Installation Manual Python / Gurobi

Prof. Dr. Reinhard Madlener

FCN | Future Energy Consumer Needs and Behavior

E.ON Energy Research Center

RWTH AACHEN UNIVERSITY

Agenda

1. Introduction
2. Installation of Anaconda
3. Gurobi license
4. Testing the installation
5. Potential errors

Agenda

1. Introduction

2. Installation of Anaconda

3. Gurobi license

4. Testing the installation

5. Potential errors

Required Components

Developement	Modelling	Optimization
spyder	python™ (Version 3.9)	GUROBI OPTIMIZATION

ANACONDA®

Agenda

1. Introduction

2. Installation of Anaconda

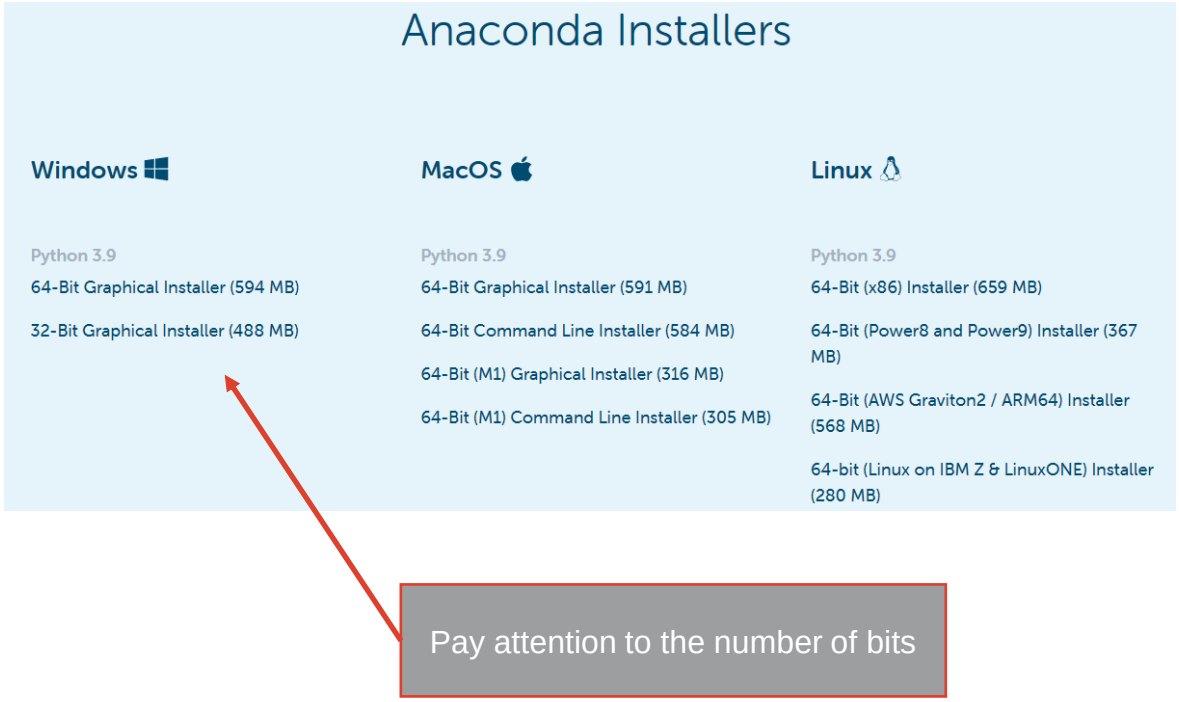
3. Gurobi license

4. Testing the installation

5. Potential errors

Anaconda: Download

- Visit this website: https://www.anaconda.com/products/individual
- Select the appropriate Graphical Installer for your operating system at the bottom of the page
- Make sure you know how many bits (32/64) your operating system has. Information on this can be found here: Windows



Anaconda: Download

Windows & Mac

- Run the downloaded installation file
- Follow the installation instructions. All settings can be kept unchanged.
- Accept the download when asked by typing "y" and clicking Enter

Linux

- Change the directory to the folder where you saved the downloaded installation file
- Run the following command:

```
bash Anaconda3-5.3.0-Linux-x86_64.sh
```

- You have now successfully installed (among others) the Anaconda Navigator and the Anaconda Prompt under Windows

