Towards a WPS platform dedicated to an urban knowledge infrastructure
Antoine Gourlay, Erwan Bocher, Gwendall Petit

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Towards a WPS platform dedicated to an urban knowledge infrastructure

Authors: Antoine Gourlay (antoine@gourlay.fr), Erwan Bocher, Gwendall Petit - IRSTV FR CNRS 2488

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).

II/ Proposal

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

--- @script
--- @identifier Buffer
--- @title Geometry buffer
--- @abstract Computes a buffer around
--- - all given geometries
--- - @abstract
--- @input TABLE ( the_geom GEOMETRY )
--- - @input LITERAL buffer_size DOUBLE
--- @output TABLE buffered
--- - @script

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

- 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

IV/ Use case

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

CREATE TABLE filled AS SELECT ST_FillShape(raster, 2.1) AS raster FROM dem_echevins;
CREATE TABLE dir AS SELECT ST_Buffer(raster) AS raster FROM filled;
CREATE TABLE dem AS SELECT ST sollenization(raster) AS raster FROM dir;
CREATE TABLE allrivers AS SELECT ST_Polygon(raster) AS raster FROM dir where id = 1;
CREATE TABLE river_low AS SELECT FROM allrivers WHERE grid < 1;
CREATE TABLE watershed_chaine AS SELECT ST_Buffer(raster, 2.0) AS raster, ST_DensFromHeat(POINT (303472.79
224260.79)) AS stroke;

I publish it on a WPS server

III/ Implementation

I want to compute a watershed

I query the WPS process with my own data

I get the results in my desktop GIS