Qt5.12.3+OpenCV4.2.0配置，minGW编译与库文件调用

原创 gerald0057 2020-03-24 22:54:14 98 收藏 展开

Qt5.12.3+OpenCV4.2.0

准备工作

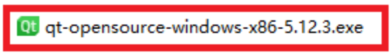
- Qt-OpenSource-windows-x86-5.12.3.exe
  - https://mirrors.tuna.tsinghua.edu.cn/qt/archive/qt/5.12/5.12.3/qt-opensource-windows-x86-5.12.3.exe
- CMake-3.17.0-win64-x64.msi
  - https://cmake.org/files/v3.17/cmake-3.17.0-win64-x64.msi
- OpenCV-4.2.0-Release-SourceCode.zip
  - https://github.com/opencv/opencv/archive/4.2.0.zip

安装步骤

Qt

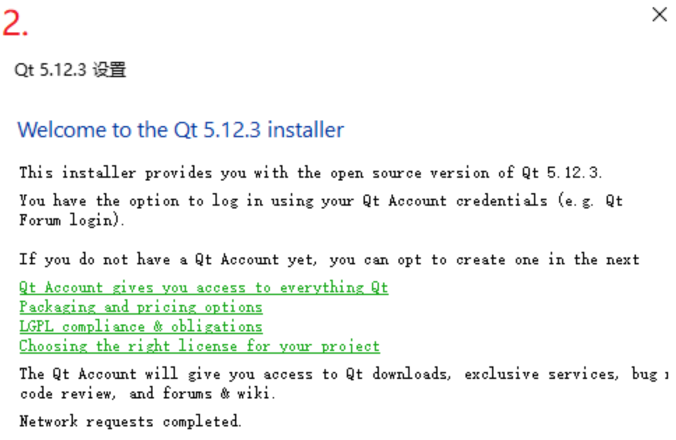
```
Welcome to the Qt installer: next
Qt Account - your unified login to everything Qt: skip
Setup-Qt: next
installation folder: $$ProgramFiles/Qt5.12.3
select components: Qt-Qt5.12.3-MingGW 64 bit
select components: Qt-Tools-MinGW 64 bit
License Agreement: agree and next
start menu shortcuts: next
ready to install: install
```

1.



qt-opensource-windows-x86-5.12.3.exe

2.



Qt 5.12.3 设置

Welcome to the Qt 5.12.3 installer

This installer provides you with the open source version of Qt 5.12.3.

You have the option to log in using your Qt Account credentials (e.g. Qt Forum login).

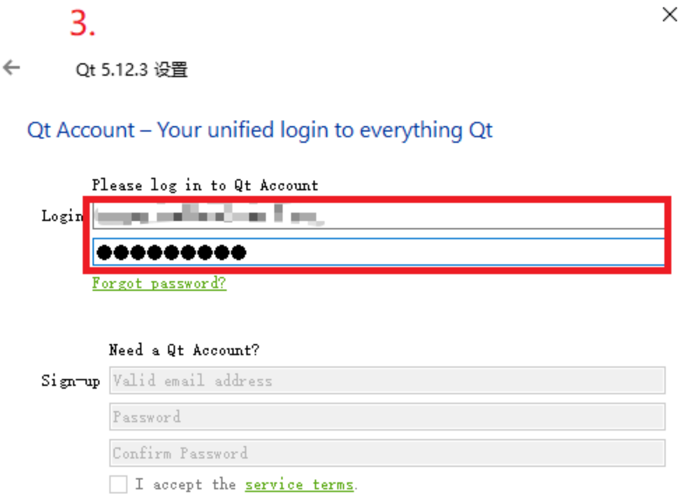
If you do not have a Qt Account yet, you can opt to create one in the next

Qt Account gives you access to everything Qt
Packaging and pricing options
LGPL compliance & obligations
Choosing the right license for your project

The Qt Account will give you access to Qt downloads, exclusive services, bug ı code review, and forums & wiki.

Network requests completed.

3.



Qt 5.12.3 设置

Qt Account – Your unified login to everything Qt

Please log in to Qt Account

Login [redacted]

●●●●●●●●●●

Forgot password?

Need a Qt Account?

Sign-up Valid email address

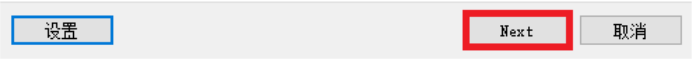
Password

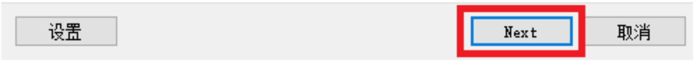
Confirm Password

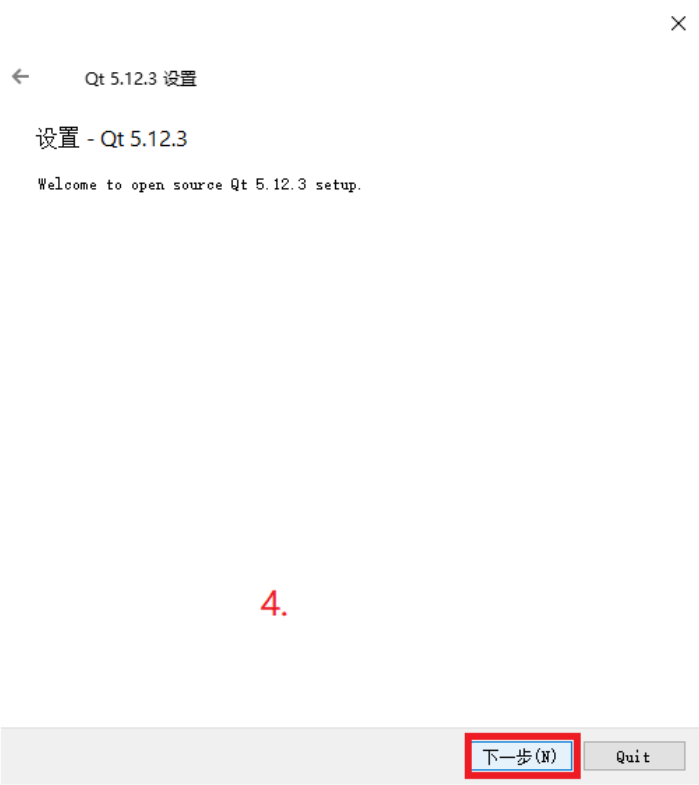
□ I accept the service terms.

如果有skip就skip

没有就注册账号





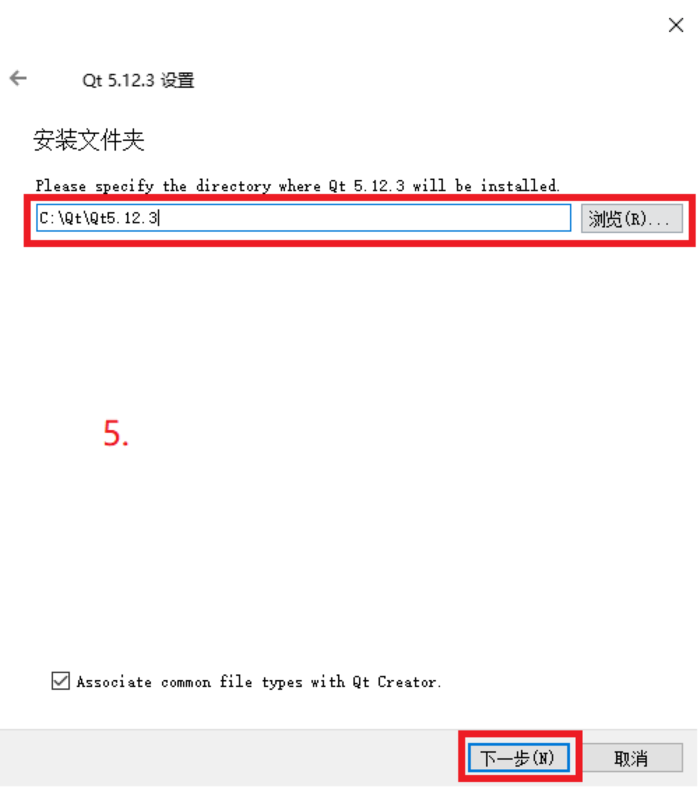


Qt 5.12.3 设置

设置 - Qt 5.12.3

Welcome to open source Qt 5.12.3 setup.

4.



Qt 5.12.3 设置

安装文件夹

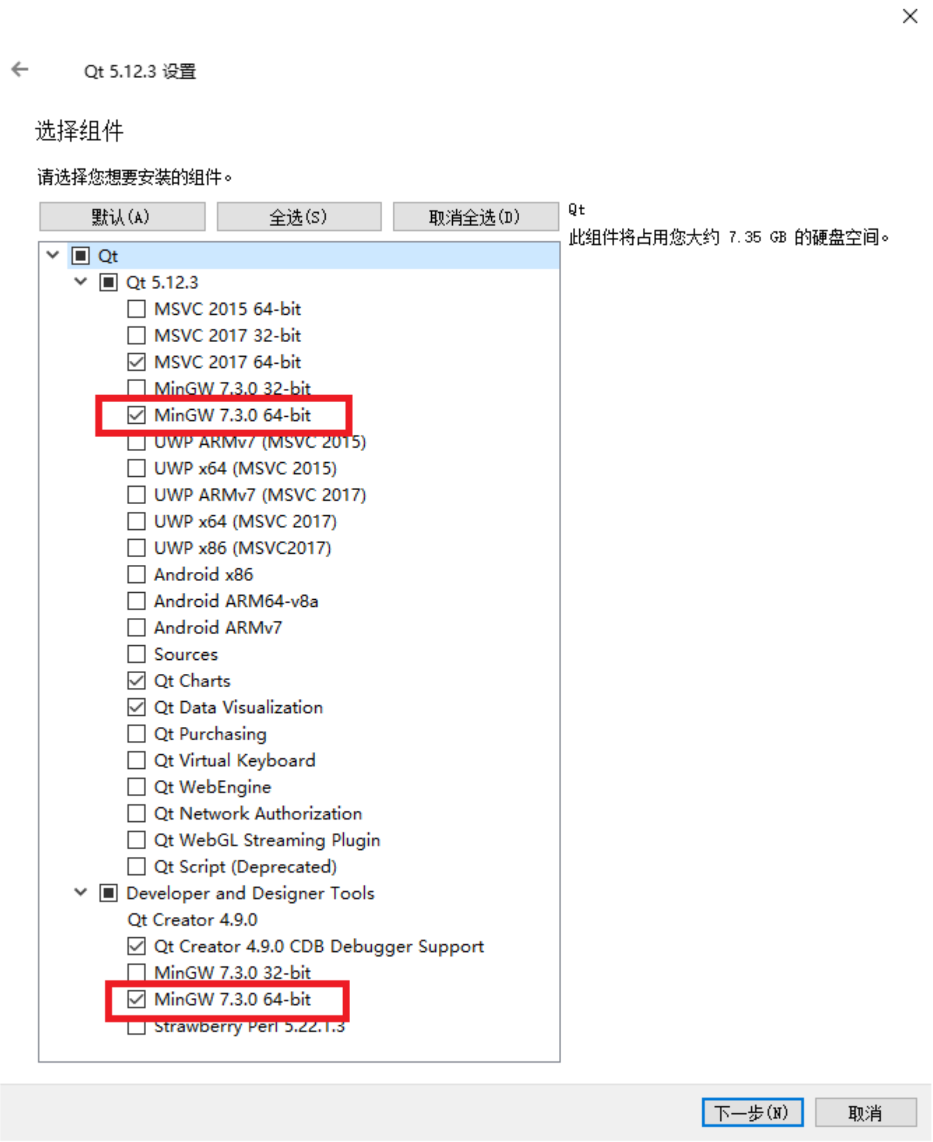
Please specify the directory where Qt 5.12.3 will be installed.

