

Compiling Vaa3D plugins(Qt6 version) in Windows

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Build Plugins Vaa3D_qt4.8.6_vs2013

1、 git clone

Git clone https://github.com/Vaa3D/vaa3d_tools.git

2、 create links between Vaa3D main body and plugins

```
cd <your Vaa3D path>\vaa3d_tools
mklink /j v3d_main ..\v3d_external\v3d_main
mklink /j bin ..\v3d_external\bin
cd ..\v3d_external
mklink /j released_plugins_more ..\vaa3d_tools\released_plugins
```

3、 Build plugins

Execute the following commands in the Visual Studio command prompt:

```
cd <your Vaa3D path>\v3d_external\released_plugins_more
build_plugindemo_msvc.bat
cd <your Vaa3D path>\vaa3d_tools\released_plugins
build_plugindemo_msvc.bat
```

New feature

- Upgrading Vaa3D from Qt 4.8 version to Qt 6.0 on Windows.
- Simplifying Vaa3D compilation on Windows and replacing Visual Studio 2013 with mingw.

Vaa3D Release v6.004 Latest Compare

linglizhangllec released this 7 minutes ago v6.004 46ce5b5

REMDME.md

Version: Vaa3D_v6.004

Release Date : Nov.30.2021

Bug Repaired

- Fix "Not display red-colored shooting ray " in VR (Vaa3D_v6.004_Windows version).
- Fix "draw curve", "add marker","change color" in VR (Vaa3D_v6.004_Windows version) .
- Fix 16 plugins in Vaa3D, like Cell_Segmentation_GVF, Crop3d_image_series, Anisotropic_filter and so on (Vaa3D_v6.004_Windows version).

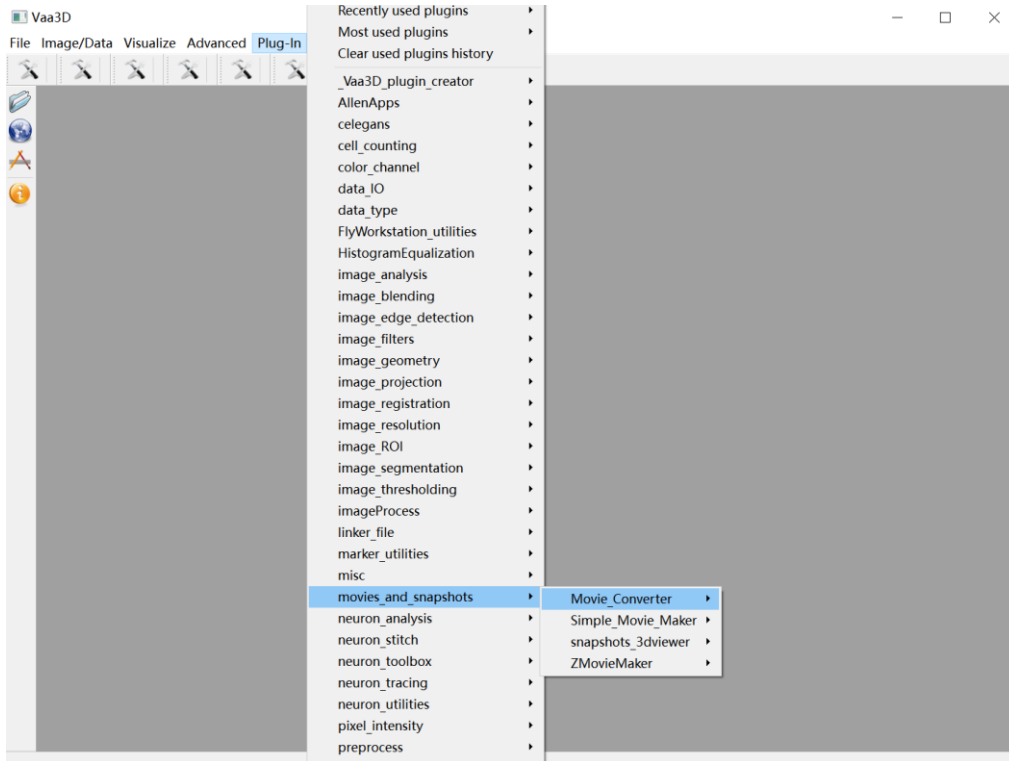
▼ **Assets** 4

- [v3d_mac_qt6.zip](#)
- [Vaa3D_v6.004_Windows_64bit.zip](#)
- [Source code \(zip\)](#)
- [Source code \(tar.gz\)](#)

