Stage 1: versions and links

Step1: PCL 1.12.0:

https://github.com/PointCloudLibrary/pcl/releases

please download:

⬡ PCL-1.12.0-AllInOne-msvc2019-win64.exe

⬡ pcl-1.12.0-rc1-pdb-msvc2019-win64.zip

Step2: VS 2019:

https://visualstudio.microsoft.com/vs/

Stage 2: PCL installation in Windows

Step1: install PCL and the 3rd party library dependencies

1) Run PCL-1.12.0-AllInOne-msvc2019-win64.exe .
2) Select "add PCL to the system PATH for all users".
3) Install "OpenNI2" under the path "%PCL_ROOT%\3rdParty". If the OpenNI2 installation window does not appear, it should be automatically installed under C disk. If this happens, double click "OpenNI2 Setup Wizard", remove all installed files, then re-install all files under the path "%PCL_ROOT%\3rdParty".
4) Check all the rest popups as default.
5) Note: the default path of %PCL_ROOT% is: C:\Program Files\PCL 1.12.0. You can change the path to D:\.

Step2: install PCL PDB (program data base) files

1) Extract pcl-1.12.0-rc1-pdb-msvc2019-win64.zip .
2) Add extracted file under the path "%PCL_ROOT%\bin".

Step3: configure system environmental variables

1) Window 10 – search "view advanced system settings" – click "environmental variables" – "system variables".
2) Check variables "OPENNI2_INCLUDE64" "OPENNI2_LIB64" "OPENNI2_REDIST64"and their values.
3) Edit variable "path" with 6 values. (red box in the second figure).
4) Check variable "PCL_ROOT" and its value.
5) All the values must be the same as the installation paths.

Step4: restart your computer

System variables

| Variable	Value
CLM_HOME	C:\Program Files (x86)\Leica Geosystems\CLM-Administration
ComSpec	C:\WINDOWS\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
FLEXLM_TIMEOUT	2000000
INTEL_DEV_REDIST	C:\Program Files (x86)\Common Files\Intel\Shared Libraries\
MIC_LD_LIBRARY_PATH	%INTEL_DEV_REDIST%compiler\lib\intel64_win_mic
NUMBER_OF_PROCESSORS	12
OPENNI2_INCLUDE64	C:\Program Files\PCL 1.12.0\3rdParty\OpenNI2\Include\
OPENNI2_LIB64	C:\Program Files\PCL 1.12.0\3rdParty\OpenNI2\Lib\
OPENNI2_REDIST64	C:\Program Files\PCL 1.12.0\3rdParty\OpenNI2\Redist\
OS	Windows_NT
Path	C:\Program Files\Autodesk\AliasAutoStudio2022.0\bin;%INTEL_DEV_REDIST%redist\intel64_win\compil...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PCL_ROOT	C:\Program Files\PCL 1.12.0
PROCESSOR_ARCHITECTURE	AMD64
PROCESSOR_IDENTIFIER	AMD64 Family 25 Model 33 Stepping 0, AuthenticAMD
PROCESSOR_LEVEL	25
PROCESSOR_REVISION	2100
PSModulePath	%ProgramFiles%\WindowsPowerShell\Modules;C:\WINDOWS\system32\WindowsPowerShell\v1.0\Mo...
TEMP	C:\WINDOWS\TEMP

New...   Edit...   Delete

OK   Cancel

Edit environment variable

```
C:\Program Files\Autodesk\AliasAutoStudio2022.0\bin
%INTEL_DEV_REDIST%redist\intel64_win\compiler
%SystemRoot%\system32
%SystemRoot%
%SystemRoot%\System32\Wbem
%SYSTEMROOT%\System32\WindowsPowerShell\v1.0\
%SYSTEMROOT%\System32\OpenSSH\
C:\Program Files\Common Files\Autodesk Shared\
C:\Program Files\Microsoft SQL Server\120\Tools\Binn\
C:\Program Files\MATLAB\R2021a\runtime\win64
C:\Program Files\MATLAB\R2021a\bin
C:\Program Files\PCL 1.12.0\bin
C:\Program Files\PCL 1.12.0\3rdParty\VTK\bin
C:\Program Files\PCL 1.12.0\3rdParty\OpenNI2\Tools
%PCL_ROOT%\3rdParty\Boost\lib
%PCL_ROOT%\3rdParty\FLANN\bin
%PCL_ROOT%\3rdParty\Qhull\bin
%OPENNI2_LIB64%
%OPENNI2_REDIST64%
```

New
Edit
Browse...
Delete
Move Up
Move Down
Edit text...