Anaconda: Installing Gurobi

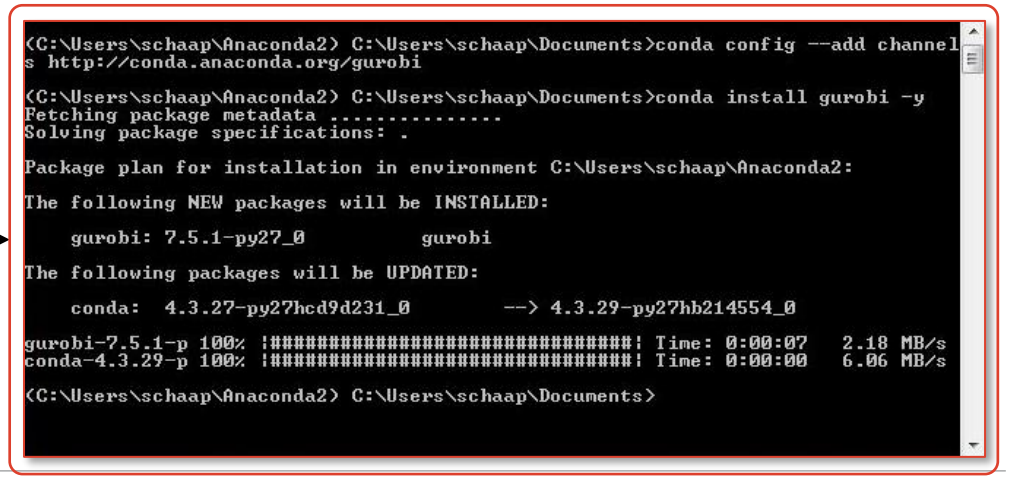
- Python and Spyder are already included in the installation of Anaconda. The Gurobi package still needs to be installed.
- To do this, start the Anaconda prompt or a terminal in the bin folder for Linux & Mac.
- Add the Gurobi channel to the package search list by entering the following command in the Anaconda prompt and pressing Enter:

```
conda config --add channels http://conda.anaconda.org/gurobi
```

- Install the Gurobi package by entering the following command in the Anaconda prompt and confirming with "y" Enter. An Internet connection is required.

```
conda install gurobi
```