C:\Qt\Qt5.12.3

5.

☑ Associate common file types with Qt Creator.

6.



Qt 5.12.3 设置

选择组件

请选择您想要安装的组件。

Qt
此组件将占用您大约 7.35 GB 的硬盘空间。

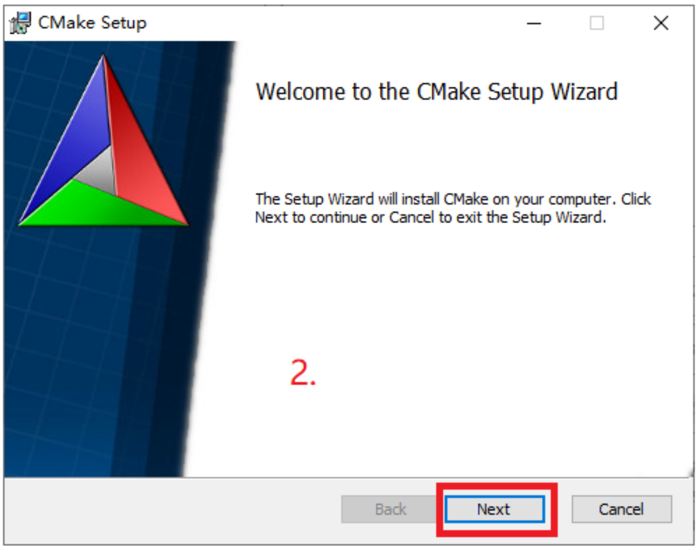
- ■ Qt
  - ■ Qt 5.12.3
    - □ MSVC 2015 64-bit
    - □ MSVC 2017 32-bit
    - ☑ MSVC 2017 64-bit
    - □ MinGW 7.3.0 32-bit
    - ☑ MinGW 7.3.0 64-bit
    - □ UWP ARMv7 (MSVC 2015)
    - □ UWP x64 (MSVC 2015)
    - □ UWP ARMv7 (MSVC 2017)
    - □ UWP x64 (MSVC 2017)
    - □ UWP x86 (MSVC2017)
    - □ Android x86
    - □ Android ARM64-v8a
    - □ Android ARMv7
    - □ Sources
    - ☑ Qt Charts
    - ☑ Qt Data Visualization
    - □ Qt Purchasing
    - □ Qt Virtual Keyboard
    - □ Qt WebEngine
    - □ Qt Network Authorization
    - □ Qt WebGL Streaming Plugin
    - □ Qt Script (Deprecated)
  - ■ Developer and Designer Tools
    - Qt Creator 4.9.0
    - ☑ Qt Creator 4.9.0 CDB Debugger Support
    - □ MinGW 7.3.0 32-bit
    - ☑ MinGW 7.3.0 64-bit
    - □ Strawberry Perl 5.22.1.3

CMake

```
Welcome to the CMake Setup Wizzard: next
End-User License Agreement: [V] Accept and next
Install options: [V] Add CMake to the system PATH for all users, next
Destination folder: $$ProgramFiles/CMake, next
Ready to install CMake, Install
```

1. cmake-3.17.0-win64-x64.msi

2.

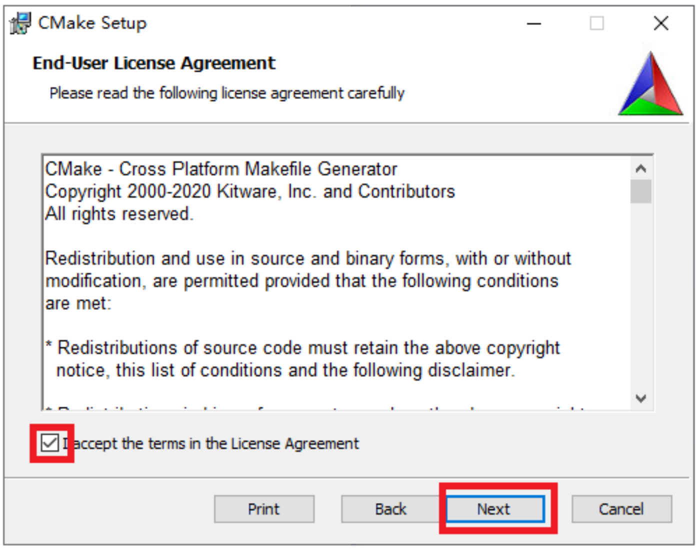


CMake Setup

Welcome to the CMake Setup Wizard

The Setup Wizard will install CMake on your computer. Click Next to continue or Cancel to exit the Setup Wizard.

3.



CMake Setup

End-User License Agreement

Please read the following license agreement carefully

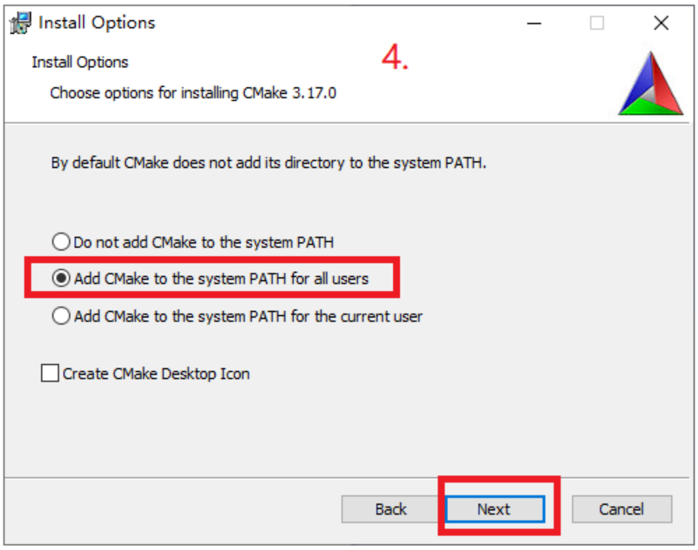
CMake - Cross Platform Makefile Generator
Copyright 2000-2020 Kitware, Inc. and Contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

☑ I accept the terms in the License Agreement

4.



Install Options

Install Options

Choose options for installing CMake 3.17.0

By default CMake does not add its directory to the system PATH.

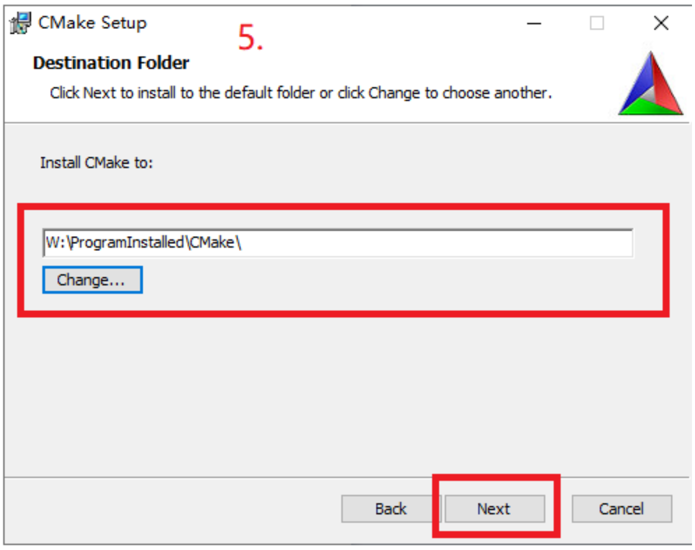
○ Do not add CMake to the system PATH

● Add CMake to the system PATH for all users

○ Add CMake to the system PATH for the current user

□ Create CMake Desktop Icon

5.



CMake Setup

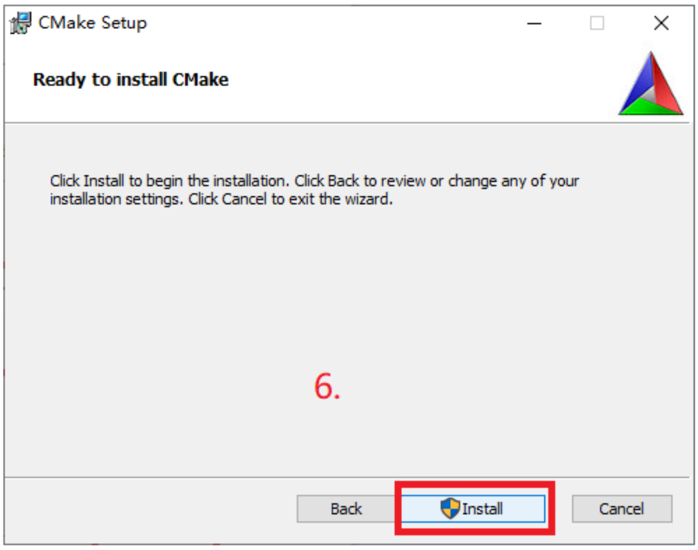
Destination Folder

Click Next to install to the default folder or click Change to choose another.

Install CMake to:

W:\ProgramInstalled\CMake\

6.



