



# DOME 4.0

[www.dome40.eu](http://www.dome40.eu)

# Connector Hack

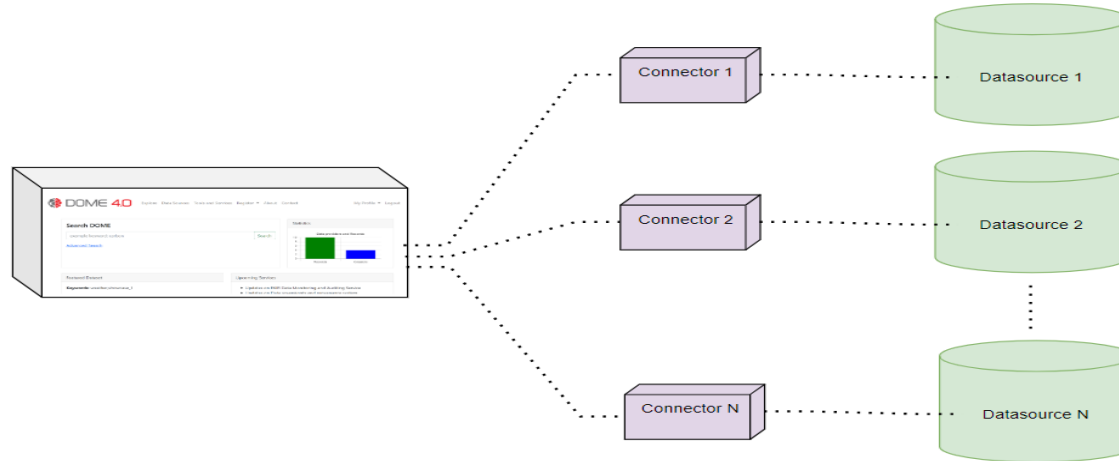
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# Connector

*"A connector is like a bridge that helps connect an external data repository to the DOME 4.0 platform, making them work together seamlessly. It allows the DOME4.0 platform to access and use data from the data repository directly, making it easy for the platform to understand and use the data."*



# Prerequisites

-  Docker
-  Python
-  Git
-  Cookiecutter : `pip install cookiecutter`

 API Client /tester: like postman or Talend API Tester - You can



chrome web store

[Home](#) > [Extensions](#) > Talend API Tester - Free Edition



Talend API Tester - Free Edition

 Featured

★★★★★ 4,205 ⓘ | [Developer Tools](#) | 600,000+ users



chrome web store

[Home](#) > [Apps](#) > Postman




Postman

 [postman.com](#)

★★★★★ 8,834 ⓘ | [Extensions](#) | 1,000,000+ users

# Example Data Provider: ZENODO




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## About Zenodo

**Passionate about Open Science!**

Built and developed by researchers, to ensure that everyone can join in Open Science.

The OpenAIRE project, in the vanguard of the open access and open data movements in Europe was commissioned by the EC to support their nascent Open Data policy by providing a catch-all repository for EC funded research. CERN, an OpenAIRE partner and pioneer in open source, open access and open data, provided this capability and Zenodo was launched in May 2013.

In support of its research programme CERN has developed tools for Big Data management and extended Digital Library capabilities for Open Data. Through Zenodo these Big Science tools could be effectively shared with the long-tail of research.

**Open Science knows no borders!**

The need for a catch-all is not restricted to one funder, or one nation, so the concept caught on, and Zenodo rapidly started welcoming research from all over the world, and from every discipline.

The digital revolution has necessitated a retooling of the scholarly processes to handle data and software, but this is proceeding at varying speeds across different communities, disciplines, and nations. To ensure no one is left behind through lack of access to the necessary tools and resources, Zenodo makes the sharing, curation and publication of data and software a reality for all researchers.

**The name**

Zenodo is derived from Zenodotus, the first librarian of the Ancient Library of Alexandria and father of the first recorded use of metadata, a landmark in library history.

**Open in every sense**

Zenodo code is itself open source, and is built on the foundation of the Invenio digital library which is also open source. The work-in-progress, open issues, and roadmap are shared openly in GitHub, and contributions to any aspect are welcomed from anyone.

All meta data is openly available under CC0 licence, and all open content is openly accessible through open APIs.

Open to all suggestions for new features, via GitHub, and especially open to all contributions of code via pull requests!



## OpenAIRE

**Type of organisation:**  
Service provider for research

**Website:**  
<https://www.openaire.eu>



**Country:**  
 Greece

**Organisation:**  
OpenAIRE



**Status:**  
Member

OpenAIRE is a key EU e-Infrastructure whose mission is to establish, maintain and operate an open and sustainable scholarly communication infrastructure and provide the necessary services, resources and network for supporting a common European e-science environment. It supports a set of services to facilitate the road to Open Science.