😊

<https://github.com/Vaa3D/release/releases/tag/v6.004>

Build a plugin



old

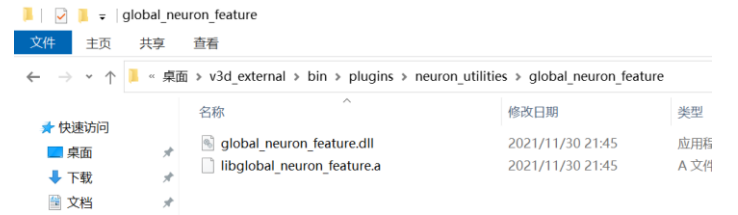
Enter the directory of your target-plugin folder,
run commands "qmake"
then "nmake -f Makefile.Release" in your VS command line Terminal.

new

Enter the directory of your target-plugin folder,
run commands "qmake"
then "mingw32-make -f Makefile.Release" in your command line Terminal.

Build a plugin

```
1 TEMPLATE = lib
2 CONFIG += qt plugin warn_off
3
4 V3DMAINPATH += ../../../../v3d_external/v3d_main
5 INCLUDEPATH += $$V3DMAINPATH/basic_c_fun
6 QT += widgets
7 HEADERS += $$V3DMAINPATH/basic_c_fun/basic_surf_objs.h
8 HEADERS += global_neuron_feature.h
9
10 HEADERS += Nfmain.h
11 HEADERS += $$V3DMAINPATH/neuron_editing/global_feature_compute.h
12
13 HEADERS += ../sort_neuron_swc/openSWCDialog.h
14
15
16 SOURCES += $$V3DMAINPATH/basic_c_fun/basic_surf_objs.cpp
17 SOURCES += $$V3DMAINPATH/basic_c_fun/v3d_message.cpp
18 SOURCES += global_neuron_feature.cpp
19 SOURCES += Nfmain.cpp
20 SOURCES += $$V3DMAINPATH/neuron_editing/global_feature_compute.cpp
21 SOURCES += ../sort_neuron_swc/openSWCDialog.cpp
22
23
24 TARGET = $$qtLibraryTarget(global_neuron_feature)
25 DESTDIR = $$V3DMAINPATH/bin/plugins/neuron_utilities/global_neuron_feature/
26
```



Since Qt 5 the widgets (Including QApplication) have been moved to QtWidgets include folder. To use this to have to add to the pro file QT += widgets

Compiling error conclusion

```
global_neuron_feature.h
1  /* ... */
8
9  #ifndef __NEURON_FEATURE_H
10 #define __NEURON_FEATURE_H
11
12 #include <QtGui>
13 #include <stdio.h>
14 #include <stdlib.h>
15 #include "v3d_interface.h"
16 #include "basic_surf_objs.h"
17
18 class GNFPPlugin: public QObject, public V3DPluginInterface2_1
19 {
20     Q_OBJECT
21     Q_INTERFACES(V3DPluginInterface2_1);
22     Q_PLUGIN_METADATA(IID "com.janelia.v3d.V3DPluginInterface/2.1")
23
24 public:
25     float getPluginVersion() const {return 1.0f;}
26     QStringList menuList() const;
27     void domenu(const QString &menu_name, V3DPluginCallback2 &callback, QWidget *parent);
28     QStringList funclist() const ;
29     bool dofunc(const QString & func_name, const V3DPluginArgList & input, V3DPluginArgList & output, V3DPluginCallback
30 };
31
32 void global_neuron_feature(V3DPluginCallback &callback, QWidget *parent, int method_code);
33
34 #endif
```

1、 add
Q_PLUGIN_METADATA(IID "com.janelia.v3d.V3DPluginInterface/2.1")

2、 annotate
Q_EXPORT_PLUGIN2(global_neuron_feature, GNFPPlugin);

Compiling error conclusion

error 1: use of undeclared identifier 'QInputDialog'

error: 'QMessageBox' has not been declared

error: 'QPushButton' has not been declared

```
Qt += widget

#include <QInputDialog>
#include <QMessageBox>
#include <QPushButton>
```

[error 2: ISO C++17 does not allow 'register' storage class specifier](#)

```
register EdgeTableEntry *pETEchase;
==>
删除register
```

cpp

error 3: C3646: "regExp": 未知重写说明符

```
#include <QRegularExpression>
QRegExp
==>QRegularExpression
```

Compiling error conclusion

Problem:

```
#include <QRegExp>

// In anonymous namespace
QRegExp &rxHexFilename()
{
    static QRegExp rx("(A\\d\\d)_V_(\\d\\d)_C(\\d\\d)\\.hex$");
    return rx;
}

// In constructor
auto pos = rxHexFilename().indexIn(fileName);
auto ecuName = rxHexFilename().cap(1);
if (pos == -1 || ...) {
    return;
}
m_version = QString("v%1.%2")
    .arg(rxHexFilename().cap(2).toInt())
    .arg(rxHexFilename().cap(3).toInt());
m_ecuType = fileName.left(fileName.size() -
    rxHexFilename().matchedLength());
```

Replacing `QRegExp` - a relic of Qt 4 - by `QRegularExpression` has been in the making since Qt 5.0. `QRegularExpression` is the only way to work with regular expressions in Qt 6. The interface has changed considerably.

