PCL 配置指南

本篇是在 VS2012 下配置 PCL1.7.2.我们可以选择合适的 PCL 来进行配置。

首先解压缩到指定的位置，然后会发现会有 OPENNI 和 PCL 两个文件夹，里面分别有：

PCL：

OPENNI：

在得到这些文件之后，我们进行环境的配置，首先是新建一个工程，然后，右键属性，找到 VC++目录：

然后，找到包含文件，进行编辑：

包含目录

E:\research\summer\PCL 1.7.2\3rdParty\Boost\include\boost-1_55
E:\research\summer\PCL 1.7.2\3rdParty\FLANN\include
E:\research\summer\PCL 1.7.2\3rdParty\Qhull\include
E:\research\summer\PCL 1.7.2\3rdParty\VTK\include\vtk-5.10
E:\research\summer\openNI\Include
E:\research\summer\PCL 1.7.2\include\pcl-1.7
E:\research\summer\PCL 1.7.2\3rdParty\Eigen\eigen3
E:\research\summer\OpenGL

继承的值:

E:\research\opencv\build\include
E:\research\opencv\build\include\opencv
E:\research\opencv\build\include\opencv2
$(VCInstallDir)include
$(VCInstallDir)atlmfc\include
$(WindowsSDK_IncludePath)

