Compilation of qgis2.14.11

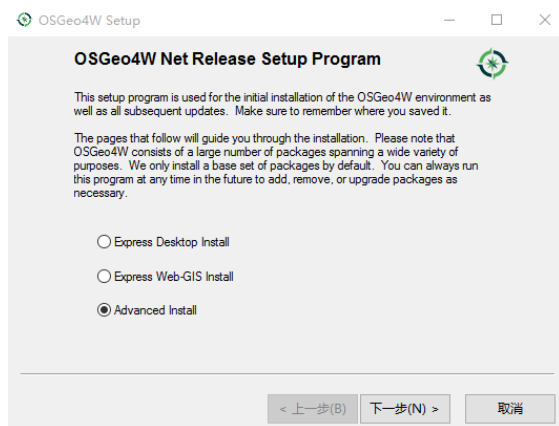## — — WIN10+VS2010+QT4

Wang Yiyi

1. Preparation work

1. Download cmake-3.0.2, bison, flex (32bit);

2. Install VS2010;

3. Download the following libraries in OSGeo4W (32bit):

-expat

- fcgi

-gdal

- grass

-gsl-devel

- iconv

-pyqt4

-qt4-devel

- qwt5-devel-qt4

- sip

- spatialite

- libspatialindex-devel

-python-qscintilla

(1) Select Advanced Install in the first step, and then default to the next step.


(2) Enter the above libraries into the search box respectively, select the file in the Libs directory, and click Skip
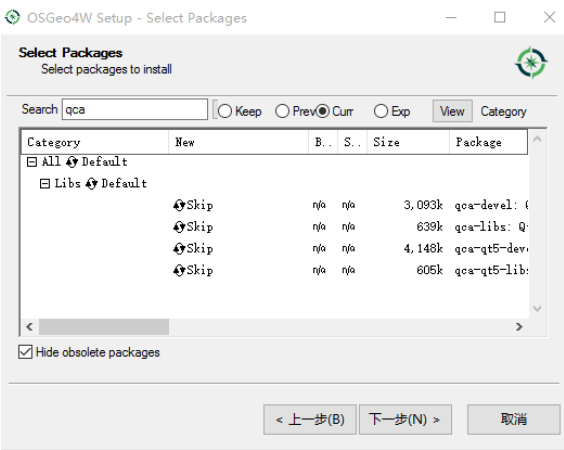
The qca library needs to be downloaded separately; qwt5-devel-qt4 cannot be directly searched due to the 32-bit OSGEO4W. Therefore I divide it into qwt,

Search and download qt4 separately.

(3) After selecting everything, click Next and it will automatically download and install. After installation, just restart the computer.
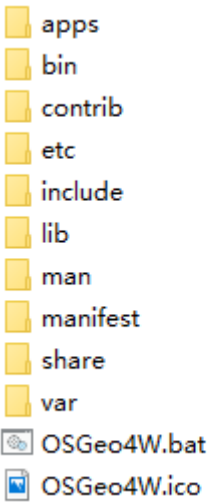
(4) The downloading methods of bison and flex are the same.
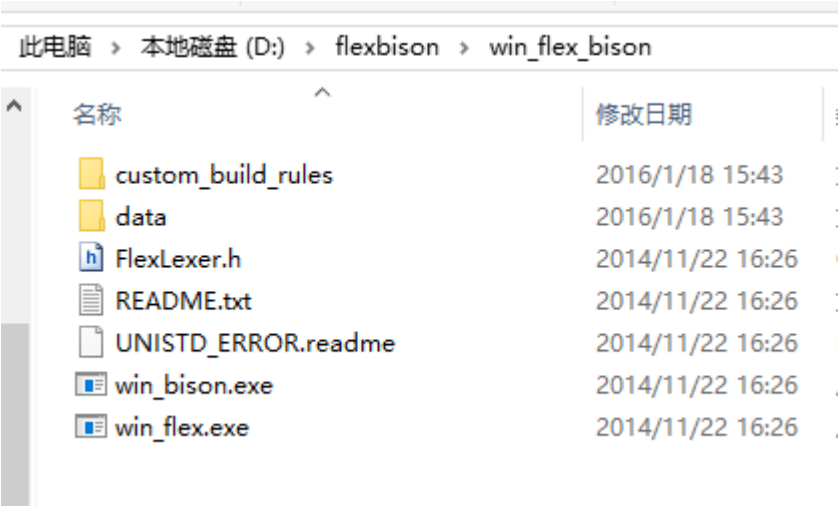
4.qgis2.14.11 source code

