

Basic Unix Commands

Bash Commands

- `man <cmd>`
 - o Shows manual for a command.
- `sudo <cmd>`
 - o Execute a command as the superuser.

File System Navigation

- `cd <path>`
 - o Change current working directory.
- `ls [<opts>] [<path>]`
 - o List the contents of a directory (current working directory by default).
 - o Options:
 - `-l`: use a long listing format.
 - `-a, --all`: do not ignore entries starting with "."
 - `-r, --reverse`: reverse order while sorting
 - `-R, --recursive`: list subdirectories recursively
- `pwd`
 - o Print name of the current working directory.

File System Manipulation

- `mkdir <dirpath>`
 - o Create a new directory, if it does not already exist..
- `rmdir <dirpath>`
 - o Remove a directory, if it is empty.
- `mv <srcpath> <destpath>`
 - o Move (rename) the file <srcpath> to <destpath>.
- `rm [<opts>] <path>`
 - o Remove a file.
 - o Options:
 - `-R`: remove directories and their contents recursively.
- `cp [<opts>] <srcpath> <destpath>`
 - o Copy the file <srcpath> to <destpath>.
 - o Options:
 - `-R`: copy directories and their contents recursively.
- `ln [<opts>] <target> <destpath>`
 - o Create an hard link to file <target> in <destpath>.
 - o Options:
 - `-s`: make symbolic links instead of hard links.

Process Management

- `ps [<opts>]`
 - o List active processes.

- o Options:
 - -e: list all processes.
 - -l: use a more detailed listing format.
- top
 - o Show a a dynamic real-time view of running processes.
- kill -<signum> <pid>
 - o Send the signal <signum> to the process specified by <pid>.
 - o Signals:
 - -9: terminate a process.
- <cmd> &
 - o Execute command in background.

File Operations

- cat <filepath>
 - o Print file on the standard output.
- more <filepath> / less <filepath>
 - o Print file on the standard output page by page.
- sort [<opts>] <filepath>
 - o Sort lines of text files (alphabetically by default).
 - o Options:
 - -r: reverse order.
 - -n: use numerical order.
 - -k <key>: sort via key.
- cut [<opts>] <filepath>
 - o Remove sections from each line of a text file.
 - o Options:
 - -f <field1,field2,...fieldN>: specify fields to select.
 - -d <delim>: use <delim> instead of TAB for field delimiter.
- tr [<opts>] <set1> [<set2>]
 - o Translate standard input characters from <set1> to <set2>.
 - o Options:
 - -d: delete characters from <set1> instead of translating them.
- uniq [<opts>] <filepath>
 - o Omit repeated lines.
 - o Options:
 - -d: report only repeated lines instead of omitting them.
- grep [<opts>] <filepath>
 - o Print lines of a file matching a pattern.
 - o Options:
 - -e <pattern>: specify a pattern to be matched.

- -E <pattern>: specify extended regular expression pattern to be matched.
 - -H: print the file name for each match.
 - -n: print the line number for each match.
 - -i: ignore case.
 - -v: invert the sense of matching, to select non-matching lines.
 - -l, --quiet, --silent: no output is produced.
 - -l, --files-with-matches: print out only file names.
- wc [<opts>] <filepath>
 - o Print newline, word, and byte counts for a file.
 - o Options:
 - -w, --words: print words counts.
 - -c, --bytes: print the byte counts.
 - -m, --chars: print the character counts.
 - -l, --lines: print the newline counts.

File Search

- find [<directory>] [<options>] [<actions>]
 - o Search for files in a directory hierarchy (with a specified root, i.e., <directory>).
 - o Options:
 - -name <pattern>: search files whose name matches the pattern.
 - -regex <pattern>: search files whose path matches a regular expression.
 - -regextype posix-extended: specify posix-extended format for regular expressions
 - -type <f|l|d>: search files of a specific type.
 - -mindepth <depth>: search files starting from the specified directory tree depth.
 - -maxdepth <depth>: search files up to the specified directory tree depth.
 - -size <[+,-]n[cwkMG]>: search files whose size starts from (+) or goes up to (-) the specified size. (c=bytes, w=words, k=kilobytes, M=megabytes, G=gigabytes).
 - -user uname: File is owned by user uname (numeric user ID allowed).
 - -group gname: File belongs to group gname (numeric group ID allowed).
 - o Actions:
 - -exec <cmd>: execute command on each matched file.
 - \{} (or '{}') can be used as a placeholder for the file path.
 - The command must end with \; (or ';'').

File Permissions Management

- chmod [<opts>] <mode> <file>
 - o Change file permissions. <mode> can be specified symbolically ([ugoa][+~][rwx]) or numerically (octal digits).

- o Options:
 - -R: change permissions of files and directories recursively.

String manipulation

- basename path
 - o Strip directory and suffix from path.
- dirname path
 - o Strip last component from path.

Redirections

- cmd1 | cmd2
 - o Redirect standard output of cmd1 to standard input of cmd2.
- cmd < file
 - o Redirect standard input of cmd from file.
- cmd > file
 - o Redirect standard output of cmd to file.
- cmd 2> file
 - o Redirect standard error of cmd to file.
- cmd &> file
 - o Redirect standard output and standard error of cmd to file.
- cmd >> file
 - o Append standard output of cmd to file.

Shortcuts

- CTRL+C
 - o Terminate the current foreground process.
- CTRL+Z
 - o Stop the current foreground process.
- TAB
 - o Autocompletion.