

Getting Started Documentation

Set up environment

ARCHICAD-Python Connection requires only the installed Python environment (version 3.7 or above) and a running ARCHICAD instance (version 24 or above).

The interactive Python Palette in ARCHICAD helps you with the installation process:

How to open Python Palette

To use Python Palette, switch on the Python Palette Experimental Feature on the Work Environment dialog. The palette can be opened from the Palettes menu.

1. Launch ARCHICAD
2. Go to **Options > Work Environment > More Options**
3. Under Experimental Features, switch on "Enable Python Palette" checkbox
4. Open the Python Palette from **Window > Palettes > Python Palette**

Work Environment

Apply Schemes of Profile: >

User Preference Schemes : Custom

Apply Scheme: >

- Work Environment Profiles
 - User Preference Schemes
 - Dialog Boxes and Palettes
 - Selection and Element Inform.
 - Tracker and Coordinate Input
 - Input Constraints and Guides
 - Model Rebuild Options
 - Publisher
 - More Options**
 - Advanced Redraw Options
 - On-Screen Options
 - Company Standards Schemes
 - Data Safety & Integrity
 - Network and Update
 - Special Folders
 - Shortcut Schemes
 - Keyboard Shortcuts
 - Tool Schemes
 - Toolbox

MORE OPTIONS

EXPERIMENTAL FEATURES

Experimental features may change or disappear in a future ARCHICAD release. Please try, but don't get too attached.

Enable Linked Tabs



Use the Tab context menu to link Live Model View Tabs together. Linked Tabs keep their View Settings synchronized.

Enable IFC Structural Analysis Model Import-Export



Export or import structural analytical models using IFC Structural Analysis Model file format.

Enable Python Palette

Use this palette to access the Python API directly from ARCHICAD and run your scripts.