☑ 从父级或项目默认设置继承(I)   宏(M) >>

确定   取消
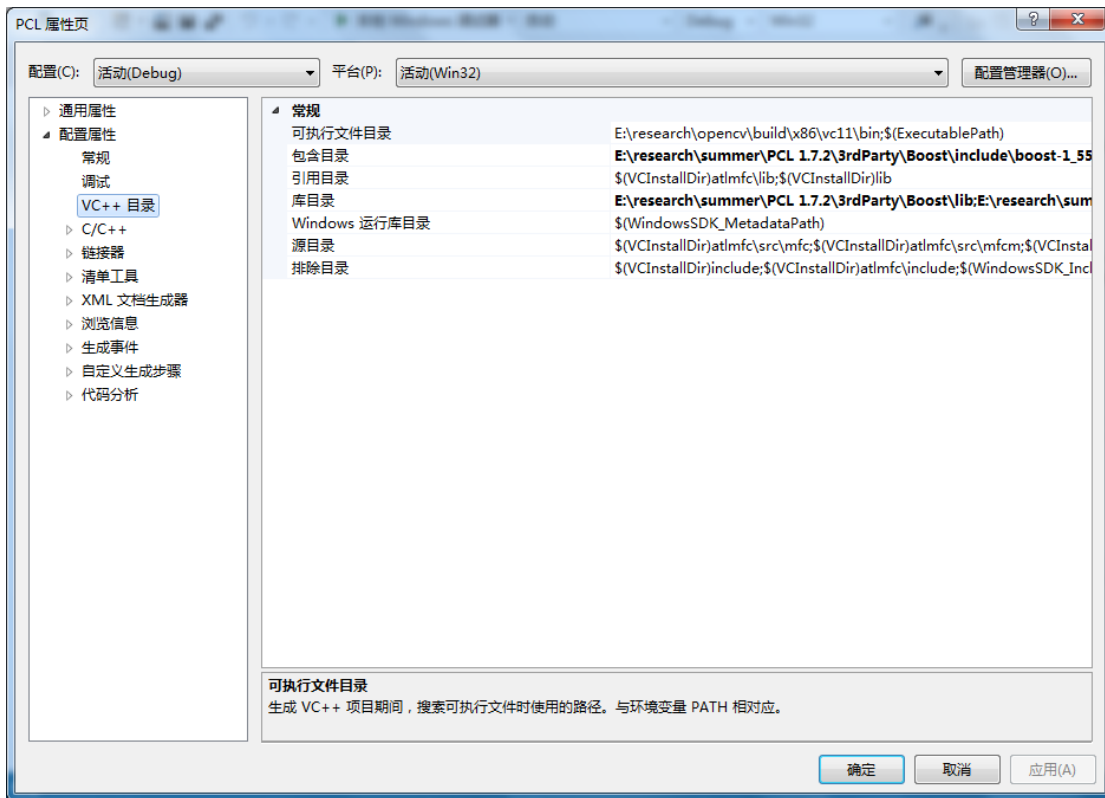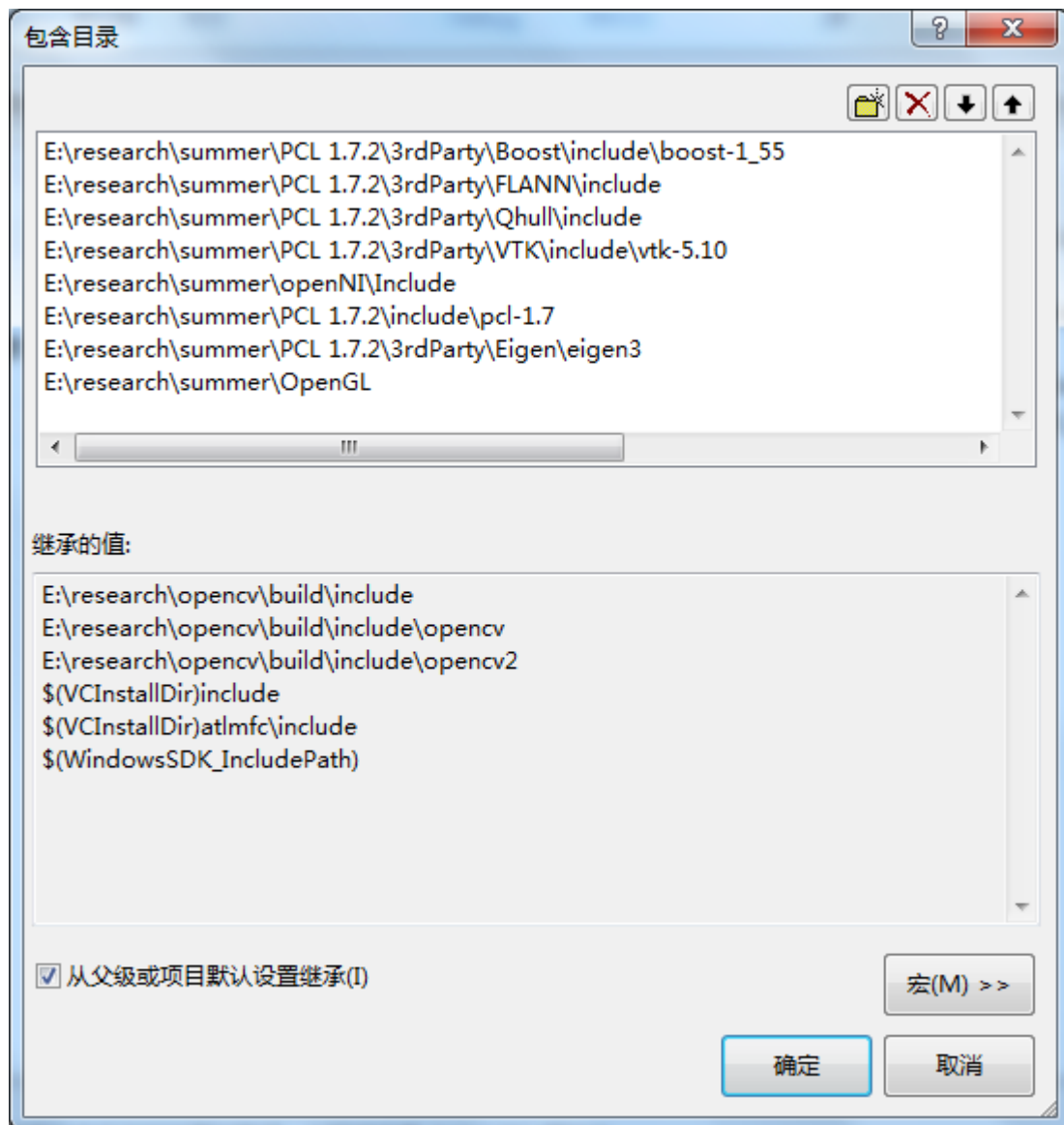
输入以上内容，对应的路径自己进行改变
然后，找到库目录：
