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Open Source GIS Implementation - an Experiment

This post documents my attempt at implementing opensource GIS Desktop and Server. It describes the trials and errors of the process. It may or may not work for your purpose, but I hope others will find it useful in terms of knowing what is involved.

This is the open source GIS software stack I used.

Desktop GIS	• QGIS
Database	• PostgreSQL/PostGIS
GIS Server	• GeoServer
Web Server	• Windows IIS
Web Application	• Leaflet • OpenLayers

The implementaion process is broken up into serveral parts:

[Part 1: Installing QGIS](#). This is just the installation of the opensource desktop GIS, QGIS, which I've already written a document on how to do this. Although it is for QGIS 2.14 the process will be the same for the current version 2.18.

Part 2: PostgreSQL/PostGIS Installation.

Part 3: Creating a PostGIS database. This part goes over how to import an ESRI file GDB to a PostGIS database using ogr2ogr command line utility.

Part 4: Installing GeoServer.

Part 5: Publishing PostGIS to GeoServer. This part goes over how to publish or push PostGIS database to GeoServer

Part 6: Using Leaflet and OpenLayers to test that layers GeoServer can be called.

I tried OpenGeoSuite 4.8 (free version from Boundless but require email sign up) which was really easy to install and used. The version of OpenGeoSuite I tested uses slightly older versions of GeoServer and PostgreSQL/PostGIS. I wanted to use more current versions of the software in the stack as well as wanting to know how to each component worked, so I tried my hand at implemnting each components of the stack myself. Of course it's not as easy as just using OpenGeoSuite but at least I learned a lot in the process.

Here are the specs on the machines that I tested.

Tested on Windows OS Machines

Installation of Postgres/PostGIS on both a Windows 10 OS x64 laptop and a Windows Server 2012 R2 virtual machine for testing. The Windows Server VM already has a web server (Windows IIS) already set up at my work by IT so I used that. Also for my laptop I just used/enabled the Windows IIS already available.

Laptop Specs: Dell XPS 13

Windows edition

Windows 10 Home

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System

Processor: Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz 2.39 GHz
Installed memory (RAM): 8.00 GB
System type: 64-bit Operating System, x64-based processor
Pen and Touch: Touch Support with 10 Touch Points

Windows Server 2012R VM

Operating system version	Microsoft Windows Server 2012 R2 Standard	Processors	Intel(R) Xeon(R) CPU E5-2609 0 @ 2.40GHz, Intel(R) Xeon(R) CPU E5-2609 0 @ 2.40GHz
Hardware information	VMware, Inc. VMware Virtual Platform	Installed memory (RAM)	8 GB
		Total disk space	299.53 GB

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