OK   Cancel

System variables

Variable	V
CLM_HOME	C
ComSpec	C
DriverData	C
FLEXLM_TIMEOUT	2
INTEL_DEV_REDIST	C
MIC_LD_LIBRARY_PATH	9
NUMBER_OF_PROCESSORS	1
OPENNI2_INCLUDE64	C
OPENNI2_LIB64	C
OPENNI2_REDIST64	C
OS	V
Path	C:\Program Files\Autodesk\AliasAutoStudio2022.0\bin;%INTEL_DEV_REDIST%redist\intel64_win\compil...

Stage 3: PCL configuration in VS

Step1: install VS2019 (must include Windows C++)

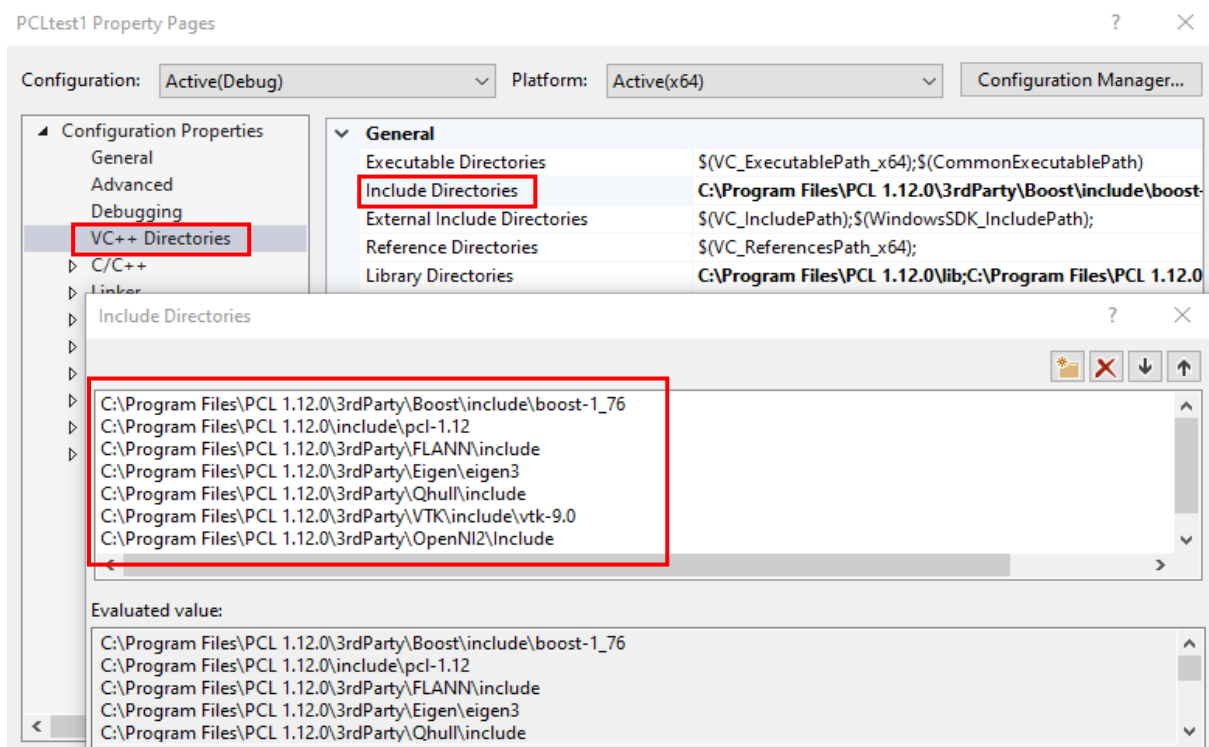**Step2: add a new C++ project, named "PCLtest1"**
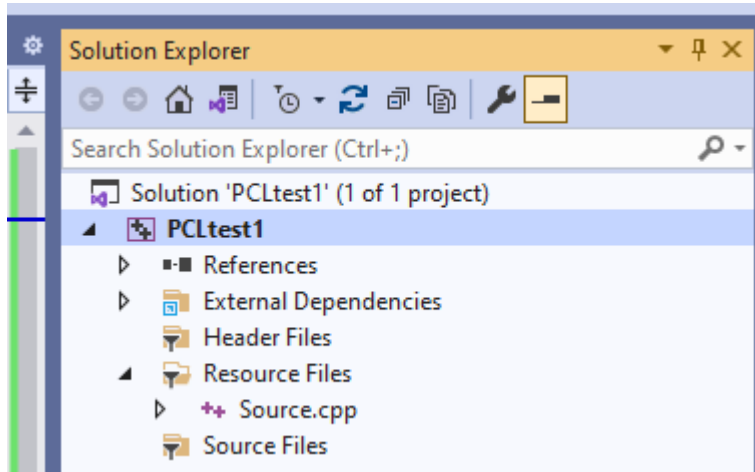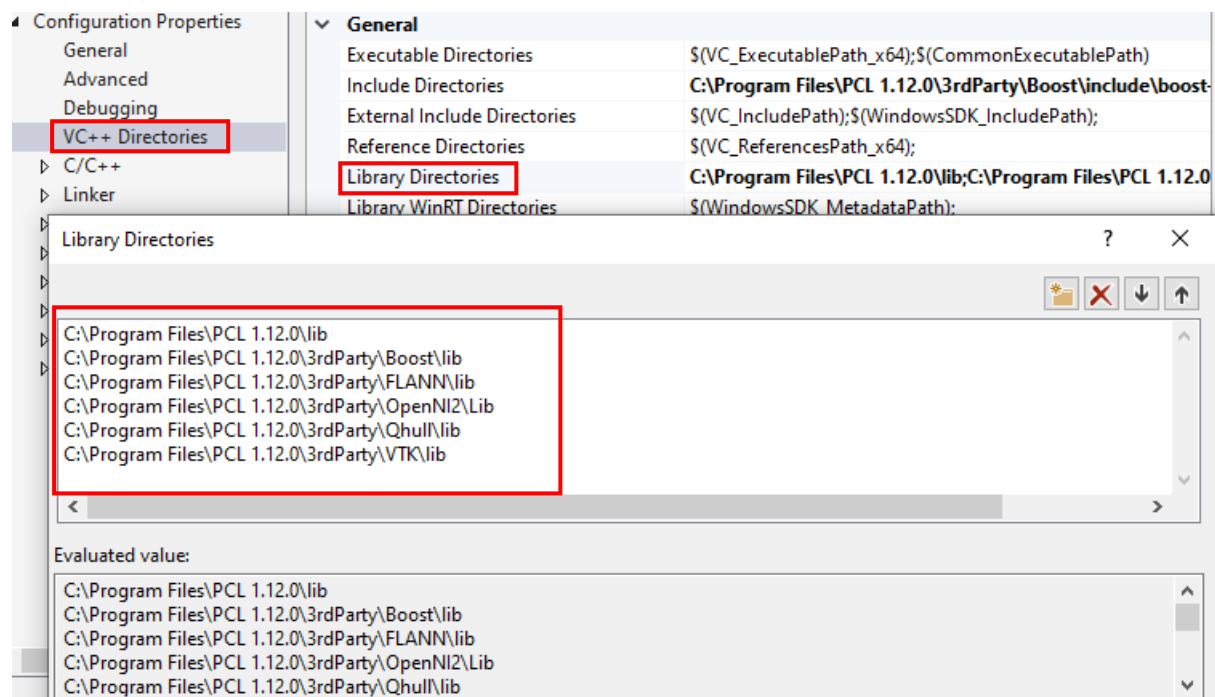

