

# Comsol Multiphysics

You can model and simulate any physics-based system using software from COMSOL®. COMSOL Multiphysics® includes the COMSOL Desktop® graphical user interface (GUI) and a set of predefined user interfaces with associated modeling tools, referred to as physics interfaces, for modeling common applications. A suite of add-on products expands this multiphysics simulation platform for modeling specific application areas as well as interfacing with third-party software and their capabilities (from: <https://www.comsol.com/products>).

Currently available are concurrent licenses for the following products:

- COMSOL Multiphysics
- AC/DC module
- CAD import module
- CADREADER
- CFD module
- DESIGN module
- ELECTROCHEMISTRY module
- HEATTRANSFER module
- Matlab Link module
- MICROFLUIDICS module
- Particle Tracing module
- RAYOPTICS module
- Structural Mechanics module
- WAVEOPTICS optics module

You can get an up-to-date list of module and current usage of comsol licenses on PAL or Maxwell with the command 'my-licenses -p comsol'

## Information

- **Source:** <https://www.comsol.com/>
- **License:** commercial.
- **Path:** /software/comsol on [maxwell](#)
- **Module:** maxwell + comsol
- **Licensing:** concurrent
- **License server:** zitlic03.desy.de. Only accessible from within the DESY network. A sample license file can be found [here](#).

## Getting access to COMSOL Multiphysics

**Please note:** COMSOL licenses can only be used for academic research and education. Any other usage, in particular for industrial application, services for industrial partners or in co-operation with industrial partners is prohibited.

**Please note:** access to the license server is not possible from outside DESY. Likewise access to installation media is only possible with a DESY-account (web) or from within the DESY-intranet (afs).

## Using COMSOL Multiphysics (MAXWELL only!)

Usually Comsol Multiphysics can be invoked directly as a (versioned) command

```
[me@maxwell ~]$ /software/comsol/5.2/multiphysics/bin/comsol # or if using remotely, you might
need to specify the renderer
[me@maxwell ~]$ /software/comsol/5.2/multiphysics/bin/comsol -3drend sw
# Alternatively the setup can be initialized via modules:
[me@maxwell ~]$ module load maxwell
[me@maxwell ~]$ module load comsol
[me@maxwell ~]$ comsol
```

Check <https://www.comsol.de/support/knowledgebase/933/> for information about rendering. In general, accessing maxwell via FastX2 will be give a considerably better experience than using ssh for remote access.

Note: COMSOL stores large amount of files and data in /tmp and the home-directory. Neither have sufficient space. It is hence advisable to redirect COMSOL temporary data. See ...

## Getting support

For basic support contact [uco@desy.de](mailto:uco@desy.de). For in-depth technical questions the [COMSOL technical support](#) is available. Asking for support at COMSOL you will need the license number (check "Licensed products" under "Options"). COMSOL comes with an extensive Help-System. Some of the manuals can also be found in the COMSOL installation folder, on maxwell have a look at /software/comsol/5.2/multiphysics/doc/pdf/.

## Installing COMSOL Multiphysics manually

The installation procedure is very similar for Linux, Mac OSX and Windows. All information needed can be found under [COMSOL Downloads & Licenses](#) (or in /afs/desy.desy/products/source/comsol/). The folder is only accessible with a DESY username and password. Available installer:

	OS	Type	Comments
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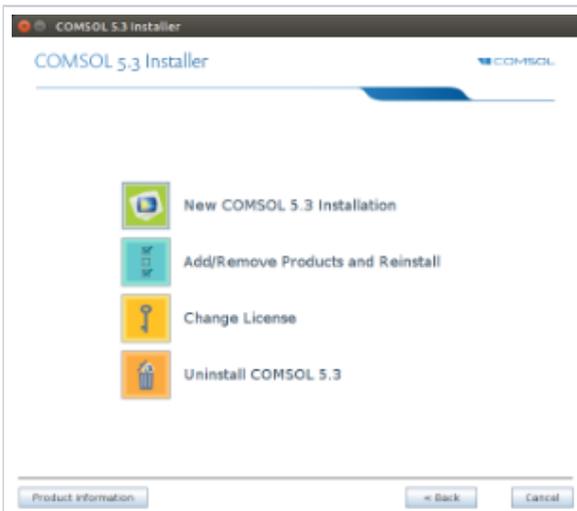
COMSOL(version)_dvd.iso	any	ISO Image	Mount the iso image with the OS specific tool. For Windows execute the setup.exe, for Mac OSX or Linux the ./setup file.
COMSOL(version)_lnx.tar.gz	Linux	Linux online installer	Create a folder and extract there! ./setup to install. Installer pulls the installation files from remote server.
COMSOL(version)_mac.dmg	OSX	Mac online installer	Installer pulls the installation files from remote server.
COMSOL(version)_win.exe	Win	Windows online installer	Installer pulls the installation files from remote server.

