Installation Manual for Gurobi 9.5 with Python 3.7 and Anaconda/Spyder

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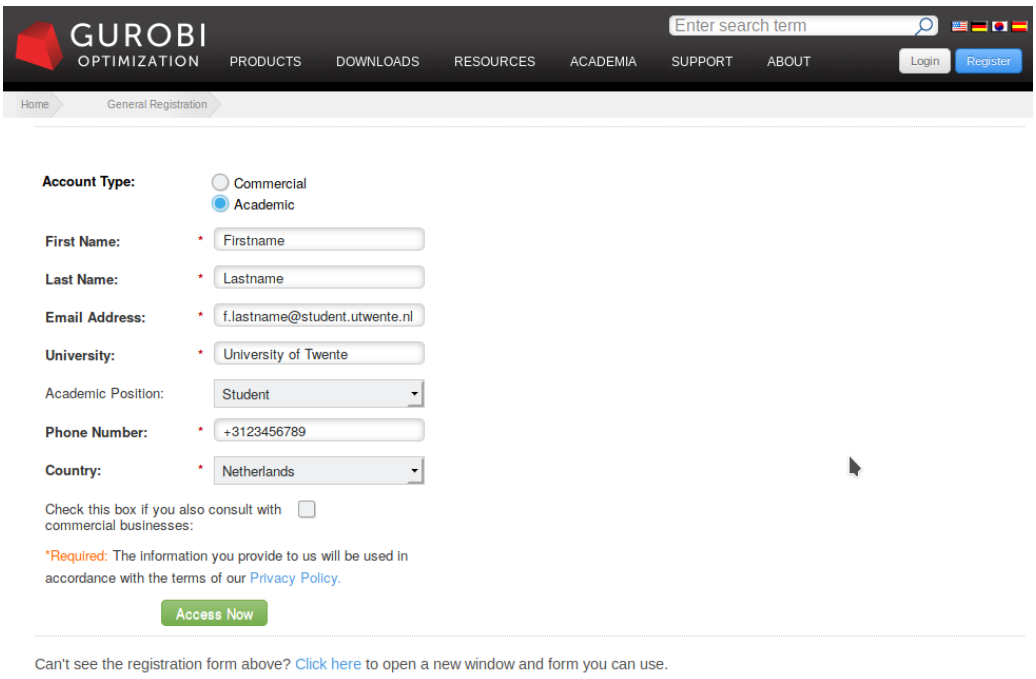
This manual explains the installation of the optimization software Gurobi 9.5, using Python version 3 as an interface. Python is used to make the integer programming model known to Gurobi, ask it to solve the model, and finally to access the resulting solution. The manual also explains how to install Python version 3 including the distribution Anaconda. We recommend to use the development environment Spyder that is shipped with Anaconda.
A detailed manual and additional examples can be found in the quickstart guides for the corresponding operating systems Windows, Linux, or Mac.
At the end of this manual you can find information on typical errors.

1 Installing Gurobi

1.1 Obtaining a license

In order to use Gurobi, a license is required. As a student, the license can be obtained for free here. When creating an account, select "academic" and specify your UTwente mail address. Make sure that the mail address is spelled correctly.