Step3: set environment: Debug; x64
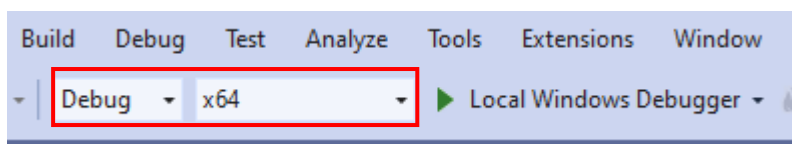
Step4: configure "Include Directions"

1) PCLtest1 - right click – "properties"
2) Select "VC++ Directions" – Edit "Include Directions" – add 7 "directions" from red box

Step5: configure "Library Directions"

1) PCLtest1 - right click – "properties"
2) Select "VC++ Directions" – Edit "Library Directions" – add 6 "directions" from red box

Step6: configure "Additional Dependencies"

1) PCLtest1 - right click – "properties"
2) Select "Linker" – "Input" – edit "Additional Dependencies" – copy debug libs in .txt
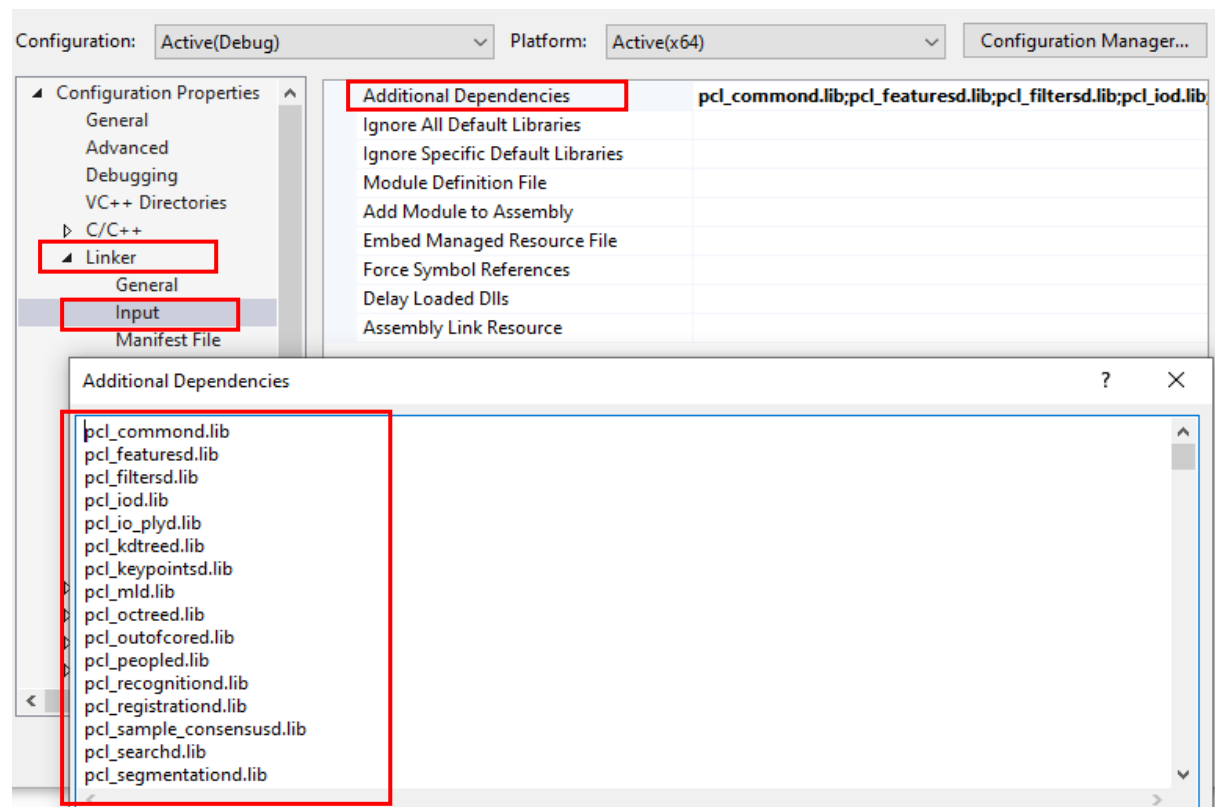
3) Note: the additional dependencies contain all libs in 6 3rd party libraries and the lib in PCL 1.20.0. Meanwhile, in each lib, it contains the type of debug and the type of release, please choose the correct type, and add in additional dependencies. Here we set environment as "debug", so we use debug type of libs.

Step7: check SDL

1) PCLtest1 - right click – "properties"
2) Select "C/C++" – "general" – select "SDL checks" into "No (/sdl-)"
3) Note: if there is no "C/C++", please create an empty "Source.cpp" file under the "Resource Files".