## Installing COMSOL Multiphysics on Linux

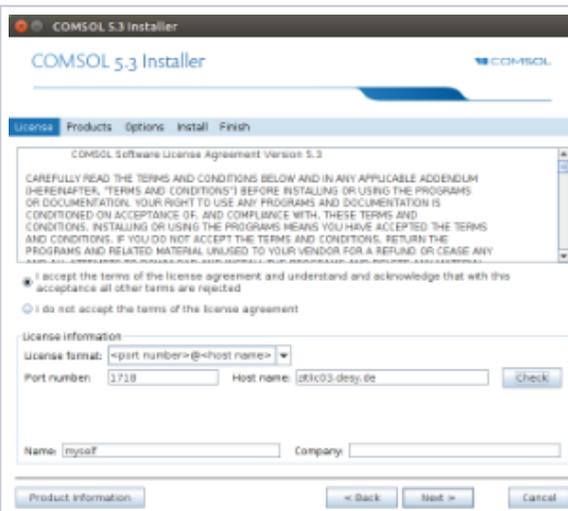
By far the simplest is to use the online installer. Fetch the tarball from <https://it.desy.de/services/soft/downloads/comsol/> or directly from [comsol](#) or directly from AFS (if you have an AFS client installed):

```
[me@rhel ~]$ mkdir COMSOL
[me@rhel ~]$ tar xf /afs/desy.de/products/source/comsol/5.3/COMSOL53_lnx.tar.gz -C COMSOL # example for v5.3. There might be newer releases!
[me@rhel ~]$ cd COMSOL
[me@ubun ~]$ ./setup # See snapshots below
```

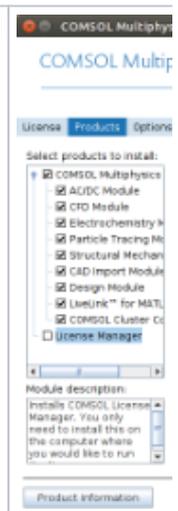
The license file is also [attached to this page](#). **PLEASE BE SURE to DESELECT THE LICENSE MANAGER!**



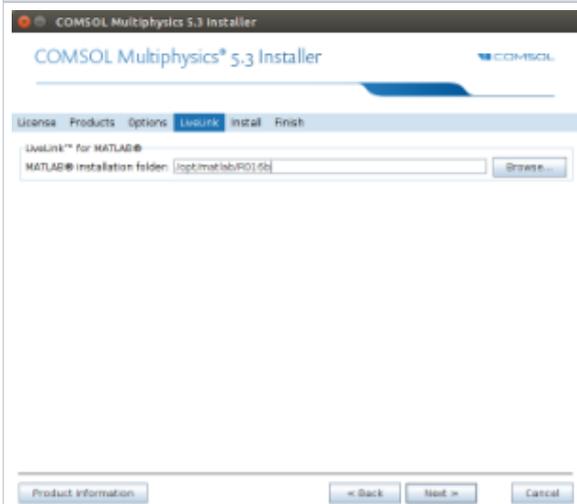
Select New COMSOL installation



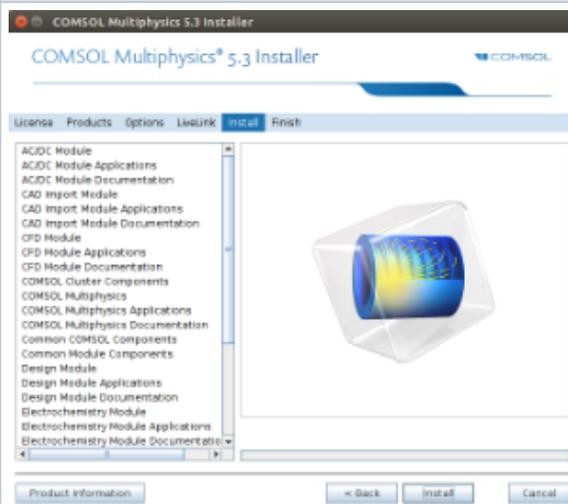
Set the license server. You might want to check.



Deselect the Licer



Select a matlab installation if you have one



Run the installer



## Resources

- [COMSOL](#)
- [COMSOL Downloads & Licenses](#)