

## Annex F: Iron Python Installation (Mac OS)

There are two possible options when installing a Rhino Python editor on Mac OS:

1. Atom – supports Python 2.7, but currently not Python 3.x
2. Via Mono

### Setting up IronPython (Mac OS) – Atom:

These instructions can also be found on the [Atom website](#).

#### **1. Installing Atom**

- ➔ Download the Atom installer package on <https://atom.io/>. Install the Atom editor.

#### **2. Settings in Atom**

- ➔ From the "Atom" menu select "Install Shell Commands" in case they are not already installed.
- ➔ Press the `cmd + ,` to launch the Settings view.
- ➔ Click on the Install tab and then click on the "Packages" button right of the top edit box.
- ➔ Type "rhino-python" in the "Search Packages" edit box followed by the `Enter` key.
- ➔ The rhino-python package will be the 1st one in the list. Click the "Install" button.

#### **3. Writing for Rhino in Atom using IronPython**

- ➔ From Rhino run the `StartAtomEditorListener` command.
- ➔ Launch the Atom editor and save the "untitled" document as `mypythonscript.py`. The file needs to have a ".py" extension for the rhino-python package to recognize it.
- ➔ Type `import` (followed by a trailing space). Depending on how you have Atom configured and which other packages you have installed you'll see a completion window with suggestions on what to type next. Type "rh" to start filtering the list and notice that the suggestions provided by Rhino are labeled with the "<- Rhino" hint on the right of the suggestion.
- ➔ As you continue typing `rhinos` you'll see the completion data list get filtered until the only option left is "rhinoscriptsyntax". Press the `tab` key (or `enter` if configured that way) to accept it.
- ➔ Finish typing the line: `import rhinoscriptsyntax as rs`
- ➔ On the next line type `from Rhino.Geometry import Point3d`. The completion data will pop up for `Rhino`, `Geometry`, and `Point3d`. Press the `tab` key (or `enter` if configured that way) to accept each.
- ➔ For the next line type `rs.AddCircle(Point3d.Origin, 5.0)` and again notice the completion window after each `.` and the doc string panel after the `(`. Keep typing until the

desired data is highlighted in the completion window and press the `tab` (or `enter` if configured that way) key to accept.

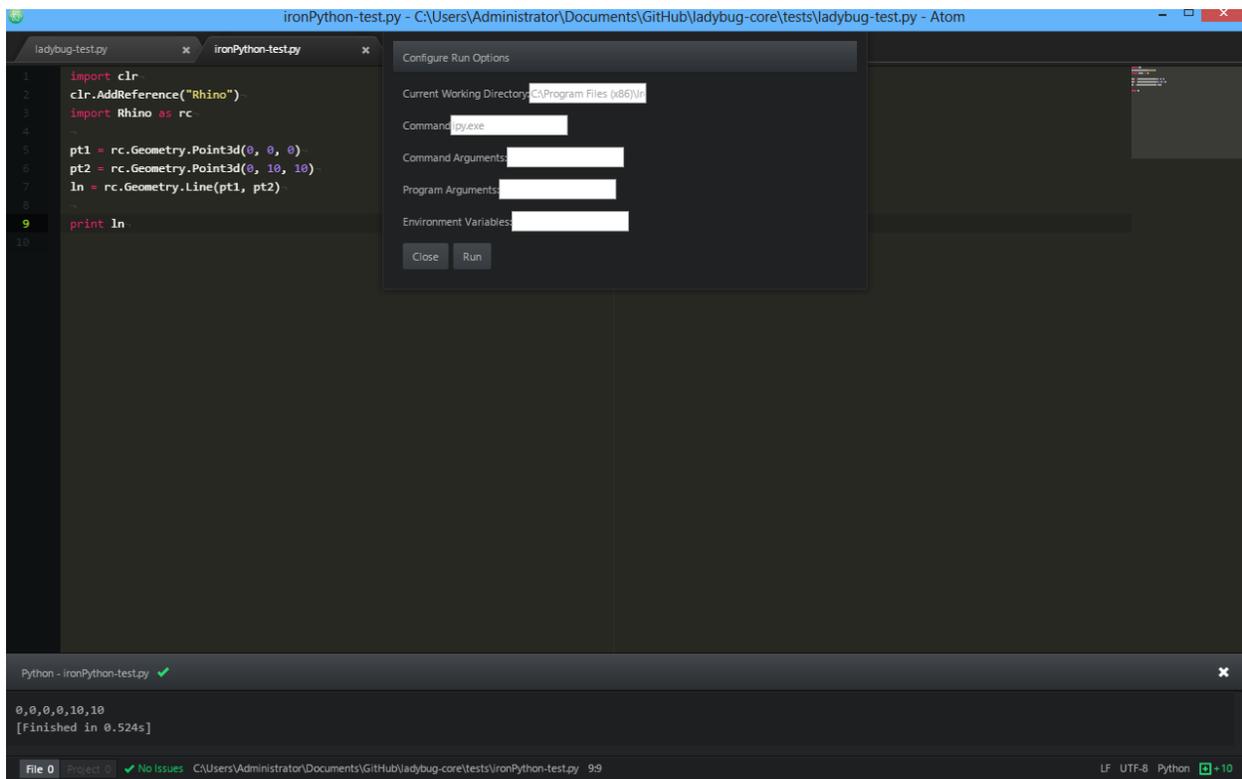
→ To send the file to Rhino for execution press the `ctrl` + `alt` + `r` keys.

