1. Table of contents

1.1. Introduction

In this document I include some notes about general stuff I learn and do during my work/free time.

2. Markdown Notes

2.1. VsCode extensions

- Markdown all in One
  - `Ctrl + Shift + P: Markdown All in One: section numbers, create table of contents, etc`
- Markdown lint
- vscode-pandoc
  - Ctrl + Shift + P -> Pandoc Render
  - Add `"pandoc.pdfOptString": "-t html --css style.css"` to `settings.json` in `.vscode/settings.json` in the work directory containing the markdown project. This `settings.json` overrides the global variables specified in that file. This can also be edited by doing `Ctlr+Shift+P: Preferences: Workspace Settings`. The `style.css` is put in the same folder of the `.md` file
  - `` `pacman -S pandoc pandoc-crossref wkhtmltopdf ``
- Markdown PDF
  We can add to the `setting.json` for vscode workspace to use a specific style to generate the pdf:

```
"markdown-pdf.styles": [
      "style.css",
    ],
```

3. Git notes

3.1. Notes on creating a git repository on github

On folder do:

```
git init
git commit
git branch -M main
git remote add origin https://github.com/jgroboredo/test.git
git push -u origin main
```

3.1.1. Some notes on the above commands

- `git branch -m master main`

> renames the master branch in local git repository

- In the second step, we'll have to create a new branch on the remote named "main" - because Git does not allow to simply "rename" a remote branch. Instead, we'll have to create a new "main" branch and then delete the old "master" branch: `git push -u origin main` We now have a new branch on the remote named "main".
- When you clone a repository with git clone , it automatically creates a remote connection called origin pointing back to the cloned repository.
- When you do a git push origin master, you are saying to git: "Look git, I want to push the current branch I am on to the remote repository named origin, and I want to push to the master branch in that remote.". By default, the remote repository is named origin. I only need to specify where I want to push if there are more than 1 repositories.
- When you execute the command: git remote add origin "github repo link" you are saying that for the current project, there is a remote repository with the name origin, with the address of "github repo link"

3.2. Check previous commit

```
git log
git checkout <commit_hash> (example:
18e0b6a044a715b04bcacd599061b6b8bd586a7a)
git checkout <branch_to_return_to_present_state>
```

3.3. Git stash and log

```
git log --stat -> see which files were altered in each commit
git stash; git stash list; git stash drop
```

3.4. Create local git repository

- Create a folder which is going to be the "server" -> For example, Notes.git
- Inside the repository do: `git init --bare`
- On the same computer do: `git clone /path/to/server` -> the repository created this way will be linked to the "server" by an absolute path which only works on this same pc
- On the other computer do: `git clone goncalo@ip:/path/to/server`

3.5. Change the author name

`git config --global user.name "John Doe"`

3.6. Remove tracked file that is now in .gitignore

`git rm --cached <file>`

3.7. Check last commit changes

`git show --name-only` -> Lists just the files in the last commit and doesn't give you the entire guts `git diff HEAD^ HEAD` -> HEAD^ identifies last commit

3.8. Installing git in live ISO arch

If error in keys: `pacman -Sy archlinux-keyring; pacman-key --populate archlinux`

3.9. Change remote URL

- `git remote -v`

> To check the present remote url

- `git remote set-url origin git@github.com:jgroboredo/Linux_Infos.git`

3.10. Add remote URL

- `git remote add name_of_remote git@github.com:jgroboredo/Linux_Infos.git`
- `git push -u name_of_remote --all`

> Note: this changes the default repository! It also pushes all branches!

- `git config --edit`

> Can use this command to change the default git push

- `git branch --set-upstream-to <remote-name>`

> Set preferred remote for current branch

- `git branch branch_name --set-upstream-to <remote-name>/branch`

> set preferred remote for branch_name

- `git branch -vv`

> shows the default remote for the current branch

3.11. Different Pushes

- To push all branches to all remotes: `git remote | xargs -L1 git push --all`
- Push a specific branch to all remotes: `git remote | xargs -L1 -I R git push R branch_name`
- To make a git alias for the command: `git config --global alias.pushall '!git remote | xargs -L1 git push --all'`

Or

- Create an all remote with several repo URLs to its name:

```
git remote add all origin-host:path/proj.git
git remote set-url --add all nodester-host:path/proj.git
git remote set-url --add all duostack-host:path/proj.git
git push all --all
```

Or

- If you want to always push to repo1, repo2, and repo3 but always pull only from repo1, set up the remote 'origin' as:

```
git remote add origin https://exampleuser@example.com/path/to/repo1
git remote set-url --push --add origin
https://exampleuser@example.com/path/to/repo1
git remote set-url --push --add origin
https://exampleuser@example.com/path/to/repo2
git remote set-url --push --add origin
https://exampleuser@example.com/path/to/repo3
```

- If you only want to pull from repo1 but push to repo1 and repo2 for a specific branch specialBranch:

```
[remote "origin"]
    url = ssh://git@aaa.xxx.com:7999/yyy/repo1.git
    fetch = +refs/heads/*:refs/remotes/origin/*
    ...
[remote "specialRemote"]
    url = ssh://git@aaa.xxx.com:7999/yyy/repo1.git
    pushurl = ssh://git@aaa.xxx.com:7999/yyy/repo1.git
    pushurl = ssh://git@aaa.xxx.com:7999/yyy/repo2.git
    fetch = +refs/heads/*:refs/remotes/origin/* (Note: Has origin here
again, only pulls from origin)
    ...
[branch "specialBranch"]
```

```
        remote = origin
        pushRemote = specialRemote
        ...
```

- My experience:

  - I can specify which remote to push or pull from:

    ```
    git push remote_name branch
    ```

    ```
    - A branch has a default remote: I only need to specify the
    remote_name and eventually the branch_name (I can't pull from a non-
    default remote without specifying the branch) if I don't want to do it
    to the default one
    ```

3.12. Use curl to download from github

```
curl -LkSs https://api.github.com/repos/jgroboredo/arch_install/tarball -o
master.tar.gz
tar xf master.tar.gz
```

3.12. Download a file from github

- Go to file, click on raw, copy link
- `curl -L "link_from_above_step" >> output`

3.13. Merge branches

- `git checkout master; git merge other_branch_name`
- Alternative:`git merge --no-ff other_branch_name` . Using --no-ff allows someone reviewing history to clearly see the branch you checked out to work on.
- `git branch -d branch_name`

deletes branch locally

- `git push origin --delete branch_name`

deletes a branch remotely

- `git fetch -p`

Synchronize branch listing. After fetching, branches which no longer exist on the remote will be deleted.

