Chapter 01 - Server, Login, Shell - TRAINING - Common

Course authors (Git file)



- Server and user credentials
- Q GNOME desktop: First lookaround
- The course data
- 4 Linux shell



Server and user credentials

The PC environment for the course will be provied by IHP.

- Your PC in front of you must be connected to a server
- You will then work in a Ubuntu 24 Linux system
- The desktop GUI will be Gnome



Connect to the IHP server

Follow these steps:

- Open ThinLinc on the host PC (Windows?)
- Connect with the login data, given to you by IHP
- Ubuntu with Gnome desktop should start in ThinLinc
- Make it fullscreen
- "Forget about the host system?"

Notice:

- Please ask if there is questions!
- We'll try to do this for all participants first, before proceeding to the next steps of the training.

Search, start and close programs

Create and save a textfile:

- Search for a texteditor (gedit)
- Open gedit
- Write a litte (your name or anything else)
- Save the textfile with a name and the suffix .txt
- To a new dirctory: Documents/myfiles
- Olose the texteditor (gedit)



Tab-switching between programs

Tab-switch between opened programs:

- Search and open at least three different programs (office, gedit, document viewer?)
- Tab between the programs (with ALT+TAB on the keyboard)
- 1 It is a circle. After three Tabs you should be at the first again.
- Close all programs



Download and unpack

Get the course data

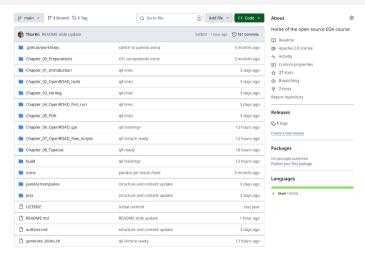
Get the latest release download package:

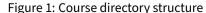
https://github.com/OS-EDA/Course/releases

- Create a directory for the course slides.
- In Linux the ~/Documents is a good place to create the directory. Maybe create the directory Documents/course
- Unpack the course into this directory.



Look around in the course data





The chapters and slides

You will find the slides in the build directory.

- If sorted alphabetical, it makes most sense.
- COX is the chapter number.
- In each chapter:
 - Start with the lecture
 - Cheasheet (if available) is a single slide
 - Trainnings in the order commcon, advanced and bonus
 - Questions are for the next day (mornings)

Task:

- Examine the build directory.
- Open and close some of the pdf files.
- Become comfortable with the course structure.

Links from the slides

This might be outdated for the course, please try yourself.

- An issue with the linux document viewer and snap browsers.
- Links from slides don't open in the browser.

Possible workaround:

- Right click the link and copy
- Open browser
- Paste link to URL line



Workspace arrangement

Suggestions or Options:

- Arrange windows next to each other
- ALT+TAB between programs (tasks)
- Close unwanted windows after the completion of a chapter



Short commandl ist of a linux shell

- Is (list content of directory)
- Is -al (list with option for more information)
- cd directoryname (change to directory)
- cd .. (change to upper directory)
- mkdir (make directory)
- touch (make file)
- mv (move)
- cp (copy)
- nano (opens the nano file editor)



If unsure how to use a command, read the man-page:

1 | man <command>

Task:

- Open the man pages of all the commands in the above list (last slide)
- Find the syntax for the commands (it is given on the top of the man page)
- What are OPTION, SOURCE and DEST?
- Find the definition of the option -al for the command ls



IMPORTANT: Setup the environment

To get ready for working with the open-source EDA tools, you must run (execute) a shell script in your shell terminal.

This is aboslutly neccessary for the rest of the course

This must be done every time you open a shell and want to work with the tools

Task: Setup the linux tool environment

- Open a shell terminal
- Run source /eda/or/env.sh
- Do this every time you open a new shell.
- It doesn't hurt of you do it multiple times. Nothing breaks.
- It will lead to strange behaviour and not results if it is not done.

You should get a message like copied flow directory Or flow directory already there

IMPORTANT: Check the environment

- Check if the setup was successfull.
- Don't continue if the checks are errornous, but ask for help from the trainer

Task: Check the environment

- Open a shell terminal
- Run source /eda/or/env.sh
- See if the tools are sourced (available) with getting their versions:
 - openroad -version should give your the version number
 - yosys --version should give you the version number
 - klayout -v should give you the version number



Congratulations!

Congratulations:

You have succesfully run some of the open-source EDA tools on a linux server.

- You did run openroad, yosys and klayout.
- They did not do much, but giving you their version numbers.
- But it is the needed base for the rest of the course.

You are on a good way



Online shell tutorial

To learn some Linux shell, you should find a tutorial that matches good to you.

I found this one simple and good to follow for me while learning Linux shell:

https://community.linuxmint.com/tutorial/view/100



Makefile

OpenROAD flow scripts use Makefiles. So you might want to learn some basics about Makefiles.

Again here is the tutorial that has helped me most:

https://makefiletutorial.com/



Tips and tricks

- shell: TAB for autocompletion
- shell: 2xTAB for all choices of autocompletion
- Open a new shell terminal with the mouse:
 - Right click on an empty space in the directory window
 - Choose "open in Terminal"

