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# ionchypedia Documentation

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## 1.1 Setting Up a Static IP Address

1. Find the logical name of the network device:

```
$ sudo lshw -class network -short
H/W path          Device          Class          Description
=====
/0/100/4/0       enp1s0          network       RTL810xE PCI Express Fast Ethernet
↳controller
```

2. Edit `/etc/network/interfaces` to contain the following (where the IP address of the router begins with `192.168.0.*`):

```
auto enp1s0
iface enp1s0 inet static
    address 192.168.0.69
    netmask 255.255.255.0
    network 192.168.0.0
    broadcast 192.168.0.255
    gateway 192.168.0.1
    dns-nameservers 8.8.8.8 8.8.4.4
```

Field	Notes
<code>address</code>	The static IP address to be set, here set to <code>*.69</code>
<code>netmask</code>	0 bits indicate bits that can be used for the IP address; here, only the lower 256 bits can be used
<code>network</code>	First address in network, here set to <code>*.0</code>
<code>broadcast</code>	Last address in network, here set to <code>*.255</code>
<code>gateway</code>	IP address of the router
<code>dns-nameservers</code>	DNS servers; 8.8.8.8 and 8.8.4.4 are Google's DNS servers

3. Run `sudo ifdown -v enp1s0 && sudo ifup -v enp1s0`

## 1.2 Setting up SSH from a New Machine

1. Generate an SSH key (defaulting to RSA 2048 bits): `ssh-keygen`
2. Temporarily enable password login on server by setting `PasswordAuthentication yes` in `/etc/ssh/sshd_config`
3. Restart the SSH server: `sudo systemctl restart ssh`
4. Copy public SSH key to server: `ssh-copy-id user@ert.space`
5. Disable password login

Bonus:

- Copying a file via SSH: `scp ~/src.file user@ert.space:~/dest/location`

## 1.3 Setting Up Services

### 1.3.1 Docker

#### Docker Compose template

```
version: "3"

services:
  example:
    build: .
    image: author/example:tag
    container_name: example
    restart: always
    environment:
      - ENV_VAR=value
    ports:
      - 8000:80
    volumes:
      - /unnamed/volume/will/be/created
      - myvolume:/var/www/html
      - /srv/data/host/location:/srv/data
    networks:
      - mynetwork
    depends_on:
      - db
  db:
    image: postgres
    container_name: example-db
    restart: always
    expose:
      - 5432
    volumes:
      - example-db:/var/lib/postgresql/9.3./main
```

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```
networks:
  mynetwork:

volumes:
  myvolume:
  example-db:
```

## Useful Docker (and related) commands

Task	Command
Shutting down and restarting a detached container	<code>docker-compose down &amp;&amp; docker-compose up -d</code>
Entering into a running Docker container	<code>docker exec -it containername bash</code>
Copying files into a running Docker container	<code>docker cp ~/location/on/host containername:/var/www/html</code>

### 1.3.2 Nginx

#### Nginx templates

##### Static web page

The URL <https://example.ert.space> will point to files in `/srv/www/example.ert.space`.

```
server {
  listen 80;
  listen [::]:80;
  root /srv/www/example.ert.space;
  server_name example.ert.space;
  error_page 404 /404.html;
  location / {
    try_files $uri $uri/ =404;
  }
}
```

##### Reverse proxy

The URL <https://example.ert.space> will point to the local port 8080.

```
server {
  listen 80;
  listen [::]:80;
  server_name example.ert.space;
  location / {
    proxy_pass http://localhost:8080;
    proxy_set_header Host $host;
    proxy_set_header X-Real-IP $remote_addr;
  }
}
```

### PHP site with HTTP authentication

The URL <https://example.ert.space> will point to the PHP application at `/srv/www/example.ert.space/index.php`. HTTP authentication done as indicated [here](#).

```
server {
    listen 80;
    listen [::]:80;
    server_name example.ert.space;

    root /srv/www/example.ert.space;
    index index.html index.php;

    # set up HTTP basic authentication
    auth_basic "Authentication Required";
    auth_basic_user_file /etc/apache2/.htpasswd;

    location / {
        try_files $uri $uri/ =404;
    }

    # process PHP requests
    location ~ /\.php$ {
        include snippets/fastcgi-php.conf;
        fastcgi_pass unix:/run/php/php7.0-fpm.sock;
    }