The output should look something like this



Agenda

1. Introduction

2. Installation of Anaconda

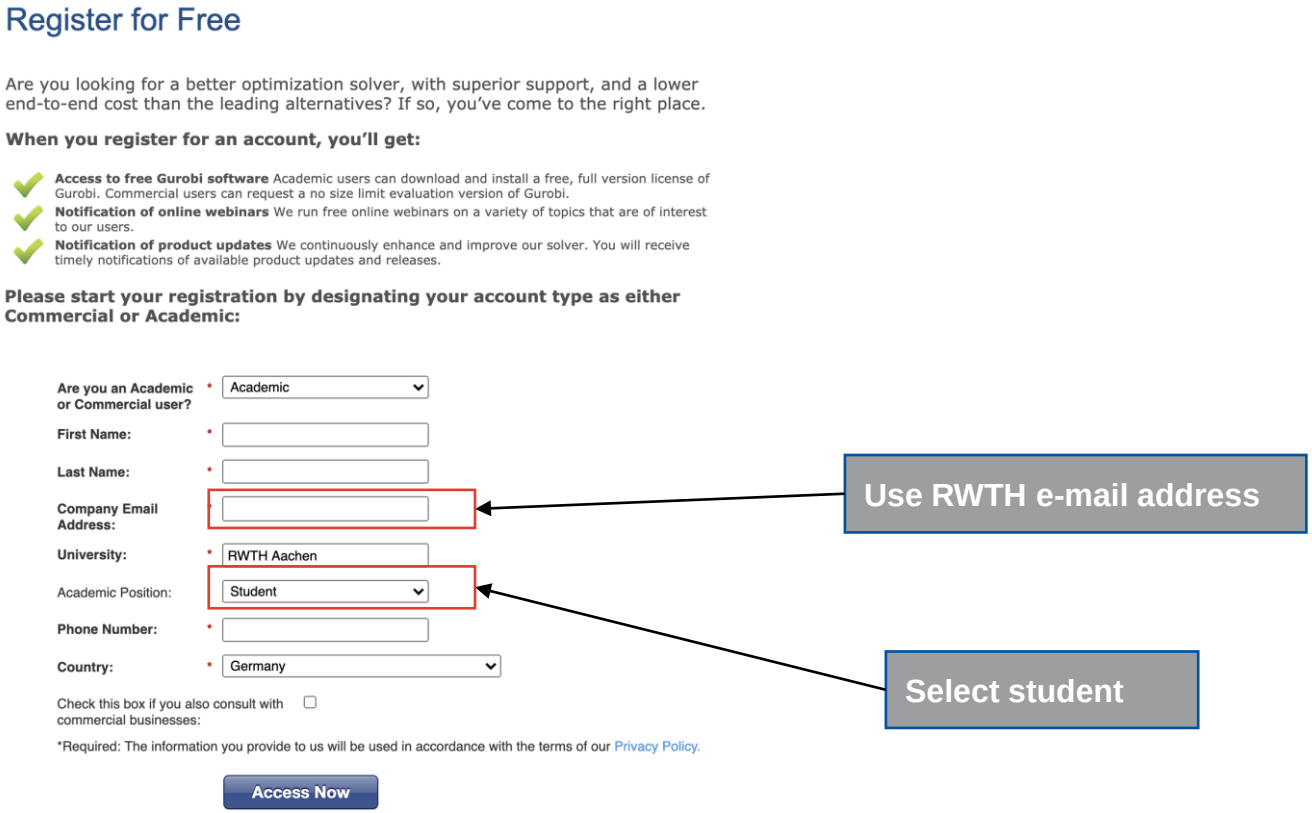
3. Gurobi license

4. Testing the installation

5. Potential errors

Creating an Account

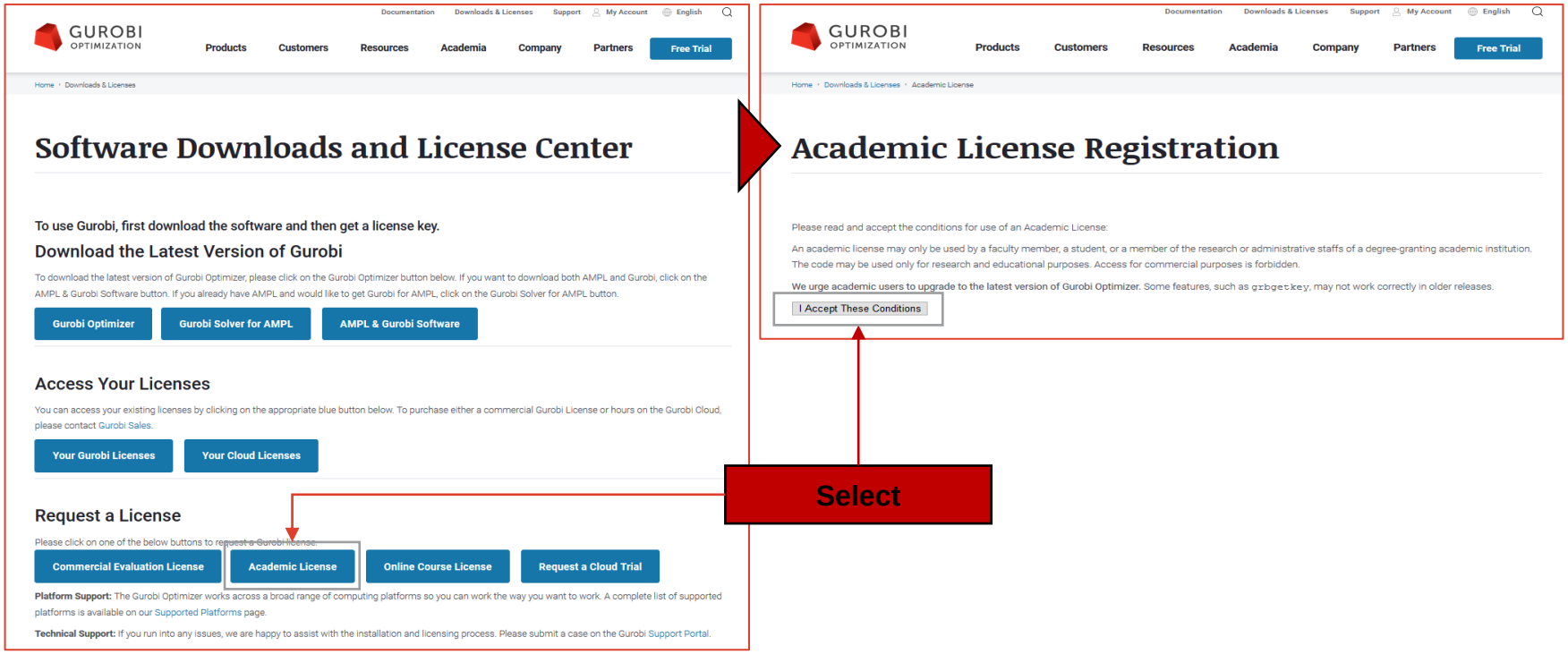
- A license is required to use Gurobi
- Register here for free as an academic user
- Follow the instructions below



