

Drawing all the OpenStreetMap relations on a map with GDAL/OGR, Spatialite and OpenJUMP

The flexible data model of OpenStreetMap makes it easy to create relations but it is not always easy to visualize the relations on a map, especially if they include different geometry types. However, the GDAL/OGR OSM driver tries to resolve all the relations which are found from the OpenStreetMap data file. Most common relation types (multipolygons and routes) are converted into OGC multipolygon and multilinestring geometries. What is interesting is that all the remaining relations are converted into OGC GeometryCollection geometries which can be visualised with some GIS software.

What is needed

- GDAL trunk version (becomes GDAL 2.0) from July 29, 2012 or later
- OpenJUMP GIS from <http://openjump.org>
- DB Query Plugin for OpenJUMP, version 0.8.0 from <http://jumpdbqplugin.sourceforge.net/>
- SQLite JDBC driver
- Some data, for example berlin.osm.pbf from <http://download.geofabrik.de/osm/europe/germany/>

The download link <http://www.zentus.com/sqlitejdbc/> for the Zentus JDBC driver does not work at the moment. The alternative is probably to use Xerial JDBC driver instead <http://www.xerial.org/trac/Xerial/wiki/SQLiteJDBC>. However, until the Xerial driver is tested the complete OpenJUMP DB Query plugin, including the JDBC driver can be downloaded from <http://latuviitta.org/documents/jumpdbplugin-0.8.0.zip>.

For installing the plugin just extract all files from the zip into OpenJUMP extensions directory "lib/ext" and start OpenJUMP.