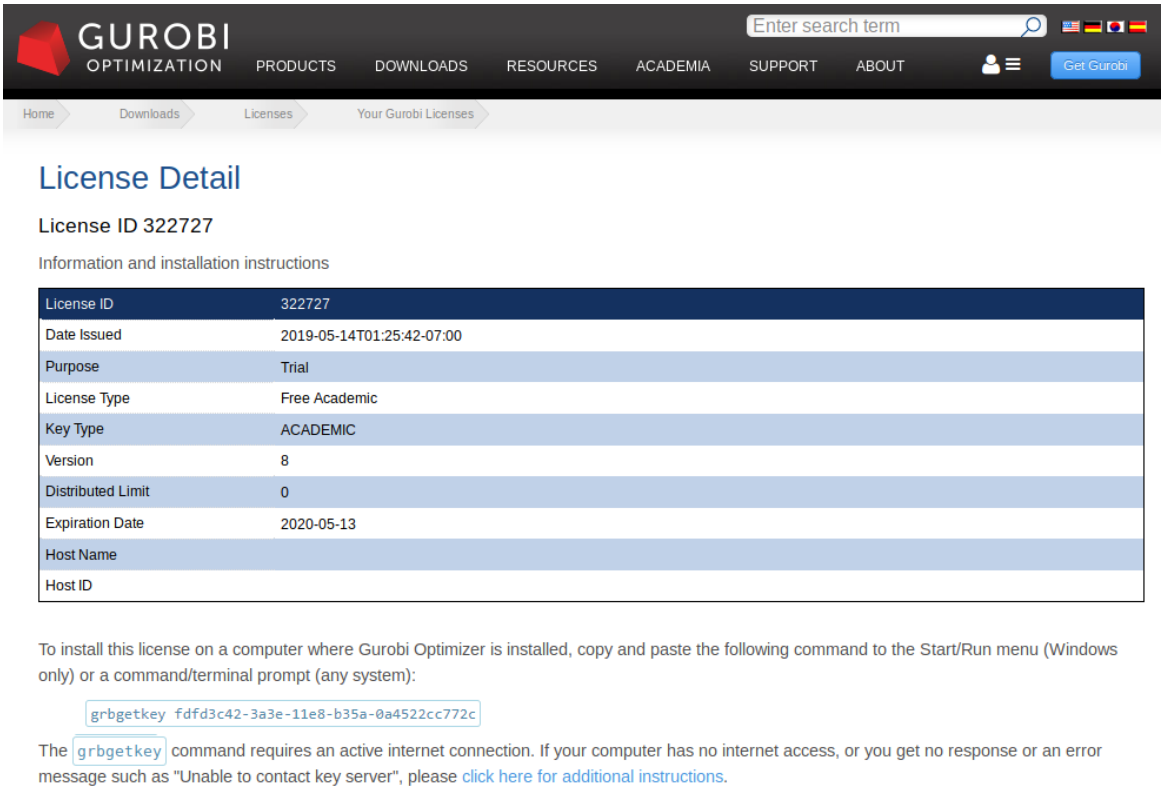


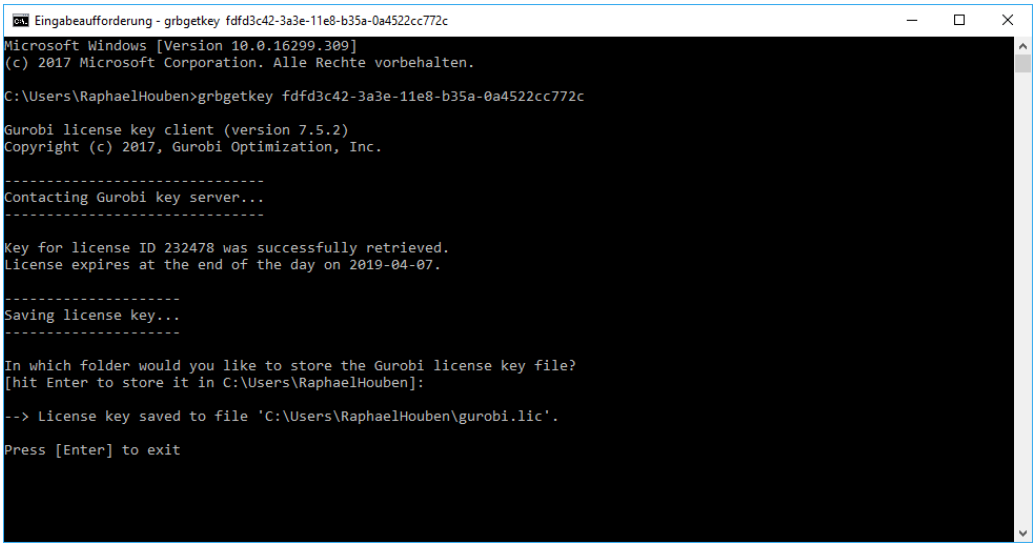
1.2 Downloading the software

When logged in, the current Gurobi version for the corresponding operating system can be obtained here. The distinction between 32 und 64 bits is important. If you are unsure which bit number to use, you can find help in this Manual for Windows or Manual for Mac. Finally, the most recent version of Gurobi should be installed.