E.ON Energy Research Center | RWTH AACHEN UNIVERSITY

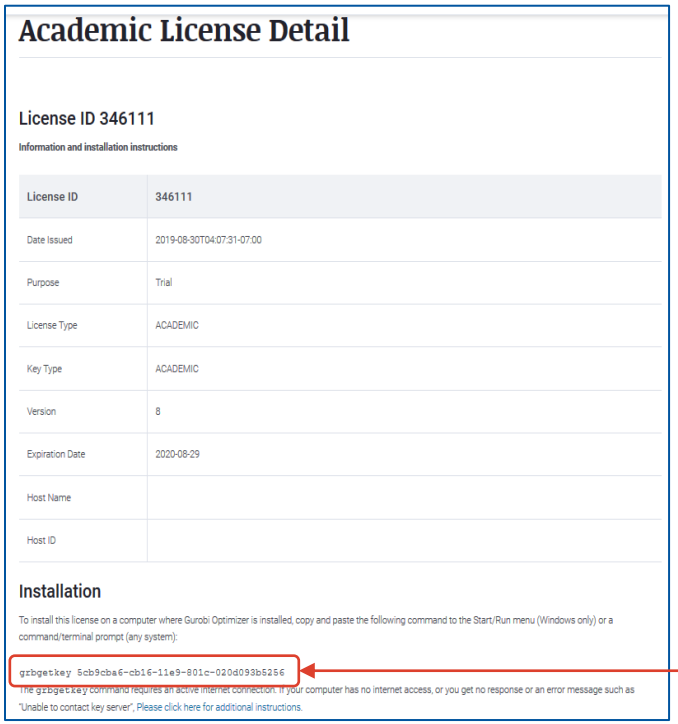
Creating an Account

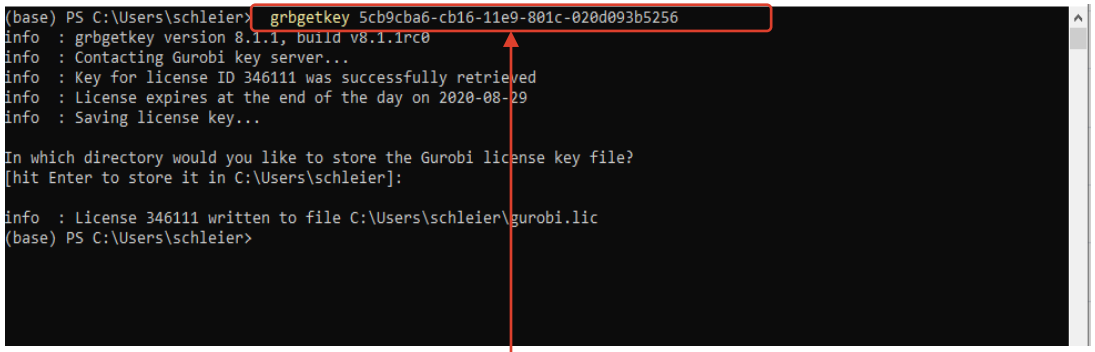
- You will now receive an email to your RWTH address. Follow the instructions to complete the account creation.
- To ensure that the following links lead to the correct pages, you should be logged in for the following steps
- The license can now be finally applied for here



Verify license

- Attention! The license can only be verified via Eduroam or VPN (description of how to set up a VPN channel can be found here)
- Copy the Grbgetkey command and run it in the Anaconda prompt (Windows) or Terminal (Linux & Mac):
- To avoid problems, you should use the suggested location





Copy Grbgetkey command

Agenda

1. Introduction

2. Installation of Anaconda

3. Gurobi license

4. Testing the installation

5. Potential errors

Testing the Installation

- Download the file "test_file.py" from the Moodle learning room
- Start Spyder (this may take a few seconds! For macOS via the Anaconda navigator)
- In Spyder, open the downloaded file " test_file.py" and run it with "F5". You should get an output of the following form:

```
Academic license - for non-commercial use only
Optimize a model with 0 rows, 0 columns and 0 nonzeros
Coefficient statistics:
  Matrix range     [0e+00, 0e+00]
  Objective range  [0e+00, 0e+00]
  Bounds range     [0e+00, 0e+00]
  RHS range        [0e+00, 0e+00]
Presolve time: 0.16s
Presolve: All rows and columns removed
Iteration    Objective       Primal Inf.    Dual Inf.      Time
       0    0.0000000e+00   0.000000e+00   0.000000e+00      0s

Solved in 0 iterations and 0.17 seconds
Optimal objective  0.000000000e+00
```

Agenda

1. Introduction
2. Installation of Anaconda
3. Gurobi license
4. Testing the installation
5. Potential errors

Potential Errors

- If the installation of Anaconda fails, this may be due to the installation path and the username it may contain. If this contains spaces, umlauts or special characters, a different directory should be selected so that neither spaces, umlauts nor special characters are contained.

- Under macOS it is necessary to open Anaconda to access Spyder

- If the execution of `conda config --add channels http://conda.anaconda.org/gurobi` fails (due to typos etc.) the installation will fail. The address is stored in C:\User\[username]\.condarc. In case of doubt, the file can be deleted so that a new one is created automatically.

Contact

E.ON Energy Research Center
Mathieustraße 10
52074 Aachen
Germany

Prof. Dr. Reinhard Madlener
T +49 241 80 49820
F +49 241 80 49829
RMadlener@eonerc.rwth-aachen.de
http://www.eonerc.rwth-aachen.de/fcn