HSR
HOCHSCHULE FÜR TECHNIK
RAPPERSWIL

Vector Tiles from OpenStreetMap

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- Industry Partner: -

Introduction

Creating a custom styled map is one of a common use case for cartographers, yet it is very difficult to do with OpenStreetMap (OSM, www.osm.org) data. With emerging mapping technologies like vector tiles it becomes much easier to create nice looking and highly interactive maps. Through preprocessing of the vector tiles no downloading of the entire database is needed. And by using new deployment tools, there's no managing of a complex infrastructure.

Goals

The task of this project is to make custom styled maps from OSM data as easy as possible. A main part is about creating Mapbox Streets compatible vector tiles from OSM data (using Mapnik and data styles). The result is a set of Docker images and vector tiles for download, which makes it easy to use this complex software infrastructure.

Another part is a Docker image which contains a software stack (including http server, Node.js, TileLive, Mapnik). It serves the vector tiles and generates raster tiles on-the-fly. Mapbox Studio is an external style editor which generates visual styles and makes it easy to style custom a map.

Deliverables

- Docker Container to create vector tiles (MBTiles with PBF) from OSM.
- MBTiles for Switzerland (Snapshot).
- Docker container to serve vector tiles together with custom styles as raster tiles.
- Website and documentation.

Environment

Server: Database PostgreSQL/PostGIS. Preferred programming languages Shellscript, Python.

Form of documentation and evaluation

The thesis will be written in English. Documentation to be delivered includes 2 bound exemplars of the thesis (including a labeled CD) plus a separate CD.

The usual documents and rules of the department of informatics apply (poster in digital version). Regarding the thesis evaluation scheme there is a special emphasis of modern software development aspects (testing, deployment).

Other involved parties

Consultation: Dr. Petr Pridal, Klokan Technologies GmbH, Unterägeri

Advisor HSR

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