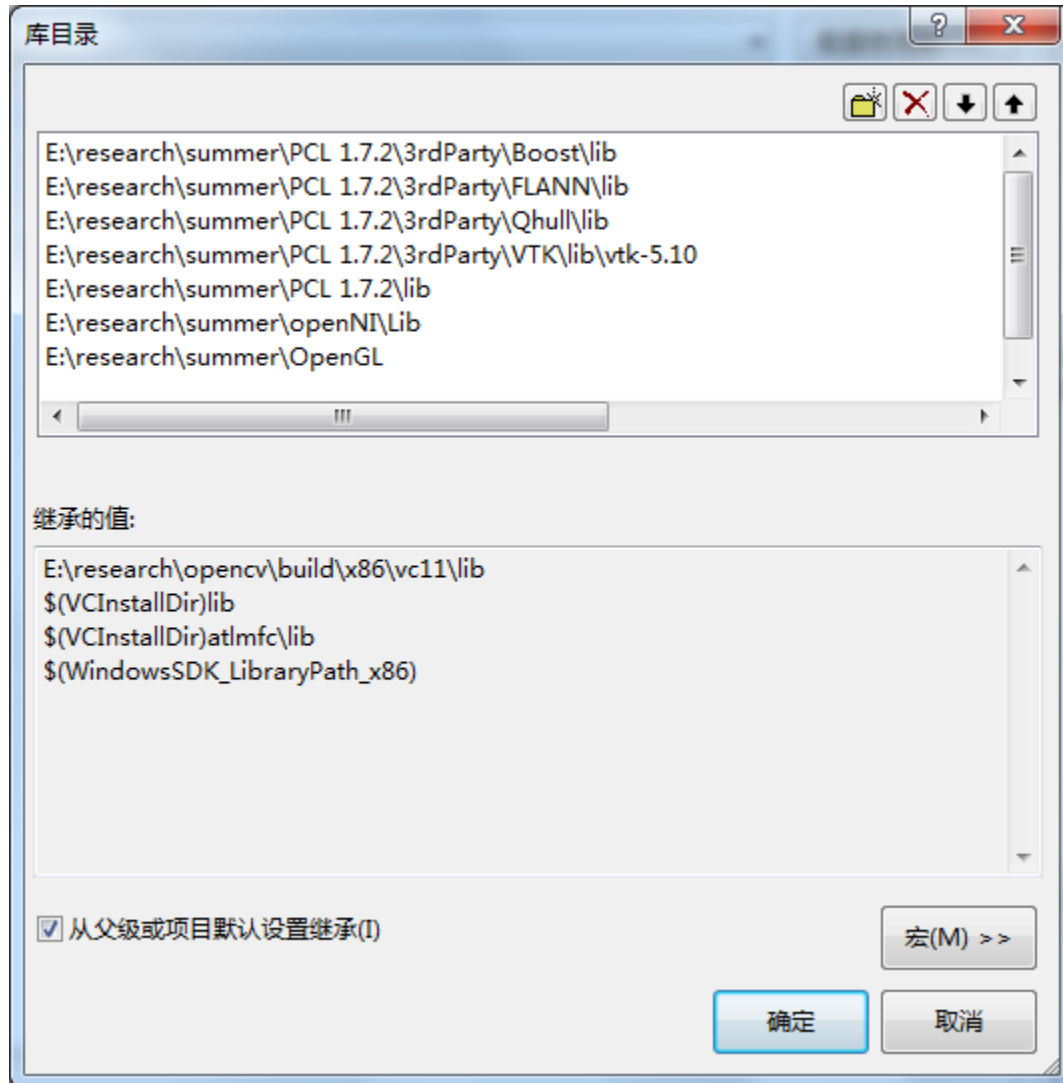
同样的输入上面的内容进行配置。
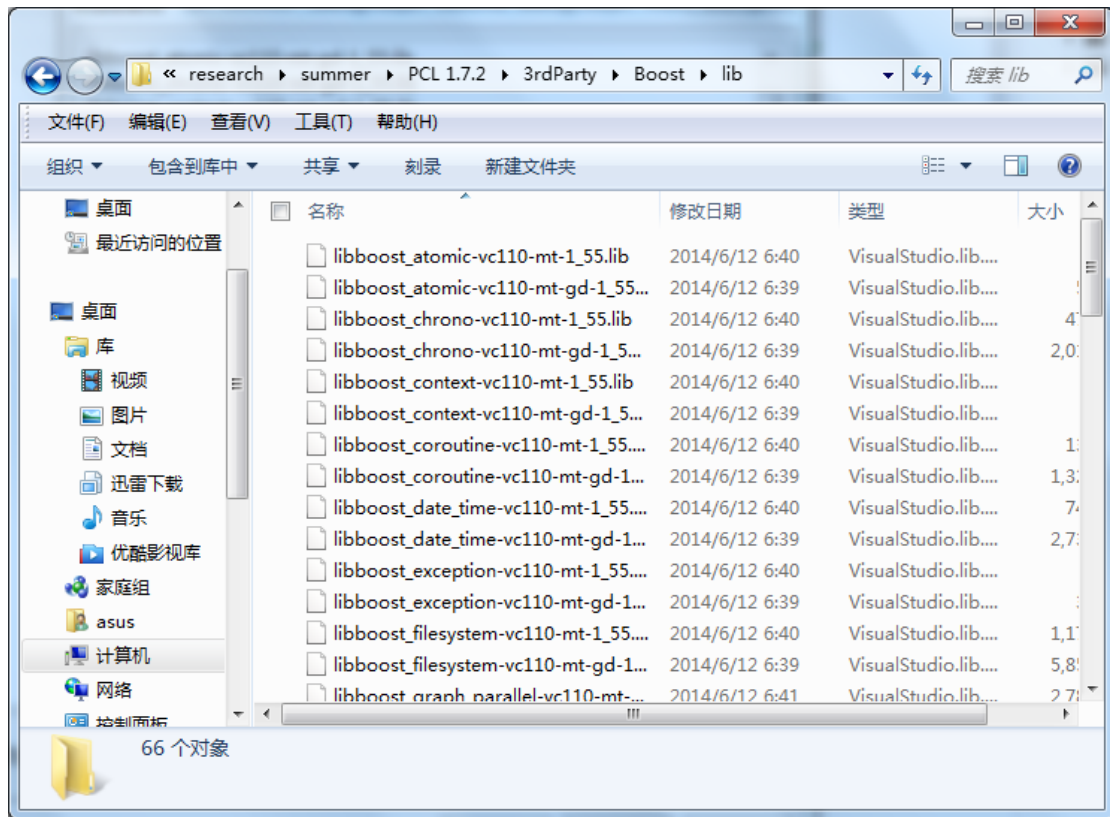
其中 OPENGL 是为了画出点云图而用到的，所以，也是需要另外的进行 OPENGL 配置，配置 PCL 的时候不用管这些。