CMake Setup

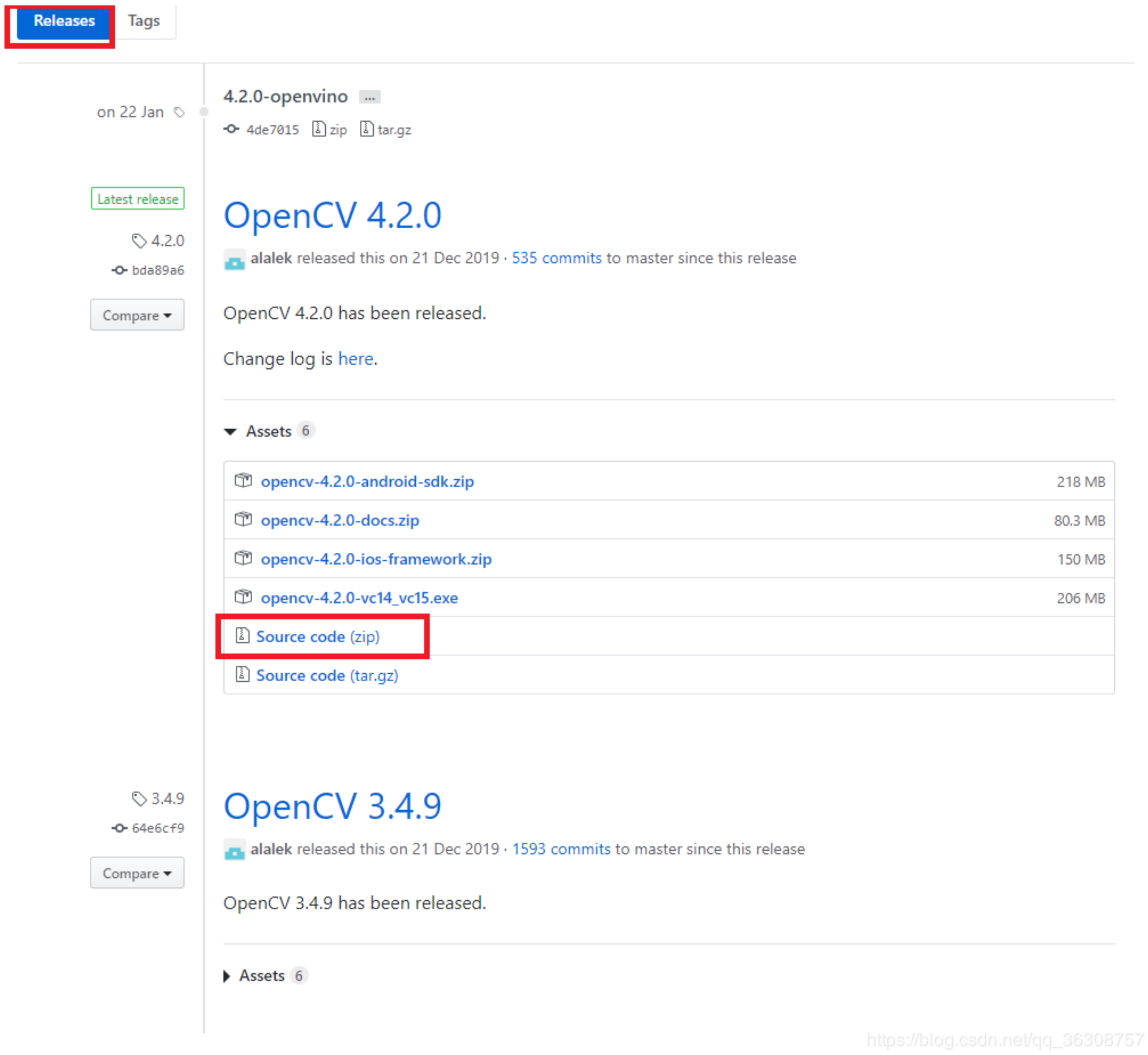
Ready to install CMake

Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.

7.finish

OpenCV

opencv需要选择release版本下载，直接clone可能在make的时候出错，这里下载最新的4.2.0版本，然后解压到没有中文路径的目录下，本教程**假设**解压到目录 $$opencv-4.2.0\ 下



on 22 Jan

4.2.0-openvino ...

4de7015 zip tar.gz

4.2.0

bda89a6

OpenCV 4.2.0

alalek released this on 21 Dec 2019 · 535 commits to master since this release

OpenCV 4.2.0 has been released.

Change log is here.

Assets 6

opencv-4.2.0-android-sdk.zip	218 MB
opencv-4.2.0-docs.zip	80.3 MB
opencv-4.2.0-ios-framework.zip	150 MB
opencv-4.2.0-vc14_vc15.exe	206 MB
Source code (zip)	
Source code (tar.gz)	

3.4.9

64e6cf9

OpenCV 3.4.9

alalek released this on 21 Dec 2019 · 1593 commits to master since this release

OpenCV 3.4.9 has been released.

Assets 6

使用minGW编译opencv

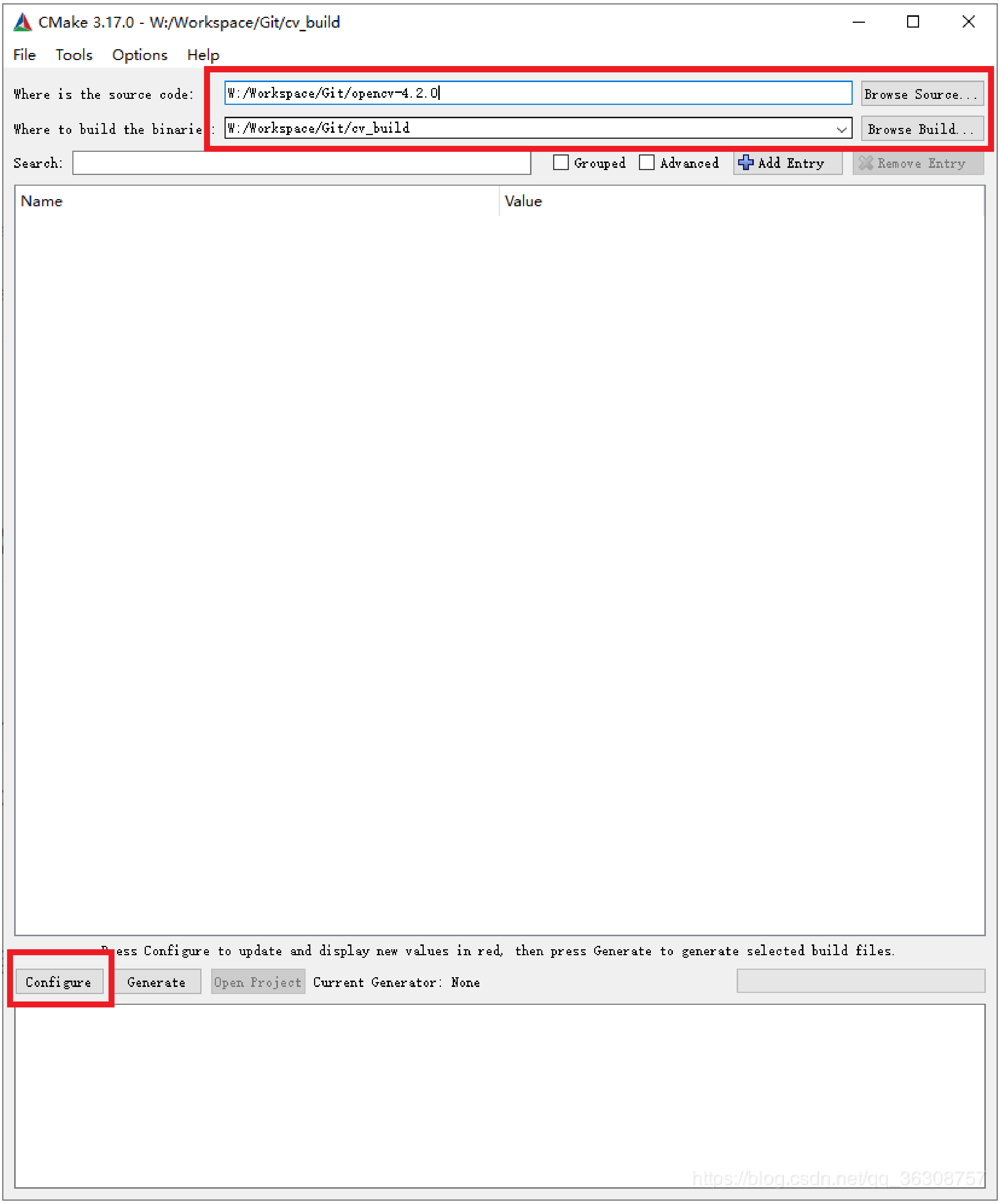
mingw 来自 qt，添加其到系统环境变量

```
$$ProgramFiles\Qt\5.12.3\mingw73_64\bin
```

在 $$opencv-4.2.0 附近或子目录建立编译 opencv 的 output 文件夹：

```
mkdir cv_build
```

打开CMake，选中 opencv 的源码和 output 目录，然后 configure


CMake 3.17.0 - W:/Workspace/Git/cv_build

Where is the source code: W:/Workspace/Git/opencv-4.2.0

Where to build the binaries: W:/Workspace/Git/cv_build

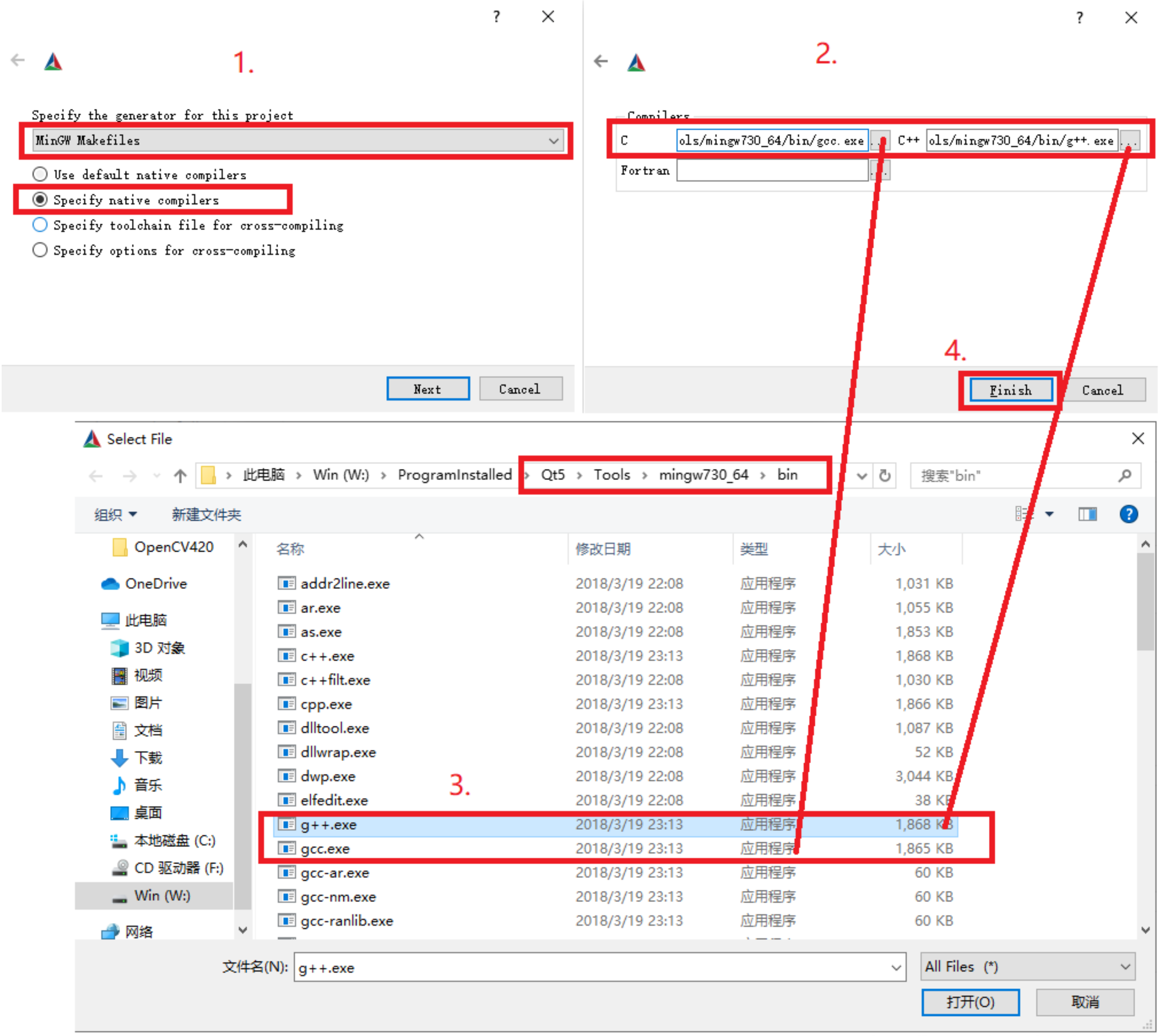
Search:

