Installing Spatialite on Ubuntu

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Follow these instructions to install Spatialite on Ubuntu.

> *Note: This was tested on Ubuntu 12.04.1 LTS.*

Requirements

- install packages build-essential, g++

```
sudo apt-get install build-essential g++ libc6-dev
```

- Download and install sqlite (3071700)

> Note: it is likely going to conflict with sqlite on your system.

```
sudo apt-get remove sqlite3 libsqlite3-dev libsqlite3
wget http://www.sqlite.org/2013/sqlite-autoconf-3071700.tar.gz
tar -xzf sqlite-autoconf-3071700.tar.gz
cd sqlite-autoconf-3071700
./configure
make
sudo make install
sudo ldconfig
cd ..
```

Instructions:

- download and compile proj4 (4.8.0)

```
wget http://download.osgeo.org/proj/proj-4.8.0.tar.gz
tar -xzf proj-4.8.0.tar.gz
cd proj4-4.8.0
./configure
make
sudo make install
```

- download and compile geos (3.3.8)

```
wget http://download.osgeo.org/geos/geos-3.3.8.tar.bz2
tar -xjf geos-3.3.8.tar.bz2
cd geos-3.3.8
./configure
make
sudo make install
sudo ldconfig
cd ..
```

- download and compile freexl (1.0.0e)

```
wget http://www.gaia-gis.it/gaia-sins/freexl-1.0.0e.tar.gz
tar -xzf freexl-1.0.0e.tar.gz
cd freexl-1.0.0d
./configure
make
sudo make install
sudo ldconfig
cd ..
```

- download and compile libspatialite (4.1.1)

```
wget http://www.gaia-gis.it/gaia-sins/libspatialite-sources/libspatialite-4.1.1.tar.gz
tar -xzf libspatialite-4.1.1.tar.gz
cd libspatialite-4.1.1
./configure
make
sudo make install
sudo ldconfig
cd ..
```

You probably also want to use ldconfig to make sure /usr/local/lib is included when Ubuntu looks for shared libraries.

Testing:

```
$ sudo apt-get install rlwrap
$ rlwrap sqlite3
sqlite> select load_extension('libspatialite.so');
sqlite> select sqlite_version(), spatialite_version(), proj4_version(), geos_version()
sqlite_version()  spatialite_version()  proj4_version()           geos_version()
----------------  --------------------  ------------------------  ----------------
3.7.17            4.1.1                 Rel. 4.8.0, 6 March 2012  3.3.8-CAPI-1.7.8

sqlite> select InitSpatialMetaData();
sqlite> select degrees(azimuth(makepoint(151.23346, \-33.91674, 4326),
makepoint(151.20435, \-33.86712, 4326)));
degrees(azimuth(makepoint(151.23346, \-33.91674, 4326), makepoint(151.20435,
\-33.86712, 4326)))
\----------------------------------------------------------------------------
--------;
333.922088499053

Compare this with http://goo.gl/maps/YMFQf with 0 degrees being "12 o'clock" (and, in
this case, north.)
```