Step8: add Preprocessor Definitions

1) PCLtest1 - right click – "properties"
2) Select "C/C++" – "Preprocessor" – edit "Preprocessor Definitions" – add 3 sentences as the figure showed in red box
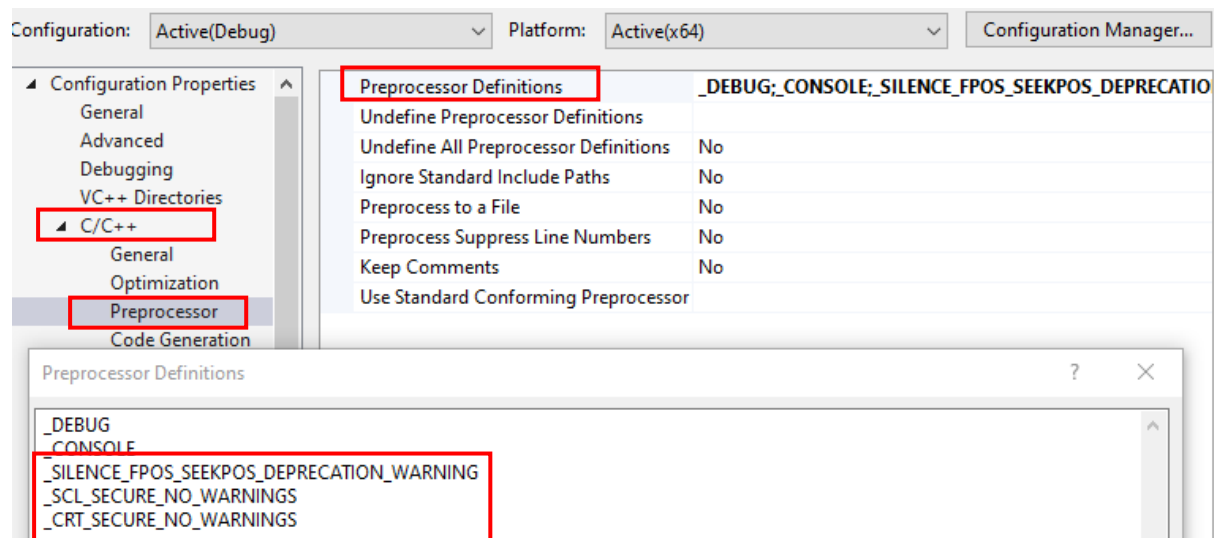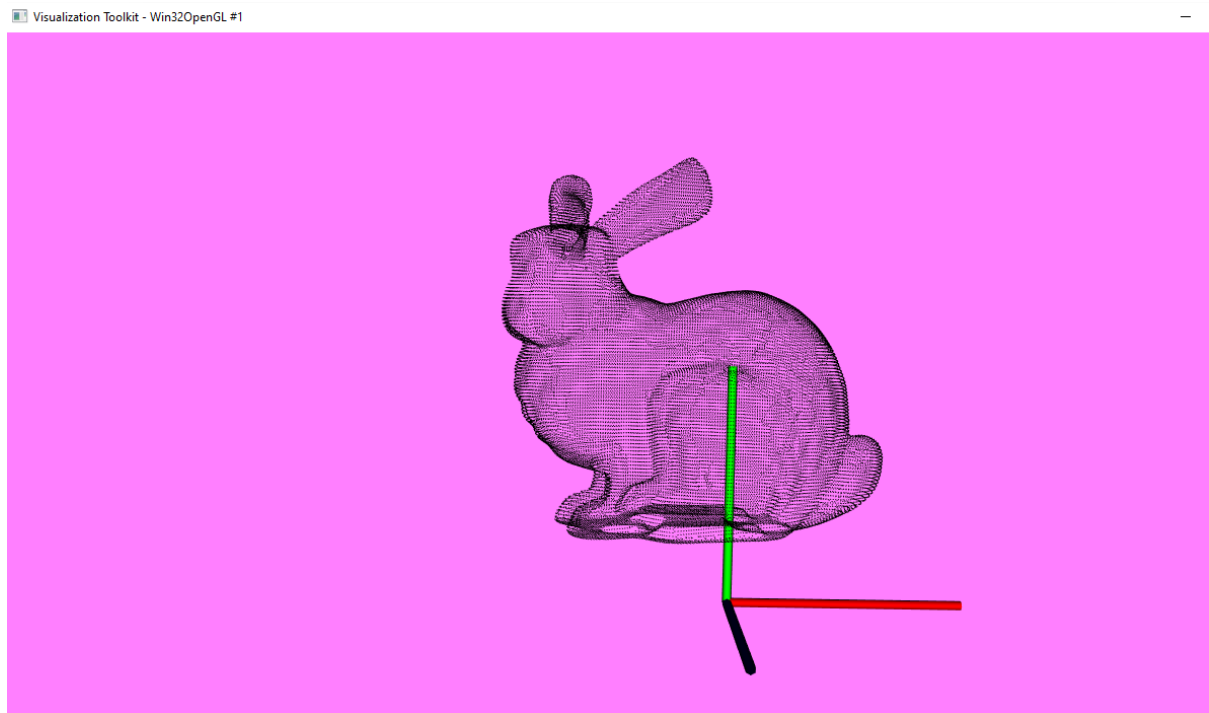
Stage 4: Simple test and demo

Step1: download point cloud file "rabbit.pcd"; download code file "Source.cpp"

Step2: put "rabbit.pcd" into the same location with "Source.cpp" under project PCLTest1

PCLtest1 > PCLtest1

Name	Date modified	Type	Size
x64	28/09/2021 13:02	File folder	
PCLtest1.vcxproj	28/09/2021 13:02	VC++ Project	14 KB
PCLtest1.vcxproj.filters	28/09/2021 13:02	VC++ Project Filte...	1 KB
PCLtest1.vcxproj.user	28/09/2021 11:11	Per-User Project O...	1 KB
rabbit.pcd	28/09/2021 13:19	PCD File	1,129 KB
Source.cpp	28/09/2021 13:49	C++ Source	2 KB

Step3: run code "Ctrl+F5" and visualization

28/09/2021

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