# Linux Command Line Cheat Sheet (v0.3)

## File Management

| | | |
|---|---|---|
| **cd** | | change directory |
| **cp** | | copy files and directories |
| | **-r** | recursive |
| | **-p** | preserve attibutes |
| **ln** | | make links between files |
| | **-s** | symbolic link |
| **ls** | | list directory contents |
| | **-l** | more info |
| | **-a** | all files |
| | **-h** | human readable |
| **mkdir** | | make directories |
| **mv** | | move (rename) files |
| **pwd** | | show current/working directory |
| **rm** | | remove files or directories |
| | **-r** | recursive |
| | **-f** | force |
| **rmdir** | | remove empty directories |

## File Viewing

| | | |
|---|---|---|
| **cat** | | show file content |
| **head** | | output the first part of files |
| | **-n** | specify number of lines to show |
| **less** | | show scrollable output |
| **more** | | show output in pages |
| **od** | | dump file in octal format |
| **tail** | | output the last part of files |
| | **-f** | keep showing new added lines |
| | **-n** | specify number of lines to show |
| **xxd** | | make a hexdump |

## File Editing

| | | |
|---|---|---|
| **nano** | | simple text editor |
| | **-c** | show cursor position |
| | **-w** | disable line wrapping |
| **vi** | | text editor |
| | **i** | switch to insert mode |
| | **esc** | switch to command mode |
| | **:w** | save file |
| | **:q** | quit |

## File Properties

| | | |
|---|---|---|
| **chattr** | | change file attributes |
| **chgrp** | | change group ownership |
| | **-R** | recursive |
| **chmod** | | change file access permissions |
| | **-R** | recursive |
| **chown** | | change file owner and group |
| | **-R** | recursive |
| **du** | | estimate file size |
| | **-s** | summarize |
| | **-h** | human readable |
| **file** | | determine file type |
| **lsattr** | | list file attributes |
| **stat** | | display file or filesystem status |
| **touch** | | change file timestamps |

## Finding Files

| | |
|---|---|
| **find** | search for files |
| | **find <path> -name <filename>** |
| **grep** | find files containing text pattern |
| | **grep <pattern> files** |
| **locate** | search for files in Locate database |
| **updatedb** | update Locate database |

## File Manipulation

| | | |
|---|---|---|
| **comm** | | compare sorted files line by line |
| **cmp** | | compare files byte by byte |
| **cut** | | select columns from files |
| | **-f** | column number |
| | **-d** | specify column delimiter |
| **diff** | | compare files line by line |
| **fold** | | wrap lines to specified width |
| **grep** | | filter lines matching a pattern |
| **md5sum** | | generate / check MD5 checksums |
| **nl** | | number lines |
| **sort** | | sort lines |
| **strings** | | show printable characters |
| **tee** | | write to standard output and file |
| | **-a** | append |
| **tr** | | translate or delete characters |
| **uniq** | | remove duplicate successive lines |
| **wc** | | count lines, words, and bytes |
| | **-l** | count just lines |

## File Packaging and Compressing

| | |
|---|---|
| **bzip2** | compress files |
| **bunzip2** | uncompress bzipped files |
| **gzip** | (un)compress files |
| **gunzip** | uncompress gzipped files |
| **tar** | pack or unpack files in tar archive |
| **-x** | extract from archive |
| **-t** | list contents of archive |
| **-c** | create archive |
| **-f** | specify archive filename |
| **-z** | perform gzip compression |
| **-j** | perform bzip2 compression |
| **unzip** | unpack and uncompress zip files |
| **zip** | package and compress files |
| **-r** | recursive |

## File System Management

| | |
|---|---|
| **df** | report filesystem disk space usage |
| **-h** | human readable |
| **fsck** | check and repair a file system |
| **lsof** | list open files |
| **-c** | select matching processes |
| **-i** | show open network files |
| **mkfs** | create a file system (i.e. format) |
| **mount** | mount a file system |
| | **mount <device> <mount point>** |
| **stat** | display file or filesystem status |
| **-f** | show file system status |
| **sync** | flush file system buffers |
| **umount** | unmount a file system |

## System Information

| | |
|---|---|
| **date** | print or set system date and time |
| **free** | show memory information |
| **hostname** | show or set the system's name |
| **last** | show log of last logged in users |
| **lsof** | list open files |
| **lspci** | list all PCI devices |
| **lsusb** | list all USB devices |
| **ps** | show current processes |
| **-e/-A** | all processes |
| **pstree** | display a tree of processes |
| **time** | summarize resource usage |
| **top** | display real-time list of processes |
| **q** | quit |
| **uname** | print system information |
| **-a** | all information |
| **uptime** | show uptime and system load |
| **w** | show users and what they run |
| **which** | locate a command on the PATH |
| **who** | show who is logged in |