    location ~ /\.ht {
        deny all;
    }
}
```

### Useful Nginx (and related) commands

Task	Command
Softlinking from sites available to sites enabled (while in sites-enabled)	<code>sudo ln -s /etc/nginx/sites-available/example.ert.space example.ert.space</code>
Restarting Nginx	<code>sudo systemctl restart nginx</code>
Listing SSL certificates	<code>sudo certbot certificates</code>
Adding a domain to an SSL certificate (note that all old domains must be included as well)	<code>sudo certbot --nginx --expand -d ert.space,example.ert.space</code>



## 1.4 Maintenance and Configuration

### 1.4.1 General

Task	Command
Update DDNS record	<code>curl "https://dynamicdns.park-your-domain.com/update?host=@&amp;domain=ert.space&amp;password=&lt;REDACTED&gt;"</code>
Renew SSL certificate	<code>sudo certbot renew &amp;&amp; sudo systemctl restart nginx</code>
Update UFW firewall rules	<pre>sudo ufw allow 22000/tcp # add TCP port ↳22000 sudo ufw reload # enable new rules sudo ufw status # check active rules sudo ufw delete allow 22000/tcp # remove ↳TCP port 22000</pre>

### 1.4.2 TTRSS

Modification	Location
Database configuration (SELF_URL_PATH, etc.)	<code>/var/www/ttrss/config.php</code>

### 1.4.3 Gitea

Modification	Location
Configuration settings	<code>\$GITEA/conf/app.ini</code> (see <a href="#">here</a> for configurable values)
Git clone SSH port	<code>SSH_PORT = port</code> in <code>app.ini</code> (sets clone url to <code>ssh://git@ert.space:port/user/repo.git</code> )
Home page	<code>\$GITEA/gitea/templates/home.tmpl</code>
Localized strings	<code>\$GITEA/gitea/options/locale/local_en-US.ini</code>
CSS styling	<code>\$GITEA/gitea/public/css/index.css</code>
Other	Copy files as necessary from the <a href="#">Gitea repository</a> under <code>custom/conf</code> , <code>options</code> , <code>public</code> , and <code>templates</code>

### 1.4.4 Nextcloud

Modification	Location
HTTPS protocol for reverse proxies	Add <code>'overwriteprotocol' =&gt; 'https'</code> in <code>config/config.php</code> to <code>\$CONFIG</code> array in <code>config/config.php</code>
Running an occ command	<code>docker exec -u www-data nextcloud php occ \$command</code>

## 1.4.5 Ghost

Modification	Location
URL	url in <code>\$GHOST/config.production.json</code>
Theme	Unzip into <code>\$GHOST/content/themes/themename</code>
Custom JS	Settings -> Code injection

## 1.4.6 MediaWiki

Task	Commands
Changing the logo	<ol style="list-style-type: none"> <li>1. Upload logo to <code>\$MEDIAWIKI/html/resources/assets/logo.png</code></li> <li>2. Modify <code>\$wgLogo = "\$wgResourceBasePath/resources/assets/logo.png";</code> in <code>\$MEDIAWIKI/html/LocalSettings.php</code></li> <li>3. <code>docker exec mediawiki php /var/www/html/maintenance/rebuildImages.php</code></li> </ol>
Making pages show up in categories	<code>docker exec mediawiki php /var/www/html/maintenance/refreshLinks.php</code>
Adding extensions	<pre> TODO,      add      wfLoadExtension( 'ExtensionName' ); in \$MEDIAWIKI/html/ LocalSettings.php </pre>

## 1.4.7 Funkwhale

Task	Commands
Importing music	<ol style="list-style-type: none"> <li>1. Copy music to <code>\$FUNKWHALE/music</code></li> <li>2. <code>docker exec -it funkwhale manage import_files e4ddd50e-ae64-4390-861b-28a4338b5de7 "/music/*.mp3" --in-place --recursive --broadcast</code></li> </ol> <p>See <a href="#">docs</a> for more details and <code>docker exec -it funkwhale manage import_files --help</code> for more commands.</p>

## 1.4.8 Standard Notes

Modification	Location
Disabling registration	Comment out <code>post "auth" =&gt; "api/auth#register"</code> in <code>\$STDNOTES/config/routes.rb</code>
Other	See <a href="#">docs</a>

## 1.5 Updating Services

### 1.5.1 Nextcloud

1. `docker-compose down`
2. `docker pull nextcloud`
3. `docker-compose up -d`
4. Remember to delete unused Docker images!

### 1.5.2 Ghost

1. Check the current version of Ghost at <https://ert.space/ghost/#/about>.
2. `docker-compose down`
3. **`docker pull ghost`**
  - If the latest major version differs from the current major version, first update to the latest minor version of the current major version, then update to the latest image.
4. `docker-compose up -d`
5. Remember to delete unused Docker images!

### 1.5.3 Gitea

1. `docker-compose down`
2. `docker pull gitea/gitea`
3. Update `$GITEA/templates/home.tmpl` (especially `{{.i18n.Tr "startpage.app_desc"}}`) and possibly `$GITEA/conf/app.ini` as necessary from <https://github.com/go-gitea/gitea>
4. `docker-compose up -d`
5. Remember to delete unused Docker images!

### 1.5.4 Funkwhale

Official instructions are [here](#).

1. `docker-compose down`
2. `docker pull funkwhale/all-in-one:$VERSION`
3. Edit the Docker Compose file to use the new image.
4. `docker-compose up -d`
5. Remember to delete unused Docker images!

### 1.5.5 MediaWiki

Follow [these instructions](#). Alternatively, simply use <https://wiki.ert.space/mw-config/>.

## 1.5.6 TTRSS

The `x86dev/docker-ttrss` image should automatically install updates.

## 1.6 Backing Up Data from Services

### 1.6.1 Ghost

All content is under `/srv/docker/ghost/content/`, with an additional configuration file under `/srv/docker/config.production.json`. It should be sufficient to back up the entire `/srv/docker/ghost/` directory.

### 1.6.2 TTRSS

All data is stored in a PostgreSQL database mounted on the `ttrss_ttrssdb` Docker volume. However, it would be easier to download the OPML via the public URL and to restore from it, redoing the settings as needed.

### 1.6.3 Gitea

All content is under `/srv/docker/gitea/git/`, `/srv/docker/gitea/gitea/`, and `/srv/docker/gitea/ssh/`. It should be sufficient to back up the entire `/srv/docker/gitea/` directory.

### 1.6.4 Nextcloud

### 1.6.5 Funkwhale

### 1.6.6 MediaWiki

## 1.7 Tips on Developing Coq

### 1.7.1 Setup

1. `sudo apt install opam` (OCaml package manager)
2. `opam init && opam switch create ocaml-base-compiler` (OCaml compiler)
3. `opam install num ocamlfind ounit merlin user-setup` (OCaml libraries needed for compilation and development)
4. `opam user-setup install` (configuring Merlin)
5. For VSCode, use the [OCaml and Reason IDE](#) by Darin Morrison

### 1.7.2 Debugging

#### Building

1. `./configure -profile devel` (use `-warn-error no` to turn off errorfying warnings)

2. make `coqbinaries` (native code) or make `byte` (bytecode) to build toplevel
3. make `coqplib` to build libraries; make `theories/<path>/<file>.vo` for specific library

### Using `coqtop`

1. `bin/coqtop` or `bin/coqtop.byte`
2. Drop.
3. `#use "base_include";;` for basic printing or `#use "include";;` for pretty-printing
4. `#trace Module.function;;`
5. `go();;`
6. Run your Coq code in the prompt; CTRL-D to exit

### Useful functions

Helpers for printing out `Pp.t` and `constr` with a prefixed message:

```
let print_pp msg ppt =
  let open Format in
  let open Pp in
  pp_with std_formatter @@ str msg ++ spc () ++ ppt ++ fnl ()

let print_constr msg cstr =
  print_pp msg (debug_print cstr)
```

### Using `ocamldebug`

1. make `&& make byte`
2. `dev/ocamldebug-coq bin/coqtop.byte`
3. source `db` to load printers (optional)
4. `break @ Module 123` to set breakpoint at line 123 of `module.ml`
5. run, then run your Coq code in the prompt
6. Useful commands (more [here](#)):
  - `s` to step into a function
  - `n` to go to the next function
  - `p var` to print the variable `var`
  - `li` to print the surrounding lines of the current breakpoint

## 1.7.3 Unit testing

### Running tests

1. make `bin/coqtop` to compile to native code; make `bin/coqide` to compile CoqIDE if needed

2. In test-suite, run `make unit-tests/<dir>/* .ml.log` to run the unit tests in test-suite/unit-tests/<dir> (or `make unit-tests/**/* .ml.log` to run all)
3. `make summary` to see test files run; `make report PRINT_LOGS=1` to see test failures

### Test template

```
open Utest

let log_out_ch = open_log_out_ch __FILE__

let test1 = mk_{eq,bool}_test "name" "description" ...
...
let testn = ...
let tests = [test1;...;testn]

let _ = run_tests __FILE__ log_out_ch tests
```

### 1.7.4 Plugins

Use the plugin `example_plugin` with the command `Declare ML Module "example_plugin"`. Re-run `./configure` so that `.cma` files will be created during `make byte`. In `Makefile.common`, add to `PLUGINDIRS` and `PLUGINS_CMO` so that `.cmo` files will be created during `make pluginsopt`.

In `example.mlg`:

```
{
open Example
...
}

DECLARE PLUGIN "example_plugin"

VERNAC COMMAND EXTEND CommandName CLASSIFIED AS SIDEFF
| [ "Set" "Flag" ] -> { set_flag true }
END

VERNAC COMMAND EXTEND CommandName CLASSIFIED AS QUERY
| [ "Print" "Stuff" ] -> { print_stuff () }
END
```

In `example.ml`:

```
let set_flag b = ...
let print_stuff () = ...
```

In `example.mli`:

```
val set_flag b : bool -> unit
val print_stuff : unit -> unit
```

In `example_plugin.mlpack`:

```
Example
G_example
```

## 1.7.5 Type inference

### Important types and functions

#### Constr

- `constr`: Main AST of the Coq kernel (“constructions”)
- `mk*`, `is*`, `dest*`: Functions for creating, testing membership, and destroying (extracting data from) `constr`
- `compare_head_gen_leq_with`: Tests for subtyping on types and alpha equivalence on terms, with optional collection of stage constraints
- `constr_ord_int`: Comparison function for total ordering with alpha equivalence (nothing to do with subtyping)

#### Typeops

- `execute`: Main inference algorithm
- `infer*`: Entry points to inference algorithm
- `check_cast`: Entry point to subtyping (i.e. `conv` rule)

#### CClosure

- `fconstr`: Frozen version of `Constr.constr` for closure

#### Reduction

- `eqappr`: Tests for subtyping on `fterm`, similar to `compare_head_gen_leq_with` (probably)

#### Term

Contains functions for decomposing and recomposing lambdas, products, and arities.

#### Pretyping

- `search_guard`: Guard-checking entry point for fixpoints. Used by other functions to “guess” the recursive indices of fixpoints.

## 1.7.6 Other

- If the dependencies of `kernel/declarations.ml` are changed, e.g. adding a new field to a variant in `Constr.constr`, changes may be needed in `checker/values.ml`, e.g. in `Values.v_constr`. Failure to make the necessary changes may result in mysterious segfaults.
- Changes to `Constr.constr` need to be reflected in the hashing functions in `Constr`.

## 1.8 LaTeX Fixes for arXiv Submissions

These are the errors I encountered when creating a submission with arXiv by uploading LaTeX files created in Overleaf. There are probably more proper ways to fix them. See [Considerations for TeX Submissions](#) and [Common Mistakes](#) for other errors. See also [this README](#) for more details on building (especially when using *acmart*) and submitting to arXiv.

Problem	Solution
Package xkeyval Error: `printccs' undefined in families `@ACM@topmatter@'.	Removed <code>printccs</code> from <code>settopmatter</code> . I didn't have categories anyway.
Undefined control sequence. <argument> <code>\mdseries@tt</code>	Added <code>\makeatletter\providecommand{\mdseries@tt}{}\makeatother</code> <i>before packages</i> .
Package minted Error: You must invoke LaTeX with the <code>-shell-escape</code> flag.	Compiled with <code>\usepackage[finalizcache,cachedir=.]{minted}</code> , downloaded all <code>*.pygtex</code> and <code>*.pygstyle</code> files from the logs, uploaded them to the root directory, and compiled with <code>\usepackage[frozenscache,cachedir=.]{minted}</code> .
LaTeX Error: Option clash for package <code>hyperref</code> .	Added override file <code>00README.XXX</code> with the line <code>nohypertex</code> . arXiv loads HyperTeX by default, and <i>acmart</i> formats try to load them again.
arXiv is unable to run <code>graphviz</code> .	I just converted by DOT content to images beforehand and included them as graphics, but the proper solution would be to use <code>dot2texi</code> .
Unable to convert to PDF.	Added <code>\pdfoutput=1</code> to the beginning of the main file.

## 1.9 Miscellaneous

### 1.9.1 Copying a control character to the clipboard (Windows)

For control character `0x07`, for instance, execute `[char]7 | clip` in Powershell. For multiple characters, use `"$([char]7)$([char]...)..."`. Alternatively, execute `echo -e "\x07" > test` in Bash to put the character in the file `test` and then execute `cat test | clip` in Powershell to paste it into the clipboard.

### 1.9.2 Displaying Unicode characters in the terminal (Windows)

Run `chcp.com 65001`. See [here](#) for details.



### 1.9.3 Syntax highlighting in MediaWiki

Template: `<syntaxhighlight lang="" inline></syntaxhighlight>`

See [here](#) for more details and [here](#) for a list of supported languages.

## 1.10 Firefox Configurations

These are some common useful configs that can be set in Firefox's `about:config`.

Name	Description
<code>browser.urlbar.clickSelectsAll</code>	When true, single-clicking on the URL bar selects all text instead of placing cursor
<code>browser.urlbar.doubleClickSelectsAll</code>	When false, double-clicking on the URL bar selects a single word below the cursor instead of all text
<code>browser.urlbar.suggest.{bookmark, history, openpage, searches}</code>	When true, bookmarked sites/sites you've visited/open pages/past searches will show up as you type in the URL bar
<code>browser.urlbar.ctrlCanonizesURLs</code>	When false, URLs are copied in percent-encoding
<code>middlemouse.paste</code>	When false, on systems where the middle button pastes (e.g. most Linux), clicking the middle button will not paste within Firefox.

## 1.11 Linux Customizations and Configurations

I frequently forget the various customizations I configure after setting up a distro installation, so this time around I've finally compiled a list.

### 1.11.1 Configuration Files

#### `.vimrc`

Use `sensible.vim` and add the following:

```

colorscheme peachpuff " desert, slate are nice too
set shiftwidth=4      " 4-space tabs (reindenting)
set tabstop=4         " 4-space tabs (viewing)
set softtabstop=4     " 4-space tabs (editing)
set expandtab          " tabs -> spaces
set number             " line numbers
set hlsearch          " highlight search matches
set smartcase         " being smart about cases during searching
set mouse=a           " click to place cursor

" Map register "+" to system secondary clipboard
" and set ctrl-c/ctrl-x as copy/cut
" N.B. Pasting will still require ctrl-shift-v
set clipboard=unnamedplus
vmap <C-C> "+y
vmap <C-X> "+d

```

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```
" :W sudo saves the file
" (useful for handling the permission-denied error)
" https://github.com/amix/vimrc/blob/master/vimrcs/basic.vim
command! W execute 'w !sudo tee % > /dev/null' <bar> edit!
```

### **.bashrc, .zshrc**

Add the following (optional):

```
# prepends execution of `cat` command with "meow" in yellow
cat() {
  YELLOW='\033[1;33m'
  NC='\033[0m' # no colour
  echo -e "${YELLOW}meow${NC}";
  command cat "$@"
}

# "gimme gimme gimme" if `man` after midnight (half past twelve)
man() {
  BLUE='\033[0;34m'
  NC='\033[0m' # no colour
  if [ $(date +%H%M) -eq 0030 ]; then
    echo -e "${BLUE}gimme gimme gimme${NC}"
  fi;
  command man "$@"
}
```

### **.profile**

Change the following to set default applications:

```
export EDITOR=/usr/bin/vim
export BROWSER=/usr/bin/firefox-developer-edition
```

### **.Xresources**

Change the following and use `xrdb ~/.Xresources` to reload:

```
! set the XTerm terminal font
XTerm*faceName: Source Code Pro
XTerm*faceSize: 10
! set the URxvt terminal font
URxvt.font:xft: Source Code Pro:size=10
```

### **.inputrc**

Add the following (bash only):

```
set completion-ignore-case on # case-insensitive tab completion
```

**.i3/config**

Change and add the following (\$mod+Shift+c to reload):

```
bindsym $mod+q kill # close window
# bindsym $mod+q split toggle # I use $mod+h/+v
↳ anyway
bindsym $mod+F2 exec firefox-developer-edition # replace Pale
↳ Moon
bindsym $mod+Print --release exec --no-startup-id i3-scrot -s # select area by
↳ default
bindsym $mod+Shift+Print --release exec --no-startup-id i3-scrot -w # capture window
↳ on Shift
focus_follows_mouse no # click to focus
↳ window

# audio settings
# use `pactl list sinks short` to list sinks
bindsym $mod+Ctrl+m exec pavucontrol
bindsym XF86AudioMute exec "pactl set-sink-mute 0 toggle"

# arrange monitors correctly on startup
# use `xrandr -q` to list monitors
# this should go in /etc/lightdm/lightdm.conf
# under `display-setup-script` as well
exec --no-startup-id xrandr --output HDMI-1 --primary --auto --left-of DVI-I-1

# start IBus and Nextcloud on startup
exec --no-startup-id ibus-daemon -drx
exec --no-startup-id nextcloud

# set natural scrolling
# use `xinput list` to list devices
exec --no-startup-id xinput --set-prop "Elan Touchpad" "libinput Natural Scrolling
↳ Enabled" 1

# open file manager in floating mode
for_window [class="Pcmanfm"] floating enable
```

**.i3status.conf**

Copy from /etc/i3status.conf. Refer to the man page and to strftime for time format strings. Use \$mod+Shift+r to reload.