If I do a: `git pull origin master` on another branch, it will merge them. After creating a new branch, we need to specify tracking information for the current branch. That means we need to do something like `git pull <remote> <branch>` for it to work. On the other hand, we can simply set tracking information for the current branch by: `git branch --set-upstream-to=origin/<branch> correction_chapter1`

3.14. Check merge conflicts

`git show --name-only [commit sha]` on a commit that was a merge containing conflicts and you'll see it as part of the message.

3.15. Merge mistake (You committed changes to (local) master)

```
git branch <new-branch>
git reset HEAD~ --hard
git checkout new-branch
```

The first command creates the new branch we want to work with. The second command resets the main branch to just before the last commit, but leaves the changes you just made in the new branch. Finally, we switch to the new branch where your changes await you. If you've made multiple commits, use `git reset HEAD~<n> --hard`, where is the number of commits back you want to go.

3.16. Git merge "Deleted by us"

Resolve all non deleted merge conflicts by hand, which you have to do anyway; Type `git diff --name-only --diff-filter=U` to get a list of all remaining files in conflict. These files must be the ones you want deleted. `git diff --name-only --diff-filter=U | xargs git rm`

3.17. Commit ID and SHA

```
git show -s --format=%H -> shows the last commit full id
git show -s --format=%h -> shows the last commit sha
```

3.18. Git over ssh using ssh config

`git remote set-url origin ssh://pi(here config name)/home/goncalo/HDD/Documents/git_repos/Notes.git` (here full path)

4. Bash Notes

4.1. Bash Note 1

- `$#`

  > number of arguments passed to the shell script

- `$1`, `$2`, etc

  > identify the arguments passed to the script

4.2. Bash Note 2

The code:

```
case $1 in
  -f|--from) command1; shift ;;
  *)         command2;;
  esac
  shift
```

will check if the first argument `$1` passed to the script matches `-f` or `--from` or any other cases; The asterisk means that it does command2 if it doesn't match any of the cases above; The "shift" command shifts the arguments, i.e., if I have `$1`, `$2` arguments, then `$2` -> `$1`.

4.3. Bash Note 3

The code:

`SCRIPT_DIR="$( cd "$( dirname "${BASH_SOURCE[0]}" )" &> /dev/null && pwd )"`

will give you the full directory name of the script no matter where it is being called from.

4.4. Bash Note 4 - Compare Files

`grep -F -x -v -f fileA fileB`

> This works by using each line in `fileA` as a pattern (`-f fileA`) and treating it as a plain string to match (`-F`). You force the match to happen on the whole line `-x` and print out only the lines that don't match (`-v`). Therefore, you are printing out the lines in fileB that don't contain the same data as any line in fileA.

4.5. Bash Note 5 - Use of curly braces

1. In the example:

```
    var=10          # Declare variable

    echo "${var}" # One use of the variable
    echo "$var"   # Another use of the variable
```

it makes no difference to use curly braces.

2. However, the `{}` in `${}` are useful if you want to expand the variable foo in the string `"${foo}bar"` since "$foobar" would instead expand the variable identified by foobar.

Curly braces are also unconditionally required when:

- expanding array elements, as in `${array[42]}`
- using parameter expansion operations, as in `${filename%.*}` (remove extension)
- expanding positional parameters beyond 9: `"$8 $9 ${10} ${11}"`

4.6. Bash Note 6 - Search recursively in directory

- `grep -R "stuff"` will search recursively on all files on that directory and look for the word stuff
- `for i in **/.ipynb_checkpoints` will find recursively all directories with this name
- `for i in ./pattern` will search for this pattern in current directory

5. Lyx

5.1. Configure lyx

- Tools-Preferences-File Formats: PDF (pdflatex), shortname: pdf2, Viewer: Custom - zathura
- Tools-Preferences-Output-PDF command: `zathura --synctex-forward $$n:1:$$t $$o`
- Tools-Preferences-Shortcuts-New: buffer-view pdf2 and buffer-update pdf2
- For the spellchecker, might need to install hunspell-en_US and hunspel-pt_pt and enchant
- For lgrenc.def not found -> install texlive-langgreek
- To use eps figures in lyx I need ghostscript : try to epstopdf on command line to discover this.

5.2. Kpathsea

- Kpathsea is a library for path searching (e.g., for very quickly locating a given .sty file in a set of potentially large TEXMF trees, without doing a recursive directory tree trversal every time a given file is needed. (pse -> pathsea)
- kpsewhich minted.sy to search efficiently on tex library

5.3. Configure minted

```
sudo mkdir "/usr/share/texmf-texlive/tex/latex/minted/"
sudo cp minted.sty "/usr/share/texmf-texlive/tex/latex/minted/"
sudo mktexlsr
```

- Then in lyx, go to Tools/Tex Information, select latex styles and click rescan. minted.sty should appear in the list in lyx, go to "Tools>preferences>file handling>converters" and find the converter from tex to pdflatex. Edit its command line adding the option "-shell-escape" (no quotes) into the Converter field, then click the Modify button next to the list of converters. This is equivalent to going to Documents->Formats->Allow running external programs (is a better solution since it avoids writting a warning message). Then click Apply in lyx, go to Document>Settings and enter "/usepackage{minted}" (no quotes) in the latex preamble in lyx, in the part of your document where you want the highlighted code to appear, go to "Insert>TEX code" to get an Evil Red Text (ERT) box

- In Document->Settings->Listings, add following options:

  - language=C++
  - frame=single
  - mathescape=true
  - `syoek --synctex-forward $$n:1:$$t $$o`

- Ordered bibliography: Use style unsrt and add to preamble: \usepackage{notoccite}