然后，是链接器部分的输入：

添加一下文件：

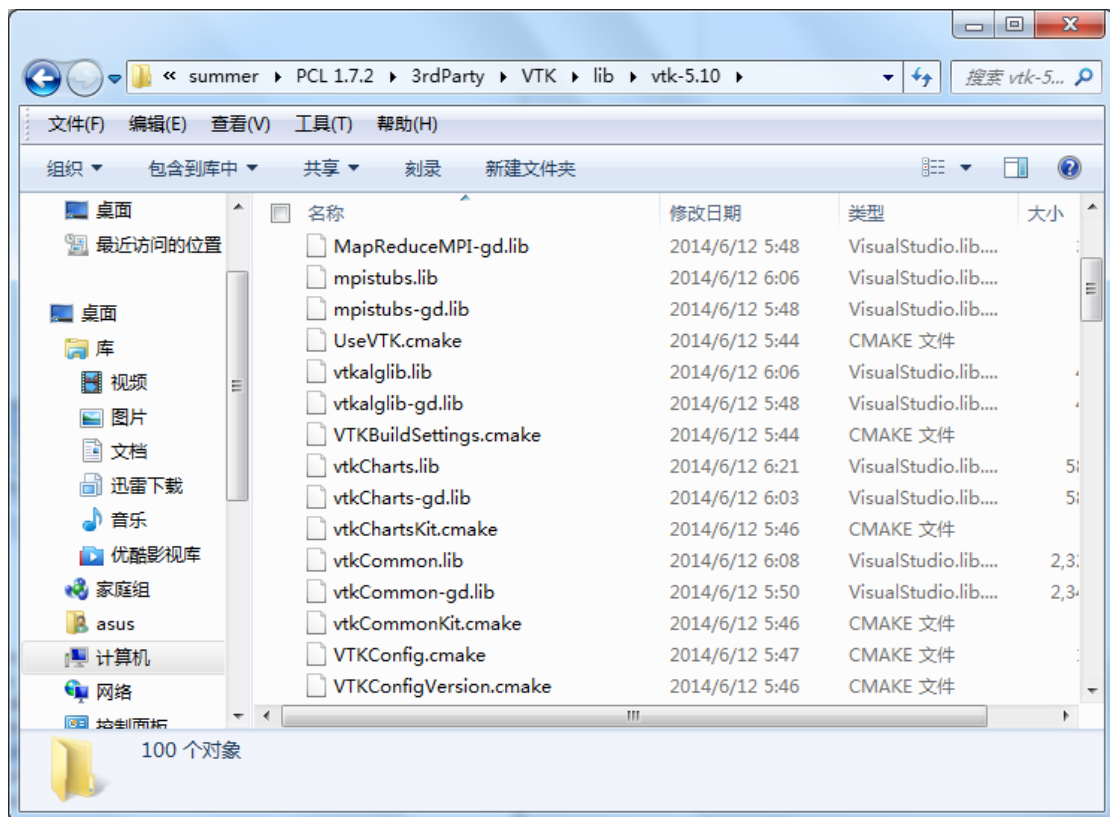PCL\lib 的 lib：

Boost\lib 的所有 lib：

