
Wolfram Language kernel for Jupyter notebooks

Jupyter provides a protocol (ZMQ) to connect their notebooks to various languages. This project defines a Wolfram Language kernel which can be used in Jupyter notebooks.

Prerequisites

On your machine, you will need:

- Jupyter
- Wolfram Engine, i.e., a Wolfram Desktop or Mathematica installation
- Optional, but recommended: [wolframscript](#)

Installation

There are **two** ways to make the Wolfram Language available in Jupyter:

- Using the [wolframscript](#) command line script interpreter
- Using Wolfram Language commands from the [WolframLanguageForJupyter](#) paclet.

Method 1: Using wolframscript

On macOS/Unix: Clone the repository

```
1 git clone https://github.com/WolframResearch/WolframLanguageForJupyter.git
```

Run the following command in your shell to make the Wolfram Language engine available to Jupyter:

```
1 ./configure-jupyter.wls add
```

On Windows: Follow the first two steps here, and on the third step select [Download Zip](#), and unzip the file using a tool for Windows. Open PowerShell in the directory of the unzipped folder

Run the following command in your shell to make the Wolfram Language engine available to Jupyter:

```
1 .\configure-jupyter.wls add
```

Notes:

- If the location of the Wolfram Engine changes, you will have to run `configure-jupyter.wls` again.
- `configure-jupyter.wls` gives an error if the Wolfram Engine could not be added.

For more configuration options run:

```
1 ./configure-jupyter.wls help
```

Method 2: Using Wolfram Language

You can download the latest version of the paclet here:

<https://github.com/WolframResearch/WolframLanguageForJupyter/releases>

To install the paclet, run the following command with Wolfram Language (replacing x, y, and z with the correct values):

```
1 PacletInstall["WolframLanguageForJupyter-x.y.z.paclet"]
```

To load the paclet, run:

```
1 Needs["WolframLanguageForJupyter`"]
```

To add the Wolfram Language to Jupyter, run:

```
1 ConfigureJupyter["Add"]
```

To specify a specific Jupyter binary, run:

```
1 ConfigureJupyter["Add", "JupyterInstallation" -> "..."]
```

To specify a specific Wolfram Engine binary, run:

```
1 ConfigureJupyter["Add", "WolframEngineBinary" -> "..."]
```

Please note, however, that the value for the `"WolframEngineBinary"` option should not be a `wolframscript` path.

Testing your installation

The following command should now list the Wolfram Engine:

```
1 jupyter kernelspec list
```

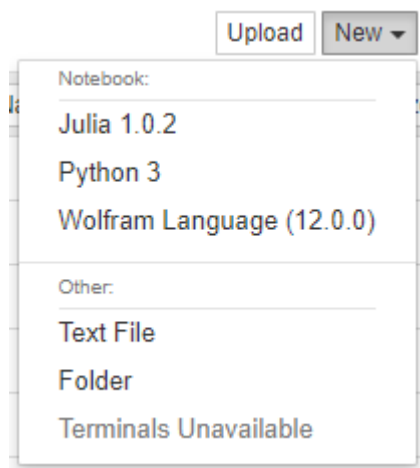
The output should include a line like this:

```
1 wolframlanguage12 C:\ProgramData\jupyter\kernels\wolframlanguage12
```

To test your installation in a notebook, run the following command:

```
1 jupyter notebook
```

Then select Wolfram Language from the drop down menu:



After the In[] prompt you can now type a Wolfram Language command (use shift-enter to evaluate):

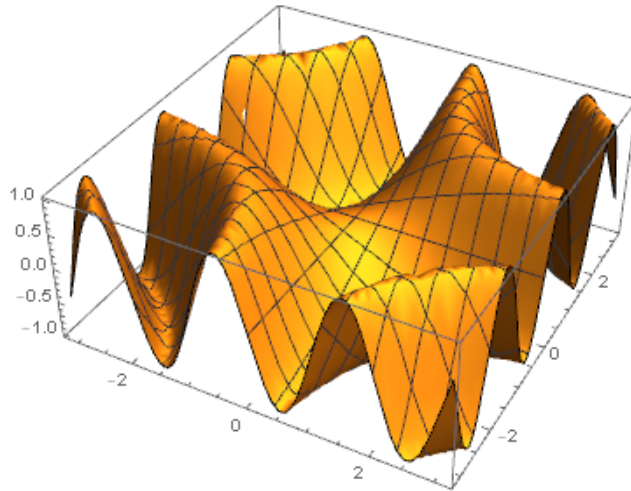
```
In [1]: $Version
```

```
Out[1]: 12.0.0 for Microsoft Windows (64-bit) (November 15, 2018)
```

Outputs are either strings, for simple textual results, or images, for graphics and typeset results:

```
In [2]: Plot3D[Sin[x y],{x,-Pi,Pi},{y,-Pi,Pi}]
```

```
Out[2]:
```



Any messages that occur during evaluation are displayed:

```
In [3]: 1/0
```

```
Out[3]:
```

```
Power::infy: Infinite expression  $\frac{1}{0}$  encountered.  
ComplexInfinity
```

To test your installation in the terminal, run the following command:

```
1 jupyter-console --kernel=wolframlanguage12
```

Building the WolframLanguageForJupyter paclet

To build the WolframLanguageForJupyter paclet file yourself, run:

```
1 ./configure-jupyter.wls build
```

This creates the `WolframLanguageForJupyter-x.y.z.paclet` file (use the `PacletInfo.m` to increment the version).

Removing your installation

Method 1: Using wolframscript

Run the following command to remove the Wolfram Language engine from Jupyter:

```
1 ./configure-jupyter.wls remove
```

Method 2: Using Wolfram Language

Run the following command:

```
1 ConfigureJupyter["Remove"]
```

Links

- <https://github.com/WolframResearch/WolframLanguageForJupyter>
- <https://jupyter.readthedocs.io/en/latest/projects/content-projects.html>