

# PostGIS

## Spatial database extender for PostgreSQL



### What is PostGIS

PostGIS is a spatial database extension for PostgreSQL object-relational database. PostGIS is released under the GPLv2+ license. It is written in C and relies on libraries GEOS and GDAL for many geometry and raster operations.

PostGIS implements the OGC Spatial Features for SQL (SFSQL) standard. It goes beyond the standard to support seamless raster/geometry queries, round earth model thru geography type, and 3D surface and volume support.

### Some things it can do

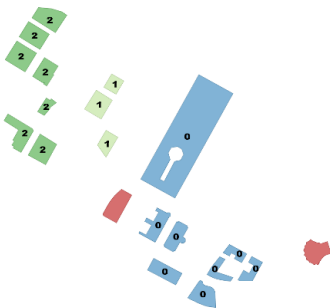
Longest line



Clip rasters



Cluster number by distance



### Database Components

PostGIS project includes several PostgreSQL extensions.

- ▶ **postgis**  
geometry, geography, and raster types and database functions to work with these types  
  
postgis\_topology, postgis\_sfcgal, and postgis\_tiger\_geocoder, require this extension.
- ▶ **postgis\_topology**  
topogeometry type, functions and topologies (edges, faces, edges) as defined by the SQL-MM: Topo-Geo and Topo-Net.
- ▶ **postgis\_sfcgal**  
spatial processing functions for 3D surfaces and volume geometries  
  
not packaged with all PostGIS binary distributions.  
  
Geocoding for USA
- ▶ **postgis\_tiger\_geocoder**  
geocoding and reverse geocoding functions for USA using Census TIGER data.
- ▶ **address\_standardizer**  
standardizing USA addresses into their house number, street, city, state, zip and other address elements.  
  
not packaged with all PostGIS binary distributions.

### Tools

PostGIS project includes tools for loading data

- ▶ **shp2pgsql, pgsql2shp, shp2pgsql-gui**  
data loaders and export tools for ESRI Shapefiles
- ▶ **raster2pgsql**  
load raster from various GDAL supported formats into postgis raster format.

### Where to get it

In addition to source form, PostGIS is often distributed along with PostgreSQL via various package maintainers and database-as-a-service cloud hosters.

<http://postgis.net/install><http://postgis.net/source>