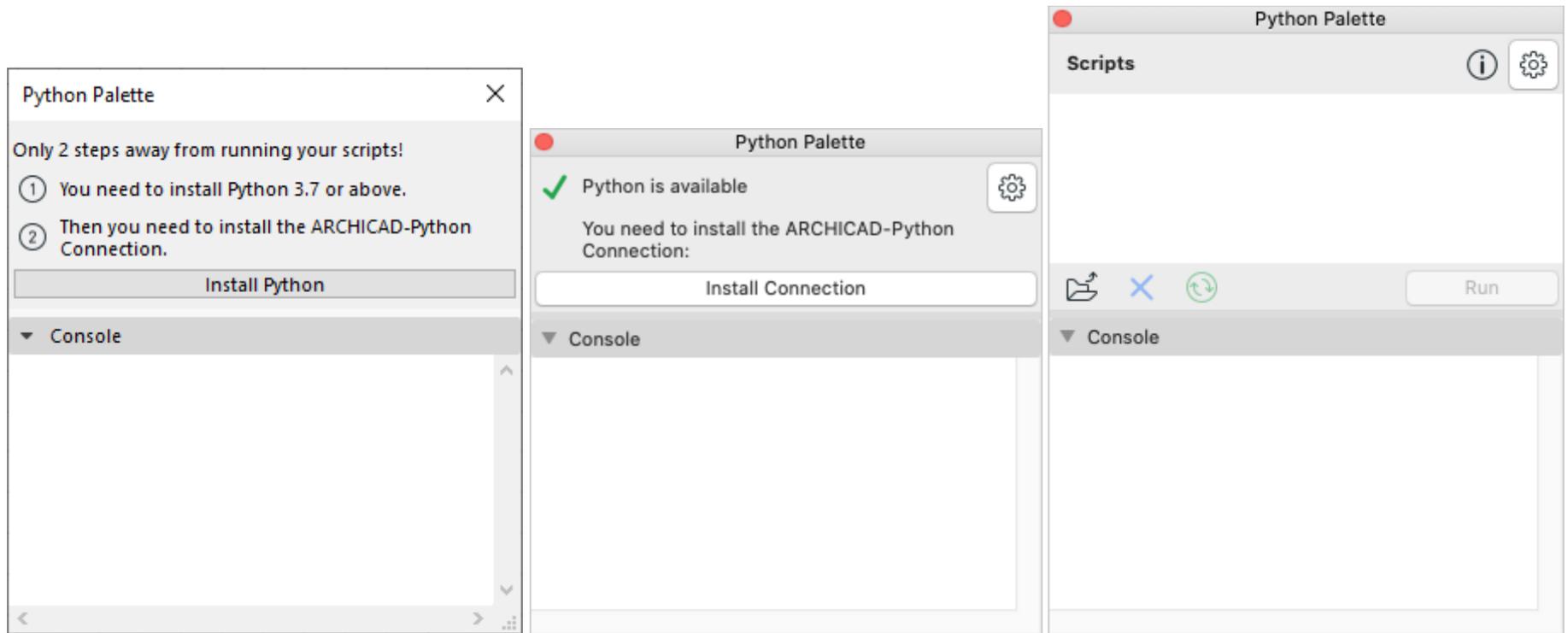
Enable System Appearance



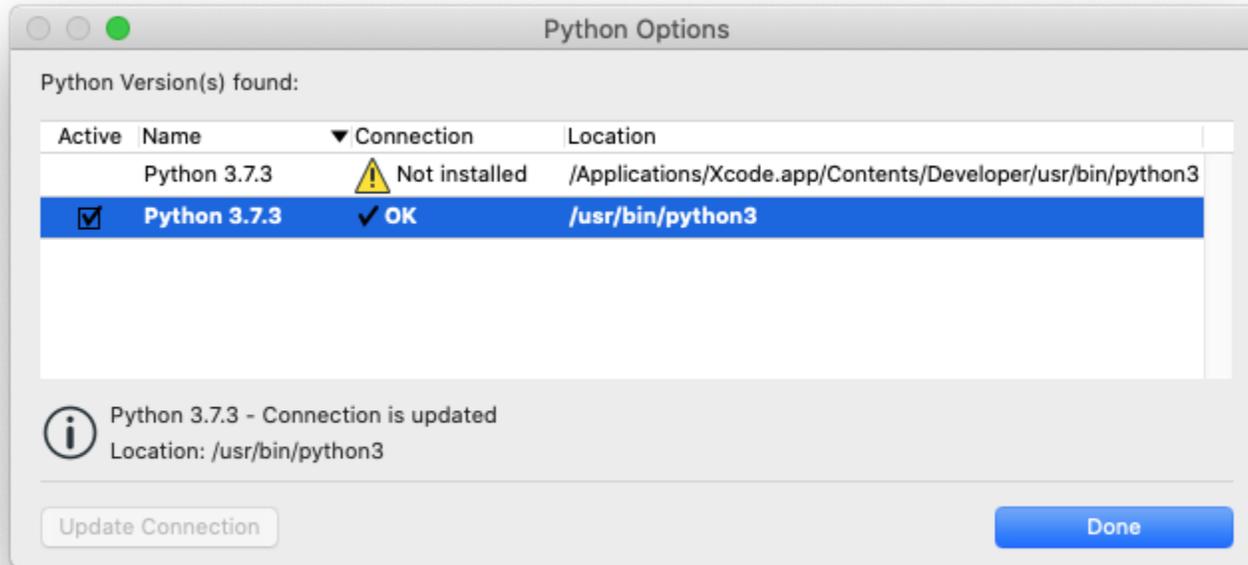
Dark or light? It's up to you. Try this out on your next night shift, but beware the creatures of the night...

Cancel OK

The Python Palette warns you if something is missing from your computer. If Python is not installed, then the Install Python button navigates you to the official webpage of python where you can download the latest version of Python. We recommend you installing the latest version of Python with default options (which contains pip and tkinter support). The Install Connection button automatically installs the missing package in case the Python is installed but the ARCHICAD-Python Connection package is missing.



