

6.2.2 Get Started with OpenWeatherMap API

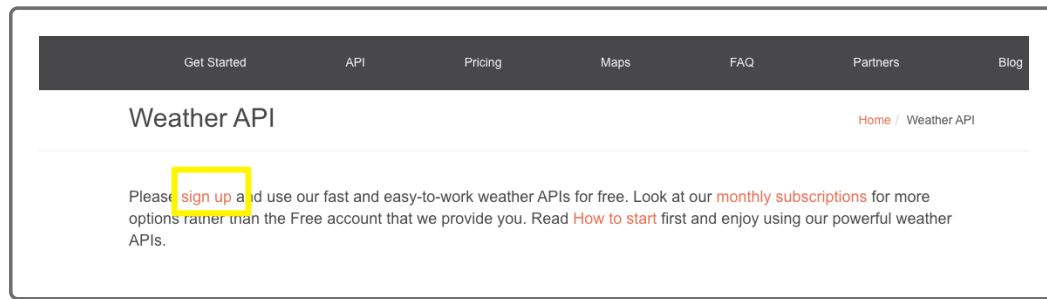
Awesome. You get it—mostly. We'll use the API setup to go out and get information when our clients ask us for it. So, now it's time to download the Python Requests Library and register for an API key.

Register for an API key, then review a short example of how to retrieve weather data from an API call.

Register for an API Key

Follow these steps to register for an OpenweatherMap API key:

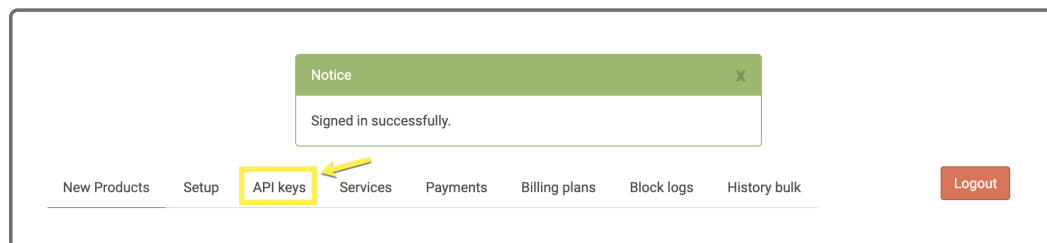
1. Navigate to the [OpenWeatherMap website](https://openweathermap.org/api) (<https://openweathermap.org/api>).
2. Click "sign up."



3. Complete the form Create New Account.

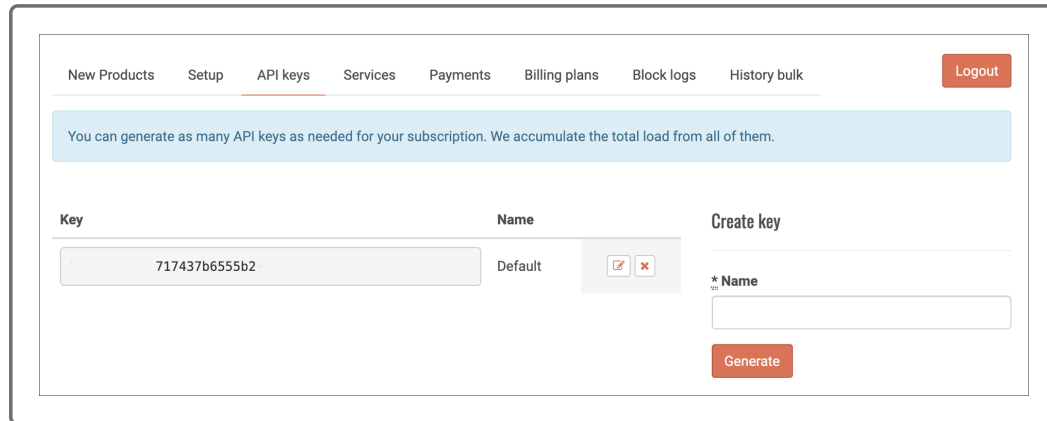
The screenshot shows the 'Create New Account' form. The navigation bar at the top includes links for 'Weather', 'Maps', 'API', 'Price', 'Partners', and 'Stations'. The main heading is 'Create New Account'. Below the heading, there are four input fields: 'Username', 'Enter email', 'Password', and 'Repeat Password'.

4. Once you have a new account, sign in and click on "API keys."



5. The site will likely generate an API key automatically. If not, under "Create key," type a name in the available cell and click "Generate" to

create an API key.



The screenshot shows the 'API keys' section of the OpenWeatherMap dashboard. At the top, there's a navigation bar with links: New Products, Setup, API keys (active), Services, Payments, Billing plans, Block logs, History bulk, and a Logout button. Below the navigation bar, a light blue box contains the text: 'You can generate as many API keys as needed for your subscription. We accumulate the total load from all of them.' The main area is divided into two columns. The left column has a 'Key' field containing '717437b6555b2' and a 'Name' field containing 'Default'. The right column has a 'Create key' section with a '* Name' label and an empty text input field. Below the input field is a red 'Generate' button.

