



## Der neue OGC API Standard ist da!

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# OGC API – Features – Part 1: Core

**“OGC API standards define modular API building blocks to spatially enable Web APIs in a consistent way.”**

**“OGC API Features provides API building blocks to create, modify and query features on the Web.”**

**“The Core is intended to be a minimal useful API for fine-grained read-access to a spatial dataset where geometries are represented in the coordinate reference system WGS 84 with axis order longitude/latitude.”**



- › **WFS 3 → OGC API**
- › **Öffentliches Repo:**  
**<https://github.com/opengeospatial/ogcapi-features>**
- › **Testbed-14**
- › **OGC API - Features - Part 1: Core**  
**Approval Date: 2019-09-09**



# OGC API – Features (Core)

/ → **landing page**

/conformance → **Conformance declaration**

/collections → **Feature collections**

/collections/{collectionId} → **Feature collection**

/collections/{collectionId}/items → **Features**

/collections/{collectionId}/items/{featureId} →  
**Feature**




# Formate

- › HTML
- › GeoJSON
- › GML SF Level 0
- › GML SF Level 2
- › OpenAPI

**Alle Formate sind optional!**

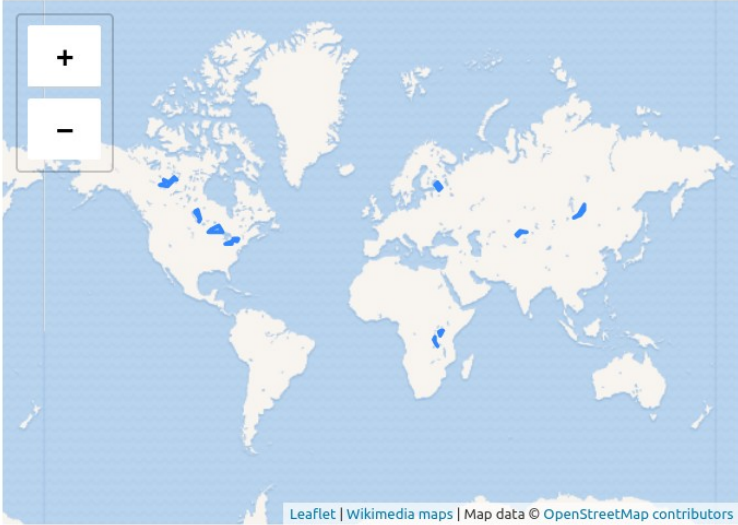
**HTML und GeoJSON sind empfohlen.**



Contact

Home / Collections / Large Lakes / ItemsJSON JSON-LD

## Items



Warning: Higher limits not recommended!

Limit: 10 (default) ▾

Next

id	id	scalerank	name	name_alt
0	0	0	Lake Baikal	<a href="#">https://...</a>
1	1	0	Lake Winnipeg	<a href="#">https://...</a>
2	2	0	Great Slave Lake	<a href="#">https://...</a>
3	3	0	L. Ontario	<a href="#">https://...</a>
4	4	0	L. Erie	<a href="#">https://...</a>
5	5	0	Lake Superior	<a href="#">https://...</a>
6	6	0	Lake Victoria	<a href="#">https://...</a>



# /conformance (JSON)

```
{  
  "conformsTo": [  
    "http://www.opengis.net/spec/ogcapi-features-1/1.0/conf/core",  
    "http://www.opengis.net/spec/ogcapi-features-1/1.0/conf/oas30",  
    "http://www.opengis.net/spec/ogcapi-features-1/1.0/conf/html",  
    "http://www.opengis.net/spec/ogcapi-features-1/1.0/conf/geojson"  
  ]  
}
```



# /collections/lakes (JSON)

```
{
  "id": "lakes",
  "itemType": "feature",
  "title": "Large Lakes",
  "description": "lakes of the world, public domain",
  "keywords": ["lakes"],
  "extent": {
    "spatial": {
      "bbox": [[-180, -90, 180, 90]],
      "crs": "http://www.opengis.net/def/crs/OGC/1.3/CRS84"},
    "temporal": { "interval": [["2011-11-11", ".."]] } },
  "links": [
    {
      "type": "text/html",
      "rel": "canonical",
      "title": "information",
      "href": "http://www.naturalearthdata.com/"
    },
    {
      "type": "application/geo+json",
      "rel": "items",
      "title": "Features as GeoJSON",
      "href": "https://pygeoapi.io/collections/lakes/items.json"
    }
  ],
}
```