5.4. Install custom cls

- `latex my_class.ins` -> produces my_class.cls
- `kpsewhich -var-value=TEXMFHOME` -> prints path where to put cls

- Regarding the above command, it's good to put the usual path:
  `$HOME/texmf/tex/latex/commonstuff/`
- kpsewhich my_class.cls -> to check path of the class
- Write lyx layout: In order to do this, find the basis class for our new class. For that, inspect my_class.cls and check the line LoadClass. It implies that my_class.cls is a descendent of that class (let's suppose it's dependent on report class). Then, in /usr/share/lyx/layouts copy report.layout, change its name to my_class.layout and edit like this:

```
\DeclareLaTeXClass[my_class]{name_of_layout}
Input report.layout
```

- In lyx, reconfigure. Now, name_of_layout is the text we see in Document-Class
- Default classes: `/usr/share/texmf-dist/latex/elsarticle/elsarticle.cls`

6. Qemu

6.1. Commands

```
qemu-img create -f qcow2 qemu_image 8G
qemu-system-x86_64 -smp 6 -m 4G -enable-kvm -cdrom arch.iso -boot order=d
qemu_image
smp (number of cores)

qemu-system-x86_64 -soundhw ac97 -k en-us -vga std -enable-kvm -m 4G  -
usbdevice tablet -smp 6 -enable-kvm -boot c qemu_image
#For no sound
qemu-system-x86_64 -k en-us -vga std -enable-kvm -m 4G  -usbdevice tablet -
smp 6 -boot c qemu_image
```

6.2. Variables

```
-k en-us (keymap)
-usbdevice tablet

-cpu host
-smp 6 # number of cores
-machine type=pc,accel=kvm
-enable-kvm
-format=raw ??
-machine smm=off # bug?
-soundhw sb16,es1370

#telnet access
qemu-system-x86_64 -curses -monitor telnet:127.0.0.1:1234,server,nowait -
boot c qemu_image
telnet 127.0.0.1 1234  -- in another terminal

#KVM Quick Check
zgrep CONFIG_VIRTIO /proc/config.gz
lsmod | grep kvm
```

7. Inkscape

- If I have problems with eps images, in this case, also need to install ghostscript.
- Do you have ImageMagick installed? LyX relies on ImageMagick to convert among graphics formats. It also needs Ghostscript installed (IM uses GS when the conversions involve PS, EPS or PDF files).
- If `textext` package form the AUR gives problem, simply go to **textext** official website and install it from there

8. VsCode

- You can format an entire file with Format Document (Ctrl+Shift+I) or just the current selection with Format Selection (Ctrl+K Ctrl+F) in right-click context menu.
- F1 -> command pallet
- SSH : F1 -> Remote-SSH: Connect to Host...
- Install extension: TabNine

9. Zathura

- `pacman -S zahtura-pdf-poppler`
- make zathura default pdf viewer: `mimeo --ad application/pdf zathura.desktop`
- to discover the real name of zathura.desktop run `locate zathura.desktop`
- to check that pdf files have the correct mimetype run `mimeo -m pdf_file.pdf`
- Clipboard: add `set selection-clipboard clipboard` to `~/.config/zahtura/zathurarc` or `/etc/zathurarc`

10. Zsh

```
git clone https://github.com/zsh-users/zsh-autosuggestions ~/.zsh/zsh-
autosuggestions
source ~/.zsh/zsh-autosuggestions/zsh-autosuggestions.zsh in .zshrc
mkdir .cache/zsh && touch .cache/zsh/dirs
```

11. Jupyter

11.1. Jupyter-Lab

To run over ssh, execute

```
ssh -L 8888(port on local):localhost::8889(port on remote) goncalo@ip
jupyter-lab --no-browser --port=(same as before on remote)8889
```

- To avoid authentication by token: `jupyter server password`
- To list active sessions: `jupyter lab list`
- To kill a session: `jupyter lab stop 8888` (for e.g.)

11.2. Opening browser

If jupyter doesn't open, do : `jupyter lab build` If command above gives permission error, do:

```
sudo chown -hR {user} {dir}
jupyter notebook (lab) --generate-config
```

Also, change redirect_file to false Na verdade, isto não funciona porque tenho de mudar o `~/.profile` para firefox LOL

- Can't access file (probably happens cause directory contains hidden folder .local):
  - set `c.ServerApp.use_redirect_file = False` in `~/.jupyter` `jupyter_server_config.py`
  - Stop server:

    ```
    lsof -n -i4TCP:[port-number]
    kill -9 [PID]
    ```

12. Tmux

ssh host, tmux, run command, `ctr+b d`, exit. To check the tmux session, run `tmux attach`

13. Pacman

- Update pacman mirrors: `reflector --verbose --latest 5 --sort rate --save /etc/pacman.d/mirrorlist`
- Check recently installed packages: `grep -i installed /var/log/pacman.log`

13.1. Pacman cache

```
sudo ls /var/cache/pacman/pkg/ | wc -l # checks cached packages
du -sh /var/cache/pacman/pkg/ # disk space occupied by cache
sudo paccache -r # cleans all packages except most recent 3
sudo paccache -rk 1 # keep only one most recent version
sudo pacman -Sc # remove all uninstalled packages
sudo pacman -Scc # remove installed and uninstalled packages from cache
sudo paccache -ruk0 #**** remove all versions of uninstalled packages
change /etc/pacman.conf ParallelDownloads=5
```

13.2. Install from live usb

```
mount system: mount /dev/sdax /mnt
sudo pacman --root /mnt -S package
sudo pacman -Qkk | grep warning # To verify the presence of the files
installed by a package
sudo pacman --root /mnt -S $(sudo pacman --root /mnt -Qeq) --noconfirm #
reinstalls installed packages
#If need to remove aur packages:
sudo pacman --root /mnt -Qeq > packages.txt
sudo pacman --root /mnt -S $(cat packages.txt) --noconfirm
```

