

VICON Tracker Python API



VICON Tracker Python Api User Guide

[Home](#) » [VICON](#) » VICON Tracker Python Api User Guide 

Contents

- [1 VICON Tracker Python API](#)
- [2 Product Usage Instructions](#)
- [3 About this guide](#)
- [4 Install the Tracker API](#)
- [5 Connect to the terminal server](#)
- [6 Example scripts](#)
- [7 Documents / Resources](#)
 - [7.1 References](#)
- [8 Related Posts](#)

VICON

VICON Tracker Python API



Specifications

- **Product Name:** Vicon Tracker Python API
- **Compatibility:** Tracker 4.0
- **Supported Python Versions:** 2.7 and Python 3

Product Usage Instructions

Install the Tracker API

To use the Tracker API with Python, follow these steps:

1. Check the Python version to ensure compatibility.
2. Install Python by downloading it from the official website and selecting the appropriate version.
3. Locate and install the Tracker Python module from the specified folder.

Check Python Version

1. Open a command prompt.
2. Type 'py' and press Enter.
3. If Python is not installed, refer to the installation instructions.

Install Python

1. Go to [Python's official website](https://www.python.org/).
2. Download and install Python, ensuring to add python.exe to PATH during installation.

Install the Tracker Python Module:

1. Locate the installation files in the specified folder.
2. Choose the installation method based on your setup.

Install the Python Module by Running the Batch File:

1. Navigate to the Python install folder: C: Program FilesViconTracker4.xSDKPython
2. Double-click on 'install_tracker_api.bat' to initiate the installation process.

Frequently Asked Questions (FAQ):

Q: What can I automate using the Tracker API?

- **A:** The Tracker API allows you to automate common functions such as loading, playing, exporting data, activating/deactivating objects, and triggering workflow parts.

Q: Which Python versions are supported by the Tracker API?

- **A:** The Tracker API supports Python versions 2.7 and Python

About this guide

- The Tracker API lets you control certain features of Tracker via a Python API.
- The API enables you to automate some common functions of Tracker, such as loading, playing, and exporting data, activating or deactivating different objects, or triggering parts of the workflow.
- This document enables you to get started with the Tracker API.

Install the Tracker API

- To use the Tracker API with Python, you must make sure that you have both installed.
- The Tracker API provides support for Python 2.7 and Python 3. Vicon recommends that you use the latest full release of Python 3 unless your project requires you to use a specific version of Python.

These procedures guide you through the installation process:

- Check the Python version on
- Installing Python on
- Installing the Tracker Python module on
- Check that the Python module is installed correctly on

Check Python version

- If you are not sure if you have Python installed or which version of Python you are using, you can open a command prompt and run the py command.