# /collections/lakes/items (GeoJSON)

```
{
  "type": "FeatureCollection",
  "features": [{
    "type": "Feature",
    "properties": {
      "id": 0,
      "scalerank": 0,
      "name": "Lake Baikal",
      "name_alt": "https://en.wikipedia.org/wiki/Lake_Baikal",
      "admin": null,
      "featureclass": "Lake"
    },
    "geometry": {
      "type": "Polygon",
      "coordinates": [[
        [106.57998579307912, 52.79998159444554],
        [106.53998823448521, 52.93999888774037],
        [107.0800069519353, 53.18001007751998], ...
      ]],
    },
    "links": [{
      "type": "application/geo+json",
      "rel": "next",
    }],
  }],
}
```



# OpenAPI (HTML)



## pygeoapi Demo instance - running latest stable pygeoapi version 3.0.2

OAS3

<https://demo.pygeoapi.io/stable/openapi>

pygeoapi provides an API to geospatial data

[Terms of service](#)

[pygeoapi Development Team - Website](#)

[Send email to pygeoapi Development Team](#)

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### Servers

<https://demo.pygeoapi.io/stable> - pygeoapi provides an API to geospatial data

**server** pygeoapi provides an API to geospatial data

information: <https://github.com/geopython/pygeoapi>

**GET** / Landing page

**GET** /collections Feature Collections

**GET** /conformance API conformance definition

**GET** /openapi This document

**GET** /processes Processes



# OpenAPI (JSON)

```
{
  "openapi": "3.0.2",
  "info": {
    "title": "pygeoapi Demo instance",
    "description": "pygeoapi provides an API to geospatial data"
  },
  "paths": {
    "/": {
      "get": {
        "description": "Landing page",
        "parameters": [
          {"$ref": "#/components/parameters/f"}
        ],
        "responses": {
          "200": {
            "$ref":
"http://schemas.opengis.net/ogcapi/features/part1/1.0/openapi/ogcapi-features-1.yaml#/components/responses/LandingPage"
          },
          "400": {
            ...
          }
        }
      }
    }
  }
}
```



# Implementationen (Server)

- › **GeoServer**
- › **pygeoapi** <https://pygeoapi.io/>
- › **QGIS Server**
- › **u.v.m.**
  - › <https://github.com/opengeospatial/ogcapi-features/blob/master/implementations.md>