Just download and unzip it from the official website

If you want to download the latest version of the source code, you can download git and click git bash and enter

the following command (take my computer as an example)

cdd

cd qgis2.14.11

mkdir qgis

cdqgis

git clone https://github.com/qgis/QGIS

2. CMAKE export project files

1. Select the source code folder and the folder to export the project

2

Search: | | Grouped | Advanced | ⊞ Add Entr

Name
BINDING
BISON_E
BUILD_TE
CMAKE_(
CMAKE_I
ENABLE_
ENABLE_
ENABLE_
ENABLE_
ENABLE_
EXPAT_IN
EXPAT_LII
FLEX_EXE
GDAL_IN
GDAL_LIE
GENERAT
GEOS_IN
GEOS_LIE
GRASS_P
GRASS_P
GSLCBLA
GSL_INCLUDE_DIR
GSL_LIB
PEDANTIC

cmake-gui — ? ✕

Specify the generator for this project

Visual Studio 10 2010 ▼

⦿ Use default native compilers
○ Specify native compilers
○ Specify toolchain file for cross-compiling
○ Specify options for cross-compiling

< Back   Finish   Cancel

vin_bison.exe

WithDebInfo
.14.11

vin_flex.exe

D:/OSG32/include/gsl
D:/OSG32/lib/gsl.lib

Press Configure to update and display new values in red, then press Generate to generate selected

Configure   Generate   Current Generator: None

3. Click configure again and you will be prompted to set the paths of flex and bison.

4. Continuously configure and set the include and lib of each library (note that include must include the header file of the corresponding library)

5. When setting up python, you will be reminded that the version is too low, so you need to download a higher version of python from the official website.

6. After setting all paths, finally set SETUPAPI

| SETUPAPI_LIBRARY | C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/Lib/SetupAPI.Lib |
| SPATIALINDEX_INCLUDE_DIR | D:/OSG32/include/spatialindex |

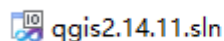## 7. Click generate after configure done appears.