FLANN 和 QHull 里面分别添加一个：
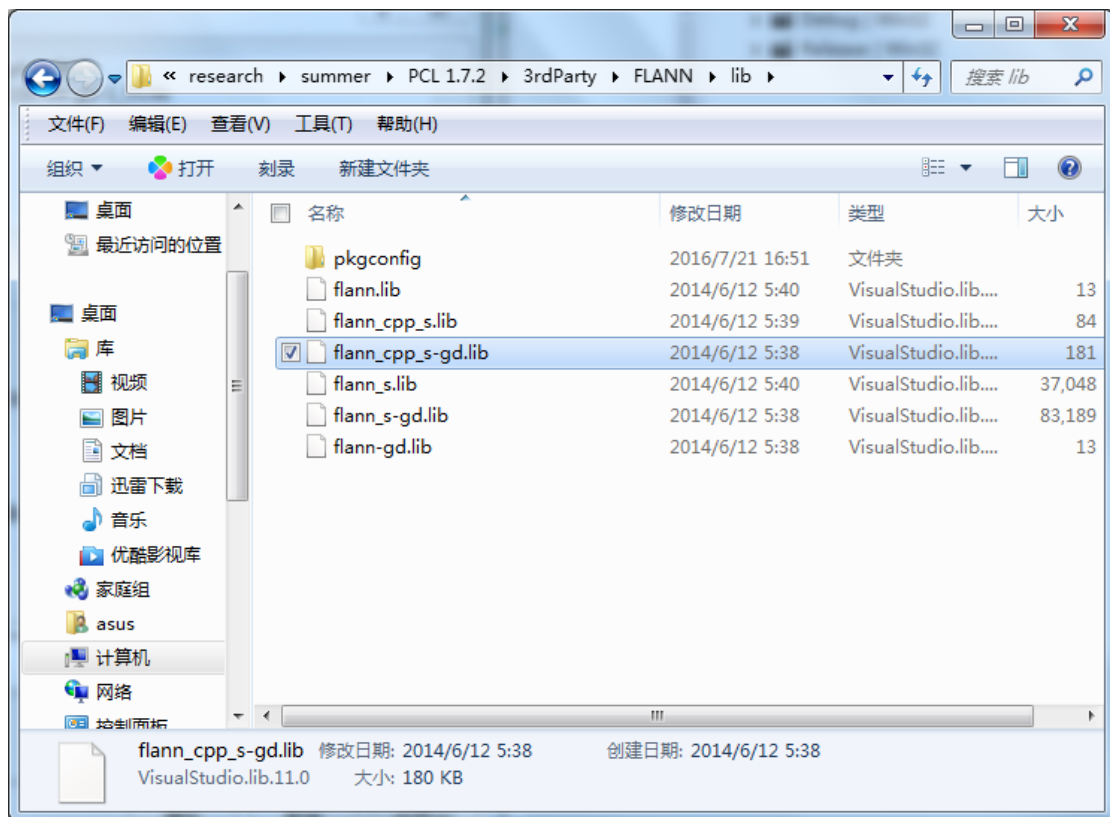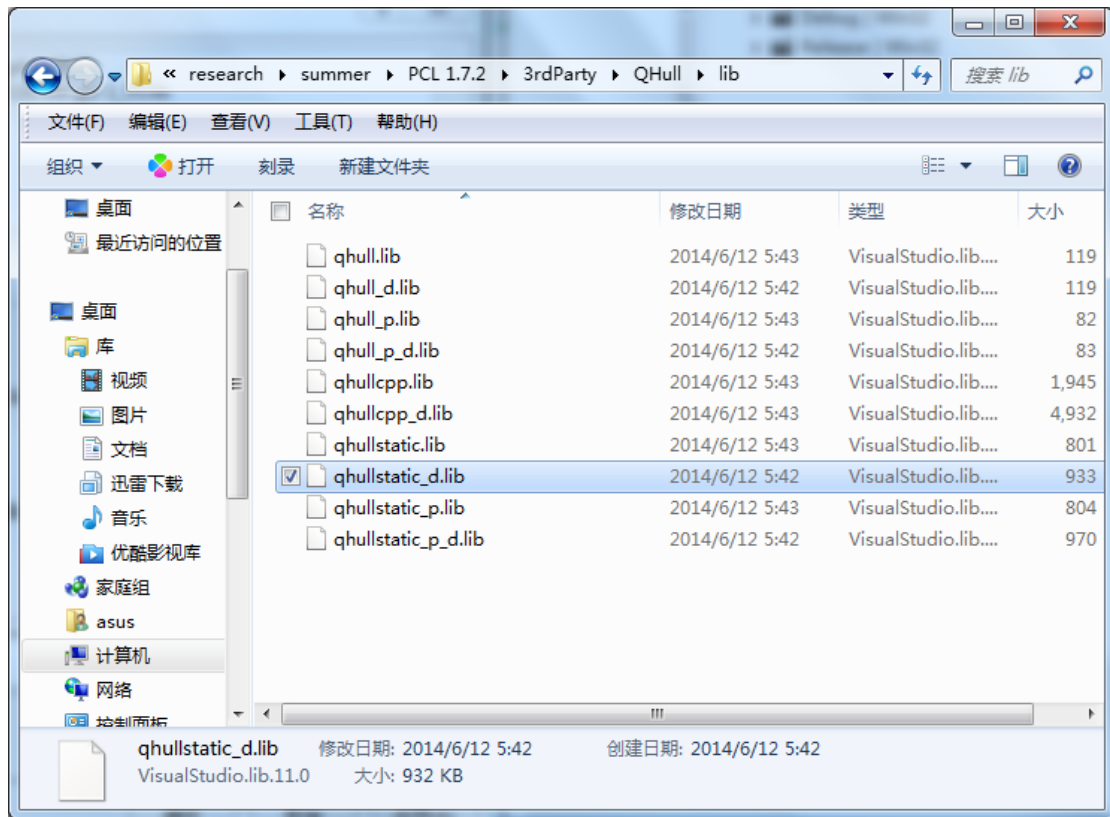
VTK 的所有 lib：