**/etc/pulse/client.conf**

Uncomment out the following to start PulseAudio on boot:

```
autospawn = yes
daemon-binary = /usr/bin/pulseaudio
extra-arguments = --log-target=syslog
```

## 1.11.2 Disabling Middle-Click Paste

From <https://unix.stackexchange.com/a/277488>:

1. Install `xsel`, `xbindkeys`, `xdotool`
2. In `~/ .xbindkeysrc`, insert

```
"echo -n | xsel -n -i; pkill xbindkeys; xdotool click 2; xbindkeys"  
b:2 + Release
```

3. In `~/ .profile`, insert `xbindkeys`
4. `source ~/ .profile`

## 1.11.3 Customizations for Xubuntu

### Theming

- GTK theme: Greybird-dark (Settings > Appearance > Style)
- Xfwm theme: Numix (Settings > Window Manager > Style)
- Icon theme: ePapyrus (Settings > Appearance > Icons)
- Greeter theme: Greybird-dark (Settings > LightDM GTK+ Greeter Settings > Theme)
- Desktop background: `/usr/share/xfce4/backdrops` (Settings > Desktop)

### Installed Programs

#### Installed

- Vim, Git, GParted, Synaptic, Neofetch
- Tilix (set as default terminal in Settings > Preferred Applications; `tilix --preferences` to open Preferences)
- VSCode
- Spacemacs
- Firefox Developer Edition (`sudo add-apt-repository ppa:ubuntu-mozilla-daily/firefox-aurora`)
- Inkscape (`sudo add-apt-repository ppa:inkscape.dev/stable`)
- Racket (`sudo add-apt-repository ppa:plt/racket`)
- Minecraft
- Source Code Pro (copy into `/usr/local/share/fonts/` and run `sudo fc-cache -fv`)

#### Removed

(via “Complete removal” using Synaptic)

- `libreoffice*`, `libuno*` (remove keyboard shortcuts in Settings > Keyboard > Application Shortcuts)
- `xfce4-terminal`, `xfce4-notes`, `xfburn`

- pidgin\*, thunderbird
- gnome-mines, gnome-sudoku, sgt-puzzles
- simple-scan, mate-calc-common, gnome-font-viewer

### 1.11.4 Customizations for Manjaro i3

#### Installed Programs

- firefox-developer-edition (**removed** palemoon-bin)
- gvim (**replaced** vim), code (**removed** mousepad), racket
- texlive-most (-core, -bibtexextra, -latexextra, -fontsextra, -science), tllocalmgr-git (AUR)
- source-code-pro-fonts, ttf-fira-code, noto-fonts-cjk, noto-fonts-emoji
- manjaro-printer, system-config-printer
- ibus, ibus-libpinyin, ibus-table-others (AUR)
- neofetch, lm\_sensors, lightdm-settings, earlyoom, pulseaudio
- minecraft-launcher (AUR), steam-manjaro

## 1.12 Display Managers

### 1.12.1 General

- Display managers: Use `sudo dpkg-reconfigure {lightdm, sddm, gdm, ...}`
- Sessions: `/usr/share/xsessions/`
- Greeters: `/usr/share/xgreeters/`

### 1.12.2 LightDM

#### Changing the greeter

1. Install and set up the greeter
  - LightDM GTK+ Greeter: Use `lightdm-gtk-greeter-settings`
  - Slick Greeter: Use `lightdm-settings`
2. Set `greeter-session={lightdm-gtk-greeter, slick-greeter, ...}` under `[Seat:*]` in `/etc/lightdm/lightdm.conf` (see [here](#) for more configuration settings)
3. Use `sudo systemctl restart lightdm` to reload greeter, `dm-tool switch-to-greeter` to see the greeter after making configuration changes

### 1.12.3 GDM

- Removing Wayland: Set `WaylandEnable=false` in `/etc/gdm3/custom.conf`

## 1.13 UBC Alumni Email Syncing on Android

The instructions for syncing UBC's alumni email account on Android devices [here](#) are quite outdated. The following is what has worked for me on Android 10.

### 1.13.1 Account Info

#### Email

[local-part]@alumni.ubc.ca (this is the email address you have registered [here](#))

#### Password

Your CWL password.

#### Client Certificate

None (default)

### 1.13.2 Server Settings

#### Domain\Username

EAD\[CWL username].stu

#### Server

activesync.alumni.ubc.ca

#### Port

443 (default)

#### Security Type

SSL/TLS (apparently "accept all certificates" is no longer needed)

## 1.14 Arch Package Managers

### 1.14.1 Pacman

Command	Description
<code>pacman -Syu [package]</code>	Sync, refresh, upgrade, install
<code>pacman -Rsu [package]</code>	Remove recursively unneeded package
<code>pacman -Qs [string]</code>	Search local database
<code>pacman -Ss [string]</code>	Search sync database
<code>pacman -Qttdq   pacman -Rs -</code>	Remove recursively all (optional) orphan dependencies quietly

### 1.14.2 Pamac

Command	Description
<code>pamac search (-a) [string]</code>	Search Manjaro repo (and AUR)
<code>pamac install [package]</code>	Install package from Manjaro repo
<code>pamac build [package]</code>	Install package from AUR
<code>pamac upgrade (-a)</code>	Upgrade packages installed from Manjaro repo (and AUR)
<code>pamac remove [package]</code>	Uninstall package
<code>pamac remove -o</code>	Uninstall orphaned packages

## 1.15 i3 Keybindings

These are all prefixed with `$mod`.

