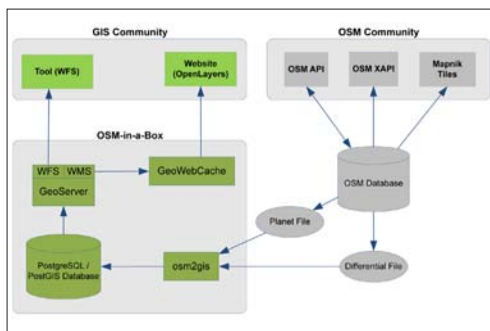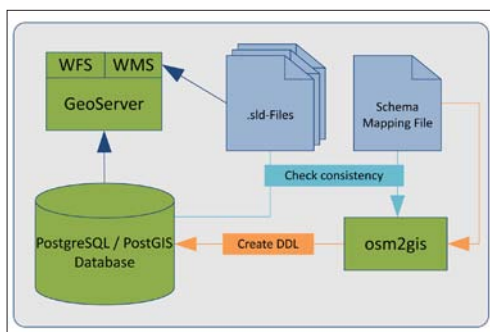|	
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Subject Area	Software
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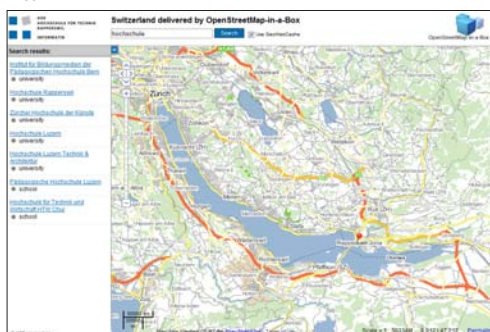
OpenStreetMap-in-a-Box Version 1.0

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OSM-in-a-Box as link between OSM and GIS

Creation of the database structure based on the Schema
Mapping File. Consistency check between all configuration
files

OSM-in-a-Box showcase website

Introduction: Most cartographic visualization requires a base map layer to provide geographic context. Current base map products are either rather expensive and sometimes outdated or not available for certain regions (i. e. cadastral data or Google Maps). Up-to-date base maps are becoming more and more important when setting up a spatial infrastructure for companies, non-governmental organizations or the public sector. OpenStreetMap (OSM) is a crowd sourcing project which aims to provide free geographic data. OSM itself is run by many open source tools with a range of languages written by volunteers. Thus, in order to set up an OSM server, quite a heterogeneous bunch of software is involved, with obscure dependencies which are only partially documented. In addition the OSM community is not overly concerned about international geographic information standards such as those from the Open Geospatial Consortium (OGC). And for some projects it's important to have one's own map server, either because it is sometimes offline or because it needs to be reliable and fast.

Approach: The OpenStreetMap-in-a-Box software was created in prior students' work. An easy-to-use setup installs OSM «out of the box» as a dedicated map server offering well-known OGC web services. OSM-in-a-Box includes several parts as follows:

– A fully configurable (Schema Mapping File) osm2gis import converter (Java) which imports OSM data and inserts the relevant part of it in the database (PostgreSQL/PostGIS/geospatial database schema).

– A spatial information server with geographic web services (GeoServer), such as WMS, Tiling/Caching and WFS (read-only).

– Due to the configuration complexity of the osm2gis and GeoServer software, a consistency check can be run with the osm2gis software. This generates a statistical report of the entire configuration.

– A website (showcase) to demonstrate the project.

Result: The following changes in this Bachelor's thesis led to the OSM-in-a-Box 1.0 release:

– osm2gis import converter: More OSM data can be imported using the support of entity-to-entity relations. Keeping the database up to date by downloading and importing the regularly released differential update files.

– Showcase: Update of the website to support the above changes.

– osm2gis consistency check: Update of the consistency check to support the new GeoServer version. Extending the check to show self-inconsistency of the osm2gis Schema Mapping File.

– GeoServer: Update of GeoServer to current version 2.0. Revision of the configuration (map presentation, caching, services).