1.3 Adding the license to Gurobi

Select the license, copy (as shown below) the `grbgetkey`-command, and execute it in the console. Under Windows, open the start menu and search for `cmd.exe` in the search field. Under Mac or Linux, open a terminal.



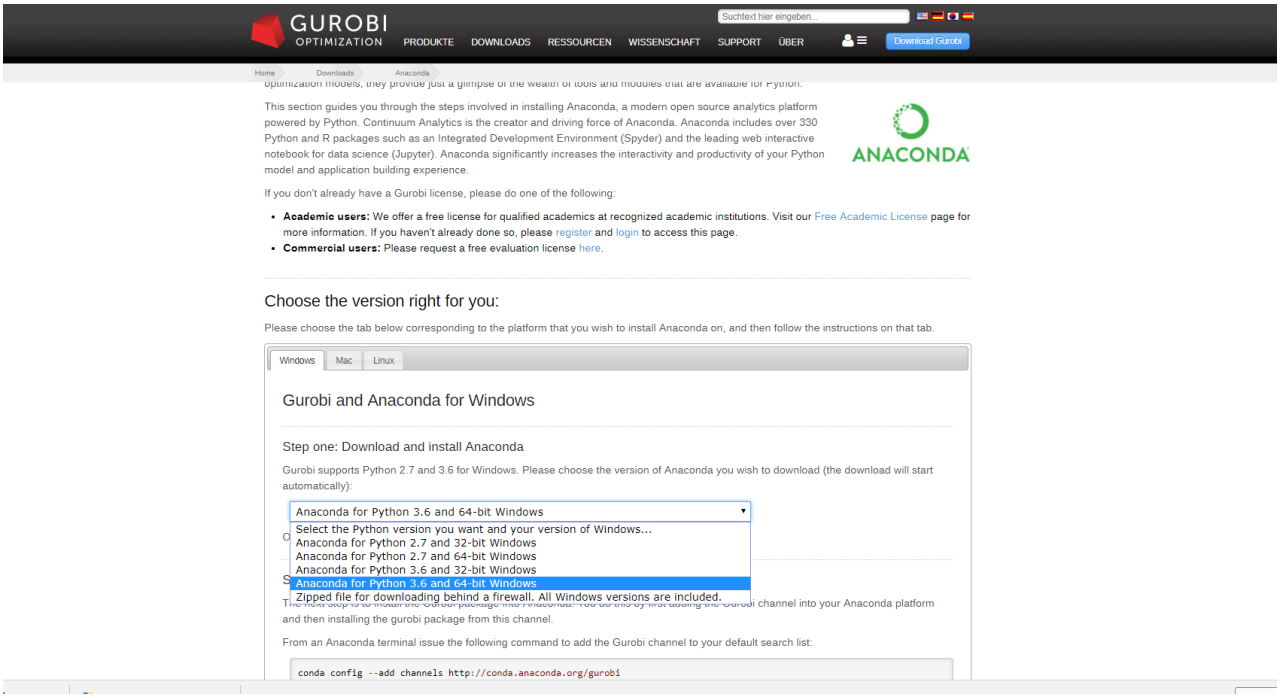


To avoid problems, use the suggested directory for storing the license file!