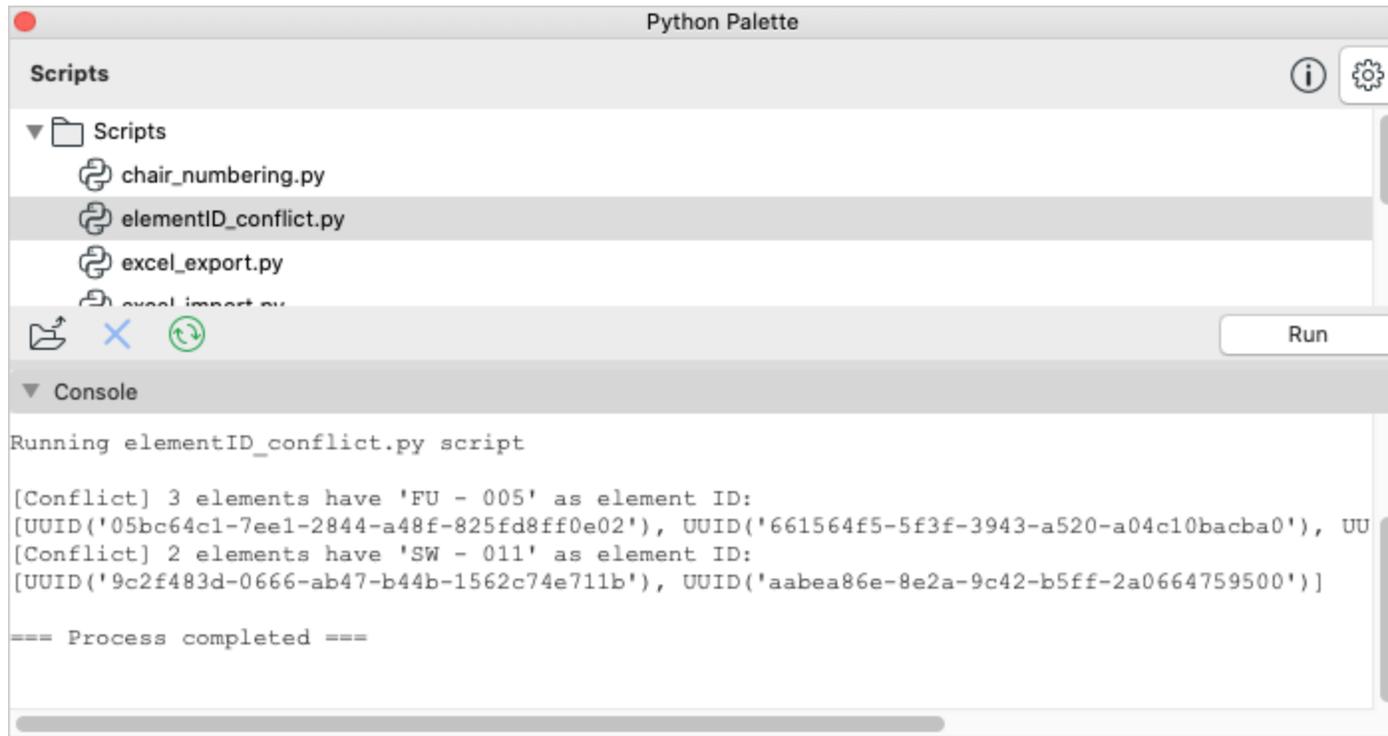
The palette automatically detects the installed Python versions. Click on the Options button in the upper right corner of the palette to list the found Python versions. If you have multiple Python versions installed, then you can select which one to be used. Here you can update the connection if it's not up to date.



How to run Python scripts

You can download a bunch of scripts from our webpage at the downloads section.

For beginners the Python Palette helps to run Python scripts. Simply browse a folder and the palette will list the runnable scripts inside. By double clicking a script in the list or pushing Run button the selected script will be executed. You can check the output of the script at the Console field of the Python Palette.



[How to revert changes made by the executed script](#)

All undoable modifications made by a Python script execution can be undone in one undo step. For example, if the script modified property values of multiple elements, then only one undo step will be available which will undo all property values to the original state.

