

# linux CheatSheet

## Top-level Directories

- / : root
  - /etc : Program Configuration Files
  - /var : Frequently changing content (ex. logs)
  - /home : User account files
  - /sbin : System binary files
  - /bin : User binary files
  - /lib : Shared libraries
  - /usr : Third-party libraries

## Basic Commands

### ls

- lists content of a directory

```
ls [/aDirectoryName]
```
- lists content with the long flag `-l` and human-readable flag `h` displays file permissions and size information

```
$ ls -lh /users/max/documents
```
- lists with the recursive flag `-R` everything in and under a directory

```
$ ls -R /users/max/documents
```

### pwd (present working directory)

- print name of current/working directory
- using flag Logical `-L` to include symlinks

### cd (change directory)

- ex. : moving to root directory :

```
$ cd \
```

### rm (remove)

- removing a file :

```
$ rm myFile
```
- removing an empty directory:

```
$ rmdir myEmptyDirectory
```
- removing a non-empty directory and its contents recursively :

```
rm -r myDirectory
```

### cp (copy)

- copy a file to a specified directory

```
$ cp myFile /home/max/anotherDirectory
```

### mv (move)

- move a file to a specified directory

```
$ cp myFile /home/max/anotherDirectory
```

## Other Commands

### cat (concatenate)

- prints file content to output

### less

- quickly display less than a complete file contents
- scroll document's content with arrows
- quit by typing 'q'

### man

- brings up a one-page interface to reference manuals about a linux command

```
ex. : $ man ls
```
- type `\` (backslash) followed by keywords to search into document

```
move forward to next keyword by typing 'n'
```
- quit by typing 'q'

### touch

- updates file timestamps
- if file doesn't exist it will create it

### stat (status)

- displays file or file system status

```
displays file's inode (metadata) information
```

### | (pipe)

- creates a unidirectional data channel
- takes the output of a command to feed it as the input of another

```
$ journalctl | grep myFile.php
```
- you can chain as many pipes as you wish

```
$ journalctl | grep myFile.php | grep error
```

### info

- reading documentation in Info format
- useful, when you don't know the name of a command you want to use
- click Enter on underlined text to follow links

```
'u' will bring you back one level
```

```
'q' to exit
```

### journalctl

- tool to query the contents of the systemd journal

```
ideally do filter query with grep
```

```
$ journalctl | grep myPage.php
```

## kernel & architecture

- print your system architecture (ex: x86\_64)

```
$ arch
```
- print your kernel's version

```
$ uname -r
```

## Keyboard Shortcuts

### TAB (completion)

- press TAB to complete a command

```
$ touch myNewFile
```

```
$ rm my<TAB>
```

## Special Characters

### \* (gobbling)

- wildcard used to designate all files in a directory

```
$ mv * /home/max/archive
```
- wildcard used to designate any characters

```
$ git add linux*.tex, linux*.pdf
```

### ? (question mark)

- represents or matches a single occurrence of any character

```
there are files named 'file1', 'file2', 'file3'
```

```
$ rm file? /home/max/documents
```

### \ (backslash)

- The backslash character can be used to conveniently break a long command into multiple lines on the command line.

```
# yum install lxc lxc-templates \libcaps-devel libcgrouper busybox
```

## System Administration

### systemd

- first process to run on a system
- show all services and processes running

```
$ systemctl list-units -type service -state running
```

or

```
$ systemctl -no-pager | grep service | grep running | column -t
```
- show all installed unit-files

```
$ systemctl list-units -type service
```

or

```
$ systemctl list-units -type service -state running -no-legend
```
- show processes that executed then exited

```
$ systemctl list-units -type service -state exited
```
- show processes that have failed

```
$ systemctl list-units -type service -state failed
```
- \*In order to pass the output to *stdout* instead of a pager

```
add argument '--no-pager'
```

- enabling and starting a service (without rebooting)

```
$ systemctl enable -now httpd
```
- show boot time

```
$ systemd-analyze
```
- identify which process slow down boot

```
$ systemd-analyze blame
```

### SELinux

- show SELinux status

```
$ sestatus
```
- disable error enforcing and logging them instead

```
$ sudo setenforce 0
```

### Docker

- show Docker version

```
$ docker version
```
- starting Docker daemon manually

```
$ sudo docker daemon
```
- add user to Docker group (i.e. running Docker as root)  
on Ubuntu

```
$ sudo usermod -aG docker
```
- restarting Docker

```
$ sudo service docker restart
```

### Utils

- show regional settings

```
$ locale
```

```
$ localectl
```
- display information about the nature of a command

```
$ type {command}
```

```
$ type bash
```
- display information about time and timezones

```
$ timedatectl
```
- display all block devices connected and their size

```
df -ht ext4
```
- display interactions with the kernel

```
$ dmesg
```
- list all hardware connected

```
$ sudo lshw | less
```
- show grub configuration

```
$ less /etc/default/grub
```

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Last compilation : April 16, 2020