根据不同的版本对应着需要的 lib 是不同的，现在分享两个版本的 lib 文件：

PCL1.7.2：

pcl_common_debug.lib
pcl_features_debug.lib
pcl_filters_debug.lib
pcl_io_debug.lib
pcl_io_ply_debug.lib
pcl_kdtree_debug.lib
pcl_keypoints_debug.lib
pcl_octree_debug.lib
pcl_outofcore_debug.lib
pcl_people_debug.lib
pcl_recognition_debug.lib
pcl_registration_debug.lib
pcl_sample_consensus_debug.lib
pcl_search_debug.lib
pcl_segmentation_debug.lib
pcl_surface_debug.lib
pcl_tracking_debug.lib
pcl_visualization_debug.lib
libboost_atomic-vc110-mt-gd-1_55.lib
libboost_chrono-vc110-mt-gd-1_55.lib
libboost_context-vc110-mt-gd-1_55.lib
libboost_coroutine-vc110-mt-gd-1_55.lib
libboost_date_time-vc110-mt-gd-1_55.lib
libboost_exception-vc110-mt-gd-1_55.lib
libboost_filesystem-vc110-mt-gd-1_55.lib
libboost_graph-vc110-mt-gd-1_55.lib
libboost_iostreams-vc110-mt-gd-1_55.lib
libboost_locale-vc110-mt-gd-1_55.lib
libboost_log-vc110-mt-gd-1_55.lib
libboost_log_setup-vc110-mt-gd-1_55.lib
libboost_math_c99-vc110-mt-gd-1_55.lib
libboost_math_c99f-vc110-mt-gd-1_55.lib
libboost_math_c99l-vc110-mt-gd-1_55.lib
libboost_math_tr1-vc110-mt-gd-1_55.lib
libboost_math_tr1f-vc110-mt-gd-1_55.lib
libboost_math_tr1l-vc110-mt-gd-1_55.lib
libboost_mpi-vc110-mt-gd-1_55.lib
libboost_program_options-vc110-mt-gd-1_55.lib
libboost_random-vc110-mt-gd-1_55.lib
libboost_regex-vc110-mt-gd-1_55.lib
libboost_serialization-vc110-mt-gd-1_55.lib
libboost_signals-vc110-mt-gd-1_55.lib
libboost_system-vc110-mt-gd-1_55.lib
libboost_thread-vc110-mt-gd-1_55.lib

libboost_timer-vc110-mt-gd-1_55.lib
libboost_wave-vc110-mt-gd-1_55.lib
libboost_wserialization-vc110-mt-gd-1_55.lib
flann_cpp_s-gd.lib
qhullstatic_d.lib
vtkalglib-gd.lib
vtkalglib.lib
vtkCharts.lib
vtkCharts-gd.lib
vtkCommon.lib
vtkCommon-gd.lib
vtkDICOMParser.lib
vtkDICOMParser-gd.lib
vtkexoIIc.lib
vtkexoIIc-gd.lib
vtkexpat.lib
vtkexpat-gd.lib
vtkFiltering.lib
vtkFiltering-gd.lib
vtkfreetype.lib
vtkfreetype-gd.lib
vtkftgl.lib
vtkftgl-gd.lib
vtkGenericFiltering.lib
vtkGenericFiltering-gd.lib
vtkGraphics.lib
vtkGraphics-gd.lib
vtkGeovis-gd.lib
vtkhdf5-gd.lib
vtkhdf5_hl-gd.lib
vtkHybrid.lib
vtkHybrid-gd.lib
vtkImaging.lib
vtkImaging-gd.lib
vtkInfovis.lib
vtkInfovis-gd.lib
vtkIO.lib
vtkIO-gd.lib
vtkjpeg.lib
vtkjpeg-gd.lib
vtklibxml2.lib
vtklibxml2-gd.lib
vtkmetaio.lib
vtkmetaio-gd.lib

vtkNetCDF.lib
vtkNetCDF_cxx.lib
vtkNetCDF_cxx-gd.lib
vtkNetCDF-gd.lib
vtkpng.lib
vtkpng-gd.lib
vtkproj4.lib
vtkproj4-gd.lib
vtkRendering.lib
vtkRendering-gd.lib
vtksqlite.lib
vtksqlite-gd.lib
vtksys.lib
vtksys-gd.lib
vtktiff.lib
vtktiff-gd.lib
vtkverdict.lib
vtkverdict-gd.lib
vtkViews.lib
vtkViews-gd.lib
vtkVolumeRendering.lib
vtkVolumeRendering-gd.lib
vtkWidgets.lib
vtkWidgets-gd.lib
vtkzlib.lib
vtkzlib-gd.lib
glut32.lib
opengl32.lib
glaux.lib

PCL1.8.0：

pcl_common_debug.lib
pcl_features_debug.lib
pcl_filters_debug.lib
pcl_io_debug.lib
pcl_io_ply_debug.lib
pcl_kdtree_debug.lib
pcl_keypoints_debug.lib
pcl_octree_debug.lib
pcl_outofcore_debug.lib
pcl_people_debug.lib
pcl_recognition_debug.lib
pcl_registration_debug.lib