6. Save your API key to a Python file, which we'll add as a dependency to your `WeatherPy.ipynb` file.

- Navigate to your `World_Weather_Analysis` folder and launch Jupyter Notebook.
- Click the New button and select Text File.
- Rename the text file `config.py`.
- On the first line, type `weather_api_key=""` and add your API key between the double quotation marks.
- Save and close the `config.py` file.

NOTE

You can also create the `config.py` file using VS Code.

IMPORTANT

Don't share your API key with anyone, and do not add the `config.py` file to your GitHub repository—someone might copy and use it, and you could incur charges on your credit card.

7. Click on "Services" for details on your free subscription and its limitations.

New Products

Setup

API keys

Services

Payments

Billing plans

Block logs

History bulk

Logout

Name	Description	Price plan	Limits	Details
Weather	Current weather and forecast	Free plan	Hourly forecast: unavailable Daily forecast: unavailable Calls per minute: 60 3 hour forecast: 5 days	view

8. Click on "View" to see more options on your plan, and then click on "Current weather API" to see how to get the current weather from a city.

Current weather and forecasts collection	
	Free
Price per month Price is fixed, no other hidden costs (VAT is not included)	Free
Subscribe	Get API key and Start
Calls per minute (no more than)	60
Current weather API ←	✓
4 days/hourly forecast API ^{NEW}	-
5 days/3 hour forecast API	✓

We'll refer to this documentation when we make an API call to the server.

The JavaScript Object Notation Format for API Data

The API has reached the website or server, its endpoint, and now we can retrieve data from the website. When we retrieve data from a website, we have to make a "request," which returns data in a text format, not in a tab- or comma-separated file.

One format we can use to parse data is **JavaScript Object Notation (JSON)**. The JSON format is also referred to as an "object" or "JSON object." The data inside a JSON object opens and closes with curly braces, much like a Python dictionary. Inside the JSON object is a collection of dictionaries and arrays.

Below is an example of what weather data looks like in the JSON format when we request it from the OpenWeatherMap website. There are curly braces that wrap the data, and inside the curly braces are dictionaries and arrays.

```
{
  - coord: {
    lon: -0.13,
    lat: 51.51
  },
  - weather: [
    - {
      id: 300,
      main: "Drizzle",
      description: "light intensity drizzle",
      icon: "09d"
    }
  ],
  base: "stations",
  - main: {
    temp: 280.32,
    pressure: 1012,
    humidity: 81,
    temp_min: 279.15,
    temp_max: 281.15
  },
  visibility: 10000,
  - wind: {
    speed: 4.1,
    deg: 80
  },
  - clouds: {
    all: 90
  },
  dt: 1485789600,
  - sys: {
    type: 1,
    id: 5091,
    message: 0.0103,
    country: "GB",
    sunrise: 1485762037,
    sunset: 1485794875
  },
  id: 2643743,
  name: "London",
  cod: 200
}
```

The Python Requests Library

To request JSON data over the internet, we use the Requests Library in Python. The Anaconda installation comes with version 2.22 of the Requests Library.

Confirm you have the latest version of the Requests Library using the command line, or in the Jupyter Notebook environment. Follow the instructions for your operating system.

Check out the macOS instructions below, or jump to the [Windows instructions](#).

macOS

1. Launch the command line and activate your PythonData environment.
2. After the prompt, type `$ python` to launch Python.
3. After the Python prompt, `>>>`, type `import requests` and press Enter.
4. On the next line, type `requests.__version__` and press Enter.
5. The output should be version `2.22.0` or later.

Alternatively, you can check the version of request in Jupyter Notebook.

In Jupyter Notebook, create a new file if one hasn't been created. Add the following code to the new cell and run it.

```
import requests
requests.__version__
```

The output should be `2.22.0` or later.

If you have an older version, please upgrade it in your PythonData environment by typing `conda install -c conda-forge requests` at the command prompt and press Enter.

Windows

1. Launch the Anaconda Prompt for your PythonData environment.
2. After the Python prompt, `>`, type `python` to launch Python.
3. At the Python prompt, `>>>`, type `import requests` and press Enter.
4. On the next line type `requests.__version__` and press Enter.
5. The output should be version `2.22.0` or later.

Alternatively, you can check the version of request in Jupyter Notebook.

In Jupyter Notebook, create a new file if one hasn't been created. Add the following code to the new cell and run it.

```
import requests
requests.__version__
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The output should be `2.22.0` or later.

If you have an older version, please upgrade it in your PythonData environment by typing `conda install -c conda-forge requests` at the command prompt and press Enter.

NOTE

For more information about the Requests Library, see the following documentation:

Requests: HTTP for Humans

(<https://requests.kennethreitz.org/en/master/>)

Quickstart

(<https://requests.kennethreitz.org/en/master/user/quickstart/#make-a-request>)

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