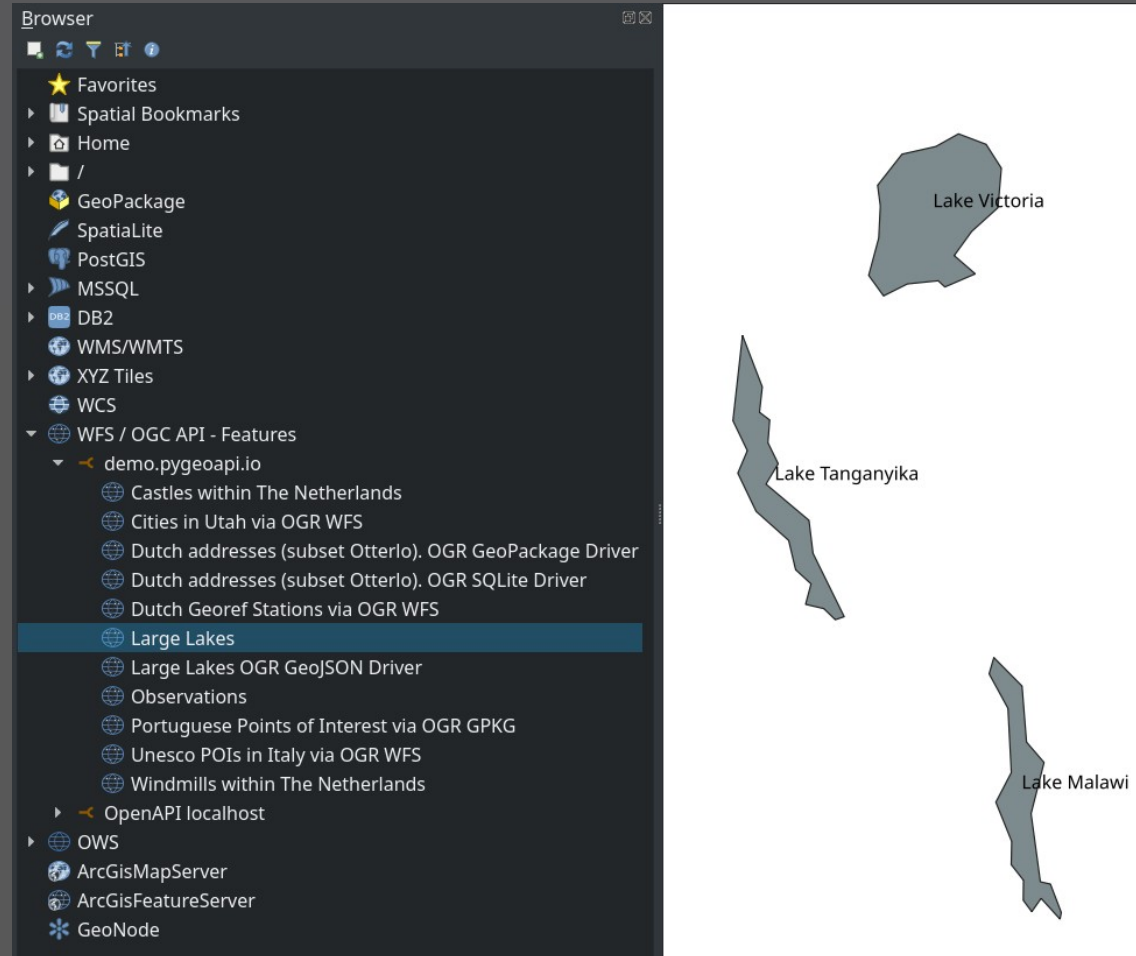


# Implementationen (Client)

➤ GDAL

➤ QGIS

➤ ...





- › CRS Extension
- › COL Extension
- › Simple Transactions
- › Complex Transactions
- › OGC API Coverages
- › OGC API Maps
- › OGC API Tiles
- › OGC API Styles

<http://www.ogcapi.org/>



# OGC API Ökosystem: STAC

- › SpatioTemporal Asset Catalog
- › Imagery, SAR, Point Clouds, Data Cubes, Full Motion Video, etc

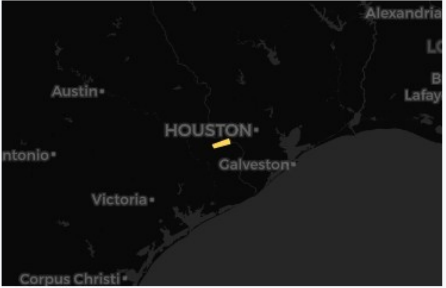
Planet Disaster Data / Hurricane Harvey / Hurricane Harvey 08-31-2017 / 20170831\_172754\_101c

## 20170831\_172754\_101c

[https://storage.googleapis.com/pdd-stac/disasters/hurricane-harvey/0831/20170831\\_172754\\_101c.json](https://storage.googleapis.com/pdd-stac/disasters/hurricane-harvey/0831/20170831_172754_101c.json)

Preview Thumbnail **Assets**

Name	Content-Type
<a href="#">Thumbnail</a>	image/png
<a href="#">PSScene4Band Analytic GeoTIFF</a>	image/vnd.stac.geotiff; cloud-optimized=true
<a href="#">PSScene4Band XML Metadata</a>	text/xml
<a href="#">PSScene4Band Unusable Data Mask</a>	image/vnd.stac.geotiff; cloud-optimized=true
<a href="#">PSScene3Band Visual GeoTIFF</a>	image/vnd.stac.geotiff; cloud-optimized=true



**Collection** Planet Disaster Data

**License** CC-BY-SA-4.0 by Planet Disaster Team

**Acquired** 8/31/2017, 5:27:54 PM UTC

**Provider** Planet

**License** CC-BY-SA

**Cloud cover** 2%



- **OGC API ist ein zeitgemässer, modularer Standard**
- **Zugänglich für Web-Entwickler ohne GIS-Hintergrund (GeoJSON, OpenAPI)**
- **Aussage zur Konformität hat geringe Bedeutung, da alle Formate optional**
- **Ersatz von WFS erst mit Extensions**
- **Kann separate Katalog-Dienste überflüssig machen**
- **Kern für Standard-Ökosystem (z.B. STAC)**





## Danke!



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