2 Installing the Anaconda Python distribution

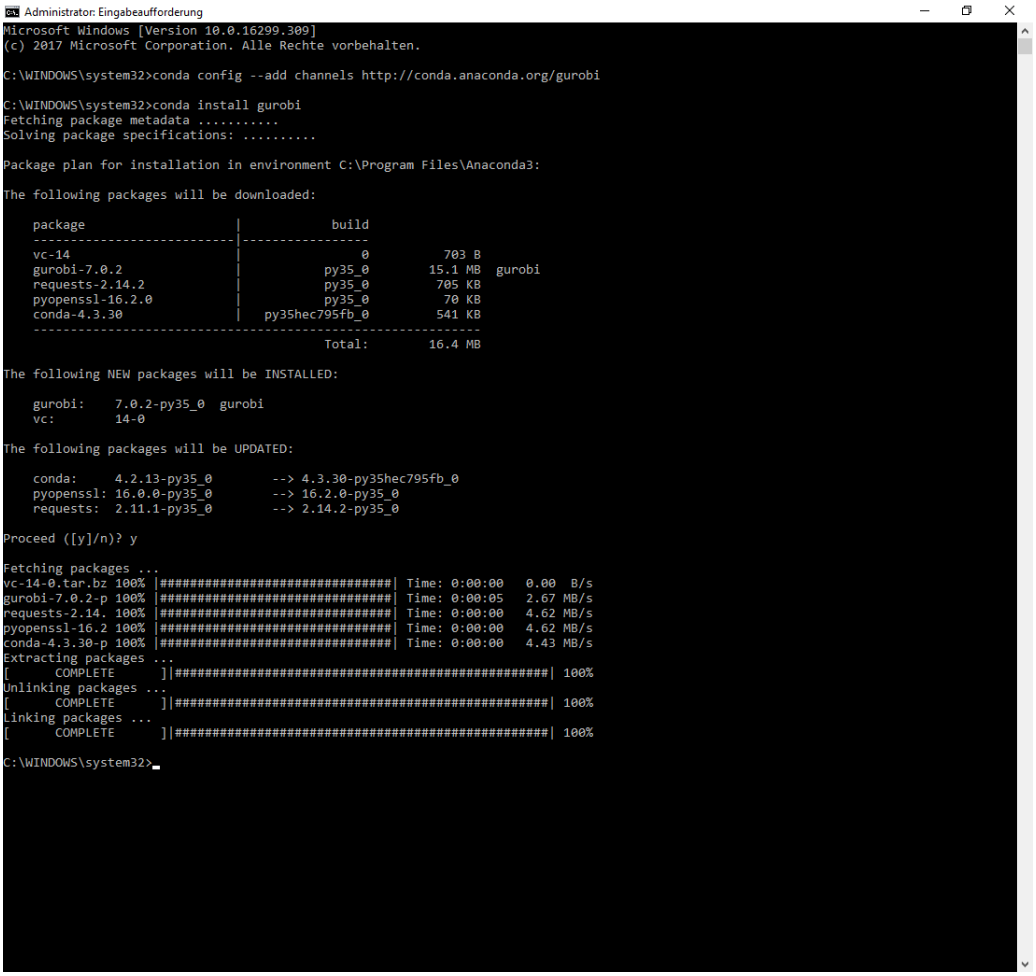
2.1 Downloading and installing the distribution

Now, the Anaconda package can be downloaded and installed; select the Python version 3.7 for the appropriate bit number for your platform.