Notation:

- Capitalization: Shift
- `^`: CTRL
- `*`: custom keybindings

### 1.15.1 Basics

Effect	Command
Terminal	<code>enter</code>
Reload i3 configs	<code>C</code>
Restart i3	<code>R</code>
Lock screen	<code>9</code>
System mode	<code>0</code>

## 1.15.2 Windowing

Effect	Command
Close	q*
Tile down	v
Tile right	h
Split	e
Stack	s
Tab	w
Float	Space
Fullscreen	f
Cycle workspace	b
Workspace #n	#n
Move to #n	#N
Focus parent	a
Focus left	←
Focus down	↓
Focus up	↑
Focus right	→
Focus float	space
Move left	
Move down	
Move up	
Move right	
Move workspace	B
Move scratchpad	-
Show scratchpad	-

## 1.15.3 Applications

Application	Command
Launcher	d
Menu	z
Audio	^m
Capture area	print
Capture window	Print
Browser	f2
File manager	f3
Music	f5

## 1.16 Jekyll

### 1.16.1 Front matter

Post template:



```

---
layout: post
title: "Post Template"
excerpt_separator: "<!--more-->"
tags:
  - post
categories:
  - templates
---

```

Page template:

```

---
layout: page
title: "Page Template"
sidebar_link: true
---

```

Defaults are set in `_config.yml`:

```

defaults:
  -
    scope:
      path: ""
      type: "posts"
    values:
      layout: "default"
      comments: false
      permalink: "url"
      published: true

```

## 1.16.2 Images

In `_includes/images.html`, add the following:

```

<div class="image-wrapper" >
  {% if include.url %}
  <a href="{{ include.url }}" title="{{ include.title }}" target="_blank">
  {% endif %}

  

  {% if include.url %}
  </a>
  {% endif %}

  {% if include.caption %}
  <p class="image-caption">{{ include.caption }}</p>
  {% endif %}
</div>

```

In `_sass/images.scss` or however styling is overridden in your theme, add the following:

```

@import "hydeout";

.image-wrapper {

```

(continues on next page)

(continued from previous page)

```
text-align: center;

.image-caption {
  color: $your-grey;
  margin-top: 0;
  font-size: 85%;
}
}
```

Where `$your-grey` is a predefined colour variable. Finally, add an image using the following:

```
{% include image.html
  img="images/image.png"
  title="title"
  caption="caption"
  url="https://example.com" %}
```

Taken from <https://superdevresources.com/image-caption-jekyll/>

## 1.16.3 Hyperlinks

Linking to another post:

```
[name]({{ site.baseurl }}{% post_url yyyy-mm-dd-post-file-name %})
```

## 1.17 reStructuredText

### 1.17.1 Other cheat sheets

- <https://github.com/ralsina/rst-cheatsheet/blob/master/rst-cheatsheet.rst>
- <http://docutils.sourceforge.net/docs/user/rst/cheatsheet.txt>

### 1.17.2 Headings

```
####
Parts
####

*****
Chapters
*****

=====
Sections
=====

Subsections
-----

Subsubsections
```

(continues on next page)

(continued from previous page)

```
^^^^^^^^^^^^^^^^^^
Paragraphs
*****
```

### 1.17.3 Code snippets

#### Unhighlighted

Inline code snippets look like ```this```.

```
Code blocks are done ::
  like this.
  (The indented text is what will be in the block.)
```

#### Highlighted

To highlight an inline snippet in, for instance, Bash, register a new role:

```
.. role:: bash(code)
   :language: bash
```

Then use the role `:bash:``echo "like this"```. More information on roles can be found [here](#).

To highlight a code snippet, use the code directive:

```
.. code:: bash

   echo "Like this."
```

More information on directives can be found [here](#).

A list of valid languages can be found [here](#).

### 1.17.4 Tables

For tables with long entries, it is easier to use the `list-table` syntax.

```
.. list-table:: Table Name
   :widths: auto
   :header-rows: 1
   :stub-columns: 1

   * - This and
     - this is part of
     - the header row.
   * - This is a column header.
     - This is part of
     - the second row.
```

Table 1: Table Name

This and	this is part of	the header row.
This is a column header.	This is part of	the second row.

See [here](#) for all the table directives.

### 1.17.5 Images

The logo on the front-page README is inserted by the following:

```
.. image:: ionchypedia.png
   :alt: inchypedia in rainbow text over a black background
   :width: 100%
```

### 1.17.6 Newlines

Use the following directive in order to use `|br|` to insert newlines:

```
.. |br| raw:: html

   <br/>
```

## 1.18 Packing Checklist

**N.B. No sharps in carry-on baggage!!**

*Fluids up to 100 mL per clear bottle in a 1L bag.*

### 1.18.1 Clothing

- undershirts, underpants, socks
- indoor shorts, pants, hoodie
- T-shirts, button-down shirts, hoodie/sweater
- shorts, jeans
- jacket/coat/windbreaker
- shoes, boots, slippers
- cap, tuque, scarf

### 1.18.2 Toiletries

- toothbrush, toothpaste, floss
- shampoo, face wash, soap
- shaver, comb, spray bottle, antiperspirant

- towel
- tissues, bandages, tweezers, scissors
- aspirin + acetaminophen + caffeine (migraine)
- diphenhydramine/clorpheniramine + pseudoephedrine (allergy)
- melatonin

### 1.18.3 Tech

- laptop + charger
- keyboard, mouse
- USB-C + MicroUSB chargers
- battery pack
- earphones
- adapters (for shaver + country)
- SIM card + the pin thing

### 1.18.4 Miscellaneous

- travel documents, passport + paper copy, travel insurance card
- pencil case, clipboard, notebooks
- wallets, cash, coins, transit cards
- water bottle, thermos
- umbrella
- plastic bags, zipper bags, cloth bags
- smaller backpack/shoulder bag
- snacks!

