Towards a WPS platform dedicated to an urban knowledge infrastructure
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Towards a WPS platform dedicated to an urban knowledge infrastructure

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I/ Context

This poster presents an implementation of the WPS (Web Processing Services) specification that provides specialized geographic analysis and processing tools to researchers, local authorities and private organizations and companies within IRSTV’s Spatial Data Infrastructure (SDI).

We present a descriptive meta-language that allows GIS specialists to WPS-enable their existing SQL processes and then push them within the WPS component of the SDI.

II/ Proposal

Exposing a SQL script as an online geoprocess using Web Processing Services (WPS)

- Multiple inputs & outputs
- Multiple formats supported
- SQL Spatial: OGC Simple Feature SQL
- Vector and raster
- Custom functions (hydrology, noise maps, grid analysis...)
- Full support for OGC WPS 1.0

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CREATE TABLE buffered AS
SELECT ST_Buffer(geom, buffer_size) FROM input;

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III/ Implementation

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IV/ Use case

1. I want to create a process to compute the watershed from a river outlet using a DEM

CREATE TABLE filled AS SELECT ST_FillSinks(raster, 0.1) AS raster FROM dem_chaine;
CREATE TABLE size AS SELECT ST_Dimension(raster) AS raster FROM filled;
CREATE TABLE area AS SELECT ST_Area(raster) AS raster FROM dir;
CREATE TABLE all_rasters AS SELECT ST_VectorizedLine(geom) AS raster FROM strahler;
CREATE TABLE watershed_chaine AS SELECT ST_buffers(dim, 0.1) AS raster FROM filled WHERE grid = 1;
CREATE TABLE watershed_chaine AS SELECT ST_Buffer(sink, buffer_size) FROM input;

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2. I want to query the WPS process with my own data

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3. I get the results in my desktop GIS