8. The following are the path settings for all dependent libraries and the selection of WITH option

```
BINDINGS_GLOBAL_INSTALL        ☐
BISON_EXECUTABLE               D:/flexbison/win_flex_bison/win_bison.exe
BUILD_TESTING                  ☑
CMAKE_CONFIGURATION_TYPES      Debug;Release;MinSizeRel;RelWithDebInfo
CMAKE_INSTALL_PREFIX           C:/Program Files (x86)/qgis2.14.11
ENABLE_COVERAGE                ☐
ENABLE_MODELTEST               ☐
ENABLE_PGTEST                  ☐
ENABLE_QT5                     ☐
ENABLE_TESTS                   ☐
EXPAT_INCLUDE_DIR              D:/OSG32/include
EXPAT_LIBRARY                  D:/OSG32/lib/libexpat.lib
FLEX_EXECUTABLE                D:/flexbison/win_flex_bison/win_flex.exe
GDAL_INCLUDE_DIR               D:/OSG32/include
GDAL_LIBRARY                   D:/OSG32/lib/gdal_i.lib
GENERATE_COVERAGE_DOCS         ☐
GEOS_INCLUDE_DIR               D:/OSG32/include
GEOS_LIBRARY                   D:/OSG32/lib/geos_c.lib
GRASS_PREFIX
GRASS_PREFIX7
GSLCBLAS_LIB                   GSLCBLAS_LIB-NOTFOUND
GSL_INCLUDE_DIR                D:/OSG32/include/gsl
GSL_LIB                        D:/OSG32/lib/gsl.lib
```

```
PEDANTIC                       ☑
POSTGRESQL_PREFIX
PROJ_INCLUDE_DIR               D:/OSG32/include
PROJ_LIBRARY                   D:/OSG32/lib/proj_i.lib
PYTHON_VER                     2.7
QCA_INCLUDE_DIR                D:/OSG32/include/qt4/QtCrypto
QCA_LIBRARY                    D:/OSG32/lib/qca.lib
QSCINTILLA_INCLUDE_DIR         D:/OSG32/include/qt4
QSCINTILLA_LIBRARY             D:/OSG32/lib/qscintilla2.lib