## Process Management

| | |
|---|---|
| **at** | queue jobs for later execution |
| **bg** | resume process in the background |
| **ctrl-c** | interrupt (stop) running process |
| **ctrl-z** | suspend running process |
| **fg** | bring process to foreground |
| **kill** | terminate a process |
| **nice** | change process priority |
| **ps** | show current processes |
| **-e/-A** | show all processes |
| **renice** | change priority of running process |
| **sleep** | delay a process |
| **sudo** | run command as different user |
| **top** | display real-time list of processes |
| **q** | quit |
| **w** | show users and what they run |

## Getting Help

| | |
|---|---|
| **apropos** | search manual pages |
| **info** | read detailed documentation |
| **man** | view manual pages |
| **whatis** | view command descriptions |

## Networking

**dig**      perform DNS lookup
    **dig @<server> <name> <type>**
**host**      perform DNS lookup
    **-t**   query type
**ifconfig** configure a network interface
    **netmask**   specify subnet mask
    **up/down**   enable or disable interface
**netcat**   read/write over a network
    **-l**   listening mode
**netstat**  print network connections
    **-l**   show listening sockets
    **-p**   show PID and program name
    **-t**   show TCP
    **-u**   show UDP
**nmap**     network exploration scanner
**ping**     send ICMP echo requests
**route**    print / manipulate IP routing table
**scp**      secure copy (remote file copy)
    **scp <user1>@<host1>:file1 \**
      **<user2>@<host2>:<file2>**
    **-r**   recursive
**ssh**      SSH client (remote login)
    **ssh <user>@<host>**
**tcpdump**  dump network traffic
    **-i**   specify network interface
**telnet**   communicate over TCP
    **telnet <host> <port>**
**traceroute**    print network route
**wget**     non-interactive downloader
    **wget <url>**
**whois**    query whois database

## I/O Redirection

**|**      pipe output of cmd 1 to cmd 2
    **<command1> | <command2>**
**<**      take input from file
    **<command> < <file>**
**>**      redirect output to file
    **<command> > <file>**
**>>**     append output to file
    **<command> >> <file>**
**2>**     redirect error stream to file
    **<command> 2> <file>**
**&>**     redirect output and error stream
    **<command> &> <file>**
**2>&1**   redirect error stream to output
    **<command> &> <file>**

## Shell Wildcards

**\***       wildcard for zero or more chars
**?**       wildcard for zero or one char
**[abc]**   exactly one of the listed chars
**[a-z]**   exactly one char from the range
**[!abc]**  any char that is not listed
**[!a-z]**  any char not in the range
**{go,no}** exactly one of the words

## Shortcuts

**<up>**     scroll through command history
**<down>**       "        "        "        "
**<tab>**    file or command completion
**~**        home directory
**cd -**     cd to last visited directory
**\\**        command continues on next line

## & execute command in background
    **<command> &**
**alias**    create an alias for a command
    **alias ls='ls --color=auto'**
**unalias**  remove a command alias
**ctrl-R**   search in command history
**history**  list executed commands

## Special keys

ctrl + D   End-Of-File (ends standard input)
ctrl + U   erase complete line
ctrl + W   erase last typed word

## Misc

**cal**      display a calendar
**clear**    clear terminal
**lpq**      show printer queue
**lpr**      print files
**lprm**     cancel print job
**mail**     send and receive mail
    **-s**   specify mail subject
**reset**    re-initialize terminal
**watch**    periodically execute program
**xargs**    build complex command lines

## Fun and Games

**banner**   show large banner
**fortune**  print random adage

## System Administration

| | |
|---|---|
| **passwd** | change user password |
| **su** | change user ID or become root |
| **useradd** | create new user |
| **shutdown** | bring the system down |
| **-r** | reboot |

## Regular Expressions

| | |
|---|---|
| **.** | any single character |
| **[ ]** | one given characters |
| **[aeiou]** | matches one vowel |
| **[a-m]** | matches one of a,b,c,...,m |
| **[^ ]** | any single char except given |
| **[^0-9]** | matches one non-numeric char |
| **^** | start of the line |
| **$** | end of the line |
| **\*** | 0 or more times |
| **+** | 1 or more times |
| **?** | 0 or 1 times |
| **{x,y}** | at least x and max y times |
| **( )** | groups multiple expressions |
| **([][][])+** | |
| **\|** | or |
| **(me\|you)** | matches 'me' or 'you' |
| **( )** | marks an expression |
| **\n** | matches n-th marked expression |
| **([ao])x\1** | matches 'axa' and 'oxo', not 'axo' |

## Package Management

| | |
|---|---|
| **apt-get** | Debian package management |

```
apt-get install <package>
apt-get remove <package>
```

| | |
|---|---|
| **rpm** | RedHat package management |

```
rpm -i <package>
rpm -e <package>
```

## Scripting

| | |
|---|---|
| **perl** | execute Perl program |
| **-e** | execute perl oneliner |
| **-n** | execute for each line in given text file |
| **-p** | like -n, but prints resulting lines |