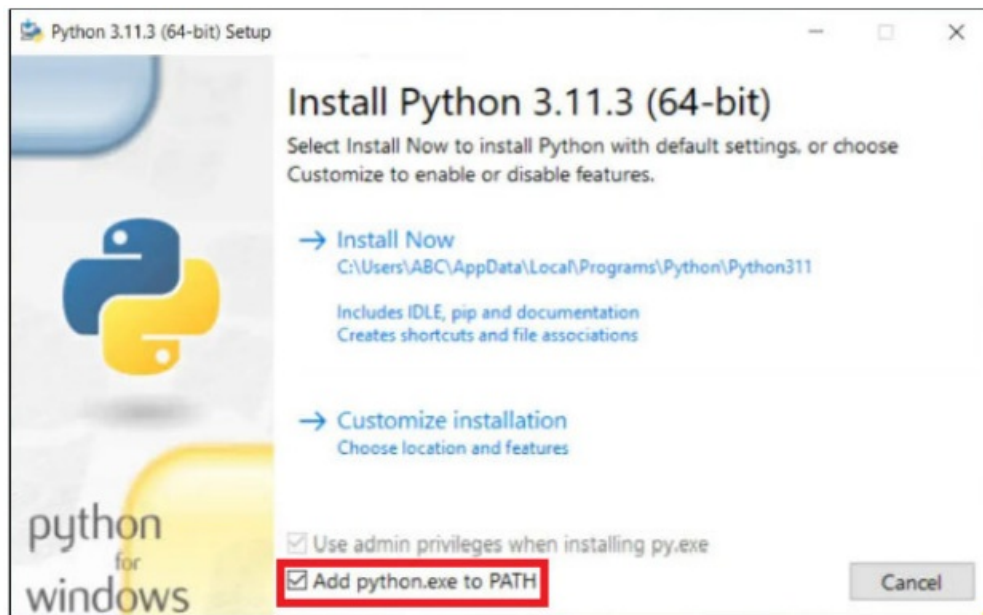
For example:

```
c:\>py
Python 3.11.3 (tags/v3.11.3:f3909b8, Apr 4 2023, 23:49:59) [MSC v.1934 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

If you do not have Python installed, see Install Python.

Install Python To install Python 2 or 3:

1. Go to <https://www.python.org/downloads/>
2. Locate the required version and install Python, ensuring that Add python.exe to PATH is selected:

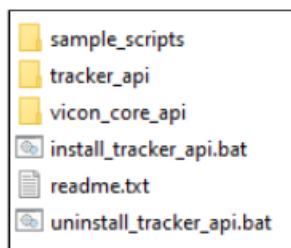


In the above image, ABC is replaced with your username for the installation folder.

Install the Tracker Python module To install the Tracker Python module:

1. Locate the installation files. If you installed Tracker in the default location, they are found in this folder:
C:\Program Files\Vicon\Tracker4.x\SDK\Python

- **These files are displayed:**



2. Install the Tracker Python module in either of the following ways, depending on your particular installation:
 - The simplest way is to run the batch file (install_tracker_api.bat) that is included in the Tracker installation (as shown in the above image).
 - **This usually works well if:**
 - Python was installed to the PATH variable; or

- Multiple versions of Python are installed, but you want to install the API to the latest version that you installed; or
- Only a single version of Python is installed.
- If any of these conditions apply, see Install the python module by running the batch file on.
- In all other cases, install the Python module by using pip. This usually applies if:
- Multiple versions of Python are installed, but you want to install to a specific version; or
- Multiple different versions of Python are installed and you want to install to all of them (in this case, you must install the module for each version); or
- Only a single version of Python is installed, but you didn't install to PATH.
- If any of these conditions apply, see Install the Python module by running pip on.

Install the Python module by running the batch file To do this:

1. **Navigate to the Python install folder:** C:\Program Files\Vicon\Tracker4.x\SDK\Python
2. Double-click install_tracker_api.bat.
 - The installation process initializes automatically.

Install the Python module by running the pip

1. Navigate to the Scripts folder for the Python that you want to use:
2. For Python 3, the default installation folder is: C:\Users\
 <username>\AppData\Local\Programs\Python\Python<version>\Scripts
 - For Python 2.7, the default installation folder is: C:\Python27\Scripts
3. Open a command window or PowerShell in that folder.
4. **Run the following command to install the Vicon Core API:** C:\Users\
 <username>\AppData\Local\Programs\Python\Python311\Scripts> .\pip.exe install "C:\Program
 Files\Vicon\Tracker 4.0\SDK\Python\vicon_core_api"
 - **Run the following command to install the Tracker API** C:\Users\
 <username>\AppData\Local\Programs\Python\Python311\Scripts> .\pip.exe install "C:\Program
 Files\Vicon\Tracker 4.0\SDK\Python\tracker_api"

Note The above examples use a Python 3.11 installation with Tracker 4.0. Your path and commands may differ slightly.

Check that the Python module is installed correctly

- Check that the following modules have been installed.
- **vicon_core_api:** This is the core remote control API and includes a client for communication with the terminal server.
- **tracker_api:** Services API for accessing Tracker-specific application functionality.
- To test that the Tracker Python module is installed correctly, try importing one of the modules in Python: >>>
 import vicon_core_api

If the above process fails to recognize the module, try the following:

- Check the site-packages folder in the Python installation for the tracker_api or vicon_core_api folder. For Python 3.11, the location of the default installation folder is:
 - C:\Users\<username>\AppData\Local\Programs\Python\Python311\Lib\site-packages
- Check your system environment variables and ensure that the scripts folder for the Python installation you want to use is the highest in the list. For Python 3.11, the default location of the installation folder is:
 - C:\Users\<username>\AppData\Local\Programs\Python\Python311\Scripts
- If either of the modules' folders is missing, and you have verified the path, re-run through the installation process described in Installing the Tracker Python module on.

Connect to the terminal server

- To connect to the terminal server, first import the Vicon Core API module: `>>> import vicon_core_api`
 - `>>> from vicon_core_api import`
- Next, create a client. This automatically tries to connect to the specific host address on the default port (52800)


