

Installation and Operation of Python SDK in Genie

Starting with Version 4.0, Genie provides the ability to customize scripts using Python programming language. Visit the Mirion website, <https://www.mirion.com/genie4/python>, for more information on Python® scripting integrations for Genie 4.0.

Installing Python and Python SDK

Three components need to be installed before using Python scripting: Python, the Python-Date Utility, and finally, the Python SDK.

Installing Python

To install Python you will need to download v3.10.4 for Windows 32-bit from a reputable website and then:

1. Start the python-3.10.4.exe installer.
2. Select the “Customize Installation” option.

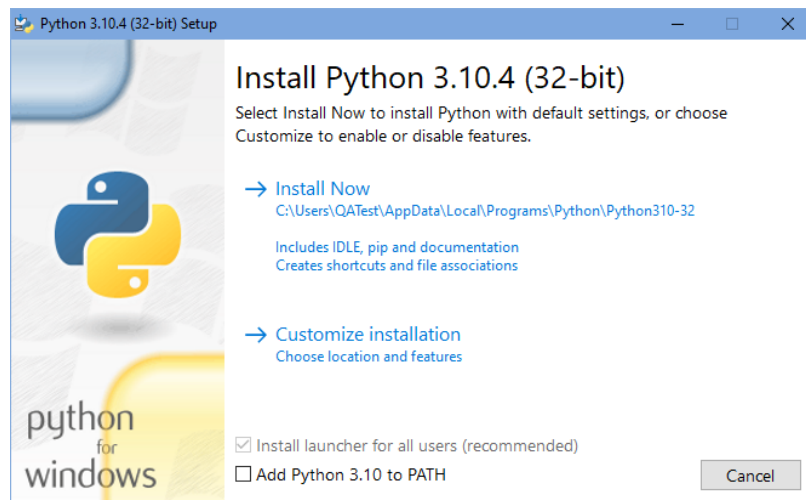


Figure 1 Selecting the Custom Python Installation

3. Keep all selected default options and then select **Next**.

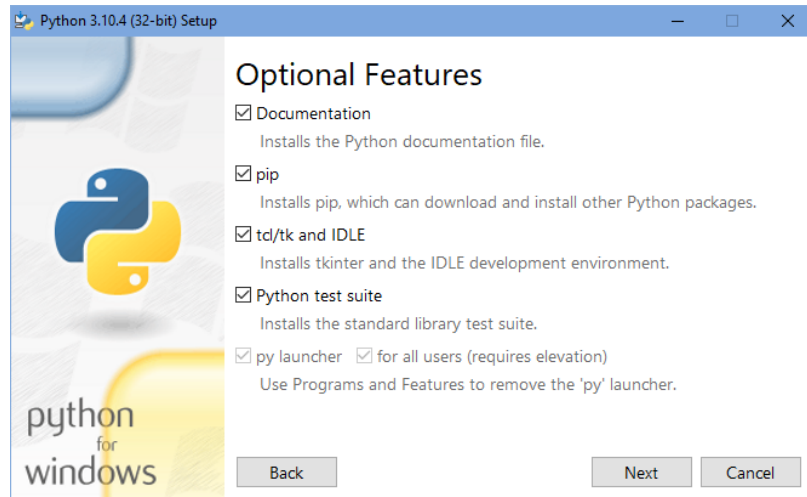


Figure 2 Selecting the Optional Feature

4. Select the “Install for all users” checkbox.