QT_DOC_URL                     http://doc.qt.io/qt-4.8/
QT_QMAKE_EXECUTABLE            D:/OSG32/bin/qmake.exe
QWTPOLAR_INCLUDE_DIR           QWTPOLAR_INCLUDE_DIR-NOTFOUND
QWTPOLAR_LIBRARY               QWTPOLAR_LIBRARY-NOTFOUND
QWT_INCLUDE_DIR                D:/OSG32/include/qwt
QWT_LIBRARY                    D:/OSG32/lib/qwt.lib
SETUPAPI_LIBRARY               C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/Lib/SetupAPI.Lib
SPATIALINDEX_INCLUDE_DIR       D:/OSG32/include/spatialindex
SPATIALINDEX_LIBRARY           D:/OSG32/lib/spatialindex_i.lib
SPATIALITE_INCLUDE_DIR         D:/OSG32/include
SPATIALITE_LIBRARY             D:/OSG32/lib/spatialite_i.lib
SQLITE3_INCLUDE_DIR            D:/OSG32/include
SQLITE3_LIBRARY                D:/OSG32/lib/sqlite3_i.lib
```

```
WITH_APIDOC                    ☐
WITH_ASTYLE                    ☐
WITH_BINDINGS                  ☐
WITH_CUSTOM_WIDGETS            ☐
WITH_DESKTOP                   ☑
WITH_GLOBE                     ☐
WITH_GRASS                     ☐
WITH_GRASS7                    ☐
WITH_INTERNAL_QEXTSERIALPORT   ☑
WITH_INTERNAL_QWTPOLAR         ☑
WITH_ORACLE                    ☐
WITH_POSTGRESQL                ☐
WITH_PY_COMPILE                ☐
WITH_QSPATIALITE               ☐
WITH_QTMOBILITY                ☐
WITH_QWTPOLAR                  ☑
WITH_SERVER                    ☐
WITH_STAGED_PLUGINS            ☑
WITH_TOUCH                     ☐
WITH_TXT2TAGS_PDF              ☐
```
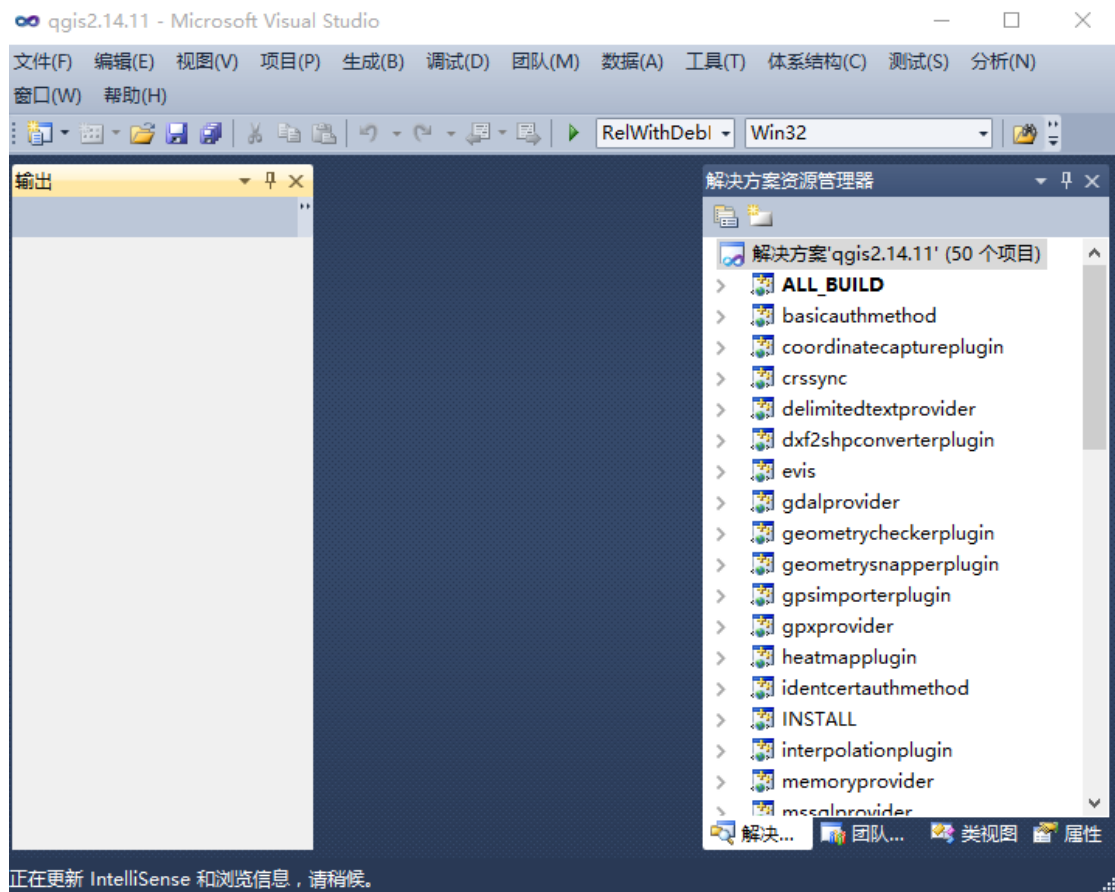
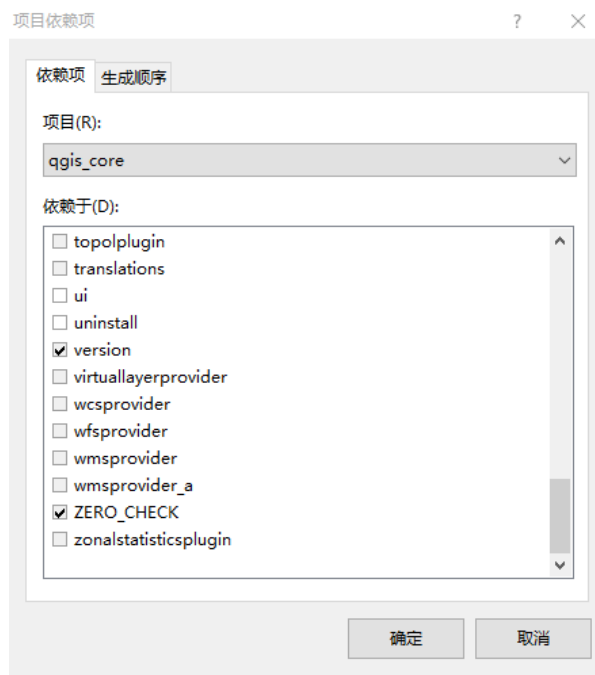9. Find it in the newbuild directory after Generate done   qgis2.14.11.sln   Open