## 1.19 Cantonese Words and Phrases

### 1.19.1 Words

This is an arbitrary collection, possibly extracted from [Written Cantonese](#) and [Cantonese grammar](#)

- /lêi go
- lêi
- hâi
- ge
- mat yé
- gúm

- gnó dêi
- m
- hâi
- tái
- sâi
- kéui
- zhó
- ló/līng
- gä
- lëng
- móu
- béi
- fūn
- lêi
- güi
- hām
- mâi
- táu
- gäu
- sâi
- yōuk
- gó
- ngām
- gúm
- ngāk
- wún

### 1.19.2 Phrases

Originally posted on <http://ihome.ust.hk/~lbsun/hkloan.html>.

- [] <support>
- [] <boxing>
- [] <broker>
- [] <>
- [] <deuce>

- [] <Leghorn>
  
- [] <sandwich>
- [] <salmon>
- [] Cognac, <cognac>
- [] <station sergeant>
- [] <score>
- [] <snooker>
- [] <starter>
- [] 1. 2. <stamp>
- [] <steam boiler>
- [] <smart>
- [] <spare>
- [] <spare tire>
- [] <sport shirt>
- [] 1. <stick> 2. <steak>
- [] <steak cube>
- [] <store>
- [] <storeroom>
- [] <strawberry>
- [] <spanner>
- [] <shellac>
- [] <potassium cyanide>
- [] <charge>
  
- [] <Six Sigma>
- [] <thinner>
- [] <>
- [] <check>
- [] <function>
- [] []
- [] <bagel>
- [] <bikini>
- [] <check>

- [] < barrier>
- [] <bus>
- [] <pasteurized>
- [] <brother>
- [] <paraffin>
- [] <barret>
- [] <percent>
  
- [] <>
- [] <Croquette>
- [] <Cologne water>
- [] bourgeoisBohemian <bobo>
- [] <plum>
- [] <buffet>
- [] <pudding>
- [] <dynamo>
- [] <darling>
- [] Derby <Derby>
- [] <car>
- [] <cassette>
- [] 1. <cast> 2. <class>
- [] <colour>
- [] <car coat>
- [] <cartoon>
- [] <kebab>
- [] <gabardine>
- [] []
- [] <level>
- [] <lacquer>
- [] <shutter>
- [] <cent>
- [] rum <tafia / taffia>
- [] <>
- [] <>
- [] <doughnut>



- [] <seal>
- [] <milk shake>
  
- [] <horn>
- [] <ounce>
- [] <encore>
- [] <millimeter>
- [] <shake>
- [] <guts>
- [] <custard powder>
- [] <custard>
- [] <cutlet>
- [] <jEEP>
- [] <Delicious>
- [] <digoxin>
- [] <sirloin>
- [] <xylophone>
- [] []
- [] <fuse>
- [] <trust>
- [] <trumpet>
- [] <cookie, cooky>
- [] <coke>
- [] 20A <cooker switch>
- [] <happy>
- [] <chocolate>
- [] []
- [] <toast>
- [] <toaster>
- [] <saxophone>
- [] <satin>
- [] <>
- [] []
- [] <master>
- [] 1. <margin> 2. <merchant>

- [] <marketing>
  
- [] <SARS (Severe Acute Respiratory Syndrome)>
- [] <>
- [] <salad>
- [] []
- [] <sardine>
- [] <sergeant>
- [] <certificate>
- [] 1. <laine> 2. <round>
- [] <tuna>
- [] <monitor>
- [] <cheese>
- [] <cracker>
- [] <cherry>
- [] <>
- [] <pose>
- [] <post card>
- [] <foul>
- [] <fluke>
- [] 1. <pie> 2. <pizza>
- [] <file>
- [] <fiber, fibre>
- [] <quinine>
- [] <vanilla>
- [] 1. <tie> 2. <tire, tyre>
- [] <bar>
- [] <bar king>
- [] <cocoa>
- [] <>
- [] <mince>
- [] <mignon>
- [] <cream>
- [] <à gogo / à go-go>

- [] <French toast>
- [] <park>
- [] () <puff>
- [] <powder>
- [] <ball>
- [] <ball shirt>
- [] <boss>
- [] <ball joint>
- [] <ball room>
- [] <porter>
- [] <ball cock>
- [] <ball boot>
- [] “” <yellingleilãolelang>
- [] <>
- [] []
- [] <fund>
- [] <vaseline>
- [] <fashion>
- [] <warrant>
- [] <fashion show>
- [] []
- [] <parfait>
- [] <case>
- [] <boycott>
- [] <amoeba>
- [] <Aspirin>
- [] <sir>
- [] <Asian>
- [] <>
- [] <>
- [] <kiwi fruit>
- [] <omelet, omelette>
- [] library “” <library>
- [] <last>
- [] <lysol>