13.3. Pacman infos

```
pacman -Qe # lists explicitly installed packages
pacman -Rsc # uninstalls (including unneeded dependencies)
pacman -Qs "query" # search installed packages for keywords
pacman -Qdt # list unneeded packages
pacman -Rns $(pacman -Qdtq) # uninstall unneeded packages (nota: quando
adicionei isto aos aliases, sempre que abri o terminal pedia-me a pass do
sudo (estava a correr o que esta a frente de $)
```

13.4. pacman mirrors

`sudo pacman-mirrors --fasttrack && pacman -Syyu`

14. Grub

- If no update-grub command, do:

```
sudo nano /usr/sbin/update-grub
"
#!/bin/sh
set -e
exec grub-mkconfig -o /boot/grub/grub.cfg "$@"
"
sudo chown root:root /usr/sbin/update-grub
sudo chmod 755 /usr/sbin/update-grub
```

- If error syntax in grub-customizer:

  - View -> Show placeholders
  - select entry "script code"
  - remove

- check kernel by `uname -r`

14.1. Install grub manually when manjaro fails

- Deactivate CSM in BIOS
- Quando acaba a instalacao, ver se ele cria a particao em /boot/efi ou /boot
- `sudo fdisk --list` (para ver onde foi instalada a particao no pc)
- `sudo su`
- `mount /dev/sda2 /mnt` (em que sda2 era a particao com o linux)
- `mount /dev/sda1 /mnt/boot/efi`
- `grub-install --target=x86_64-efi --efi-directory=/mnt/boot/efi --bootloader-id=manjaro --boot-directory=/mnt/boot --recheck --debug`
- `manjaro-chroot -a`
- `update-grub`
- `umount -R /mnt`

Link

15. Vim

- `yay -S vim-plug-git`
- add `.vimrc` with the plugs I want
- add folder `~/.vim/plugged/`
- to install plugs, do `:PlugInstall`
- for fzt pluggin: `:Files` command
- For the NERDTree plugin to see icon of file, install: `yay -S nerd-fonts-complete`; This font package my screw up font sizes of icons. To correct this, add to i3blocks config the following:

```
<span size='small' font_weight='light'> icon </span>
```

 And change font on terminal to SauceCodePro Nerd Font Medium

- To open a file in a new tab in nerdtree, press t (or T); to open vertically click s;
- To cycle through windows: C-W-W, C-W-H, C-W-L, C-W-J, C-W-K
- To open file using fzf do:
- CTRL+T to open in new tab
- CTRL+X to open a new split
- CTRL+V to open in a new vertical split
- While in NERDTree, click on "m" to have a menu to do stuff with the file or other things
- `yay -S vim-youcompleteme-git` -> vim autocompletion (Needs to be done separately from the installation of the dotfiles)
- No need to add this plugin (vim-youcompleteme-git) to the `.vimrc` file
- add: `let g:ycm_show_diagnostics_ui = 0` to disable error checking by YouCompleteMe
- `pacman -S python-black`

15.1. Install Vim in cluster

```
git clone https://github.com/vim/vim.git
./configure --prefix=$HOME/.local && make && make install
# More flags: --disable-perlinterp --enable-rubyinterp --enable-multibyte -
-enable-pythoninterp --with-features=huge
export PATH="/home/youruser/.local/bin:$PATH"
# For plugins:
mkdir .vim/autoload
curl -fLo ~/.vim/autoload/plug.vim --create-dirs \
https://raw.githubusercontent.com/junegunn/vim-plug/master/plug.vim
```

Place in `.vimrc` before `plug#begin()`:

```
let data_dir = has('nvim') ? stdpath('data') . '/site' : '~/.vim'
if empty(glob(data_dir . '/autoload/plug.vim'))
```

```
    silent execute '!curl -fLo '.data_dir.'/autoload/plug.vim --create-dirs
https://raw.githubusercontent.com/junegunn/vim-plug/master/plug.vim'
    autocmd VimEnter * PlugInstall --sync | source $MYVIMRC
endif
```

15.2. Vim snippets

- `:UltiSnipsEdit` command opens up a custom snippets file for the current language/filytype
- Don't need the above step if I install vim-snippets plugin

15.3. Manage Tabs

- To move tabs -> `Alt + arrows`
- To merge tabs -> `Ctr + m` or `Ctrl + n`;
- To exchange position of merged tabs -> `<C-w> x`;
- To change cursor position -> `<C-w> w`;
- To rotate windows -> `<C-w> <C-r>`

15.4. Vim surroundings

- cs(atual)(target) -> change surround from "atual" to "target"
- ds" -> delete surround "
- ysiw[-> yank surround inner word [-> puts [surrounding the word the curson is in
- ysf(smth)[-> puts [surrounding current cursor position till smth

15.5. Some commands

- procurar coisas: /searchthing e usa-se n ou N para avançar para as seguintes
- procurar string e substituir:

```
:s/search/replace/
:8,10 s/search/replace/g procura nas linhas 8 a 10
:%s/search/replace/g procura no documento inteiro
:%s/search/replace/gc pede confirmação para alterar
```

- copiar e colar: selecionar o texto, y copia, p cola

16. Lighdm

```
pacman -S lightdm-gtk-greeter-settings
change default greeter: /etc/lightdm/lightdm.conf under [Seat:*]
pacman -S archlinux-wallpaper
pacman -S materia-gtk-theme
yay -S pop-icon-theme-git
yay -S pop-gtk-theme
```

17. i3Blocks

For the scripts to work, even if it is .py, need to chmod +x

- https://github.com/vivien/i3blocks-contrib/tree/master/
- For calendar, install yad and xdotool; add: `for_window [class='Yad'] floating enable`

18. PcmanFM

18.1. Basic Configuration

- Go to edit -> Preferences -> Advanced :

    - Set terminal emulator (ex: xfce4-terminal) -> to open directly with vim for example
    - Set archiver integration: xarchiver

- To see thumbnails, install the following packages:

    - poppler-glib
    - ffmpegthumbnailer
    - freetype2
    - raw-thumbnailer
    - tumbler
    - libgsf
    - libgepub

19. MPV

19.1. Annoying bar at the top

- Change picom config: frame-opacity option

19.2. Watch stream

- `pacman -S yt-dlp`
- `mpv 'link'`

20. Mime-Types

20.1. Alternative to xdg:

- `yay -S mimeo`
- `yay -S xdg-utils-mimeo`

[MIMEO COMMANDS]

