GIS.lab: Hydrological modelling on the Web


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What is GIS.lab?
GIS.lab (http://web.gislab.io) is capable to deploy a complete, centrally managed and horizontally scalable GIS infrastructure in local area network (LAN), data center or cloud in a few moments. It provides comprehensive set of free geospatial software seamlessly integrated in to one, easy-to-use system with desktop, web and mobile client interfaces. GIS.lab lowers deployment and ownership cost of complex geospatial solution to absolute minimum, while still keeping whole technology in house and under full control.

GIS.lab connects several open source technologies together: QGIS is used as desktop environment as well as the server for data serving. A web client is based on OpenLayers and AngularJS libraries. On the server side, thin Django application is developed as well.

How to publish data and WPS processes using GIS.lab on the Web?
1. Collect data and WPS processes which are planned to be published on the Web.
2. Prepare QGIS project to symbolize data layers.
3. Publish QGIS project and customize WPS process using GIS.lab QGIS plugin
   3a. Define project metadata and WPS URL
   3b. Select base and overlay layers for publishing
   3c. Select WPS process for publishing
   3d. Confirm publishing project including integrated WPS process
   3e. Publish the project

This poster is related to the project presented at FOSS4G Europe 2015 — “Variability of Short-term Precipitation and Runoff in Small Czech Drainage Basins and Its Influence on Water Resources Management”. The project is focused on the precipitation scenarios analysis from observed data of point gauging stations and radar data in terms of events’ return period, rainfall total amount, internal intensity distribution and spatial distribution over the area of the Czech Republic.

The aim of this project is to provide a tool to the public as a stand-alone program and also as a web geoprocessing service. The tool uses methods of zonal statistics to compute average values of design 24 hours precipitation for a selected area or for a spot. This value is reduced to the chosen length design rain for selected period of repetition.

The tool for reduction of daily precipitation r.subdayprecip.design has been implemented for GRASS GIS (http://grass.osgeo.org) using PyGRASS and Python Scripting Library. It is available as Addon. The tool is also accessible to the public as Web Processing Service (WPS). The service is based on r.subdayprecip.design GRASS module implemented using PyWPS framework.

Poster Background

OSGeoRE @ CTU in Prague
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