Exercise 5: Creating Map Services

Goal

The goal of this exercise is to create and configure your own map services.

Note: The map server, that you will be configuring, implements the OGC Web Map Service (WMS) standard. You will learn more about WMS and other OGC standards in the following lectures and exercises.
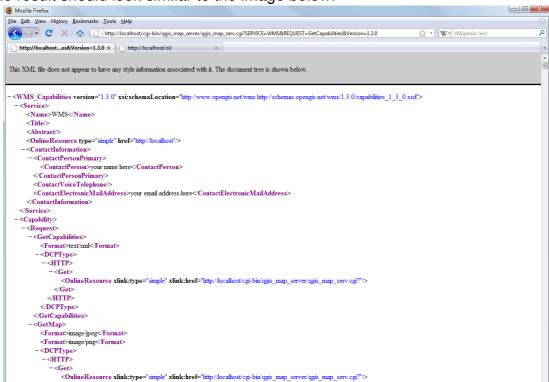
Part 1: Start Your Local Map Server

Locate the wamp folder in "C:\workspace" on your computer. Start the local Apache web server with the provided ".bat" file available in "C:\workspace\wamp". (Note: if you start this exercise already on day 1, the local web server has already been started in exercise 1.)

Locate the qgis mapserver folder under C:\workspace\wamp\Apache2\cgi-bin. Verify if the qgis mapserver works properly by typing in a web browser:

http://localhost/cgi-bin/qgis_map_server/qgis_map_serv.cgi?
SERVICE=WMS&REQUEST=GetCapabilities&Version=1.3.0

The result should look similar to the image below:

Part 2. Basic Layer Symbolization

For this exercise, we use the desktop GIS "QGIS" (QGISPublishtoWeb). Unpack the "QGISPublishtoWeb.zip" in your workspace and start the software with the qgis.exe from inside the unpacked folder.

Before continuing please take some time to review the manual of the QGIS mapserver (see http://karlinapp.ethz.ch/qgismapservmanual.pdf) for an overview of the entire process. Read at least chapters 4 and 5, with special attention to sections 5.5 and 5.6.

Now load the world satellite image in QGISPublishtoWeb (land_ocean_ice_8192.tif) and the shapefiles from the geodata_eu directory: e.g. add the "eu_countries.shp", "eu_rivers.shp" and "eu_cities.shp" to your map.

Double-clicking on the layer legend opens the vector layer properties dialog. In the "Symbology" tab, it is possible to symbolize the features of the layer. Symbolize the vector layers as you prefer by changing the outline color, outline width and fill color.

For the eu_cities layer, please use only simple point symbols (circle, rectangle, star). For the eu_countries layer, you may want to set the fill style to "No Brush" for obtaining a no fill effect. For the moment, keep the Legend Type to Single Symbol.

At this point, you should save the QGIS Desktop project with "File"->"Save Project" to a location of your choice inside of the workspace.

Part 3. Creation of a Map Service with QGIS mapserver

Export the current project with "Plugins" -> "Publish to web" -> "Publish to web". A dialog opens where it is possible to insert the metadata, information about server, layer and style names. Please change the layer and style names by double-clicking the default names from the list presented in the Publish to Web plug-in window. Please use "default" for every style name of every layer and give a shorter, more readable name for each layer.

Important: Your path to the QGIS map server directory should be "C:\workspace\wamp\Apache2\cgi-bin\qgis_map_server".

Finally, generate the server configuration by clicking on the "Publish" button.

In the directory "C:\workspace\wamp\Apache2\cgi-bin\qgis_map_server", there is now a new directory with the name you gave to the web project.

Copy the file "admin.sld" from this new folder one level up to the "qgis_map_server" main folder. The server configuration is now complete and the WMS URL is http://localhost/cgi-bin/qgis_map_server/qgis_map_serv.cgi?

Test now if the WMS server is configured correctly. You can do this directly with QGIS. Create a new QGIS Project (Menu "File"->"New Project") and then use QGIS Desktop as WMS client (Menu "Layer"->"Add WMS Layer"). Create a new WMS connection with the URL above and click "connect". The layers and style list that can be added to the map should now be displayed. Add the eu_countries layer with the defined style name (please expand the style list by pressing the "+" sign in front of the layer and click the name of the style). If everything works as it should, the map image in QGIS now should look the same as the local project.

Discussion of the Exercise

Congratulations, you have created and published your own map services!