2.2 Downloading and installing the Gurobi module

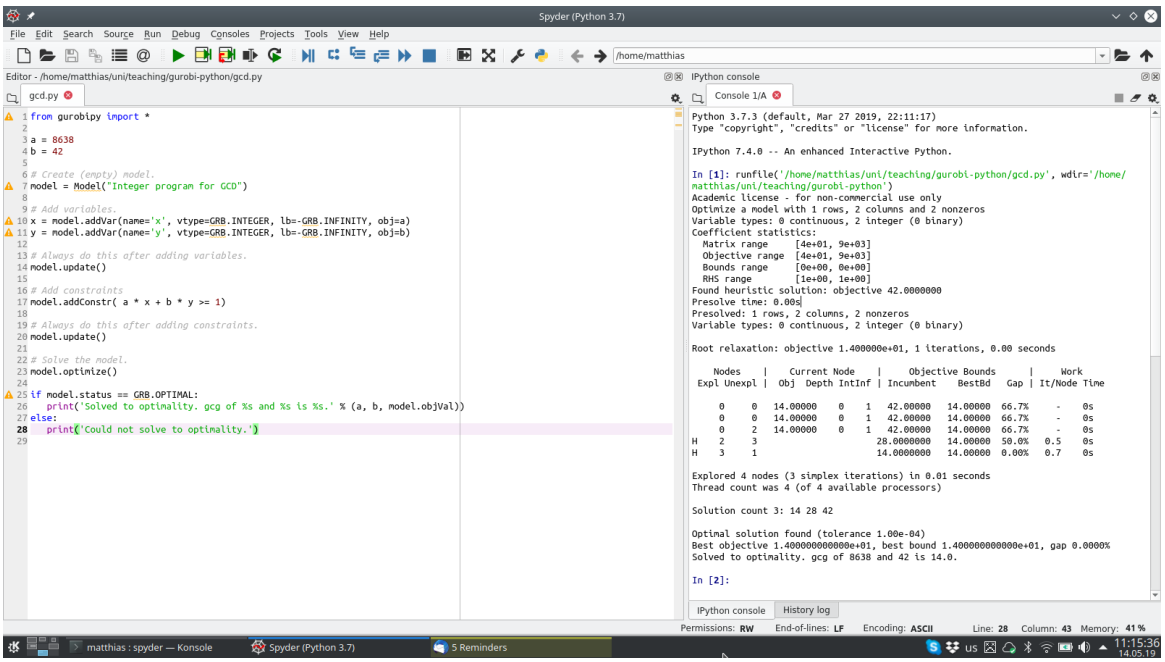
Finally, the console or terminal has to be opened again to enter the following commands. Under Windows the `Anaconda prompt`, which can be found in the start menu, is recommended.
In the console, type the following:
`conda config --add channels http://conda.anaconda.org/gurobi` [ENTER]
`conda install gurobi` [ENTER]



If, during the second step, you are asked whether a package should be updated, confirm this with `y` [ENTER]
For Windows users:
If the enviroment variables of Anaconda are not set (a message stating that *`"conda"`* was not found), enter the two commands in the console of Anaconda (program: `Anaconda Prompt`).

2.3 Testing the installation

In order to test the installation, obtain the file "gcd.py" from the course page and open Spyder (by searching for Spyder in the Windows search bar). Finally, open the file, e.g., by dragging it into Spyder (alternatively, open it with a double-click and select Spyder from the list of installed programs, or by choosing File→Open in Spyder).
After running the file (green "play" symbol in the top bar), you should see the following output:



3 Frequent errors

- If the test was not successful, please try to do the following:

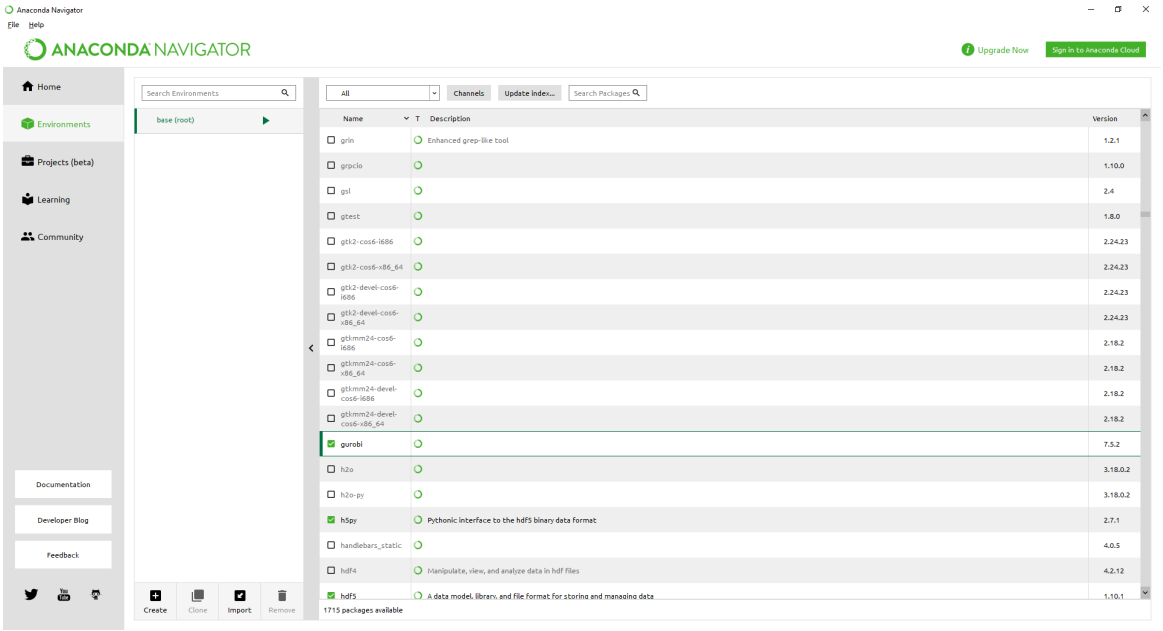
  1. Open the command prompt, if necessary with administrator priviledges.
  2. Navigate, using the cd command, into the Gurobi directory; to this end, type `cd` followed by [space] and the file path of the Gurobi directory in quotes (”). The file path can be obtained by opening the Gurobi directory and clicking to an empty position in the navigation/explorer bar (the file path can then be entered manually or pasted into the console via right-click).
  3. In the Gurobi directory, execute the command `python setup.py install`. If you don’t have the priviledges to execute this command, open the command prompt as an administrator.
  4. Finally, test again.

  If the error message `no module named gurobipy` appears you may try to install the package in a different way. To this end, open the `Anaconda-Navigator` and choose the tab `Environments`. In the box stating `Installed` select `All` instead. Now search for the package `gurobi`, mark it and start the installation with `Apply`.

- For MacOS users:

  If Spyder states the error message `Kernel died` and the terminal shows `segmentation fault 11`, the combination of Spyder and `Python 3.7` will not work for your system.

  You can install PythonIDLE in the version 3.7.3. Now, only the module `gurobipy` has to be installed for `PythonIDLE`. To this end, open the terminal, and go to the directory containing the `setup.py` file of gurobi. If you did not change the installation path of gurobi, this directory will be `/Library/gurobi752/mac64`. Hence, enter the following commands:



`cd /Library/gurobi950/mac64` [ENTER]
`python3.7 setup.py install` [ENTER]

- Sometimes, the output of Spyder states the error that the Gurobi license has the wrong version number. This can happen if the Gurobi version is not up to date. Anaconda always installs the most recent version of the Gurobi interface. If the error appears, install the most recent version and request a new license (see above).

- For Windows users:

  If the `conda config --add channels` command contained the wrong address (e.g., due to a typo), it must be removed again, since otherwise the installation will fail. The address is stored in C:\User\[Username]\.condarc. If not sure, simply remove this file as it will be recreated automatically.

  If the user name contains special characters it may happen that the installation of Anaconda fails. An alternative to Anaconda is WinPython. We recommend the version 3.6.3.0 since the newer versions (3.6.4.x and 3.6.5.x) produced errors. Similar to Anaconda, WinPython contains Python and Spyder. After the installation of WinPython, you have to make Gurobi known to Python. To this end, execute the first steps of this section.

- If also the installation of WinPython fails, Python(x,y) may be used as an alternative or Python and Spyder are installed separately by hand. Both are described under `https://pythonhosted.org/spyder/installation.html`. The manual installation is titled "The hard way". Similar to WinPython, you have to make Gurobi known to Python.

Please pose potential questions to m.walter@utwente.nl. Only contact the Gurobi support if we could not help you!

Good luck with the installation!