

Qt Serial Port

From Qt Wiki

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NOTE: As of Qt 5.1, Qt Serial Port is now officially part of Qt. You no longer need to build Qt Serial Port manually; simply install Qt 5.1 or later and go to section Usage

Brief description

The QtSerialPort (<http://doc.qt.io/qt-5/qtserialport-index.html>) module is an add-on module for the Qt5 library, providing a single interface for both hardware and virtual serial ports.

***Note:** Also added support for Qt4.*

Serial interfaces, due to their simplicity and reliability, are still popular in some industries like the development of embedded systems, robotics, etc.

Using the QtSerialPort (<http://doc.qt.io/qt-5/qtserialport-index.html>) module, developers can significantly reduce the time needed to implement Qt applications that require access to a serial interface.

Functionality

Currently, the module API contains two classes: QSerialPort (<http://doc.qt.io/qt-5/qserialport.html>) and QSerialPortInfo (<http://doc.qt.io/qt-5/qserialportinfo.html>).

QSerialPort

QSerialPort (<http://doc.qt.io/qt-5/qserialport.html>) is the base class of the module and provides a set of basic methods and properties to access resources on serial ports.

Supports the following operating systems:

Operating system	Support state	Note
Windows XP/Vista/7/8	YES	Full support
Windows CE	YES	Tested only on 5 and 6 platforms in the emulator
Gnu/Linux	YES	Full support
MacOSX	YES	Full support
Others Unix	YES	All POSIX-compatible

Partial Android Support 1 (<http://www.qtcentre.org/threads/57928-Serial-Port-in-Android>) 2 (<https://forum.qt.io/topic/34000/does-qt-support-serialport-in-android-system/19>).

QSerialPortInfo

QSerialPortInfo (<http://doc.qt.io/qt-5/qserialportinfo.html>) is a helper class. It provides information on the available serial ports on the system.

Supports the following operating systems:

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Operating system	Support state	Note
Windows XP/Vista/7/8	YES	Full support (using SetupAPI)
Windows CE	YES	Tested only on 5 and 6 platforms in the emulator
Gnu/Linux	YES	Full support (using libudev, sysfs or simple search in /dev)
MacOSX	YES	Full support
Others Unix	YES	All POSIX-compatible (only simple search in /dev)

Getting the source code

You should clone from the official mirror (<http://code.qt.io/>) and track changes from there in order to keep the load on Gerrit down.

```
$ git clone git://code.qt.io/qt/qtserialport.git
$ cd qtserialport
```

This repository contains both versions for Qt4 and Qt5.

To take the version for Qt4 it is necessary to do^[1]:

```
$ git checkout qt4-dev
```

To take the version for Qt5 it is necessary to do:

```
$ git checkout qt5.x.y
```

where x and y is a versions of available branches, which can be displayed after:

```
$ git branch -a
```

Building and Installing

There are two simple methods to compile and install library using the command line or the QtCreator (<http://doc.qt.io/qtcreator/>).

Before building you need to install Perl.

***Note:** Perl is required only in the case of Qt5, see here (http://wiki.qt.io/Building_Qt_5_from_Git). When using Qt4 just skip this point.*

Build and install from command line

***Note:** ensure that the environment variables are set correctly:*

- correctly specified the path to the installed Qt4/Qt5*
- correctly specified the path to use the compiler*
- correctly specified the path to Perl*

The following are the recommended steps for building the QtSerialPort (<http://doc.qt.io/qt-5/qtserialport-index.html>) library for Qt4/Qt5 from the command line.

```
$ git clone git://code.qt.io/qt/qtserialport.git
$ mkdir qtserialport-build
$ cd qtserialport-build
$ qmake ../qtserialport/qtserialport.pro
```

and next if you use GCC compiler then to do:

```
$ make
$ make install
```

***Note:** on unix-like systems super user privileges might be required:*

```
$ sudo make install
```

if you use MinGW compiler then to do:

```
$ mingw32-make
$ mingw32-make install
```

if you use MSVC compiler then to do:

```
$ nmake
$ nmake install
```

Build and install from QtCreator

Using QtCreator (<http://doc.qt.io/qtcreator/>) is the simplest and fastest way to manually install the library. Before building you need to check that the desired toolchains (kits) of QtCreator (<http://doc.qt.io/qtcreator/>) have been correctly configured.

Recommended steps to build the QtSerialPort (<http://doc.qt.io/qt-5/qtserialport-index.html>) library for Qt4/Qt5 from QtCreator (<http://doc.qt.io/qtcreator/>):

- download and unpack the QtSerialPort (<http://doc.qt.io/qt-5/qtserialport-index.html>) sources
- run QtCreator (<http://doc.qt.io/qtcreator/>) and open the root "qtserialport/qtserialport.pro" project file
- get to "Projects->(Your Kit)->Build->Build Steps"
- add a new make "Build Step" and write to the "Make arguments" the **install** target
- from the menus, select "Rebuild Project qtserialport"

As a result, the QtSerialPort (<http://doc.qt.io/qt-5/qtserialport-index.html>) library will be automatically compiled and installed into the desired Qt instance (according to the selected Kit).

***Note:** on unix-like systems this method can be failed if Qt was installed into system directories. Super user privileges may be required for "install" target, so need to do:*

```
sudo make install
```

from the shadow directory.

Usage

To use the library, add serialport to the *.pro file of your project:

Qt4

```
CONFIG += serialport
```

Qt5

```
QT += serialport
```

Include the header files of QtSerialPort (<http://doc.qt.io/qt-5/qtserialport-index.html>) where appropriate:

```
...
#include <QSerialPort>
#include <QSerialPortInfo>
...
```

Simple example

Below is a simple example of *main.cpp*:

```
#include <QCoreApplication>
#include <QDebug>

#include <QSerialPort>
#include <QSerialPortInfo>

QT_USE_NAMESPACE

int main(int argc, char *argv[])
{
    QCoreApplication a(argc, argv);

    // Example use QSerialPortInfo
    foreach (const QSerialPortInfo &info, QSerialPortInfo::availablePorts()) {
        qDebug() << "Name : " << info.portName();
        qDebug() << "Description : " << info.description();
        qDebug() << "Manufacturer: " << info.manufacturer();

        // Example use QSerialPort
        QSerialPort serial;
        serial.setPort(info);
        if (serial.open(QIODevice::ReadWrite))
            serial.close();
    }

    return a.exec();
}
```

Documentation generation

There is no need to build the documentation, because the documentation is available here (<http://doc-snapshot.qt.io/qt5-stable/qtserialport-index.html>).

For those wishing to contribute to the development

All development is done through Gerrit (http://wiki.qt.io/Setting_up_Gerrit). Therefore, those wishing to be involved in the development process must have a Qt developer account.

More information about the registration process and development can be found here (http://wiki.qt.io/Code_Reviews)

Possible problems

Fill up

Bug Tracking

Use bugreports.qt.io (<https://bugreports.qt.io>), Project "Qt", Component "Serial Port".

1. ↑ Now QtSerialPort has a separate branch for Qt4 (similar to Qt4 itself), which will be only in one instance.

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- This page was last modified on 27 June 2015, at 18:28.
- This page has been accessed 82,862 times.