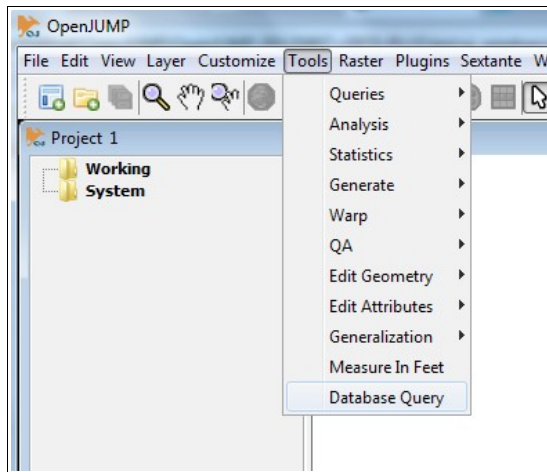
How it works

1) Convert OpenStreetMap data with ogr2ogr utility into Spatialite format

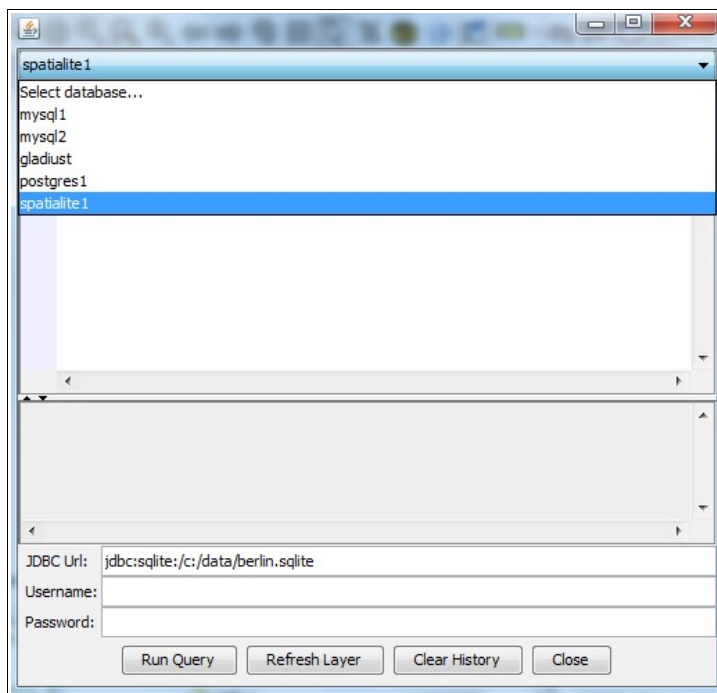
The command to use is

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ogr2ogr -f SQLite -dsco spatialite=yes -gt 20000 --config OGR_SQLITE_SYNCHRONOUS OFF berlin.sqlite berlin.osm.pbf
```

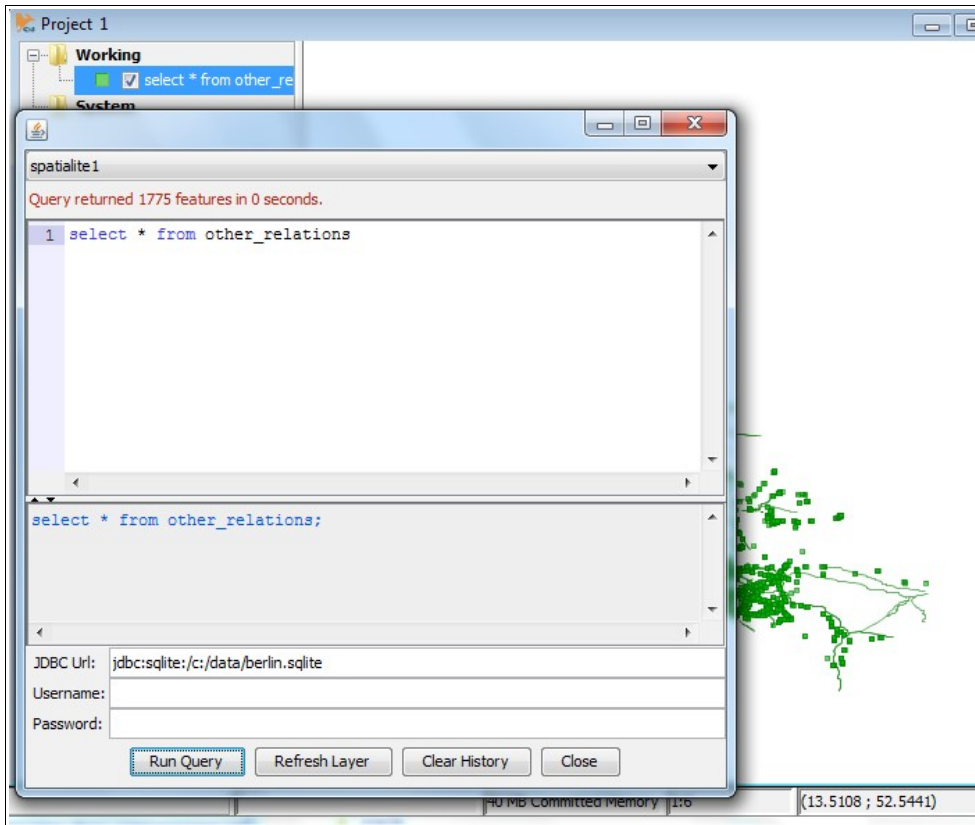
2) Read data from Spatialite DB with OpenJUMP



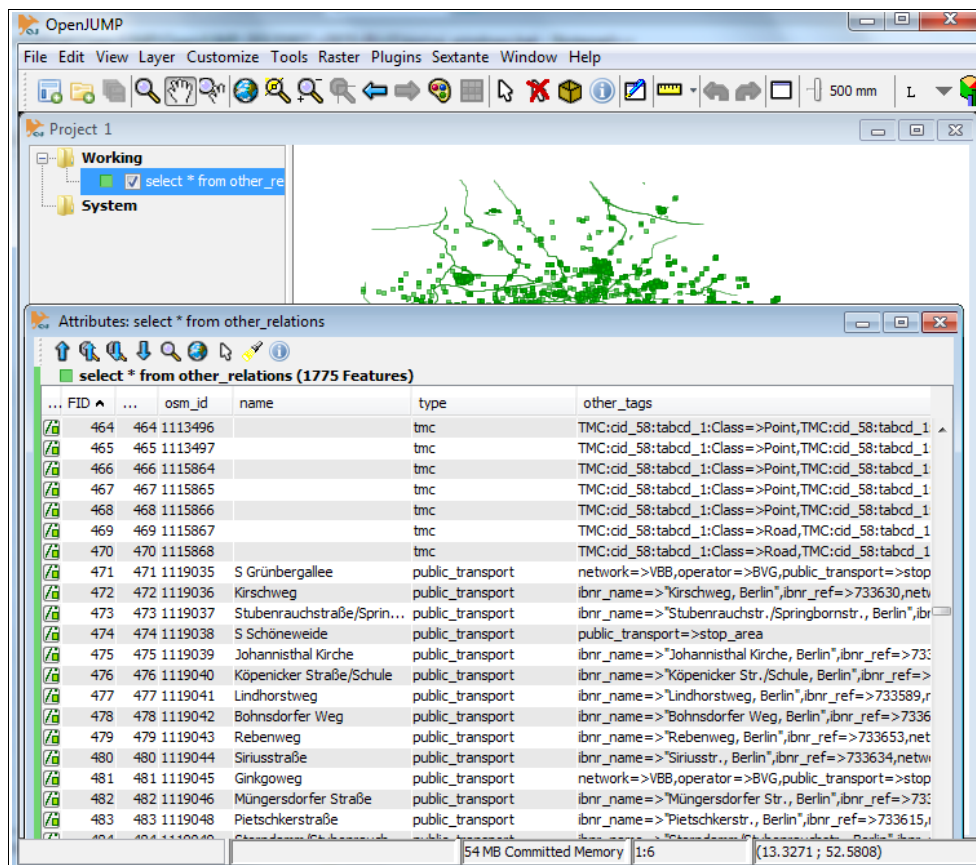
DB query plugin is started from the menu item Tools – Database Query



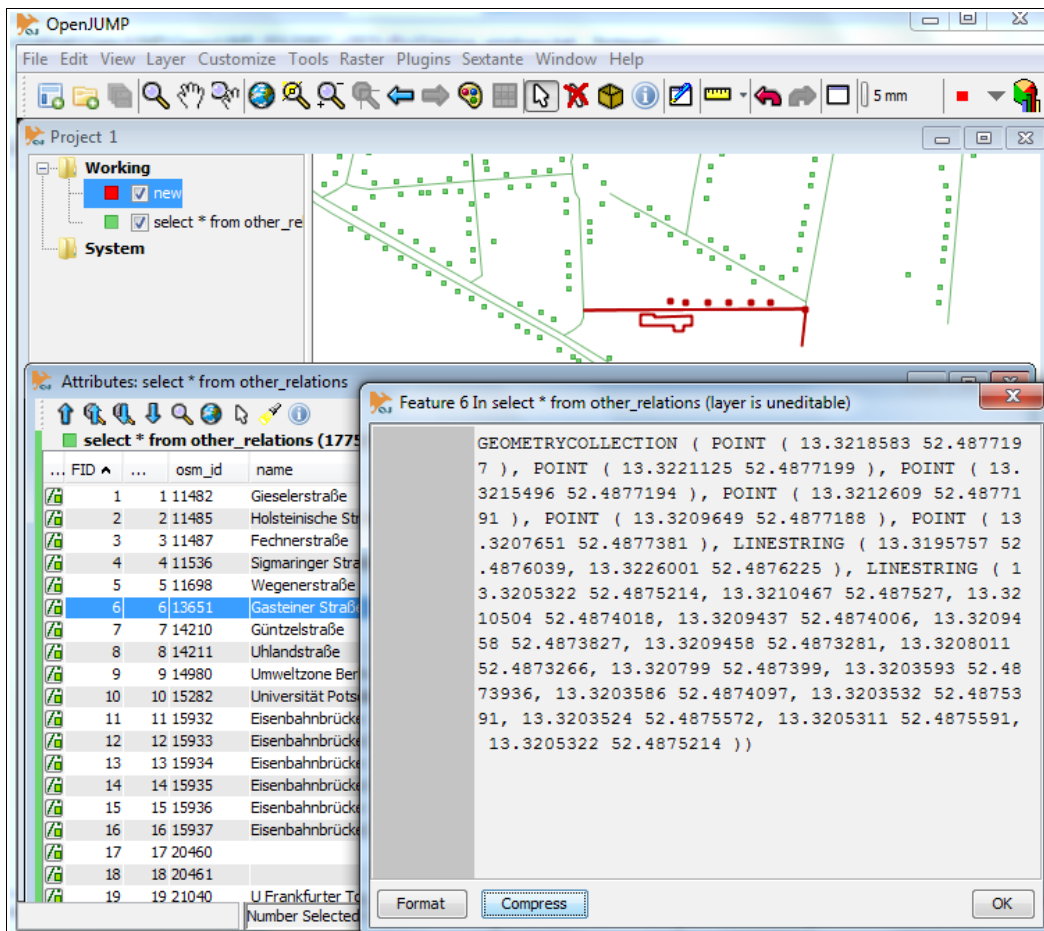
Select the database connection "spatialite1" from the drop down list . Write the name of the Spatialite database into the JDBC Url line.



Write the SQL query. The OSM relations we are interested in are in the table "other_relations". Press "Run Query" and relations appear into the map.



By default the OGR OSM driver concatenates all the OSM tags and values into "other_tags" column. This can be configured by editing the driver configuration file "osmconf.ini". Read driver documentation for further info http://gdal.org/ogr/drv_osm.html.



Geometries of the OSM relations are converted into OGC Geometry Collections. OpenJUMP can visualize them on a map without problem. Not many GIS programs can do the same. For example, Quantum GIS cannot handle Geometry Collections.

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Last edited: August 10, 2012