#### 4. Changing Python Search PATH (Supported by version 5.2 WIP 5C41w and later)

- Press the `ctrl` + `alt` + `s` keys to open the Rhino Python Search Paths panel.
- When the window is first opened only the add `+` button is enabled.
- After adding one or more paths click on one to select it and the other nav buttons become enabled. This doesn't apply to the default paths (system paths) because they cannot be edited.
- None of the changes made are saved until the save button is clicked which sends the save request to Rhino.
- Clicking the revert button discards all changes made since the last save.

#### 5. Changing directory

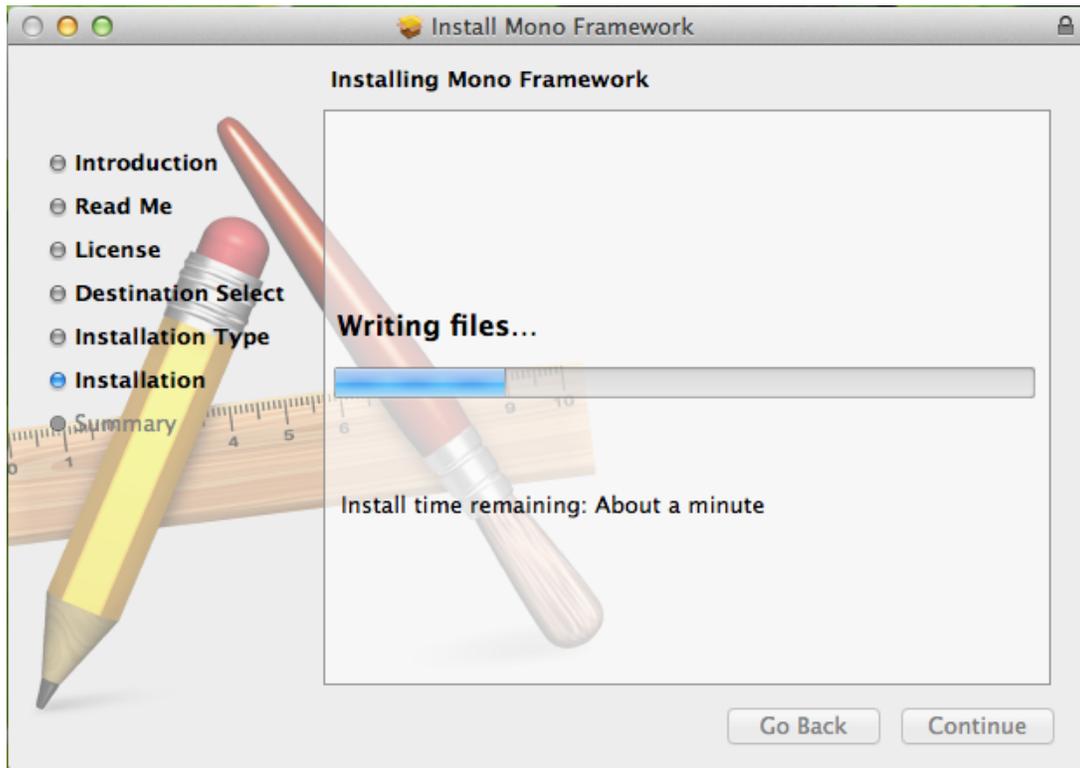
- Set Current Working Directory to IronPython installation folder
- Set Command to `ipy.exe`



## Setting up IronPython (Mac OS) – via Mono:

### 1. Installing Mono

- ➔ To install IronPython on Mac OS, first download the latest version of Mono. You can download it here: <http://www.mono-project.com/download/#download-mac>. Run the .pkg file and accept the terms of the license.



- ➔ Run through the basic hello world examples [on http://www.mono-project.com/docs/getting-started/mono-basics/](http://www.mono-project.com/docs/getting-started/mono-basics/) to verify Mono is working correctly.

### 2. Installing IronPython

- ➔ Download and install IronPython 2.7.5, which is the version compatible with Rhino. You can find it here: <https://ironpython.codeplex.com/releases/view/169382>.
- ➔ Unzip the archive and invoke Iron Python in Mono by typing 'mono ipy.exe' or 'mono ipy64.exe' in the directory.

### 3. Installing future, enum, mpmath

- ➔ Open Terminal and install pip by typing in the following command:  

```
sudo easy_install pip
```

- ➔ When prompted for a password, enter your normal login password.
- ➔ Ensure that -X:Frames is enabled on your script editor. Note that -X:Frames is always required when working with pip.
- ➔ Ensure that pip is correctly installed for IronPython by typing in this command: **sudo ipy -X:Frames -m ensurepip**. Wait for it to run.
- ➔ Install the package you want with this command:  
**sudo ipy -X:Frames -m pip install <<package you want>>**  
*Example: installing future package*  
**sudo ipy -X:Frames -m pip install future**
- ➔ A number of packages can be installed this way into Rhino's IronPython implementation, like future and mpmath, e.g. just type in 'ipy -X:Frames -m pip install mpmath' to install mpmath.
- ➔ Install the following packages before using the sortal library:
  - future: **sudo ipy -X:Frames -m pip install future**
  - mpmath: **sudo ipy -X:Frames -m pip install mpmath**
  - enum: **sudo ipy -X:Frames -m pip install enum**
- ➔ **NOTE:** This method does not work for NumPy and SciPy.