- [] <license>
- [] <library>
- [] 1. <life> 2. <live>
- [] <rally>
- [] <brandy>
- [] <ream>
- [] <toffee>
- [] []
- [] <place>
- [] <pizza>
- [] <Beatles>
- [] <jam>
- [] <green>
- [] <cushion>
- [] <coolie>
- [] <cocktail>
- [] <mink>
- [] 1. 2. <beat>
- [] []
- [] <label>
- [] <carefree>
- [] <cranberry>
- [] <>
- [] <yeast>
- [] <brake>
- [] <taxi>
- [] <disco>
- [] <discotheque>
- [] <dacron>
- [] <fail>
- [] <chowder>
  
- [] <offside>
- [] <passport>
- [] <party>

- [] <partner>
- [] []
- [] 1. T <shirt> 2. <shoot>
- [] <set>
- [] <mini>
- [] <change>
- [] <jumbo jet>
- [] <cashmere>
- [] <cash>
- [] []
- [] <order>
- [] <oral>
- [] <cha-cha>
- [] <apartment>
- [] <waste>
- [] <whisky soda>
- [] <wire>
- [] <wafer>
- [] <lace>
- [] []
- [] <bumper>
- [] <mortgage>
- [] <>
- [] <major>
- [] <madam>
- [] 1. <mic> 2. <mile>
- [] <microphone>
- [] <parking meter>
- [] <streptomycin>
- [] <bromide paper>
- [] <wallah-wallahwalla-walla>
- [] <valve>
- [] <valve guide>
- [] <card>
- [] <Halloween>
- [] <sink>

- [] <bye bye>
- [] <foreman>
- [] <floor show>
- [] <>
- [] <fare>
- [] <face>
- [] <favo(u)rite>

- [] <heroin>
- [] 1. 2. 3. <numb>
- [] <number>
- [] 1. , 2. <number one>
- [] , <number two>
- [] <rum>
- [] <>
- [] <band>
- [cake] <pancake>
- [] <massage>
- [] <trouble>
- [] <-mycin>
- [] []
- [] <linen>
- [] <caustic soda>
- [] <golf>
- [] <chloroform>
- [] <port>
- [] <uncle>
- [] <auntie>
- [] []
- [] <sign>
- [] <size>
- [] <tick>
- [] []
- [] <cocktail>
- [] <quarter>

- [] <great>
- [] <money>
- [] <>
- [] <Guinness>
- [] <daddy>
- [] <>
- [] <sauna>
- [] []

- [] <maxiskirt>
- [] []
- [] <phone in>
- [] <chiffon cake>
- [] <sherbet or sorbet>
- [] <cigar>
- [] <ciguatoxin>
- [] <salsa>
- [] <gay>
- [] <socket>
- [] []
- [] <soda>
- [] <soft>
- [] <soufflé>
- [] <sofa>
- [] <tire, tyre>
- [] <supervisor>
- [] <jelly>
- [] []
- [] []
- [] Social Service Group <SSG>
- [] <pair>
- [] <press>
- [] <blast>
- [] <baby>
- [] <bearing>

- [] <pear>
- [] <pair>
- [ju] 1. ) 2. <Gurkha>
- [] <punk>
- [] []
- [] <bungee jumping>
- [] <blunder>
- [] []
- [] <grease>
- [] <ransom>

- [] <tonic water>
- [] <>
- [] <>
- [] <>
- [] []
- [] <>
- [] <film>
- [] <cake>
- [] 1. <clutch> 2. <gripe>
- [] <lift>
- [] []
- [] <fight>
- [] <tombola>
- [] <black currants>
- [] <(globe) artichoke>
- [] <tips>
- [] <camera>
- [] <level>
- [] []
- [] <download>
- [] <jack>
- [] <hose>
- [] 1. <case> 2. <cap>
- [] Worcester sauce <ketchup>



- [] <carpetbag>
- [] <keep fit>
- [] <fans>
- [] <>
- [] <crêpe georgette>
- [] <joke>
- [] []
- [] []
- [] <sorry>
- [] <guitar>
- [] <sister>

- [] <court>
- [] []
- [] <winner>
- [] <cyclamate>
- [] <sundae>
- [] <inch>
- [] <sauce>
- [] <jump ball>
- [] <notes>
- [] <>
- [] []
- [] <AIDS>
- [] []
- [] []
- [] <bow tie>
- [] <mother>
- [] <mammy>
- [] []
- [] <>

- [] <>
- [] []
- [] <miss>
- [] <punch>
- [] <banker>
- [] <waffle>
- [] <warrant>
- [] <volley>
- [] <merchant>
- [] []
- [] <book>
- [] <carnival>
- [] <>
- [] <>
- [] <change>
- [] 1. 2. <mark>
- [] []
- [] <vitamin>

- [] <model>
- [] <motor>
- [] <mousse>
- [] <modern>
- [] <>
- [] <my favo(u)rite>
- [] []
- [] 1. <start> 2. <tart>
- [] <outside>
- [] <euro>
- [] []
- [] <hard luck>
- [] , , <tuxedo>
- [] []
- [] <mould, mold>

- [] <rock and roll, rock 'n' roll>

- [] <giga->
- [] []
- [] []
- [] <llama>
- [] <insure>
- [] <influenza>
- [] <jacket>

- [] <gin>
- [] <gin and tonic>
- [] <pump>
- [] <van>
- [] <yogurt / yoghurt>
- [] <walkman>

- [] <bun>
- [] <>
- [] []
- [] []

- [] <show>
- [] <show qualification>
- [] []
- [] <bowling>
- [] <pan>

- [] <laser>
- [] <>

- [] <tennis>