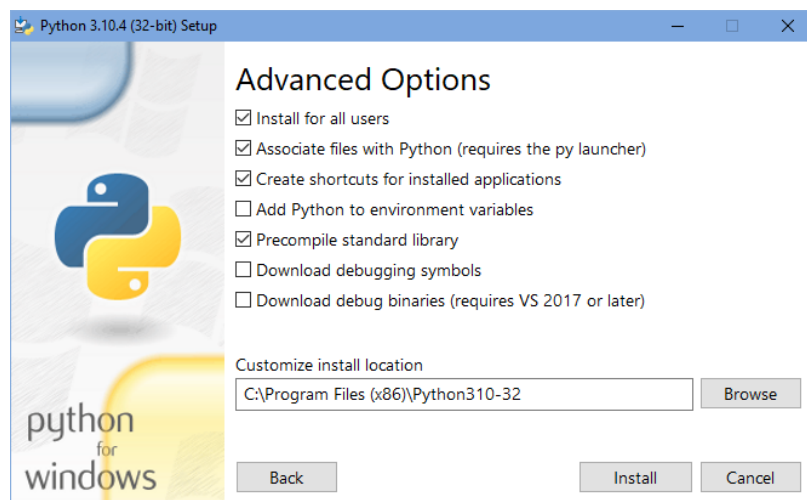


Figure 3 Selecting the Advanced Options

Note the file location for installation is in C:\Program Files (x86)\Python310-32.

5. Select **Install**. The installation process will now begin. When completed the following dialog appears. Click on **Close** to exit the installation.

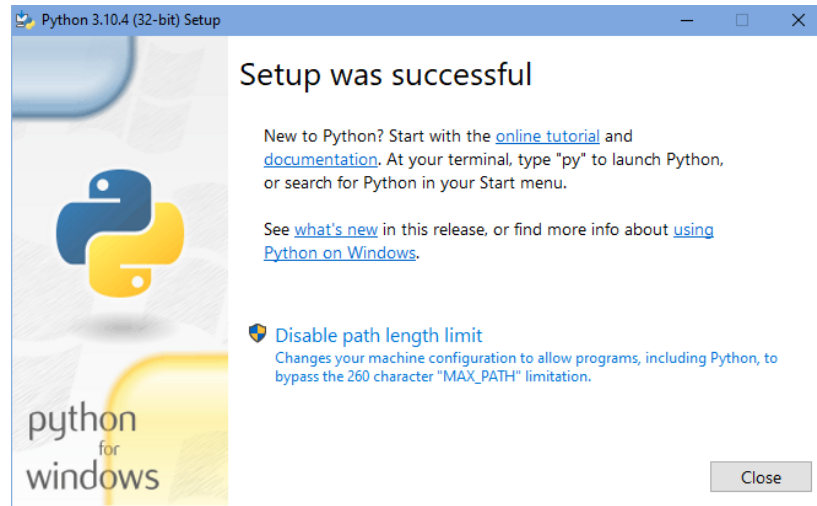


Figure 4 Completing the Software Installation

Installing the Python-Date Utility

The Date Utility is provided to allow you to read and write CAM file parameters, get and set efficiency calibrations, and perform efficiency curve optimizations. To install the dateutil, perform the following:

1. Type `Run` in the Windows search box.
2. Type `cmd` in the Run dialog box and then click on **OK**.
3. A Command Prompt window (Figure 19) should appear. Make sure you are the administrator.

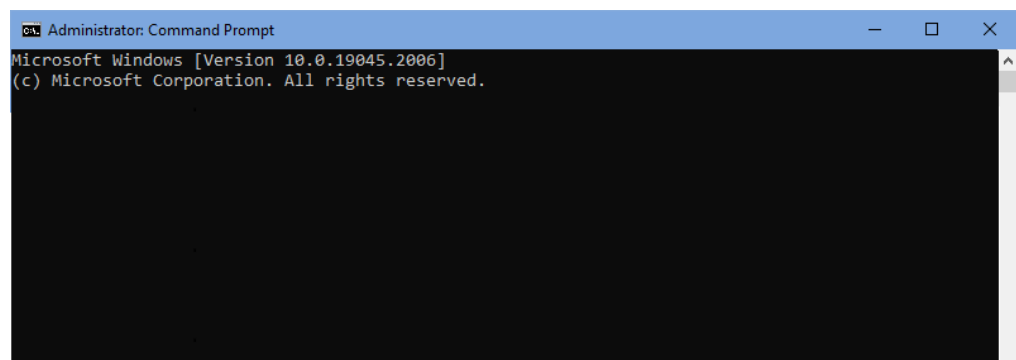
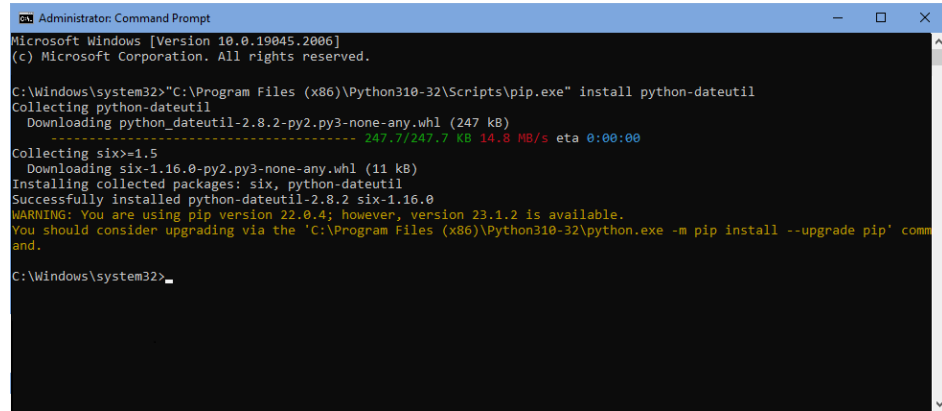