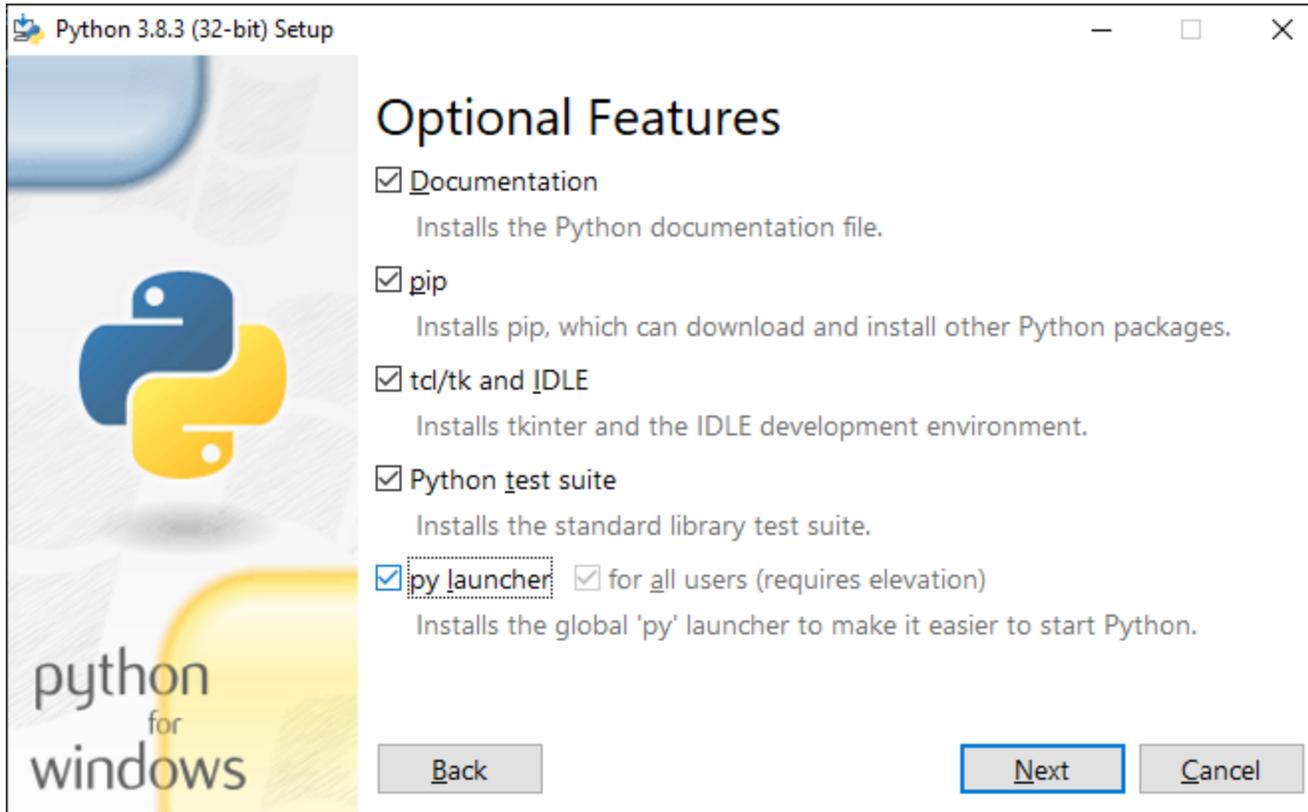
Note, that if the script made changes which are not undoable in ARCHICAD (for example moving or renaming items on View Map of the Navigator), then those changes won't be able to undo.

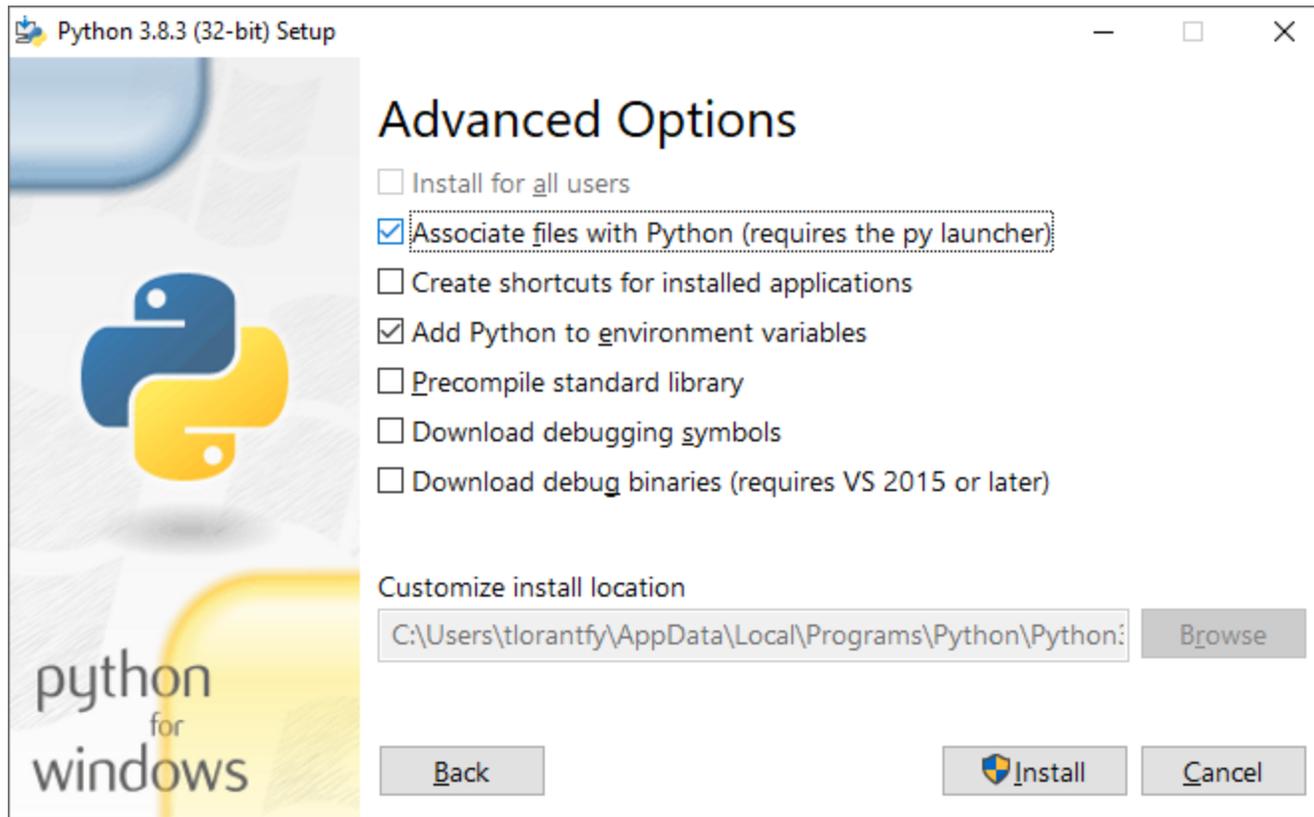
[Tips for advanced users](#)

