



# PostGIS

PostGIS adds support for geographic objects to the PostgreSQL object-relational database. In effect, PostGIS "spatially enables" the PostgreSQL server, allowing it to be used as a backend spatial database for geographic information systems (GIS).

PostGIS follows the OpenGIS "Simple Features Specification for SQL" and has been certified as compliant with the "Types and Functions" profile. PostGIS is released under the GNU General Public License. The PostGIS code is written in C++ and PL/pgSQL.

The PostgreSQL Database offers a variety of clients to handle the data (psql, pgAdmin, phpPgAdmin). You have different Desktop GIS to visualize the spatial data, edit your data, create new data, analyze your data and make evaluations.

There are different converter to get you data into the database or export them to other formats (shp2pgsql, pgsq2shp, ogr2ogr, dxf2postgis).

```
-- create a table with a geometry column
CREATE TABLE parcels (
  id SERIAL PRIMARY KEY,
  geom GEOMETRY
);

-- insert a polygon
INSERT INTO parcels VALUES
(1, 'POLYGON((0 0, 0 1, 1 1, 1 0, 0 0))');

-- create a spatial index
CREATE INDEX parcels_gix ON parcels
USING GIST (geom);

-- spatial query
SELECT ST_AsText(geom) FROM parcels
WHERE ST_Contains(geom, 'POINT(0.5 0.5)');
-----
"POLYGON((0 0,0 1,1 1,1 0,0 0))"
```

*Example: How to handle spatial data with PostgreSQL/PostGIS*

## Core Features

- PostGIS extends support for geometry types (EWKB, EWKT and Canonical Forms, 3D, 4D geometries with Z and M values)
- PostGIS follows the SQL/MM 3 standard
- PostGIS enables powerful spatial analysis
- PostGIS features a spatially-enabled query planner, highly concurrent R-Tree spatial index, and hundreds of spatial analysis and processing functions that allow for GIS-style data analysis right inside the database
- PostGIS WKT Raster

## Projects with PostGIS support

- Desktop GIS (uDig, QGIS, gvSIG, Jump)
- GRASS GIS
- MapServer, GeoServer, deegree
- OGR
- GeoTools, FDO
- Proprietary Software: FME, MapInfo, ArcGIS, Manifold, CadCorp SIS

### PgRouting - make your data routeable

PgRouting provides routing functionality to PostgreSQL/PostGIS. Have a look at <http://pgrouting.postlbs.org/>



Visit our website: <http://www.osgeo.org/postgis> <http://www.postgis.org>  
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*Project in Incubation*