Fix:

```
#include <QRegularExpression>

// In anonymous namespace
const QRegularExpression rxHexFilename("(A\\d\\d)_V_(\\d\\d)_C(\\d\\d)\\.hex$");

// In constructor
auto match = rxHexFilename.match(fileName);
auto ecuName = match.captured(1);
if (!match.hasMatch() || ...) {
    return;
}
m_version = QString("v%1.%2")
    .arg(match.captured(2).toInt())
    .arg(match.captured(3).toInt());
m_ecuType = fileName.left(fileName.size() -
    match.capturedLength(0));
```

The function for matching a string against a regular expression has got its natural name: `match` (instead of `indexIn`). It returns a `QRegularExpressionMatch` object `match` instead of an index. We retrieve the `n`th captured substring by calling `match.captured(nth)`. `match.hasMatch()` tells us whether the string matched the regular expression.

`QRegExp::matchedLength` returns the length of the substring matching the complete regular expression. This substring is the same as the 0th captured substring `match.captured(0)`, which has the length `match.capturedLength(0)`.

Compiling error conclusion

error 5: no member named `toList` in `QSet<QtCanvasItem *>`

```
return d->itemDict.toList();  
==>  
return d->itemDict.values();
```

error 6: no member named `start` in `QTime`

```
change QTime to QElapsedTimer
```

error 7: no member named `toAscii` in `QString`

```
FILE * fp = fopen(swcfile.toAscii(), "wt");  
==>  
FILE * fp = fopen(swcfile.toLatin1(), "wt");
```

error 8: no member named `getInteger` in `QInputDialog`

```
int threshold = QInputDialog::getInteger(parent, QObject::tr("Threshold"),  
                                       QObject::tr("Enter threshold:"),  
                                       100, 0, 255, 1, &ok);  
==>  
int threshold = QInputDialog::getInt(parent, QObject::tr("Threshold"),  
                                     QObject::tr("Enter threshold:"),  
                                     100, 0, 255, 1, &ok);
```

error 9: `UnicodeUTF8` is not a member of `QApplication`

```
ParaDialog->setWindowTitle(QApplication::translate("ParaDialog", "C.elegans Straighten", 0, QApplication::UnicodeUTF8));  
==>  
ParaDialog->setWindowTitle(QApplication::translate("ParaDialog", "C.elegans Straighten", 0));
```

Compiling error conclusion

error 13: cannot initialize a parameter of type '[QEnterEvent *](#)' with an lvalue of type '[QEvent *](#)'

```
void MyComboBox::enterEvent(QEvent *e)
{
    updateList();
    QComboBox::enterEvent(e);
}
==>
void MyComboBox::enterEvent(QEnterEvent *e)
{
    updateList();
    QComboBox::enterEvent(e);
}
```

error 14: 'class [QListWidget](#)' has no member named '[isSelected](#)'; did you mean '[itemClicked](#)'?

```
if (list_markers->isSelected(list_markers->currentItem()))
==>
if (list_markers->currentItem()->isSelected())
```

This function is obsolete. It is provided to keep old source code working. We strongly advise against using it in new code.

Returns `true` if *item* is selected; otherwise returns `false`.

This function is deprecated. Use [QListWidgetItem::isSelected\(\)](#) instead.

error 15: 'class [QString](#)' has no member named '[sprintf](#)'; did you mean '[asprintf](#)'?

```
file(sprintf("%d",n);
^~
asprintf
```

error 16: expected primary-expression before '[enum](#)', error: expected primary-expression before ')' token char * state = new char[[to_sz](#)]; for(long i = 0; i < [to_sz](#); i++) state[i] = FAR;

```
enum{ALIVE = -1, TRIAL = 0, FAR = 1};
^~~
```

```
#define ALIVE (-1)
#define TRIAL (0)
#define FAR (1)
```

Compiling error conclusion

C:\Qt\Tools\mingw810_64\x86_64-w64-mingw32\include\rpcndr.h:64: error: reference to 'byte' is ambiguous