```
>>> c = Client('localhost')
```
- **Check that the client successfully connected to the server:** `>>> print(c.connected)` True
- If the response is False, ensure that you have an instance of Tracker running at the specified host address and your firewall is not blocking traffic on port 52800, before creating a new client.
- When you have successfully connected, you can access the services provided by the Tracker terminal server.
- **This example uses basic object services:** `>>> import tracker_api >>> from tracker_api import BasicObjectServices >>> services = BasicObjectServices(c)`
- When it is connected, you can call methods on the Tracker instance.
 - For example, to get a list of objects in the Tracking panel, use: `>>> result, object_list = services.basic_object_list() >>> print(result)`
 - **Ok:** the function succeeded
 - `>>> print(object_list)`
 - `['Object1', 'Object2'...]`
- All API calls return a result code, which is described in `vicon_core_api/result.py`.
- One possible failure code is `Result.RPCNotConnected`, which is received if the connection to the terminal server is lost.
- For example: `>>> result, object_list = services.basic_object_list() vicon_core_api.client.RPCError: RPCNotConnected: The connection to the remote function or callback is not open`
- To display a list of all available functions and documentation: `>>> help(tracker_api)`

Example scripts

- **You can find example scripts showing the use of common API functions at** C:\Program Files\Vicon\Tracker 4.0\SDK\Python\sample_scripts
- All the scripts have documentation and take a `-help` option that gives details of the relevant arguments.
- To run a sample script, open a command window or power shell in the scripts folder above. You can do this in one of two ways:
- **Open the command prompt and change your directory to the scripts folder:** `c:\> cd C:\Program Files\Vicon\Tracker`
 - 4.0\SDK\Python\sample_scripts

- Hold SHIFT+right-click in the scripts folder and select Open command window here or Open Powershell window here.
- From here you can run the example script of your choice.
- The following examples use the command window.

camera_calibration_wave.py

- This script demonstrates how to use API functions to control the calibration process of starting and stopping the wand wave.
 - C:\Program Files\Vicon\Tracker 4.0\SDK\Python\sample_scripts> py camera_calibration_wave.py
- If successful, calibration controls are displayed

```
Calibrating cameras...
Controls:  s - Start wand wave
          p - Stop wand wave
          c - Cancel wand wave
          x - Exit
-----
```

capture_control.py

- This script shows how to capture live data C:\Program Files\Vicon\Tracker 4.0\SDK\Python\sample_scripts> py capture_control.py

```
Capture name: 'API_Capture'
Capture controls: s - Start capture
                  p - Stop capture
                  c - Cancel capture
                  x - Exit
-----
```

- The Capture name is listed before the controls. To change the capture name, use capture_services and SetCaptureName.
- For questions on using the Tracker API, contact Vicon Support1.
- **1 mailto:support@vicon.com**
- Vicon Tracker Python API Quick Start Guide 31 May 2023, Revision 1
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Documents / Resources



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Tracker Python Api, Tracker, Python Api, Api

References

-  [About VESA - VESA - Interface Standards for The Display Industry](#)
-  [Vicon | Award Winning Motion Capture Systems](#)
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