Cloud Native Geospatial Outreach Day: TiTiler Intro

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developmentSEED

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- Former geologist
- Geospatial developer
- Self taught Python dev
- Full stack

TiTiler

developmentseed/titiler

- Multiple TileMatrixSets via **morecantile**. By default, output map tiles are in the standard Web Mercator projection used by most mapping libraries, but **support for alternative projections** is available.
- Cloud Optimized GeoTIFF support
- SpatioTemporal Asset Catalog support
- Mosaic support (via MosaicJSON)
- OGC WMTS support
- AWS Lambda / ECS deployment options

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Built with FastAPI

tiangolo/fastapi

- **Fast**: Very high performance, on par with **NodeJS** and **Go** (thanks to Starlette and Pydantic). One of the fastest Python frameworks available.
- **Fast to code**: Increase the speed to develop features by about 200% to 300%. *
- **Fewer bugs**: Reduce about 40% of human (developer) induced errors. *
- **Intuitive**: Great editor support. Completion everywhere. Less time debugging.
- **Easy**: Designed to be easy to use and learn. Less time reading docs.
- **Short**: Minimize code duplication. Multiple features from each parameter declaration. Fewer bugs.
- **Robust**: Get production-ready code. With automatic interactive documentation.
- **Standards-based**: Based on (and fully compatible with) the open standards for APIs: OpenAPI (previously known as Swagger) and JSON Schema.

ref: https://github.com/tiangolo/fastapi

Install and Use

```
$ pip install titiler["server"]

$ uvicorn titiler.main:app --reload
```

Demo

COG
https://www.digitalglobe.com/ecosystem/open-data

Example:
https://opendata.digitalglobe.com/events/beirut-explosion/post-event/2020-08-05/102001009BCC9D00/102001009BCC9D00.tif

https://opendata.digitalglobe.com/events/hurricane-laura/post-event/2020-08-27/10300100ADB4FD00/10300100ADB4FD00.tif

https://opendata.digitalglobe.com/events/mauritius-oil-spill/post-event/2020-08-12/105001001F1B5B00/105001001F1B5B00.tif

Demo

STAC

https://stacindex.org

Example:
https://canada-spot-ortho.s3.amazonaws.com/canada_spot_orthoimages/canada_spot5_orthoimages/S5_2007/S5_11055_6057_20070622/S5_11055_6057_20070622.json

Customization

```python
from titiler.endpoints.factory import TilerFactory
from titiler.errors import DEFAULT_STATUS_CODES, add_exception_handlers

from fastapi import FastAPI

from starlette.requests import Request
from starlette.responses import HTMLResponse

app = FastAPI(
    title="My super app",
    openapi_url="/api/openapi.json",
    description="It's something great",
)

cog = TilerFactory(router_prefix="cog")
app.include_router(cog.router, prefix="/cog", tags=["Cloud Optimized GeoTIFF"])
add_exception_handlers(app, DEFAULT_STATUS_CODES)
```

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TiVTiler

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Thanks

Vincent Sarago - @_VincentS_ / @cogeotiff
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Kyle Barron - @kylebarron2

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