Figure 5 The Default Command Prompt Window

4. Type the following text in the command prompt window:

```
"C:\Program Files (x86)\Python310-32\Scripts\pip.exe" install python-dateutil
```

5. If successful, you should see something similar to Figure 20. If you see an error message, check your typing and try step 4 again. Note that the warning message may not appear.



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19045.2006]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\system32>"C:\Program Files (x86)\Python310-32\Scripts\pip.exe" install python-dateutil
Collecting python-dateutil
  Downloading python_dateutil-2.8.2-py2.py3-none-any.whl (247 kB)
    ----- 247.7/247.7 KB 14.8 MB/s eta 0:00:00
Collecting six>=1.5
  Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Installing collected packages: six, python-dateutil
Successfully installed python-dateutil-2.8.2 six-1.16.0
WARNING: You are using pip version 22.0.4; however, version 23.1.2 is available.
You should consider upgrading via the 'C:\Program Files (x86)\Python310-32\python.exe -m pip install --upgrade pip' command.

C:\Windows\system32>
```

Figure 6 Date Utility Successfully Installed

Installing the Python SDK

To install the Python SDK:

1. Run “setup.exe” to start the “Genie Software Suite” installation.
2. Select the **Install Mirion Python SDK** button on the install screen.

Follow the stepped instructions on the next few screens. At any time, you can go **Back** one page or proceed to the **Next** page. Click on **Cancel** to stop the installation.

3. First, select the language for this installation.

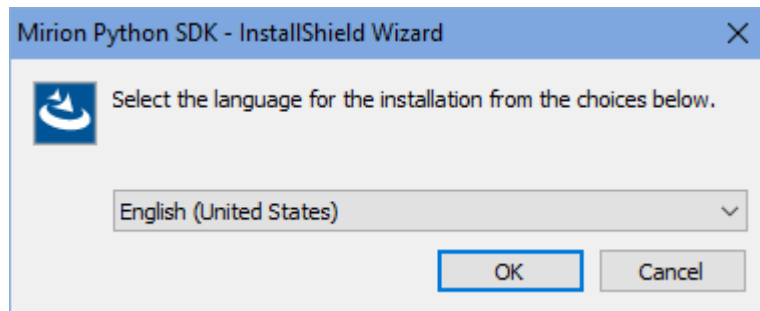


Figure 7 Select the Language

4. Next, a welcome screen appears, click on **Next** to continue.
5. Accept the End User License to proceed with the installation. You may choose to print the License agreement by selecting the **Print** button. Select the **Next** button to proceed or you may **Cancel** the installation at this time.

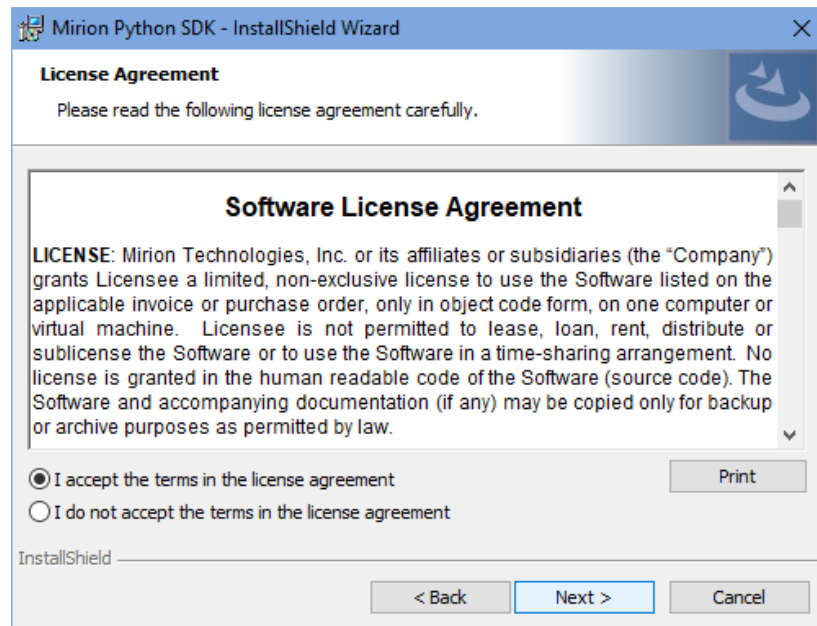


Figure 8 Accepting the License Agreement

6. By proceeding, you will see the Destination Location to install the Python SDK. You may use the **Browse** button to choose another location. Mirion suggests using the default setting here. When ready to proceed, select the **Next** button.

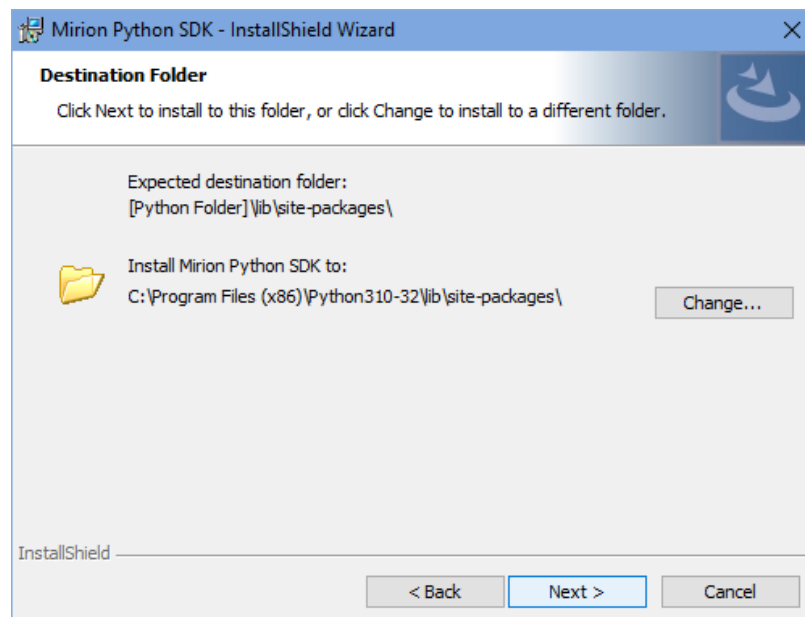


Figure 9 Set Destination Location for Files

7. Click on the **Next** and then on the **Install** button to begin the installation.

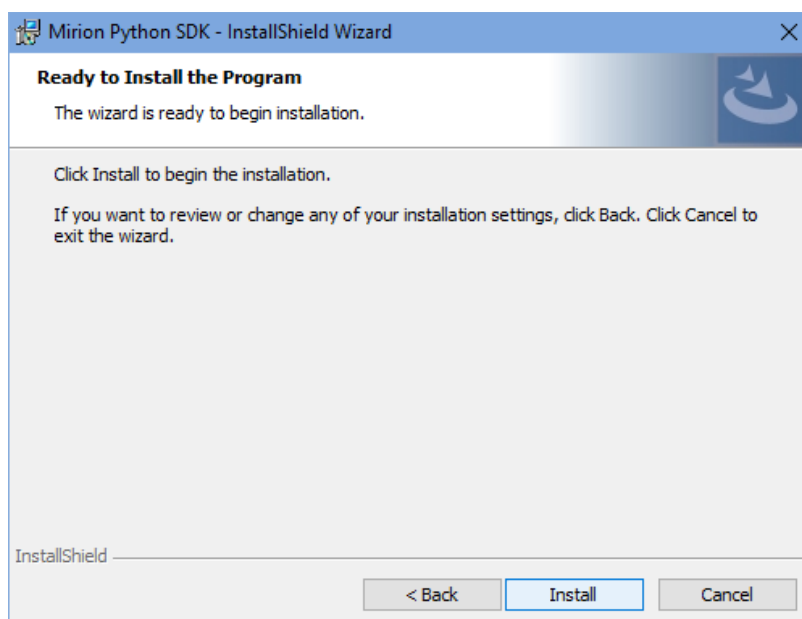