- Open files (foo, bar, etc) : `mimeo foo bar baz`
- find Leafpad's desktop file: `mimeo --app2desk leafpad`
- determine "test" file's MIME-type: `mimeo -m test`
- associate "application/x-shellscript" with Leafpad: `mimeo --add application/x-shellscript leafpad.desktop`
- Associate all text files with Medit: `mimeo --add 'glob:text/*' medit.desktop`
- Association File Examples: (mimeo --assoc-help)

```
vlc --one-instance --playlist-enqueue %U
    ^https?://(www.)?youtube.com/watch\?.*v=

Open HTTP(S) URLs with Firefox:

/usr/bin/firefox %U
    ^https?://

Open various media files in VLC by extension:

/usr/bin/vlc --one-instance --playlist-enqueue %F
  \.mp3$
  \.flac$
  \.avi$
```

- CUSTOM ASSOCIATION FILES (mimeo --help, mimeo --filepath-help If --assoc is not passed then the following paths will be checked for custom associations, in order:

```
/home/goncalo/.config/mimeo/associations.txt
/etc/xdg/mimeo/associations.txt
```

Note: Eventually try mimi! Links:

- [repo]
- [aur]

Note: eventually take a look at package perl-file-mimeinfo (mimeopen -d)

21. Color-Scheme

- Install: python-pywal
- Install: `yay -S fzwal-git`
- Run: `wal --theme base16-nord`
- Add to .zshrc: (`cat ~/.cache/wal/sequences &`)
- Add to .vimrc:
  - Plug 'dylanaraps/wal.vim' (install with PlugInstall)
  - `colorscheme wal`
  - `set background=dark`

NOTE:

- This pywal thing seems to screw up with other windows. Removed for now!
- It seems like it isn't pywal that messed with firefox -> Firefox stopped crahsing when I disabled the popOS gtk theme!!!

22. LibreOffice

- Latex in impress: `pacman -S libreoffice-extension-texmaths`
- Check extension in Extension Manager inside libreoffice
- To install ExpandAnimations go to Tools->ExtensionManager and add there the oxt file

23. Reflector

```
reflector --latest 200 --protocol http --protocol https --sort rate --save
/etc/pacman.d/mirrorlist
reflector --country 'France,Germany' --age 12 --protocol https --sort rate
--save /etc/pacman.d/mirrorlist
```

24. AceStream

```
yay -S acestream-engine
yay -S acestream-launcher
acestreamid
acestream-launcher acestream://id -p player
```

25. Swig

```
g++ -Wall -Wextra -Wpedantic -I/usr/include/python3.9 -
I/usr/lib/python3.9/site-packages/numpy/core/include/ -fPIC -shared
example_wrap.cxx -o _example.so -lpython3.9
the first includes python and the second numpy/arrayobject.h
```

26. TTY Login

26.1. Add Username

```
cat /etc/systemd/system/getty@tty1.service.d/override.conf:
  [Service]
  ExecStart=
  ExecStart=-/usr/bin/agetty -n -o <username> %I
systemctl edit getty@tty1
```

26.2. Change startup message

1. added script to bin folder that re-writes /etc/issue with the correct value of the baterry. It uses a template situated in issue folder. This template has a PLACEHOLDER text that is used by sed to substitute with the value of the battery. In order for this to work, I created a systemd service (check systemd_scripts folder) which runs the script. Everything is situated in lap_dotfiles

27. HPC

27.1. Modules

- To list all currently loaded modules: `module list`
- To list all available (loadable) modules: `module avail`
- To load a module: `module load x`
- To unload a module: `module unload x`
- To swap a specific module for another: `module switch x y`

27.2. Some Commands

```
sinfo
squeue
scontrol show partition/node/....
scancel (process_id)
# Don't forget to load modules - e.g. -> module load gcc-8.1, module load
openmpi/4.0.1
module avail # to see modules
srun -n 1 -p partition bash # takes me to a shell inside the node
```

Launch Script:

```
#!bin/bash
#SBATCH # instrucoes ao sbatch
./ficheiro.out
```

28. Network

28.1. Network not connecting at startup

- `systemctl restart NetworkManager`

28.2. MAC address

- To find the default device -> `ip route list`
- To find the mac address -> `ifconfig -a`
- Alternatives:
  - `ip addr show && ip addr show device`
  - `ip link show`

29. Dmenu_ext

29.1. Not opening paths

Add to mimeapps.list: inode/directory=pcmanfm.desktop;

30. Nvidia

30.1. NVIDIA back screen on TTY

- /etc/modprobe.d/blacklist.conf:

```
install i915 /usr/bin/false
install intel_agp /usr/bin/false
```

31. CFP Nvidia

31.1. VPN access

- Install snx from InfoCiencias
- create .snxrc file
- connect by snx
- disconnect by snx -d

31.2. First steps to config account

- To create home directory by default: CREATE_HOME yes in /etc/login.defs
- On first login had no home:
    - mkdir /home/username
    - chown username:username /home/username
    - cp -rT /etc/skel /home/username -> to populate with default files and folders
- Generate ssh keys: ssh-keygen
- Add .pub key to ~/.ssh/authorized_keys
- The default shell was /bin/sh. So that bash works,
    - chsh /bin/bash
- Can check shells by: cat /etc/shells

32. Awk

- Print every 3 lines

```
awk 'NR%3==0' file
awk 'NR%3==0' file >> tmp && mv tmp file -> saving to file
for i in ./file_pattern ; do
  awk 'NR%3==0' $i >> tmp && mv tmp $i
done
# The above cycle iterates over the files in the current directory
```

33. Sublime-Text

- Go to sublime text webpage, linux repos and find pacman. Follow the commands
    - Go to preferences -> package control (to install the package manager)
    - To install a package: Ctrl + Shift + p (command pallet) -> Install -> Package name
    - Imporant packages to install: (To see packges: Preferences->Package Control->List Packages)
        - SFTP
        - C++ Starting Kit
        - C++NamespaceTool
        - ClangFormat
        - Anaconda
        - C Improved
        - C++11
        - SideBarEnhancements