## Reference connector- Using **Cookie-Cutter Template**

-  a pre-designed and standardized blueprint for creating a specific type of software component
-  don't have to start from scratch; you can use these templates as a foundation

# Step: 1

-  Connector Initialization using reference connector template
-  Go to <https://github.com/DOME-4-0/reference-connector> and follow the steps in the readme to generate a connector project.

```
cookiecutter gh:DOME-4-0/reference-connector
```

Input key	Description	Default value
project_name	A human-readable name of the project.	My DOME 4.0 connector
project_slug	The official package name to be used when installing the package via a package manager (e.g., <code>pip</code> or <code>conda</code> ). This will be the root directory name and should also be the repository name on an online git repository (like GitHub or GitLab).  <b>Important:</b> A project slug value may not include white space.	my-dome40-connector
package_name	The Python importable root module. This will be the root module repository name, under which the source code will be placed.  <b>Important:</b> A package name value may not include white space. A package name value may only be made up of the character set: a-z, A-Z, <code>_</code> , 0-9, and may not start with a number.	my_dome40_connector

author	The author of the package. This can also be your organization name.	Firstname Lastname
organization	Your organization.	DOME 4.0
email	The author's email address.	firstname.lastname@DOME.org
version	Start version.  <b>Important:</b> Must follow semantic versioning. For more information see <a href="https://semver.org">semver.org</a> .	0.0.1
year	The current year.	2023
use_git	Whether or not the generated repository should be initialized using <code>git</code> .	True
username	A public source code platform username, e.g., for <a href="#">GitHub</a> , <a href="#">GitLab</a> , <a href="#">BitBucket</a>	GitHub_GitLab_BitBucket_etc_Username
src_url	The intended or existing URL to the repository's source code.	<a href="https://github.com/FirstnameLastname/my-dome40-connector">https://github.com/FirstnameLastname/my-dome40-connector</a>

# Step: 2

- Open the terminal in your new initialized connector folder and Build the connector template

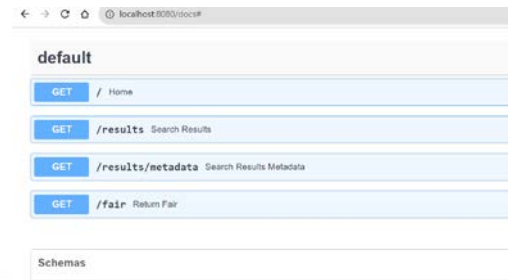
```
docker build -t zenodo .
```

- Run the connector template

```
docker run --name zenodo -p 8080:8080 -d zenodo
```

- Test the connector template

<http://localhost:8080/> <http://localhost:8080/docs>



# Step 3

 Create a zenodo token

Login /signup: <https://zenodo.org/>

To generate API key:

<https://zenodo.org/account/settings/applications/tokens/new/>

 Step 4: Test Zenodo API and analyse the data ! – either using api tester or the below python code

```
import requests
res = requests.get('https://zenodo.org/api/records', timeout=100, \
                  params={'q': 'carbon', 'access_right': 'open', 'type': 'dataset', \
                          'access_token': "efp5WNKknD2hmI6hqL100yIFEdt7r0bXHYEBY3hohiJx3Jkh1w0IFCaok0p4"}).json()

print(res)
```

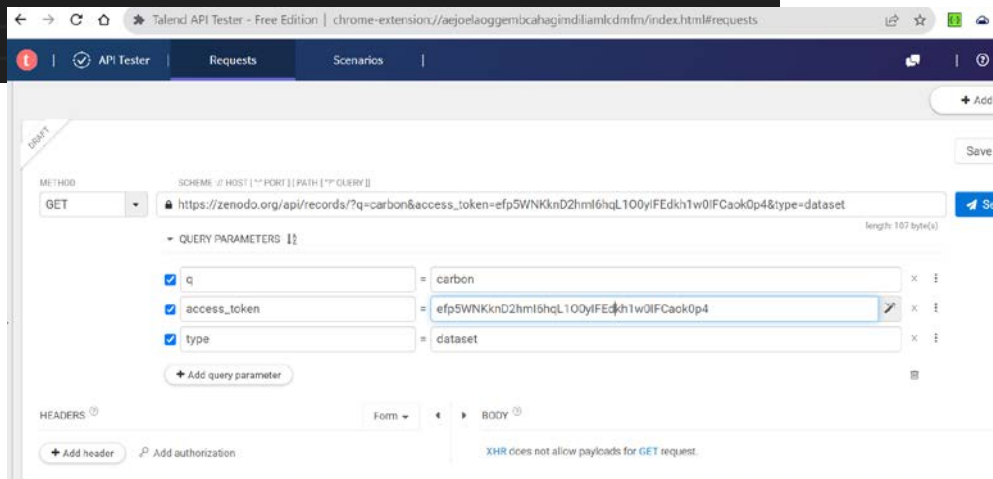


# Step 4

🔗 Step 4: Test Zenodo API and **analyse** the data ! – either using api tester or the below python code

```
import requests
res = requests.get('https://zenodo.org/api/records', timeout=100, \
    params={'q': 'carbon', 'access_right': 'open', 'type': 'dataset', \
    'access_token': "efp5WNKknD2hmI6hqL100yIFEdt7r0bXHYEBY3hohiJx3Jkh1w0IFCaok0p4"}).json()

print(res)
```