3. VS2010 compilation

1. After opening the project file, as shown in the figure

2. Check the dependencies of each qgis project

3. Then generate the projects one by one in the following order

ZERO_CHECK

ui

version

qgis_core

qgis_gui

qgis_analysis

qgis_app

qgis

gdalprovider

ogrprovider

After everything is compiled, the relevant files will be generated in output/bin/RelWithDebInfo

qgis.exe	2017/9/29 20	
qgis.ilk	2017/9/29 20	
qgis.pdb	2017/9/29 20	
qgis_analysis.dll	2017/9/29 19	
qgis_analysis.ilk	2017/9/29 19	
qgis_analysis.pdb	2017/9/29 19	
qgis_app.dll	2017/9/29 20	
qgis_app.ilk	2017/9/29 20	
qgis_app.pdb	2017/9/29 20	
qgis_core.dll	2017/9/29 19	
qgis_core.ilk	2017/9/29 19	
qgis_core.pdb	2017/9/29 19	
qgis_gui.dll	2017/9/29 19	
qgis_gui.ilk	2017/9/29 19	
qgis_gui.pdb	2017/9/29 19	
qgis_networkanalysis.dll	2017/10/1 14	
qgis_networkanalysis.pdb	2017/10/1 14	

4. Compile other related projects as needed, which will be generated in output/plugins/RelWithDebInfo

ewbuild › output › plugins › RelWithDebInfo   ∨

名称	修改日期	类型
basicauthmethod.dll	2017/10/1 14:32	应用
basicauthmethod.ilk	2017/10/1 14:32	Incre
basicauthmethod.pdb	2017/10/1 14:32	Proc
coordinatecaptureplugin.dll	2017/10/1 14:32	应用
coordinatecaptureplugin.ilk	2017/10/1 14:32	Incre
coordinatecaptureplugin.pdb	2017/10/1 14:32	Proc
delimitedtextprovider.dll	2017/10/1 14:31	应用
delimitedtextprovider.ilk	2017/10/1 14:31	Incre
delimitedtextprovider.pdb	2017/10/1 14:31	Proc
dxf2shpconverterplugin.dll	2017/10/1 14:31	应用
dxf2shpconverterplugin.ilk	2017/10/1 14:31	Incre
dxf2shpconverterplugin.pdb	2017/10/1 14:31	Proc

5   variable

编辑系统变量

变量名(N):	PATH
变量值(V):	d;D:\NODEJS\;C:\Windows\System32;D:\OSG32\bin;l

6. Click qgis.exe to run
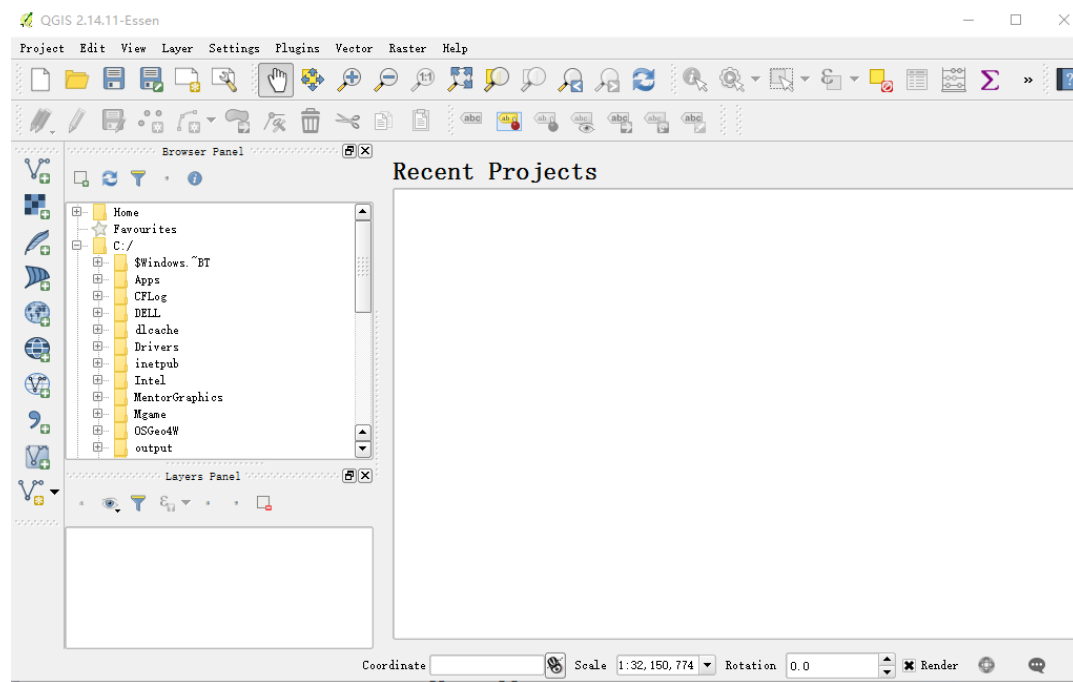
4. Errors encountered during QGIS compilation and solutions