- Define shorcuts for sftp: Preferences->Package Settings->SFTP->Key Bindings and write on the file on the right hand side with the directory: .config/...../Packages/User/... My first shortcuts were: alt+z(open files) e alt+x(open servers)

- Example file for server setup:

```
{
  // The tab key will cycle through the settings when first created
  // Visit https://codexns.io/products/sftp_for_subime/settings for
help

  // sftp, ftp or ftps
  "type": "sftp",

  "sync_down_on_open": true,
  "sync_same_age": true,

  "host": "176.79.187.130",
  "user": "goncalo",
  //"password": "",
  //"port": "22",

  "remote_path":
"/home/goncalo/Documents/Optics/NonLinearOptics_Interpolation/",
  //"file_permissions": "664",
  //"dir_permissions": "775",

  //"extra_list_connections": 0,

  "connect_timeout": 30,
  //"keepalive": 120,
  //"ftp_passive_mode": true,
  //"ftp_obey_passive_host": false,
```

```
    //"ssh_key_file": "~/.ssh/id_rsa",
    //"sftp_flags": ["-F", "/path/to/ssh_config"],

    //"preserve_modification_times": false,
    //"remote_time_offset_in_hours": 0,
    //"remote_encoding": "utf-8",
    //"remote_locale": "C",
    //"allow_config_upload": false,
}
```

- To use clang on save:

  - Install clang (pacman -S clang) and the clang package in sublime

  - Preferences->Package Settings->Clang Format->Setting-User:

    ```
    {
      "binary": "/usr/bin/clang-format-3.8" (/path/to/your/clang-
    format/executable/file),
      "format_on_save": true,
      "style": "Custom",
    }
    ```

  - Preferences->Package Settings->Clang Format->Custom Style-User:

    ```
    {
      "Language": "Cpp",
      "TabWidth": 4,
      "AlignTrailingComments": "true",
      "UseTab": "Never",
    }
    or
    Language: Cpp
    BreakBeforeBraces: Attach
    PointerAlignment: Right
    TabWidth: 4
    IndentWidth: 4
    AccessModifierOffset: 0
    ColumnLimit: 120
    NamespaceIndentation: All
    AlignTrailingComments: true
    AllowAllParametersOfDeclarationOnNextLine: true
    AlwaysBreakTemplateDeclarations: true
    UseTab: Never
    ```

34. Config-Printer

34.1. CUPS

- Packages to install:

    - cups, cups-filters, liblouis, qpdf, cups-pdf, python-pycups, python-pycurl, gsfonts
    - system-config-printer

- Services to activate

```
sudo systemctl enable --now cups.service
sudo systemctl enable --now cups.socket
sudo systemctl enable --now cups.path
```

- List services: `sudo systemctl -a list-units | grep -i cups`

- Configuration:

    - Verify the following user groups are set in file /etc/cups/cups-files.conf `SystemGroup sys root wheel`
    - Associate a user to the "sys" group by replacing "username" below: `gpasswd -a username sys`

- Add A Printer Using CUPS Web Interface

    - Open "Manage Printing" or browse to http://localhost:631/
    - Click on "Administration" at the top of the web page.
    - Click on "Add Printers".
    - Select the desired printer under "Discovered Network Printers" and click the "Continue" button.
    - Set the "Name", "Description" and "Location" and then clock on the "Continue" button.
    - Select the "Model" of printer and click the "Add Printer" button.
    - Select default options and click the "Set Default Options" button.

- Add A Printer Using Printer Settings This utilizes "Printer Settings" (system-config-printer package) a native GUI application.

    - Open "Printer Settings".
    - Click on the "Unlock" button.
    - Click on the "Add" button.
    - Select the desired printer and click the "Forward" button.
    - Set the desired "Printer Name", "Description" and "Location".
    - Click the "Apply" button.

After these steps, it should work. Do not need to go for avahi!!!!

34.2. AVAHI

- Packages to install:
  - avahi, nss-mdns
- `sudo systemctl enable avahi-daemon.service`
- edit the file /etc/nsswitch.conf and change the hosts line to include `mdns_minimal [NOTFOUND=return]` before the word resolve
- avahi-browse --all --ignore-local --resolve --terminate or
- avahi-discover (needs gtk3, dbus-python and python-gobject)

The question is not avahi or cups but : Do I need/want printer autodiscovery or not ? If answer is yes > enable avahi , if answer is no > disable avahi Either use cups or cups + avahi

34.3. HP SCANNER

- wiki page: SANE/Scanner-specific problems
- pacman -S sane-airscan ipp-usb
- pacman -S hplip
- Go to system-config-printer and now add printer (printing should work from now on). In order to scan:
  - `hp-makeuri <scanner_ip> / scanimage -L`
  - `scanimage --device "<hpaio:/net....>" --format=png --resolution 300 >scan.png`

35. Sway

35.1. Packages to check for base arch install

```
pacman -S grub efibootmgr networkmanager network-manager-applet dialog
wpa_supplicant mtools dosfstools reflector base-devel linux-headers avahi
xdg-user-dirs xdg-utils gvfs gvfs-smb nfs-utils inetutils dnsutils bluez
bluez-utils cups hplip alsa-utils bash-completion openssh rsync reflector
acpi acpi_call tlp virt-manager qemu qemu-arch-extra edk2-ovmf bridge-utils
dnsmasq vde2 openbsd-netcat iptables-nft ipset firewalld flatpak sof-
firmware nss-mdns acpid os-prober ntfs-3g terminus-font
pacman -S xdg-desktop-portal-wlr
```

35.2. Services

```
systemctl enable NetworkManager
systemctl enable bluetooth
systemctl enable cups.service
systemctl enable sshd
systemctl enable avahi-daemon
systemctl enable tlp # You can comment this command out if you didn't
install tlp, see above
systemctl enable reflector.timer
systemctl enable fstrim.timer
systemctl enable libvirtd
systemctl enable firewalld
systemctl enable acpid
```