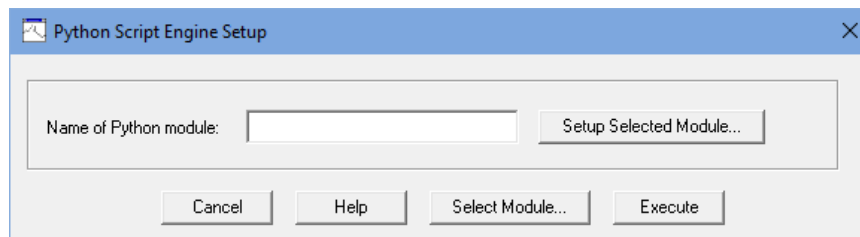
Figure 10 Starting the Software Installation

8. Once the software has been installed, click **Finish**.

Running the Example Script

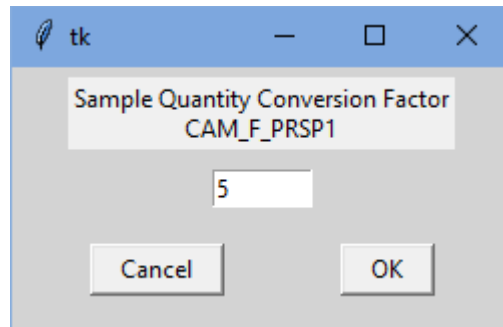
The example script, \Genie2k\Scripts\GenieScriptEnginePython.wsc, is a text file included with the Genie distribution and installed in the \Genie2k\Scripts folder. To run the script:

1. Open a spectrum file in the Gamma application.
2. Select **Analyze | Post NID Processing | PythonScript Engine**.
3. Enter the script's name in the "Name of Python Module" text box or click on the **Select Module** button.



4. Press the **Setup Selected Module** button, select the "GeneScriptEnginePython" and the click on **OK**.

5. Enter the sample quantity conversion factor, for instance, 5. Click on **OK**.



6. Press the **Execute** button to pass the conversion factor to the CAM parameter specified in the script.

To see the result, open the **Edit | Sample Info** screen. Its Quantity field should contain 5. If you save the file, the new value will be saved with the spectrum.

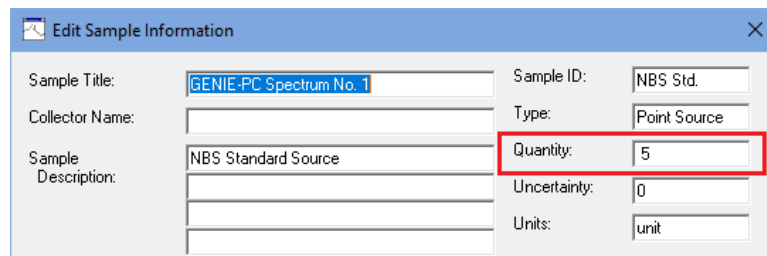
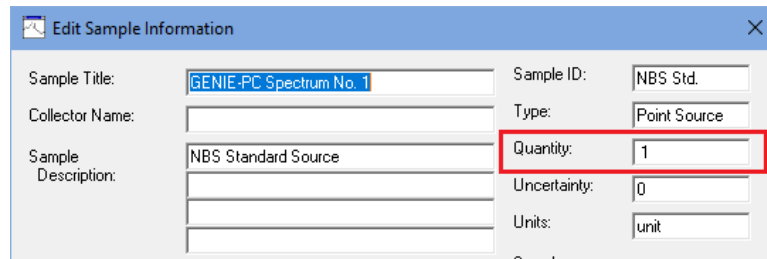


Figure 11 Change to the Quantity Field Before / After Running Script