□ Grouped □ Advanced

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

Current Generator: None

在弹出的对话框中如下配置，调用 qt 的 mingw



1. Specify the generator for this project: MinGW Makefiles

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

2. Compilers

C: ols/mingw730_64/bin/gcc.exe C++: ols/mingw730_64/bin/g++.exe

Fortran:

此电脑 › Win (W:) › ProgramInstalled › Qt5 › Tools › mingw730_64 › bin

名称	修改日期	类型	大小
addr2line.exe	2018/3/19 22:08	应用程序	1,031 KB
ar.exe	2018/3/19 22:08	应用程序	1,055 KB
as.exe	2018/3/19 22:08	应用程序	1,853 KB
c++.exe	2018/3/19 23:13	应用程序	1,868 KB
c++filt.exe	2018/3/19 22:08	应用程序	1,030 KB
cpp.exe	2018/3/19 23:13	应用程序	1,866 KB
dlltool.exe	2018/3/19 22:08	应用程序	1,087 KB
dllwrap.exe	2018/3/19 22:08	应用程序	52 KB
dwp.exe	2018/3/19 22:08	应用程序	3,044 KB
elfedit.exe	2018/3/19 22:08	应用程序	38 KB
g++.exe	2018/3/19 23:13	应用程序	1,868 KB
gcc.exe	2018/3/19 23:13	应用程序	1,865 KB
gcc-ar.exe	2018/3/19 23:13	应用程序	60 KB
gcc-nm.exe	2018/3/19 23:13	应用程序	60 KB
gcc-ranlib.exe	2018/3/19 23:13	应用程序	60 KB

文件名(N): g++.exe All Files (*)

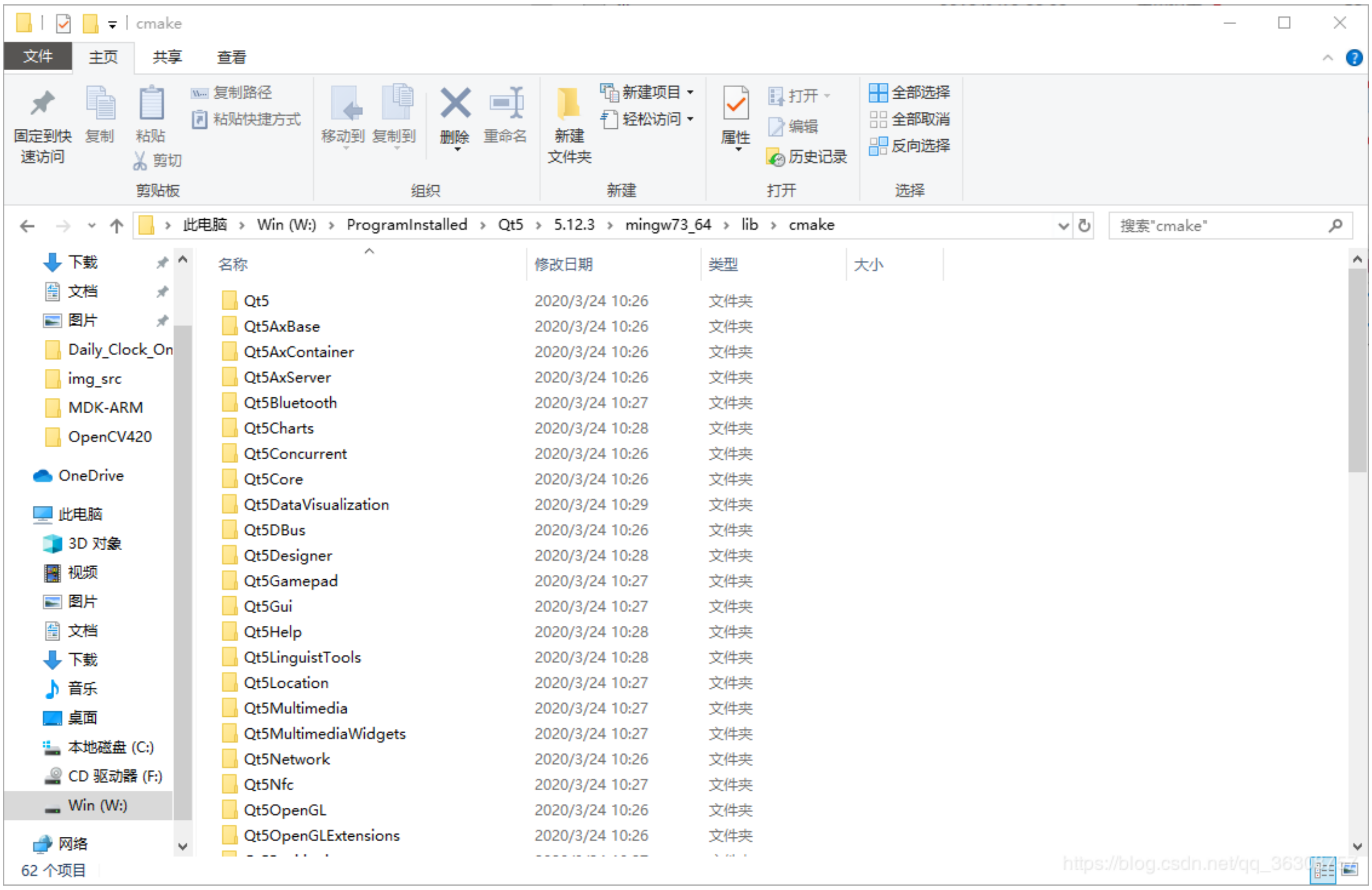
configure 期间会下载 dll 文件，由于网络原因会出现下载失败，但不影响

第一次 config 完成后：

- 勾上 WITH_QT
- 勾上 WITH_OPENGL
- 取消 ENABLE_PRECOMPILED_HEADERS
- 取消 WITH_IPP

然后再次 config，这次 config 可能会报错

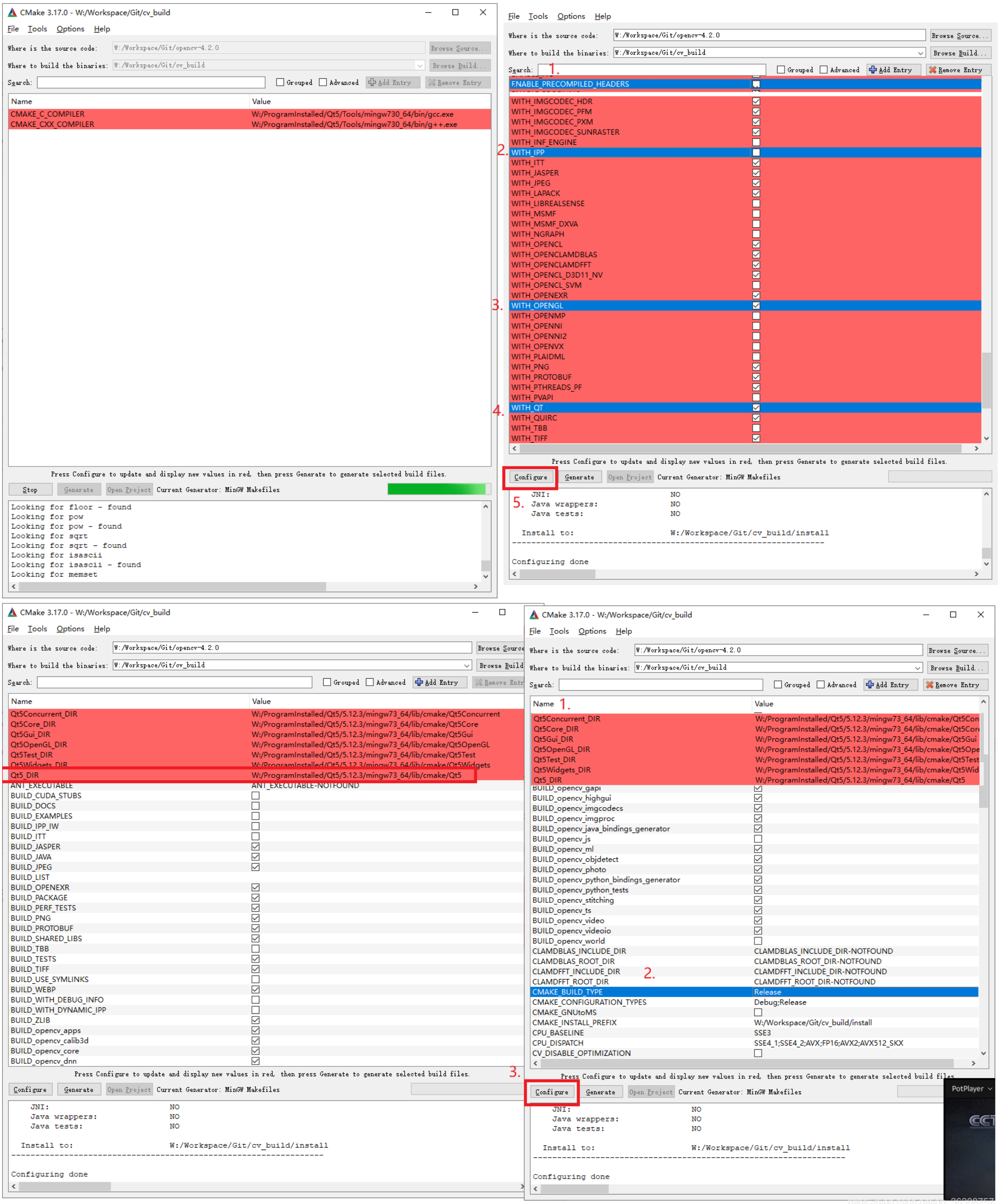
选择正确的 qt-cmake 文件路径 QT5_DIR --> $$ProgramFiles/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5



此电脑 › Win (W:) › ProgramInstalled › Qt5 › 5.12.3 › mingw73_64 › lib › cmake

名称	修改日期	类型	大小
Qt5	2020/3/24 10:26	文件夹	
Qt5AxBase	2020/3/24 10:26	文件夹	
Qt5AxContainer	2020/3/24 10:26	文件夹	
Qt5AxServer	2020/3/24 10:26	文件夹	
Qt5Bluetooth	2020/3/24 10:27	文件夹	
Qt5Charts	2020/3/24 10:28	文件夹	
Qt5Concurrent	2020/3/24 10:26	文件夹	
Qt5Core	2020/3/24 10:26	文件夹	
Qt5DataVisualization	2020/3/24 10:29	文件夹	
Qt5DBus	2020/3/24 10:26	文件夹	
Qt5Designer	2020/3/24 10:28	文件夹	
Qt5Gamepad	2020/3/24 10:27	文件夹	
Qt5Gui	2020/3/24 10:27	文件夹	
Qt5Help	2020/3/24 10:28	文件夹	
Qt5LinguistTools	2020/3/24 10:28	文件夹	
Qt5Location	2020/3/24 10:27	文件夹	
Qt5Multimedia	2020/3/24 10:27	文件夹	
Qt5MultimediaWidgets	2020/3/24 10:27	文件夹	
Qt5Network	2020/3/24 10:26	文件夹	
Qt5Nfc	2020/3/24 10:27	文件夹	
Qt5OpenGL	2020/3/24 10:26	文件夹	
Qt5OpenGLExtensions	2020/3/24 10:26	文件夹	

其他几个文件路径也在这个目录下，一直 config 和配置参数，直到红色消失，参数配置如下



Where is the source code: W:/Workspace/Git/opencv-4.2.0

Where to build the binaries: W:/Workspace/Git/cv_build

Name	Value
CMAKE_C_COMPILER	W:/ProgramInstalled/Qt5/Tools/mingw730_64/bin/gcc.exe
CMAKE_CXX_COMPILER	W:/ProgramInstalled/Qt5/Tools/mingw730_64/bin/g++.exe

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

Current Generator: MinGW Makefiles

```
Looking for floor - found
Looking for pow
Looking for pow - found
Looking for sqrt
Looking for sqrt - found
Looking for isascii
Looking for isascii - found
Looking for memset
```

Where is the source code: W:/Workspace/Git/opencv-4.2.0

Where to build the binaries: W:/Workspace/Git/cv_build

Search: 1.

