version of vi  Mode:  i = insert edit mode = input becomes file  v = visual edit, V = multiline, Ctrl+V = block  : = extended command mode  Edit:  u = undo, x = delete  :w = save file, :wq = save and quit, :q! = quit  y = copy, p = paste |  |
| set |  |  |
| chmod | Change file permissions |  |