35.3. Sway install from YT:

```
pacman -S sway swaylock swayidle xorg-xwayland ttf-font-awesome
```

35.4. Sway my experience

35.4.1. Packages

```
pacman -S sway swaylock
pacman -S mako grim
yay -S grimshot
pacman -S wl-clipboard
pacman -S light (manage brightness)
pacman -S playerctl (waybar config)
pacman -S waybar
yay -S swaylock-effects-git
pacman -S swayidle
```

```
pacman -S xdg-desktop-portal-wlr
pacman -S dex
yay -S rambox-bin
yay -S albert-minimal
pacman -S pamixer
pacman -S brightnessctl
yay -S nordic-theme
yay -S clipman
# installed i3-quickterm from github: https://github.com/lbonn/i3-
quickterm.git
```

35.4.2. Configuration

- The first config lines are concerned with environment variables needed to make gtk applications launch faster:
  - exec systemctl --user import-environment DISPLAY WAYLAND_DISPLAY SWAYSOCK
  - exec hash dbus-update-activation-environment 2>/dev/null && dbus-update-activation-environment --systemd DISPLAY WAYLAND_DISPLAY SWAYSOCK
- The keyboard and touchpad are configured in sway config. To get the inputs run: swaymsg -t get_inputs
- using i3-quickterm to have a dropdown menu. Need to install rofi for it to work but I can also use i3-quickterm shell and then I do not need to install rofi.
- binding albert in config with exec albert toggle
- using swaylock-effects-git for sway lock
- Using "exec grimshot copy area" for screenshots (requires wl-clipboard)
- Bind media keys (brightness and volume) on config. Associated icons to notifications. The icons are from Arc-X-D package.
- If I want to use light, need to add the following line to sudoers: %wheel ALL=(root) NOPASSWD: /usr/bin/light
- Install playerctl for these controls and waybar.
- For the autostart applications, need to add the flag --indicator to nm-applet
- For the dual monitor, check the monitor with swaymsg -t get_outputs
- Sway doesn't work very well with lightdm -> use lydm -> systemctl enable ly.service -f
- Instead of using ly, simply use .zprofile to login. For it to work, need whiptail and Rebelo's package shiftstate (it is on lap_dotfiles). Ctr+Enter after putting pw on tty takes me to a tui to choose the wm. Shift+Enter takes me to tty login
- The env variable MOZ_ENABLE_WAYLAND=1 enables to run firefox on wayland mode. However, it doesn't load the gtk theme this way. Then, I added to .confi/sway/env the flag GTK_THEME=Nordic. Need to change this in accordance to the gtk theme I want

35.4.3. Fix cannot open display

pacman -S xorg-server-xwayland

35.4.4. Mathematica

- In order to run mathematica: QT_QPA_PLATFORM="xcb" mathematica &

/

- A better way is to add a folder: $HOME/bin and the following script name mathematica (same name as the original in /usr/local/bin):

```sh
#!/bin/sh
QT_QPA_PLATFORM="xcb" /usr/local/bin/mathematica "$@"
```

- Then, if in sway, add to the env script in .config/sway the following line:
  `PATH="${HOME}/bin:${PATH}"` The fact that $HOME/bin comes before path overrides the original mathematica script!Now, I can launch mathematica from dmenu
- Although the above steps solve the problem when we call the binary mathematica, it doesn't solve the problem when we want to open a mathematica notebook through the file manager. To solve that problem I need to change the wolfram-mathematica12.desktop file in /usr/share/applications/wolfram-mathematica12.desktop. In the field exec I need to put the path to $HOME/bin/mathematica script. I saved the original desktop file in /usr/share/applications/mathematica.desktop.
- mathematica was crashing with 3D graphics. Solution: run mathematica with mesa: mathematica -mesa notebook_name.

35.4.5. Zoom

- Currently doesn't allow for sreen sharing. Use zoom in firefox and it works fine!
- Eventually try XGD_CURRENT_DESKTOP=gnome zoom

35.4.6. Albert

- albert crashing after search or cancelling search: rm .config/albert/core.db

36. Misc

1. By disabling all F86 binds in config and installing xfce-power-management (which needs to be started in config and need to get config from Manjaro/Home/.config) and installed pa-applet-git, pavucontrol and pulseaudio (initiated in config) all the F86 binds work.

2. It is preferable to have xfce4-notify (initiated in config by running `/usr/lib/xfce4/notifyd/xfce4-notifyd`) than dunst... Better notifications. Check i3 config and uninstall dunst (in endeavour). In manjaro, do: `sudo mv /usr/share/dbus-1/services/org.knopwob.dunst.service{,.disabled}`

3. Bluetooth:

   - pacman -S pulseaudio-bluetooth
   - pulseaudio -k
   - yay -S bluez-hciconfig
   - hciconfig -> lists bluetooth interfaces
   - sudo hciconfig hci1 down -> turn off specific interface

4. Sticky xrandr:

  - xrandr --output eDP --primary
  - pacman -S autorandr
  - autorandr --save laptop

5. FSTAB

```
sshfs : jose@pi:/ /mnt/rebelo-pi fuse.sshfs noauto,x-
systemd.automount,_netdev,user,idmap=user,follow_symlinks,identityfile
=/root/.ssh/id_rsa,allow_other,default_permissions,uid=1995,gid=1995,n
oatime,reconnect,ServerAliveInterval=45,ServerAliveCountMax=2 0 0
```

6. SYMBOLIC LINKS

  - ln -s /complete/path/to/original/file /complete/path/to/target/file (the
    target file will be a "pointer" to the original file, but it's like the file is in the new target location)
  - ln -sr /relative/path/to/original/directory
    /complete/path/to/target/directory (the target directory will be a link to the first; the
    -r flag means relative)
  - The -f flag will force the link, meaning it delets the target file/directory if it exists
  - Remember to always use complete paths and not relative paths if the -r flag is not specified

7. SSH

  - I can run commands over ssh like this: ssh user@host 'command'
    - Example: liplisboacluster 'echo $(hostname)' -> prints hostname
  - Writting on a remote file:

```
echo 'Some Text' | ssh user@remotehost -T "cat > /remotefile.txt"
# (-T flag fowards stdin local through ssh)
cat ~/.ssh/id_rsa.pub | ssh user@remote.host 'dd
of=.ssh/authorized_keys oflag=append conv=notrunc'
```