Name	Value
ENABLE_PRECOMPILED_HEADERS	□
WITH_IMGCODEC_HDR	☑
WITH_IMGCODEC_PFM	☑
WITH_IMGCODEC_PXM	☑
WITH_IMGCODEC_SUNRASTER	☑
WITH_INF_ENGINE	□
2. WITH_IPP	□
WITH_ITT	☑
WITH_JASPER	☑
WITH_JPEG	☑
WITH_LAPACK	☑
WITH_LIBREALSENSE	□
WITH_MSMF	□
WITH_MSMF_DXVA	□
WITH_NGRAPH	□
WITH_OPENCL	☑
WITH_OPENCLAMDBLAS	☑
WITH_OPENCLAMDFFT	☑
WITH_OPENCL_D3D11_NV	☑
WITH_OPENCL_SVM	□
WITH_OPENEXR	☑
3. WITH_OPENGL	☑
WITH_OPENMP	□
WITH_OPENNI	□
WITH_OPENNI2	□
WITH_OPENVX	□
WITH_PLAIDML	□
WITH_PNG	☑
WITH_PROTOBUF	☑
WITH_PTHREADS_PF	☑
WITH_PVAPI	□
4. WITH_QT	☑
WITH_QUIRC	☑
WITH_TBB	□
WITH_TIFF	☑

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

Current Generator: MinGW Makefiles

5.

```
   JNI:                         NO
   Java wrappers:               NO
   Java tests:                  NO

 Install to:                    W:/Workspace/Git/cv_build/install
-----------------------------------------------------------------

Configuring done
```

Where is the source code: W:/Workspace/Git/opencv-4.2.0

Where to build the binaries: W:/Workspace/Git/cv_build

Name	Value
Qt5Concurrent_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Concurrent
Qt5Core_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Core
Qt5Gui_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Gui
Qt5OpenGL_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5OpenGL
Qt5Test_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Test
Qt5Widgets_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Widgets
Qt5_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5
ANT_EXECUTABLE	ANT_EXECUTABLE-NOTFOUND
BUILD_CUDA_STUBS	□
BUILD_DOCS	□
BUILD_EXAMPLES	□
BUILD_IPP_IW	□
BUILD_ITT	□
BUILD_JASPER	☑
BUILD_JAVA	☑
BUILD_JPEG	☑
BUILD_LIST	
BUILD_OPENEXR	☑
BUILD_PACKAGE	☑
BUILD_PERF_TESTS	☑
BUILD_PNG	☑
BUILD_PROTOBUF	☑
BUILD_SHARED_LIBS	☑
BUILD_TBB	□
BUILD_TESTS	☑
BUILD_TIFF	☑
BUILD_USE_SYMLINKS	□
BUILD_WEBP	☑
BUILD_WITH_DEBUG_INFO	□
BUILD_WITH_DYNAMIC_IPP	□
BUILD_ZLIB	☑
BUILD_opencv_apps	☑
BUILD_opencv_calib3d	☑
BUILD_opencv_core	☑
BUILD_opencv_dnn	☑

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

Current Generator: MinGW Makefiles

```
   JNI:                         NO
   Java wrappers:               NO
   Java tests:                  NO

 Install to:                    W:/Workspace/Git/cv_build/install
-----------------------------------------------------------------

Configuring done
```

Where is the source code: W:/Workspace/Git/opencv-4.2.0

Where to build the binaries: W:/Workspace/Git/cv_build

Name 1.	Value
Qt5Concurrent_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Con
Qt5Core_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Core
Qt5Gui_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Gui
Qt5OpenGL_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Ope
Qt5Test_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Test
Qt5Widgets_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5Wid
Qt5_DIR	W:/ProgramInstalled/Qt5/5.12.3/mingw73_64/lib/cmake/Qt5
BUILD_opencv_gapi	☑
BUILD_opencv_highgui	☑
BUILD_opencv_imgcodecs	☑
BUILD_opencv_imgproc	☑
BUILD_opencv_java_bindings_generator	☑
BUILD_opencv_js	□
BUILD_opencv_ml	☑
BUILD_opencv_objdetect	☑
BUILD_opencv_photo	☑
BUILD_opencv_python_bindings_generator	☑
BUILD_opencv_python_tests	☑
BUILD_opencv_stitching	☑
BUILD_opencv_ts	☑
BUILD_opencv_video	☑
BUILD_opencv_videoio	☑
BUILD_opencv_world	□
CLAMDBLAS_INCLUDE_DIR	CLAMDBLAS_INCLUDE_DIR-NOTFOUND
CLAMDBLAS_ROOT_DIR	CLAMDBLAS_ROOT_DIR-NOTFOUND
CLAMDFFT_INCLUDE_DIR 2.	CLAMDFFT_INCLUDE_DIR-NOTFOUND
CLAMDFFT_ROOT_DIR	CLAMDFFT_ROOT_DIR-NOTFOUND
CMAKE_BUILD_TYPE	Release
CMAKE_CONFIGURATION_TYPES	Debug;Release
CMAKE_GNUtoMS	□
CMAKE_INSTALL_PREFIX	W:/Workspace/Git/cv_build/install
CPU_BASELINE	SSE3
CPU_DISPATCH	SSE4_1;SSE4_2;AVX;FP16;AVX2;AVX512_SKX
CV_DISABLE_OPTIMIZATION	□

3.

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

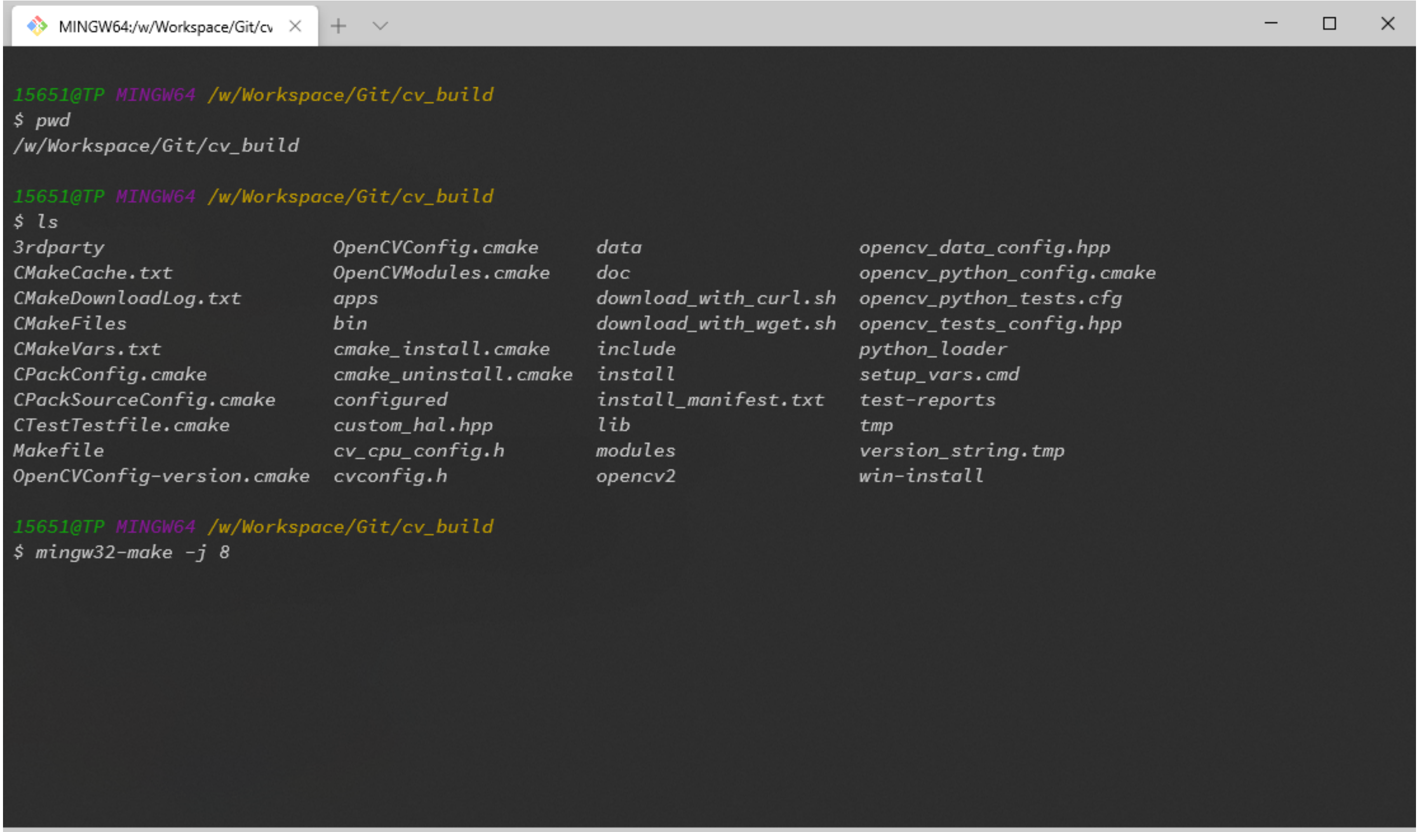
Current Generator: MinGW Makefiles

```
   JNI:                         NO
   Java wrappers:               NO
   Java tests:                  NO

 Install to:                    W:/Workspace/Git/cv_build/install
-----------------------------------------------------------------

Configuring done
```