1. Errors encountered in CMAKE: It's mainly an error in path setting. Just set the path to the library.

2. Errors encountered during VS2010 compilation:

(1) Appears when generating qgis_app:

> LINK : fatal error LNK1104: Unable to open file "E:
> \newqgis\Build\output\bin\RelWithDebInfo\qgis_app.dll"

reason: The qgis_app.dll that failed to compile last time has not been deleted. If you modify it and create it at the same time, an error will

occur. **Solution:**Clean the project and rebuild

(2) Appears when generating qgis_core

> error C2143: syntax error: missing ")" (before ";") error
> C2001: newline character in constant

reason: Encoding issues.

Solution: Open the file with NOTEPAD++ and change the encoding to UTF-8 and save it.

> error LNK2026: Module is not safe for SAFESEH images
> **Solution:**

Open the command line page of the linker in the project property settings, set /SAFESEH:NO   Type into the "Additional options" box and then

and click Apply.

> fatal error C1083: Unable to open include file: "XXXX.h": No such file or directory **reason:**This header file

is not included in the include path settings folder in the CMAKE process. **Solution:**Modify the path to include

the header file and re-CMAKE.

(3) Appears when generating qgis_gui:

> error LNK2019: Unresolved external symbol "__declspec(dllimport) public: __thiscall
> QwtIntervalSample::QwtIntervalSample(class

QwtIntervalSample const &)" (__imp_??0QwtIntervalSample@@QAE@ABV0@@Z), this symbol is in the

function "private: void __thiscall QVector<class QwtIntervalSample>::realloc(int,int)" (?realloc@?$QVector

@VQwtIntervalSample@@@@AAEXHH@Z) is quoted in

reason: An additional QWT DLL has been added to the project configuration. **Solution:**Remove

QWT_DLL from preprocessor definition in project properties

> error LNK2038: Mismatch detected for '_MSC_VER': value '1600' does not match value '1700'

reason:QT4 needs to be compiled by VS2010, and I use VS2012

Solution: Since it was originally compiled with VS2012, the platform toolset was changed from 2012 to 2010 in the project configuration.

3. Errors encountered after successful compilation:

After running QGIS.EXE, the application cannot start normally (0XC000007B) **reason:**There are multiple QT versions in the computer. After compiling with QT5's QMAKE, QT4 and QT5 DLLs are mixed.

Use 64-bit QT to compile 32-bit QGIS. Check the dependencies of the program through depends and find that some DLLs are 64-bit mismatches.

Solution: Change the QT version (I am using 32-bit QT4).

QGIS.EXE has stopped working after running QGIS.EXE.

reason: In VS2012, some projects are compiled with the 2010 platform toolset, and some are compiled with the 2012 toolset. **Solution**: All projects are compiled in VS2010

Some icons cannot be displayed after running QGIS.EXE

reason:qsvg4.dll not found

Solution: Copy the imageformats folder in ..\OSG32\apps\Qt4\plugins and drop it into the ..\qgis2.14.11\newbuild\output\bin\RelWithDebInfo folder.

"Authentication System: DISABLED. Resources authenticating via the system can not be accessed" appears after running QGIS.EXE

reason: The qca-ossl.dll of qca cannot be found.

Solution: Put the downloaded qca-ossl.dll (OpenSSL plugin for QCA) into the QT bin