

Login using your **abcd17** account.

New users: set password with **passwd**. Confirm that you know and understand the safety and security regulations with your **signature**.

SSH login to **ees11.et.tu-dresden.de**

Use your **abcd17** account

To begin a new project, create a private ICPRO project:

```
icpro -create osm s_traffic_lights
```

```
icpro setup
```

```
→ 1 (ams hit-kit)
```

```
→ 1 (3 layer metal, Core module)
```

back in the icpro setup main menu:

```
→ 5 (add tool)
```

```
→ 4 (Cadence IUS)
```

```
→ 8 (back to main menu)
```

```
→ 7 (commit project setup)
```

```
exit
```

The private ICPRO project is now created. It is still empty. From now on, when you're going to work on the project work, first login to that private ICPRO project:

```
icpro
```

if asked to choose

(depending on your existing projects, unambiguous choices are selected automatically):

```
privat or team → private
```

```
project → osm
```

```
subproject → s_traffic_lights
```

Within an ICPRO project, the design is structured into units. One single unit is sufficient for the project work of the Oberseminar.

Examples from the web page should each go to their own unit.

A new unit is created using the command "icunit"

```
icunit -vhdl -rtl traffic_lights
```

You can now edit the source code. Next to the source code file you can create more source code files, if you think fit.

To create a test bench, also use the command "icunit":

```
icunit -vhdl -parent traffic_lights -tb traffic_lights_tb
```

The option "-parent <unit-name>" tells icunit to put the new testbench file in that unit.

Simulation is carried out using NCSIM of cadence. Make sure you have setup the project to use the tool "Cadence IUS", which includes NCSIM.

In bigger projects, a single test bench can be used for many different simulations with different stimuli testing different functions of the design. That's why there exist several test cases. Each testcase comprises a stimulus file and some setup files for testcase-specific settings.

Create a new test case for your test bench:

```
icncsim prepare
```

This will create a directory tree under **units/traffic\_lights/simulation/ncsim** and populate it with template files for your simulation.

There is a testcase directory

```
units/traffic_lights/simulation/ncsim/tc_traffic_lights_0
```

All testcases for one test bench share a set of common setup files in the directory

```
units/traffic_lights/simulation/ncsim/common
```

Before you can start the simulation, you have to edit some files in the testcase directory:

- 1) Create a Makefile.rtl.sources or Makefile.beh.sources  
You can pick up examples for these from the examples on the web page
- 2) Edit the testcase.v for testcase specific stimuli.  
Common stimuli are handled in the testbench itself.

You're now ready to run the simulation:

```
icncsim runGUI
```