In file included from C:/Qt/Tools/mingw810_64/x86_64-w64-mingw32/include/wtypes.h:8,
from C:/Qt/Tools/mingw810_64/x86_64-w64-mingw32/include/winscard.h:10,
from C:/Qt/Tools/mingw810_64/x86_64-w64-mingw32/include/windows.h:97,
from C:/Qt/6.1.2/mingw81_64/include/QtCore/qt_windows.h:64,
from C:/Qt/6.1.2/mingw81_64/include/QtGui/qopengl.h:49,
from C:/Qt/6.1.2/mingw81_64/include/QtGui/QtGui:60,
from ..\littleQuickWarp\q_bspline.cpp:8:
C:/Qt/Tools/mingw810_64/x86_64-w64-mingw32/include/rpcndr.h:64:11:

error 10: reference to 'byte' is ambiguous

```
typedef byte cs_byte;  
      ^~~~
```

C++17 added `std::byte` and changed the semantics of bytes. In order to avoid pollution of the global namespace. And we need to isolate `std::byte` from ourselves. Our change is to move its byte into our namespace. Or delete C++17 in the pro file

```
==>  
#define byte win_byte_override  
#include <windows.h>  
#include <gdiplus.h>  
#undef byte
```

error 11: no match for 'operator<<' (operand types are 'QTextStream' and '<unresolved namespace>::endl') overloaded function type>') cpp

Most occurrences of `endl` triggered the warning: 'endl' is deprecated: Use `Qt::endl`. Some occurrences triggered an error: 'endl' was not declared in this scope. The compiler couldn't distinguish between `std::endl` and `Qt::endl`.

```
myfile<<"# id,type,x,y,z,r,pid"<<endl;  
==>  
myfile<<"# id,type,x,y,z,r,pid"<<Qt::endl;
```

error 12: no member named 'insertMulti' in 'QHash<long, long>'

This function is obsolete in [Qt6](#). It is provided to keep old source code working. We strongly advise against using it in new code. Use `insert()` instead.

Compiling error conclusion

error 17: macro "min" passed 3 arguments, but takes just 2 error: expected ')' before 'const

```
#undef max
#undef min
```

error 18: expected type-specifier before 'QWindowsStyle'

```
QGroupBox_channel_main->setStyle(new QWindowsStyle());
      ^~~~~
```

```
QGroupBox_channel_main->setStyle(new QWindowsStyle());
==>
QGroupBox_channel_main->setStyle(new QCommonStyle());
```

error 19: no member named 'setBackgroundColor' in 'QListWidgetItem'

```
QListWidgetItem * newItem = new QListWidgetItem;
    newItem->setText("marker "+ QString::number(i+1)+" on spine. Rejected");
    newItem->setBackgroundColor(red);
==>
QListWidgetItem * newItem = new QListWidgetItem;
    newItem->setText("marker "+ QString::number(i+1)+" on spine. Rejected");
    newItem->setBackground(red);
      ^
```

error 20 Warning: 'QString::SplitBehavior' has not been declared

选择语言

Problem:

```
auto nameParts = customer->name()
    .split(' ', QString::SkipEmptyParts);
```

Like many other [enum](#) constants, `QString::SkipEmptyParts` was moved into the [namespace Qt](#). The problem often occurs as a warning:

```
'... QString::split ...' is deprecated: Use Qt::SplitBehavior variant instead [-wdeprecated-declarations]
```

Fix:

```
auto nameParts = customer->name()
    .split(' ', Qt::SkipEmptyParts);
```

Compiling error conclusion

error 21: ISO C++17 does not allow dynamic exception specifications

```
void *fhandle = 0, int n_pages = -1, bool do_open = true ) throw (iim::IOException);
                                     ^~~~~
==>
void *fhandle = 0, int n_pages = -1, bool do_open = true ) noexcept(false);
```

fatal error 22: QPrintDialog: No such file or directory

```
#include <QPrintDialog>
      ^~~~~
```

```
QT += printsupport
```

error 23 no member named 'Delta' in QWheelEvent

```
QWheelEvent *wheelEvent = static_cast<QWheelEvent *>(event);
    if(wheelEvent->delta() > 0) {
        this->spin->setValue(this->spin->value() + 1);
    }
==>
QWheelEvent *wheelEvent = static_cast<QWheelEvent *>(event);
    if(wheelEvent->angleDelta().y() > 0) {
        this->spin->setValue(this->spin->value() + 1);
    }
```

angleDelta().y() provides the angle through which the common vertical mouse wheel was rotated since the previous event. angleDelta().x() provides the angle through which the horizontal mouse wheel was rotated,

NITRC

error:couldn't find the boost\config.h file

Include the right path (Path\local\boost_1_61_0\boost \config.h) in the project file

error : cannot find -lv3dtiff ,error: ld returned 1 exit status

You can follow the instruction to build tiff library and then link libtiff.a or libtiff.so in your pro file.

Thanks