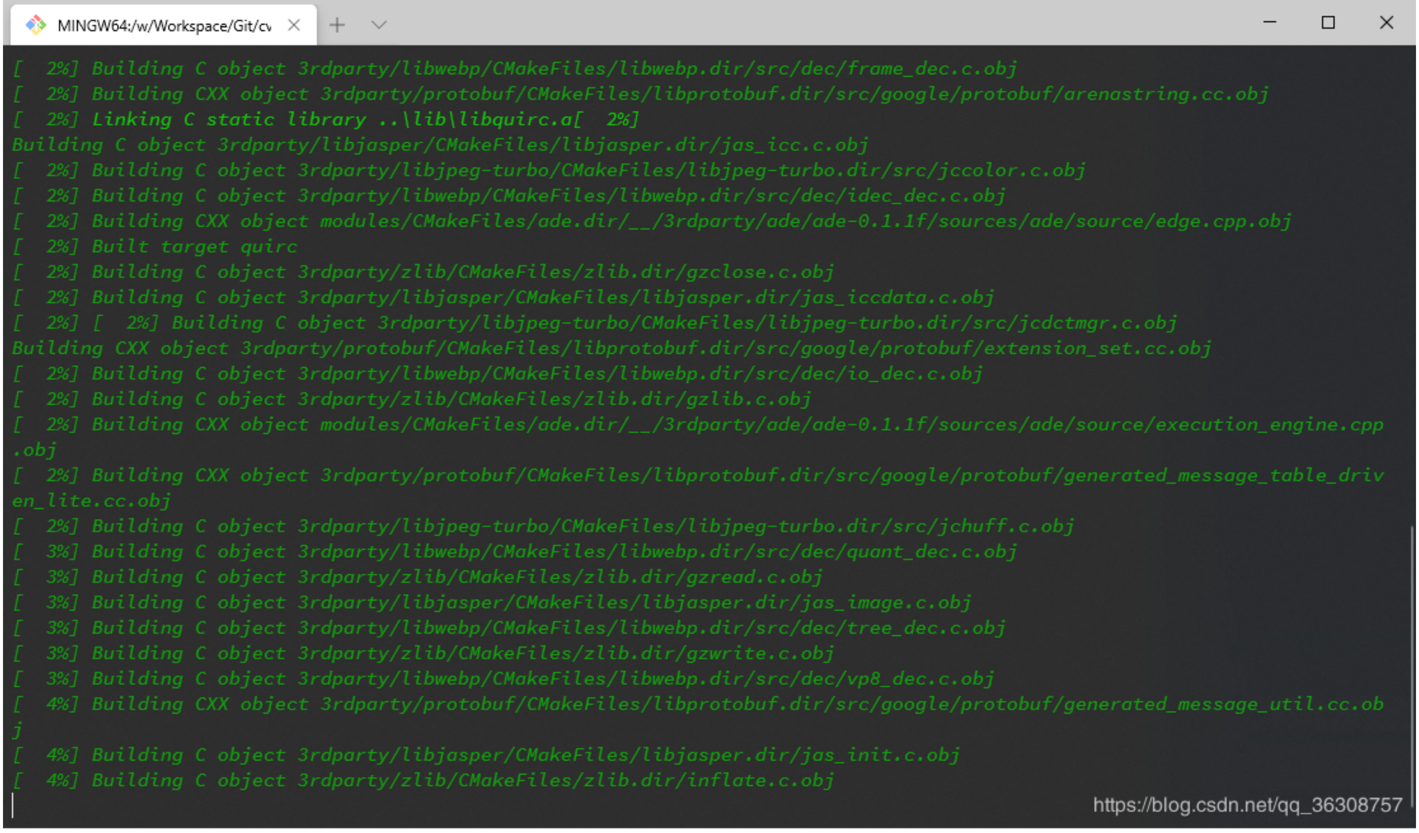
configure 完成后，执行 generate，然后在 cv_build 目录下运行终端，在终端下执行

```
mingw32-make -j 8
```

使用8个cpu核心编译 opencv 源码



```
15651@TP MINGW64 /w/Workspace/Git/cv_build
$ pwd
/w/Workspace/Git/cv_build

15651@TP MINGW64 /w/Workspace/Git/cv_build
$ ls
3rdparty                    OpenCVConfig.cmake       data                  opencv_data_config.hpp
CMakeCache.txt              OpenCVModules.cmake      doc                   opencv_python_config.cmake
CMakeDownloadLog.txt        apps                     download_with_curl.sh opencv_python_tests.cfg
CMakeFiles                  bin                      download_with_wget.sh opencv_tests_config.hpp
CMakeVars.txt               cmake_install.cmake      include               python_loader
CPackConfig.cmake           cmake_uninstall.cmake    install               setup_vars.cmd
CPackSourceConfig.cmake     configured               install_manifest.txt  test-reports
CTestTestfile.cmake         custom_hal.hpp           lib                   tmp
Makefile                    cv_cpu_config.h          modules               version_string.tmp
OpenCVConfig-version.cmake  cvconfig.h               opencv2               win-install

15651@TP MINGW64 /w/Workspace/Git/cv_build
$ mingw32-make -j 8
```

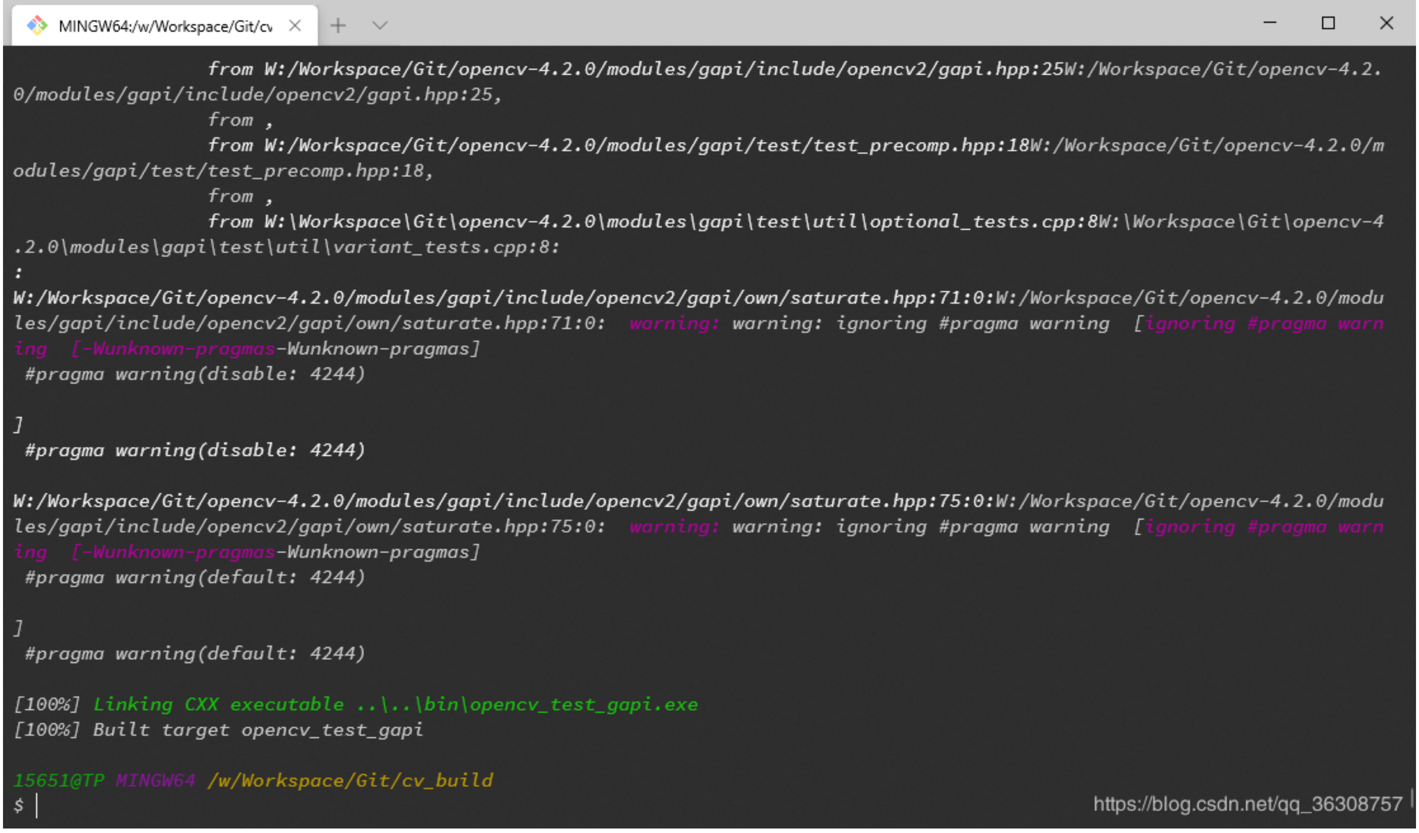


```
[  2%] Building C object 3rdparty/libwebp/CMakeFiles/libwebp.dir/src/dec/frame_dec.c.obj
[  2%] Building CXX object 3rdparty/protobuf/CMakeFiles/libprotobuf.dir/src/google/protobuf/arenastring.cc.obj
[  2%] Linking C static library ..\lib\libquirc.a[  2%]
Building C object 3rdparty/libjasper/CMakeFiles/libjasper.dir/jas_icc.c.obj
[  2%] Building C object 3rdparty/libjpeg-turbo/CMakeFiles/libjpeg-turbo.dir/src/jccolor.c.obj
[  2%] Building C object 3rdparty/libwebp/CMakeFiles/libwebp.dir/src/dec/idec_dec.c.obj
[  2%] Building CXX object modules/CMakeFiles/ade.dir/__/3rdparty/ade/ade-0.1.1f/sources/ade/source/edge.cpp.obj
[  2%] Built target quirc
[  2%] Building C object 3rdparty/zlib/CMakeFiles/zlib.dir/gzclose.c.obj
[  2%] Building C object 3rdparty/libjasper/CMakeFiles/libjasper.dir/jas_iccdata.c.obj
[  2%] [  2%] Building C object 3rdparty/libjpeg-turbo/CMakeFiles/libjpeg-turbo.dir/src/jcdctmgr.c.obj
Building CXX object 3rdparty/protobuf/CMakeFiles/libprotobuf.dir/src/google/protobuf/extension_set.cc.obj
[  2%] Building C object 3rdparty/libwebp/CMakeFiles/libwebp.dir/src/dec/io_dec.c.obj
[  2%] Building C object 3rdparty/zlib/CMakeFiles/zlib.dir/gzlib.c.obj
[  2%] Building CXX object modules/CMakeFiles/ade.dir/__/3rdparty/ade/ade-0.1.1f/sources/ade/source/execution_engine.cpp
.obj
[  2%] Building CXX object 3rdparty/protobuf/CMakeFiles/libprotobuf.dir/src/google/protobuf/generated_message_table_driv
en_lite.cc.obj
[  2%] Building C object 3rdparty/libjpeg-turbo/CMakeFiles/libjpeg-turbo.dir/src/jchuff.c.obj
[  3%] Building C object 3rdparty/libwebp/CMakeFiles/libwebp.dir/src/dec/quant_dec.c.obj
[  3%] Building C object 3rdparty/zlib/CMakeFiles/zlib.dir/gzread.c.obj
[  3%] Building C object 3rdparty/libjasper/CMakeFiles/libjasper.dir/jas_image.c.obj
[  3%] Building C object 3rdparty/libwebp/CMakeFiles/libwebp.dir/src/dec/tree_dec.c.obj
[  3%] Building C object 3rdparty/zlib/CMakeFiles/zlib.dir/gzwrite.c.obj
[  3%] Building C object 3rdparty/libwebp/CMakeFiles/libwebp.dir/src/dec/vp8_dec.c.obj
[  4%] Building CXX object 3rdparty/protobuf/CMakeFiles/libprotobuf.dir/src/google/protobuf/generated_message_util.cc.ob
j
[  4%] Building C object 3rdparty/libjasper/CMakeFiles/libjasper.dir/jas_init.c.obj
[  4%] Building C object 3rdparty/zlib/CMakeFiles/zlib.dir/inflate.c.obj
```