The screenshot shows the Talend API Tester interface. The URL is set to `https://zenodo.org/api/records/?q=carbon&access_token=efp5WNKknD2hmI6hqL100yIFEdt7r0bXHYEBY3hohiJx3Jkh1w0IFCaok0p4&type=dataset`. The query parameters are configured as follows:

Parameter	Value
q	carbon
access_token	efp5WNKknD2hmI6hqL100yIFEdt7r0bXHYEBY3hohiJx3Jkh1w0IFCaok0p4
type	dataset

The interface also shows tabs for HEADERS, BODY, and a note at the bottom: "XHR does not allow payloads for GET request."

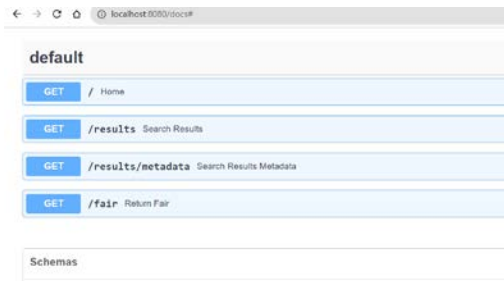
## Step 5: Modify the connector template

Example: <https://github.com/DOME-4-0/zenodo-connector-demo/blob/main/app/routers/wrapper.py>

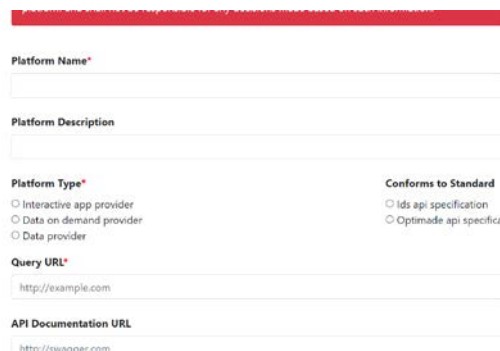
## Step 6: Build and run in docker using steps

- docker stop zenodo
- docker rm zenodo
- docker build -t zenodo . --no-cache
- docker run --name zenodo -p 8080:8080 -d zenodo

## Step 7: Test the connector locally at <http://localhost:8080/docs>




- ❁ Step 8: Deploy the connector – such that its open and available for DOME 4.0 platform to connect
- ❁ Step 9: Register Zenodo on the DOME 4.0 platform at :  
<https://dome.the-marketplace.eu/register/register-provider>



The screenshot shows a registration form with the following fields and options:

- Platform Name\***: A text input field.
- Platform Description**: A text input field.
- Platform Type\***: A group of radio buttons with the following options:
  - ☐ Interactive app provider
  - ☐ Data on demand provider
  - ☐ Data provider
- Conforms to Standard**: A group of radio buttons with the following options:
  - ☐ Ids api specification
  - ☐ Optimade api specific
- Query URL\***: A text input field with the placeholder text "http://example.com".
- API Documentation URL**: A text input field with the placeholder text "https://zenodo.com".

# Step 10

 Search and view Zenodo data on DOME 4.0 : <https://dome.the-marketplace.eu/results>

## Search Results

Keywords: phylogenetic effect  
Creator: zenodo.org

Keywords: carbon  
Creator: zenodo.org

Keywords: agricultural soil  
Creator: zenodo.org

**Search**

carbon

**Filter** 1

**Topic**

- ☐ Cartography
- ☐ Engineering and technology
- ☐ Medical and health sciences
- ☐ Natural sciences
- ☐ Meteorology
- ☐ Sea vessels
- ☐ Navigation system
- ☐ Topography

### Zenodo

A general purpose repository to share open and FAIR research outputs.

#### Metadata

```
{
  "Dataset": [
    "https://zenodo.org/api/files/9bad5933-4799-48bf-a3a6-d0671fb6c510/Hebert_et_al._2021.pdf"
  ],
  "IssueDate": "2021-03-23",
  "License": "CC0-1.0",
  "Title": "Data from: A literature synthesis resolves litter intrinsic constraints on forest carbon sequestration",
  "URL": "https://zenodo.org/api/records/4632414",
  "dataCreator": "zenodo.org",
  "dataPublisher": "University of Central Arkansas",
  "keyword": "carbon"
}
```

#### Platform Type

DATA\_PROVIDER

#### Free Platform

true

#### Domain

ENGINEERING AND TECHNOLOGY  
NATURAL SCIENCES

#### Offers

EXPERIMENTAL DATA  
MATERIAL PROPERTY  
PUBLICATION  
OBSERVATIONAL DATA