



# Installation Manual Python

# Agenda

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

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## 1. Introduction

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## 2. Installation of Anaconda

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# Required Components

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## Development



## Modelling



## Optimization



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# 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](#)

The screenshot shows the 'Anaconda Installers' page with three columns for Windows, MacOS, and Linux. Each column lists Python 3.9 installers. A red arrow points from a callout box to the '64-Bit Graphical Installer (594 MB)' for Windows.

Operating System	Installer Type	Size
Windows	64-Bit Graphical Installer	594 MB
	32-Bit Graphical Installer	488 MB
MacOS	64-Bit Graphical Installer	591 MB
	64-Bit Command Line Installer	584 MB
	64-Bit (M1) Graphical Installer	316 MB
	64-Bit (M1) Command Line Installer	305 MB
Linux	64-Bit (x86) Installer	659 MB
	64-Bit (Power8 and Power9) Installer	367 MB
	64-Bit (AWS Graviton2 / ARM64) Installer	568 MB
Linux	64-bit (Linux on IBM Z & LinuxONE) Installer	280 MB

Pay attention to the number of bits

# 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 Navigator**  
Desktop-App



**Anaconda Prompt**  
Desktop-App

# 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

```
<C:\Users\schaap\Anaconda2> C:\Users\schaap\Documents>conda config --add channel
s http://conda.anaconda.org/gurobi

<C:\Users\schaap\Anaconda2> C:\Users\schaap\Documents>conda install gurobi -y
Fetching package metadata .....
Solving package specifications: .

Package plan for installation in environment C:\Users\schaap\Anaconda2:

The following NEW packages will be INSTALLED:

  gurobi: 7.5.1-py27_0          gurobi

The following packages will be UPDATED:

  conda: 4.3.27-py27hcd9d231_0 --> 4.3.29-py27hb214554_0

gurobi-7.5.1-p 100% !##### Time: 0:00:07 2.18 MB/s
conda-4.3.29-p 100% !##### Time: 0:00:00 6.06 MB/s

<C:\Users\schaap\Anaconda2> C:\Users\schaap\Documents>
```



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# Creating an Account

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

## Register for Free

Are you looking for a better optimization solver, with superior support, and a lower end-to-end cost than the leading alternatives? If so, you've come to the right place.

**When you register for an account, you'll get:**

- ✓ **Access to free Gurobi software** Academic users can download and install a free, full version license of Gurobi. Commercial users can request a no size limit evaluation version of Gurobi.
- ✓ **Notification of online webinars** We run free online webinars on a variety of topics that are of interest to our users.
- ✓ **Notification of product updates** We continuously enhance and improve our solver. You will receive timely notifications of available product updates and releases.

**Please start your registration by designating your account type as either Commercial or Academic:**

Are you an Academic or Commercial user? \*

First Name: \*

Last Name: \*

Company Email Address: \*

University: \*

Academic Position: \*

Phone Number: \*

Country: \*

Check this box if you also consult with commercial businesses: ☐

\*Required: The information you provide to us will be used in accordance with the terms of our [Privacy Policy](#).

[Access Now](#)

Use RWTH e-mail address

Select student

# 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

The image shows two screenshots of the Gurobi Optimization website. The left screenshot is the 'Software Downloads and License Center' page. It has a navigation bar with links like 'Products', 'Customers', 'Resources', 'Academia', 'Company', 'Partners', and a 'Free Trial' button. The main content area has a heading 'Software Downloads and License Center' and a sub-heading 'Download the Latest Version of Gurobi'. Below this are three buttons: 'Gurobi Optimizer', 'Gurobi Solver for AMPL', and 'AMPL & Gurobi Software'. Further down is a section 'Access Your Licenses' with two buttons: 'Your Gurobi Licenses' and 'Your Cloud Licenses'. At the bottom is a section 'Request a License' with four buttons: 'Commercial Evaluation License', 'Academic License', 'Online Course License', and 'Request a Cloud Trial'. A red arrow points from the 'Academic License' button to the right screenshot. The right screenshot is the 'Academic License Registration' page. It has the same navigation bar. The main content area has a heading 'Academic License Registration' and a sub-heading 'Please read and accept the conditions for use of an Academic License:'. Below this is a paragraph of text and a button 'I Accept These Conditions'. A red box labeled 'Select' is positioned below the arrow, pointing to the 'I Accept These Conditions' button.

# 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

## Academic License Detail

License ID 346111

Information and installation instructions

License ID	346111
Date Issued	2019-08-30T04:07:31-07:00
Purpose	Trial
License Type	ACADEMIC
Key Type	ACADEMIC
Version	8
Expiration Date	2020-08-29
Host Name	
Host ID	

### Installation

To install this license on a computer where Gurobi Optimizer is installed, copy and paste the following command to the Start/Run menu (Windows only) or a command/terminal prompt (any system):

```
grbgetkey 5cb9cba6-cb16-11e9-801c-020d093b5256
```

The grbgetkey command requires an active internet connection. If your computer has no internet access, or you get no response or an error message such as "Unable to contact key server". Please click here for additional instructions.

```
(base) PS C:\Users\schleier> grbgetkey 5cb9cba6-cb16-11e9-801c-020d093b5256
info : grbgetkey version 8.1.1, build v8.1.1rc0
info : Contacting Gurobi key server...
info : Key for license ID 346111 was successfully retrieved
info : License expires at the end of the day on 2020-08-29
info : Saving license key...

In which directory would you like to store the Gurobi license key file?
[hit Enter to store it in C:\Users\schleier\]:

info : License 346111 written to file C:\Users\schleier\gurobi.lic
(base) PS C:\Users\schleier>
```

**Copy Grbgetkey  
command**

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# 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
```

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# Potential Errors

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- 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>