  - In order to have several ssh keys, do:

```
ssh-keygen -t rsa -b 4096 -C "your_email@example.com"
eval $(ssh-agent)
ssh-add ~/.ssh/id_rsa2 (newly created key)
```

  - In order to have ssh-agent always running, check ~/.config/systemd and .zshrc
  - systemctl --user enable ssh-agent.service (probably don't need to do this since I
    have a backup of .config/systemd)
  - Check services: systemctl --user list-unit-files | grep enabled
  - Check services (all): systemctl list-unit-files | grep enabled
  - Also, need to add to zshrc a function to load keys, since ssh-add only works for the current
    session

- To have a proxy:

```
Host 10.0.10.3
User goncalo
ProxyCommand ssh goncalo@jgroboredo.ddns.net -W %h:%p
```

- If ssh service fails to start with error: Start request repeated too quickly, do the following:

```
sudo systemctl stop sshd.socket and sshd.service
sudo /usr/bin/sshd -d
#If message from above command states a permission issue:
sudo chmod 400 /etc/ssh/ssh*key
```

8. Firefox crash

   - Seems like it was the gtk theme from popOS that made firefox to crash

   - In sway, if font problems, export GTK_USE_PORTAL=1

   - In what concerns crashes, picom with xrender crashes! Need to use glx

   - Today, 10/08/2021, firefox started crashing. Disabled picom and it did not solve the problem. Updated picom config from arch linux wiki, did not help. Firefox->Settings->Performance did not change anything

   - Starting firefox from terminal does not seem to solve the problem. Does not output any errors.

   - Testing launching firefox and terminal from i3 bind with the flag --no-startup-id -> doesnt work

   - Testing google-chrome-stable; disabled guake

   - Google-chrome also crashed; However, it recovered after a few seconds, similar to what previously happened to vscode. It seems like a X11 problem. Moved to sway.

   - Testing again firefox crashes on i3. For now, uninstalled xf86-video-intel. Since then, no crashes yet.

   - FIREFOX SLOW START:

     - about:config
     - set 0 to all widget.use-xdg-desktop-portal

9. ARCH NOT BOOTING IN VM

   - On a recent installation of arch on a VM, it did not boot after installing the custom grub-theme. In order to solve this, either chroot or open a terminal using ctrl+alt+F2. There, delete the grub theme in /usr/share/grub/themes and after that run grub-mkconfig -o /boot/grub/grub.cfg
   - The above solution doesn't work. In fact I am very dumb. This was only related with the fact that I have a intel config file in /etc/X11/xorg.d.... DUMBBBB

/

10. FIND UUID OF DISK

   - sudo blkid | grep UUID=

11. FIX YAY

   - Error: yay: error while loading shared libraries: libalpm.so.11: cannot open shared object file: No such file or directory
   - Fix: rebuild yay:

```
cd /tmp && git clone 'https://aur.archlinux.org/yay.git'
    && cd /tmp/yay && makepkg -si && cd ~ && rm -rf /tmp/yay/
```

12. FIX PAMAC

   - Error: libpamac-aur: /etc/pamac.conf exists in filesystem(owned by pamac-aur)
   - Fix: pacman -R pamac-aur && yay -S pamac-aur

13. FIX TIME

   - sudo ntpd -qg
   - install ntp
   - sudo ntpdate pool.ntp.org
   - timedatectl set-ntp true

14. CHECK RAM sudo dmidecode -t memory

15. lxrandr to change monitors

16. CONFIG LINUX ACCOUNT

```
sudo useradd -m test
userdel <nome de utilizador do utilizador>
adduser username sudo
/etc/ssh/sshd_config # Allow pubkey and add authorized_keys file;
chsh -s $(which zsh)
sudo service ssh restart
# For redmine: couldn't add repos to redmine: change permissions:
chmod 775 /path/to/dir
```

17. Dmenu-extended

   - For apps to open I need desktop files to associate a given mimetype to a binary
   - After doing the above step, rebuild cache

18. NetworkManager/Network interface stopped working

   - Solution: boot to a pen with manjaro and reboot

/

- See logs:

```
find /sys/class/net -follow -maxdepth 2 -name wireless
cat /proc/net/wireless
iw dev
sudo iw dev wlp0s20f3 connect "ROBOREDO"
sudo dmesg | grep firmware
sudo dmesg --level=emerg,alert,crit,err
lspci | grep net
lsmod
sudo ls /etc/netctl/interfaces
```

19. Rebuild all yay packages depending on python: `yay -S $(pacman -Qoq /usr/lib/python3.9) --answerclean All`

20. nc : install `pacman -S gnu-netcat`

21. Can add stuff to path in .xinitrc; a user systemd service needs to have WantedBy=default.target and not multi-user The rclone command will not work in a user service since systemd doesn't have access to env variables. For that, just add a env.conf file to .config/environment.d/ (check printenv)

22. Delay a systemd service:

```
[Service]
ExecStartPre=/bin/sleep 30
```

23. DMZ - portas abertas para toda a internet

24. `dhcpcd -T eth0` - check dns

25. PERMISSIONS

```
chown -R root:root /etc
find /etc -type f -exec chmod 644 {} +
find /etc -type d -exec chmod 755 {} +
chmod 755 /etc/init.d/* /etc/rc.local /etc/network/* /etc/cron.*/*
chmod 400 /etc/ssh/ssh*key
check desktop_dotfiles
```

26. Need imagemagick for blurlock

27. samba

```
smbclient '//print-server.critical.pt/Drivers/' -U critical/jgroboredo
(smbclient '//ip/Directory')
```

```
smbclient '\\files.critical.pt/Repository' -U critical/jgroboredo
get file
```

28. bluedevil; bluedevil-wizard; systemctl start bluetooth; pavucontrol: High Fidelity Playback (A2DP Sink, codec LDAC) blueberry-tray

29. `sudo lsof -i -P -n | grep LISTEN`

30. bash gum package

31. gtk-update-icon-cache -f -t .icons ou (/usr/share/icons/) Add icon field in desktop file - only the name.png