> 其他版本可能出现的问题：
>
> **If**, in the file opencv/sources/modules/videoio/src/cap_dshow.cpp, you have the following error : 'sprintf_instead_use_StringCbPrintfA_or_StringCchPrintfA' was not declared in this scope ...
>
> **try this**: put the following line: #define NO_DSHOW_STRSAFE, before the line : #include "DShow.h"
>
> **If** you have the error: ‘nullptr’ was not declared in this scope..
>
> **try this**: in cmake check the box ENABLE_CXX11

> **If**, in the file modules\videoio\src\cap_msmf.cpp you have the error: using invalid field '{anonymous}::ComPtr<T>::p'..
>
> **try this**: in cmake unchecking WITH_MSMF
>
> **If**，Building RC object modules/core/CMakeFiles/opencv_core.dir/vs_version.rc.obj v:\MinGW-Builds\mingw64\bin\windres.exe: unknown option -- W
>
> **try this**: change the source code to release version

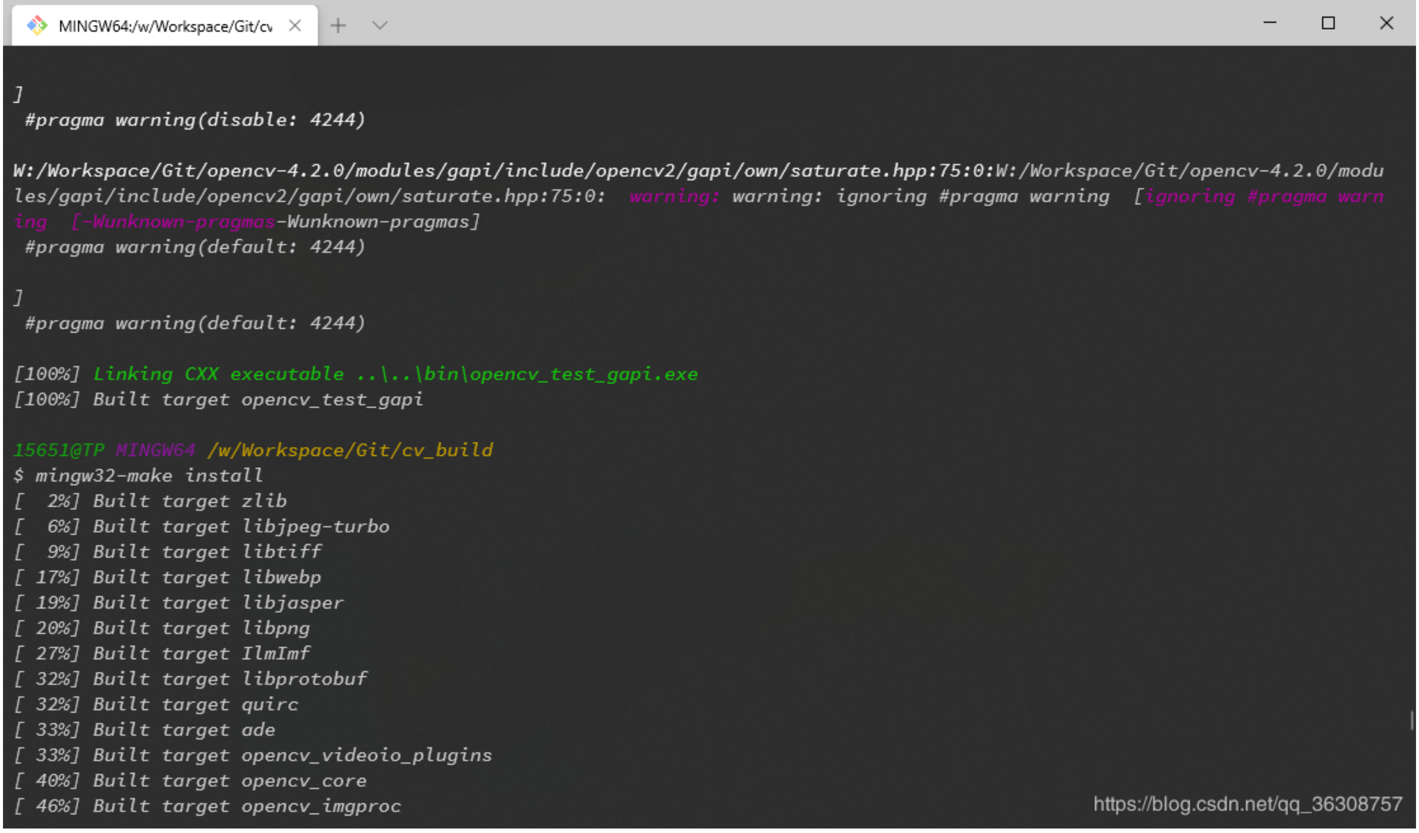
编译完成：



```
                 from W:/Workspace/Git/opencv-4.2.0/modules/gapi/include/opencv2/gapi.hpp:25W:/Workspace/Git/opencv-4.2.
0/modules/gapi/include/opencv2/gapi.hpp:25,
                 from ,
                 from W:/Workspace/Git/opencv-4.2.0/modules/gapi/test/test_precomp.hpp:18W:/Workspace/Git/opencv-4.2.0/m
odules/gapi/test/test_precomp.hpp:18,
                 from ,
                 from W:\Workspace\Git\opencv-4.2.0\modules\gapi\test\util\optional_tests.cpp:8W:\Workspace\Git\opencv-4
.2.0\modules\gapi\test\util\variant_tests.cpp:8:
:
W:/Workspace/Git/opencv-4.2.0/modules/gapi/include/opencv2/gapi/own/saturate.hpp:71:0:W:/Workspace/Git/opencv-4.2.0/modu
les/gapi/include/opencv2/gapi/own/saturate.hpp:71:0:  warning: warning: ignoring #pragma warning  [ignoring #pragma warn
ing  [-Wunknown-pragmas-Wunknown-pragmas]
 #pragma warning(disable: 4244)

]
 #pragma warning(disable: 4244)

W:/Workspace/Git/opencv-4.2.0/modules/gapi/include/opencv2/gapi/own/saturate.hpp:75:0:W:/Workspace/Git/opencv-4.2.0/modu
les/gapi/include/opencv2/gapi/own/saturate.hpp:75:0:  warning: warning: ignoring #pragma warning  [ignoring #pragma warn
ing  [-Wunknown-pragmas-Wunknown-pragmas]
 #pragma warning(default: 4244)

]
 #pragma warning(default: 4244)

[100%] Linking CXX executable ..\..\bin\opencv_test_gapi.exe
[100%] Built target opencv_test_gapi

15651@TP MINGW64 /w/Workspace/Git/cv_build
$ |
```

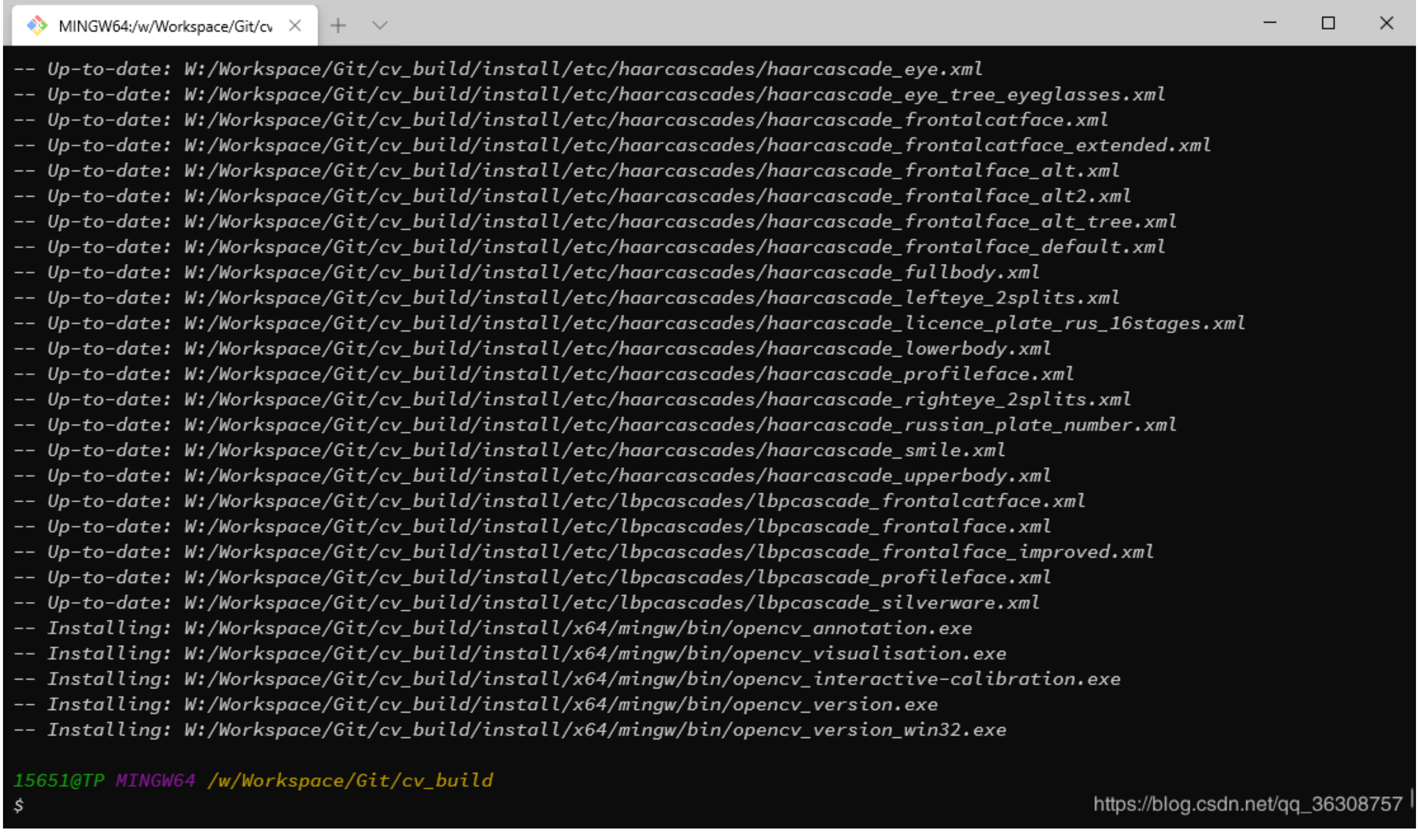
https://blog.csdn.net/qq_36308757

make install:


MINGW64:/w/Workspace/Git/cv
https://blog.csdn.net/qq_36308757

```
]
 #pragma warning(disable: 4244)

W:/Workspace/Git/opencv-4.2.0/modules/gapi/include/opencv2/gapi/own/saturate.hpp:75:0:W:/Workspace/Git/opencv-4.2.0/modu
les/gapi/include/opencv2/gapi/own/saturate.hpp:75:0:  warning: warning: ignoring #pragma warning  [ignoring #pragma warn
ing  [-Wunknown-pragmas-Wunknown-pragmas]
 #pragma warning(default: 4244)

]
 #pragma warning(default: 4244)

[100%] Linking CXX executable ..\..\bin\opencv_test_gapi.exe
[100%] Built target opencv_test_gapi

15651@TP MINGW64 /w/Workspace/Git/cv_build
$ mingw32-make install
[  2%] Built target zlib
[  6%] Built target libjpeg-turbo
[  9%] Built target libtiff
[ 17%] Built target libwebp
[ 19%] Built target libjasper
[ 20%] Built target libpng
[ 27%] Built target IlmImf
[ 32%] Built target libprotobuf
[ 32%] Built target quirc
[ 33%] Built target ade
[ 33%] Built target opencv_videoio_plugins
[ 40%] Built target opencv_core
[ 46%] Built target opencv_imgproc
```

install done:


MINGW64:/w/Workspace/Git/cv
https://blog.csdn.net/qq_36308757

```
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_eye.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_eye_tree_eyeglasses.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_frontalcatface.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_frontalcatface_extended.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_frontalface_alt.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_frontalface_alt2.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_frontalface_alt_tree.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_frontalface_default.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_fullbody.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_lefteye_2splits.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_licence_plate_rus_16stages.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_lowerbody.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_profileface.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_righteye_2splits.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_russian_plate_number.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_smile.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/haarcascades/haarcascade_upperbody.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/lbpcascades/lbpcascade_frontalcatface.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/lbpcascades/lbpcascade_frontalface.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/lbpcascades/lbpcascade_frontalface_improved.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/lbpcascades/lbpcascade_profileface.xml
-- Up-to-date: W:/Workspace/Git/cv_build/install/etc/lbpcascades/lbpcascade_silverware.xml
-- Installing: W:/Workspace/Git/cv_build/install/x64/mingw/bin/opencv_annotation.exe
-- Installing: W:/Workspace/Git/cv_build/install/x64/mingw/bin/opencv_visualisation.exe
-- Installing: W:/Workspace/Git/cv_build/install/x64/mingw/bin/opencv_interactive-calibration.exe
-- Installing: W:/Workspace/Git/cv_build/install/x64/mingw/bin/opencv_version.exe
-- Installing: W:/Workspace/Git/cv_build/install/x64/mingw/bin/opencv_version_win32.exe

15651@TP MINGW64 /w/Workspace/Git/cv_build
$
```

install 完成后，在 cv_build 目录下自动生成了一个 install 文件夹，该文件夹内包含了 h文件、lib、dll文件

建立文件夹，用于其他工程调用：

```
# 新建一个文件夹，用于其他工程调用：
mkdir opencv420
cd opencv420
```

建立文件目录如下

```
opencv420/:
+---bin
+---include
|   \---opencv2
|       +---calib3d
|       +---core
|       +---dnn
|       +---features2d
|       +---flann
|       +---gapi
|       +---highgui
|       +---imgcodecs
|       +---imgproc
|       +---ml
|       +---objdetect
|       +---photo
|       +---stitching
|       +---video
|       \---videoio
\---lib
```

其中:

- include 目录拷贝自 cv_build/install/include
- bin 目录拷贝自 cv_build/install/x64/mingw/bin
- lib 目录拷贝自 cv_build/install/x64/mingw/lib

到现在为止，opencv420 目录包含了 mingw 编译的库文件，接口的头文件，可用于其他 mingw-based 项目调用

Qt调用库文件

拷贝 opencv420 到项目内 pro 文件的同目录，在 opencv420 目录内建立文件 opencv420.pri，内容如下：

```
DEFINES += OPENCV4_DLL

INCLUDEPATH += $$PWD/include

LIBS += -L$$PWD/bin -llibopencv_calib3d420
LIBS += -L$$PWD/bin -llibopencv_core420
LIBS += -L$$PWD/bin -llibopencv_dnn420
LIBS += -L$$PWD/bin -llibopencv_features2d420
LIBS += -L$$PWD/bin -llibopencv_flann420
LIBS += -L$$PWD/bin -llibopencv_gapi420
LIBS += -L$$PWD/bin -llibopencv_highgui420
LIBS += -L$$PWD/bin -llibopencv_imgcodecs420
LIBS += -L$$PWD/bin -llibopencv_imgproc420
LIBS += -L$$PWD/bin -llibopencv_ml420
LIBS += -L$$PWD/bin -llibopencv_objdetect420
LIBS += -L$$PWD/bin -llibopencv_photo420
LIBS += -L$$PWD/bin -llibopencv_stitching420
LIBS += -L$$PWD/bin -llibopencv_video420
LIBS += -L$$PWD/bin -llibopencv_videoio420
```

- 定义宏，使用 opencv4 动态库
- 添加头文件路径为 pri 文件路径下 include 路径
- 添加库文件，-L 添加库文件的路径为 pri 文件路径下的 bin 路径，-l 添加该路径下的动态库文件

Qt测试OpenCV

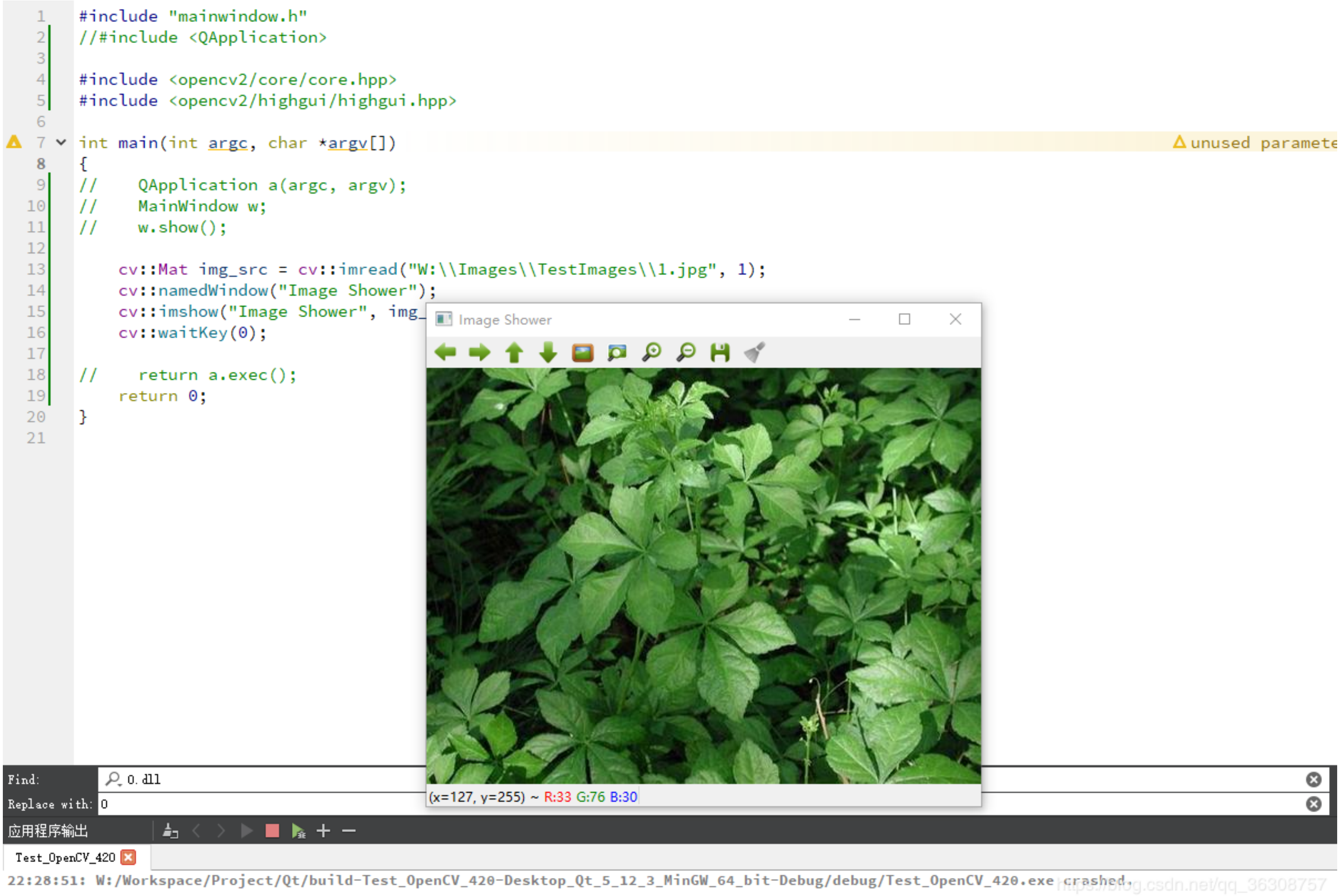
修改 pro 文件，增加该行

```
include($$PWD/opencv420/opencv420.pri)
```

修改 main.cpp

```cpp
#include "mainwindow.h"
//#include <QApplication>

#include <opencv2/core/core.hpp>
#include <opencv2/highgui/highgui.hpp>

int main(int argc, char *argv[])
{
//    QApplication a(argc, argv);
//    MainWindow w;
//    w.show();

    cv::Mat img_src = cv::imread("W:\\Images\\TestImages\\1.jpg", 1);
    cv::namedWindow("Image Shower");
    cv::imshow("Image Shower", img_src);
    cv::waitKey(0);

//    return a.exec();
    return 0;
}
```

构建运行：



```
#include "mainwindow.h"
//#include <QApplication>

#include <opencv2/core/core.hpp>
#include <opencv2/highgui/highgui.hpp>

int main(int argc, char *argv[])
{
//    QApplication a(argc, argv);
//    MainWindow w;
//    w.show();

    cv::Mat img_src = cv::imread("W:\\Images\\TestImages\\1.jpg", 1);
    cv::namedWindow("Image Shower");
    cv::imshow("Image Shower", img_
    cv::waitKey(0);

//    return a.exec();
    return 0;
}
```

⚠unused paramete

(x=127, y=255) ~ R:33 G:76 B:30

Find: 0.dll

Replace with: 0

```
22:28:51: W:/Workspace/Project/Qt/build-Test_OpenCV_420-Desktop_Qt_5_12_3_MinGW_64_bit-Debug/debug/Test_OpenCV_420.exe crashed.
```

除了拷贝库文件然后添加LIBS路径的方法外，还可以将dll文件的路径添加到系统环境变量中。