We recommend you install py launcher, add Python to the PATH environment variable and associate script files with Python. Find these options in the Optional Features and Advanced Options section of the Python installer (see images below). With these options running a python script become easier:

Open a File Explorer on Windows or a Finder on macOS platform and simply double click to any python script file. The script will be executed automatically. After double clicking a python window will pop up and automatically close when the script finished running. In this case the output messages of the script will be lost, but of course the modification made by the script in your currently opened ARCHICAD project will preserve.

Open a Command Prompt on Windows or a Terminal on macOS platform, drag-and-drop the python script file into it and push Enter button. This way the output message of the script will be written into the opened Command Prompt or Terminal window and it won't close after the execution.





How to write a new Python script

This short tutorial demonstrates how to write your own first Python script. Please note, that this guide is not intended to teach the Python language, there are plenty of online tutorials available.

Open any text editor (or Python IDE) and save a text file with .py extension and the following content:

```
from archicad import ACConnection
conn = ACConnection.connect()

elements = conn.commands.GetAllElements()

for element in elements:
    print(element.elementId.guid)
```

To use the ARCHICAD-Python Connection, import ACConnection from the archicad Python package. The first two lines establish the connection to a running ARCHICAD instance.

You can reach the collection of available commands using the commands attribute of the ACConnection object. This script uses the GetAllElements command at the third line, which returns all elements in the current plan from ARCHICAD. With a for loop the items in returned list of elements can be iterated and the contained GUID identifiers are printed.

Browse the list of the available commands at the documentation of ARCHICAD JSON Interface:

<https://archicadapi.graphisoft.com/JSONInterfaceDocumentation/#Introduction>

See the reference manual of archicad python package for type descriptions and further details:

<https://archicadapi.graphisoft.com/archicadPythonPackage/archicad.html>

Technical Details for Professionals

The professional Python developers don't need the palette to be able to run scripts, because Python scripts can be run outside from ARCHICAD too. Feel free to run your scripts from your favorite IDE (Integrated Development Environment) to speed up the development process.

ARCHICAD-Python Connection is a Python binding for the ARCHICAD JSON Interface. It's a Python package available at the PyPI (Python Package Index):

<https://pypi.org/project/archicad>

The communication between ARCHICAD and Python happens via HTTP using JSON messages. JSON is a language-independent data format, so any programming language can be used to send commands to ARCHICAD. This Python package helps to establish the connection and hides the JSON communication layer.

Please note, that ARCHICAD-Python Connection itself is not an experimental feature, it is embedded and always switched on in ARCHICAD. Only the interactive palette which helps running python scripts is part of the experimental feature. So, if you would like to run scripts without using the palette, then you don't have to switch on the Python Palette experimental feature, it's optional for using ARCHICAD-Python Connection.

The steps of installation process without using Python palette:

1. Install Python downloaded from the official Python webpage: <https://www.python.org/downloads>
Make sure to install pip and tkinter support (recommend using the default installation options).

2. Install archicad pip package.

To do that open a Command Prompt on Windows or a Terminal on macOS platform and execute the following two commands, please use the path of your installed Python executable:

```
cd <path to the installed python>  
python -m pip install archicad
```

(If the path to the installed Python executable is added to the PATH environment variable, then the first command can be omitted.)