pcl_sample_consensus_debug.lib
pcl_search_debug.lib
pcl_segmentation_debug.lib
pcl_surface_debug.lib
pcl_tracking_debug.lib
pcl_visualization_debug.lib
libboost_atomic-vc120-mt-gd-1_57.lib
libboost_chrono-vc120-mt-gd-1_57.lib
libboost_container-vc120-mt-gd-1_57.lib
libboost_context-vc120-mt-gd-1_57.lib
libboost_coroutine-vc120-mt-gd-1_57.lib
libboost_date_time-vc120-mt-gd-1_57.lib
libboost_exception-vc120-mt-gd-1_57.lib
libboost_filesystem-vc120-mt-gd-1_57.lib
libboost_graph-vc120-mt-gd-1_57.lib
libboost_iostreams-vc120-mt-gd-1_57.lib
libboost_locale-vc120-mt-gd-1_57.lib
libboost_log-vc120-mt-gd-1_57.lib
libboost_log_setup-vc120-mt-gd-1_57.lib
libboost_math_c99-vc120-mt-gd-1_57.lib
libboost_math_c99f-vc120-mt-gd-1_57.lib
libboost_math_c99l-vc120-mt-gd-1_57.lib
libboost_math_tr1-vc120-mt-gd-1_57.lib
libboost_math_tr1f-vc120-mt-gd-1_57.lib
libboost_math_tr1l-vc120-mt-gd-1_57.lib
libboost_mpi-vc120-mt-gd-1_57.lib
libboost_program_options-vc120-mt-gd-1_57.lib
libboost_random-vc120-mt-gd-1_57.lib
libboost_regex-vc120-mt-gd-1_57.lib
libboost_serialization-vc120-mt-gd-1_57.lib
libboost_signals-vc120-mt-gd-1_57.lib
libboost_system-vc120-mt-gd-1_57.lib
libboost_thread-vc120-mt-gd-1_57.lib
libboost_timer-vc120-mt-gd-1_57.lib
libboost_wave-vc120-mt-gd-1_57.lib
libboost_wserialization-vc120-mt-gd-1_57.lib
flann_cpp_s-gd.lib
qhullstatic_d.lib
vtkalglib-6.2-gd.lib
vtkChartsCore-6.2-gd.lib
vtkCommonColor-6.2-gd.lib
vtkCommonComputationalGeometry-6.2-gd.lib
vtkCommonCore-6.2-gd.lib
vtkCommonDataModel-6.2-gd.lib

vtkCommonExecutionModel-6.2-gd.lib
vtkCommonMath-6.2-gd.lib
vtkCommonMisc-6.2-gd.lib
vtkCommonSystem-6.2-gd.lib
vtkCommonTransforms-6.2-gd.lib
vtkDICOMParser-6.2-gd.lib
vtkDomainsChemistry-6.2-gd.lib
vtkexoIIc-6.2-gd.lib
vtkexpat-6.2-gd.lib
vtkFiltersAMR-6.2-gd.lib
vtkFiltersCore-6.2-gd.lib
vtkFiltersExtraction-6.2-gd.lib
vtkFiltersFlowPaths-6.2-gd.lib
vtkFiltersGeneral-6.2-gd.lib
vtkFiltersGeneric-6.2-gd.lib
vtkFiltersGeometry-6.2-gd.lib
vtkFiltersHybrid-6.2-gd.lib
vtkFiltersHyperTree-6.2-gd.lib
vtkFiltersImaging-6.2-gd.lib
vtkFiltersModeling-6.2-gd.lib
vtkFiltersParallel-6.2-gd.lib
vtkFiltersParallelImaging-6.2-gd.lib
vtkFiltersProgrammable-6.2-gd.lib
vtkFiltersSelection-6.2-gd.lib
vtkFiltersSMP-6.2-gd.lib
vtkFiltersSources-6.2-gd.lib
vtkFiltersStatistics-6.2-gd.lib
vtkFiltersTexture-6.2-gd.lib
vtkFiltersVerdict-6.2-gd.lib
vtkfreetype-6.2-gd.lib
vtkftgl-6.2-gd.lib
vtkGeovisCore-6.2-gd.lib
vtkgl2ps-6.2-gd.lib
vtkhdf5-6.2-gd.lib
vtkhdf5_hl-6.2-gd.lib
vtkImagingColor-6.2-gd.lib
vtkImagingCore-6.2-gd.lib
vtkImagingFourier-6.2-gd.lib
vtkImagingGeneral-6.2-gd.lib
vtkImagingHybrid-6.2-gd.lib
vtkImagingMath-6.2-gd.lib
vtkImagingMorphological-6.2-gd.lib
vtkImagingSources-6.2-gd.lib
vtkImagingStatistics-6.2-gd.lib

