

# Gurobi Guide

## Introduction

Gurobi Optimizer is a commercial optimization solver for linear programming.

It supports a variety of programming and modeling languages, including a matrix-oriented interface for C which this guide instructs how to begin using.

This document will describe how to execute Gurobi on **nova**. It is recommended to create a "stub" module on your computer, and ensure your program works. Then, you can implement the ILP module on nova, testing each component separately.

No instructions are provided for executing Gurobi on your personal computer. You are free to follow similar steps but **use it at your own risk**. All grading and executions will be done on **nova** with the relevant Gurobi version (5.6.3).

## Gurobi on nova

First, obtain a free academic license for Gurobi through the following link:

<https://user.gurobi.com/download/licenses/free-academic>

Enter your full details in the form above, **make sure to provide your university email address**.

Once registration is complete and all terms are accepted, you will see the "License Detail" screen which contains your license ID, as well as a command in the bottom of the page similar to the following:

```
grbgetkey abcdefgh-1234-abcd-1234-abcdefghijkl
```

Log into nova (using Putty directly, through WinSCP, or via any other SSH connection), and input the following commands into the terminal:

```
setenv GUROBI_HOME /usr/local/lib/gurobi563  
  
setenv PATH ${PATH}:${GUROBI_HOME}/bin  
  
setenv LD_LIBRARY_PATH ${GUROBI_HOME}/lib
```

Once all commands are entered successfully, enter the `grbgetkey` command from the license page. When prompted in which directory to store the license key file, press enter without any additional input. This will ensure the command does not need to be repeated.

You may now execute programs using Gurobi. A sample code file and makefile are provided in moodle.

The 3 commands above need to be repeated whenever you connect to nova. To avoid this, you can create a file called `.tcshrc` under your user folder. Enter these commands into the file, one in each line, and they will be executed on each login into nova. The `grbgetkey` command does need to be repeated and thus should not be written in the file, only the 3 commands above.