vtkImagingStencil-6.2-gd.lib
vtkInfovisCore-6.2-gd.lib
vtkInfovisLayout-6.2-gd.lib
vtkInteractionImage-6.2-gd.lib
vtkInteractionStyle-6.2-gd.lib
vtkInteractionWidgets-6.2-gd.lib
vtkIOAMR-6.2-gd.lib
vtkIOCore-6.2-gd.lib
vtkIOEnSight-6.2-gd.lib
vtkIOExodus-6.2-gd.lib
vtkIOExport-6.2-gd.lib
vtkIOGeometry-6.2-gd.lib
vtkIOImage-6.2-gd.lib
vtkIOImport-6.2-gd.lib
vtkIOInfovis-6.2-gd.lib
vtkIOLegacy-6.2-gd.lib
vtkIOLSDyna-6.2-gd.lib
vtkIOMINC-6.2-gd.lib
vtkIOMovie-6.2-gd.lib
vtkIONetCDF-6.2-gd.lib
vtkIOParallel-6.2-gd.lib
vtkIOParallelXML-6.2-gd.lib
vtkIOPLY-6.2-gd.lib
vtkIOSQL-6.2-gd.lib
vtkIOVideo-6.2-gd.lib
vtkIOXML-6.2-gd.lib
vtkIOXMLParser-6.2-gd.lib
vtkjpeg-6.2-gd.lib
vtkjsoncpp-6.2-gd.lib
vtklibxml2-6.2-gd.lib
vtkmetaio-6.2-gd.lib
vtkNetCDF-6.2-gd.lib
vtkNetCDF_cxx-6.2-gd.lib
vtkoggtheora-6.2-gd.lib
vtkParallelCore-6.2-gd.lib
vtkpng-6.2-gd.lib
vtkproj4-6.2-gd.lib
vtkRenderingAnnotation-6.2-gd.lib
vtkRenderingContext2D-6.2-gd.lib
vtkRenderingContextOpenGL-6.2-gd.lib
vtkRenderingCore-6.2-gd.lib
vtkRenderingFreeType-6.2-gd.lib
vtkRenderingFreeTypeOpenGL-6.2-gd.lib
vtkRenderingGL2PS-6.2-gd.lib

vtkRenderingImage-6.2-gd.lib

vtkRenderingLabel-6.2-gd.lib

vtkRenderingLIC-6.2-gd.lib

vtkRenderingLOD-6.2-gd.lib

vtkRenderingOpenGL-6.2-gd.lib

vtkRenderingVolume-6.2-gd.lib

vtkRenderingVolumeOpenGL-6.2-gd.lib

vtksqlite-6.2-gd.lib

vtksys-6.2-gd.lib

vtktiff-6.2-gd.lib

vtkverdict-6.2-gd.lib

vtkViewsContext2D-6.2-gd.lib

vtkViewsCore-6.2-gd.lib

vtkViewsInfovis-6.2-gd.lib

vtkzlib-6.2-gd.lib

在进行了上面的文件配置之后，我们可以进行代码测试了，输入以下代码：

```cpp
#ifdef _MSC_VER
/*
* we do not want the warnings about the old deprecated and unsecure CRT functions
* since these examples can be compiled under *nix as well
*/
#define _SCL_SECURE_NO_WARNINGS
#endif

//#define vtkRenderingCore_AUTOINIT
4(vtkInteractionStyle,vtkRenderingFreeType,vtkRenderingFreeTypeOpenGL2,vtkRenderingOpen
GL2)
#define vtkRenderingCore_AUTOINIT
3(vtkInteractionStyle,vtkRenderingFreeType,vtkRenderingOpenGL)
#define vtkRenderingVolume_AUTOINIT 1(vtkRenderingVolumeOpenGL)

#include <pcl/visualization/cloud_viewer.h>
#include <iostream>
#include <pcl/io/io.h>
#include <pcl/io/pcd_io.h>

int user_data;

void
viewerOneOff(pcl::visualization::PCLVisualizer& viewer)
{
    viewer.setBackgroundColor(1.0, 0.5, 1.0);
    pcl::PointXYZ o;
```

```cpp
    o.x = 1.0;
    o.y = 0;
    o.z = 0;
    viewer.addSphere(o, 0.25, "sphere", 0);
    std::cout << "i only run once" << std::endl;

}

void
viewerPsycho(pcl::visualization::PCLVisualizer& viewer)
{
    static unsigned count = 0;
    std::stringstream ss;
    ss << "Once per viewer loop: " << count++;
    viewer.removeShape("text", 0);
    viewer.addText(ss.str(), 200, 300, "text", 0);

    //FIXME: possible race condition here:
    user_data++;
}

int
main()
{
    pcl::PointCloud<pcl::PointXYZRGBA>::Ptr cloud(new
pcl::PointCloud<pcl::PointXYZRGBA>);
    //pcl::io::loadPCDFile("my_point_cloud.pcd", *cloud);
    pcl::io::loadPCDFile("model.pcd", *cloud);

    pcl::visualization::CloudViewer viewer("Cloud Viewer");

    //blocks until the cloud is actually rendered
    viewer.showCloud(cloud);

    //use the following functions to get access to the underlying more
advanced/powerful
    //PCLVisualizer

    //This will only get called once
    viewer.runOnVisualizationThreadOnce(viewerOneOff);

    //This will get called once per visualization iteration
    viewer.runOnVisualizationThread(viewerPsycho);
    while (!viewer.wasStopped())
```

```
    {
        //you can also do cool processing here
        //FIXME: Note that this is running in a separate thread from viewerPsycho
        //and you should guard against race conditions yourself...
        user_data++;
    }
    return 0;
}
```

然后，我们如果看到了这样的画面，就是配置成功了：