

## Build instructions

<http://jgcri.github.io/gcam-doc/gcam-build.html>

### 3+1 libraries (Hector)

	Homebrew (MacOS)	Aptitude (Debian/Ubuntu)
	<code>brew install &lt;package&gt;</code>	<code>sudo apt install &lt;package&gt;</code>
Boost	<code>boost</code>	<code>libboost-dev libboost-system-dev libboost-filesystem-dev</code>
Xerces	<code>xerces-c</code>	<code>libxerces-c-dev</code>
Java	<code>(Cask) brew cask install java</code>	<code>default-jre default-jdk</code>

## Building third party libraries

### 1, Boost

VS 2019 自带工具 Developer Command Prompt for VS 2019 (管理员运行)

```
cd <GCAM Workspace>/libs/boost-lib
bootstrap.bat
b2 --with-system --with-filesystem address-model=64 stage
```

### 2, Xerces

2-1, 解压 xerces-c-3.2.3, 进入解压后目录

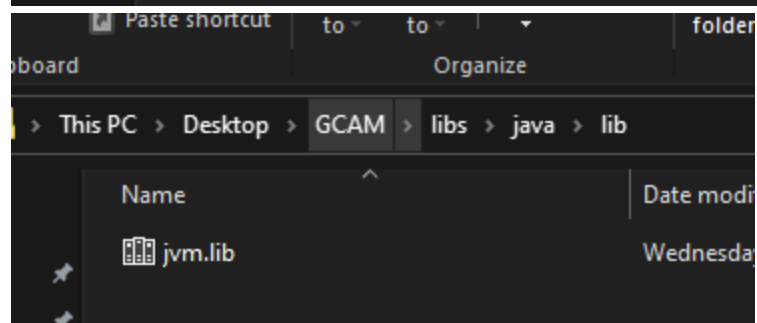
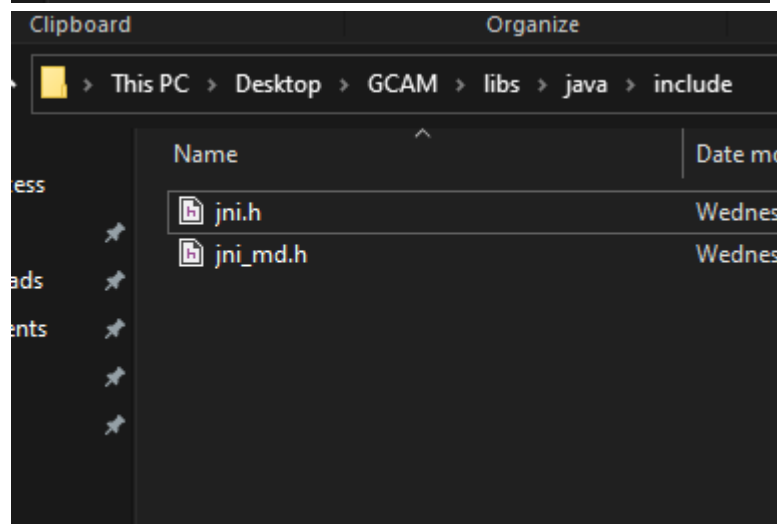
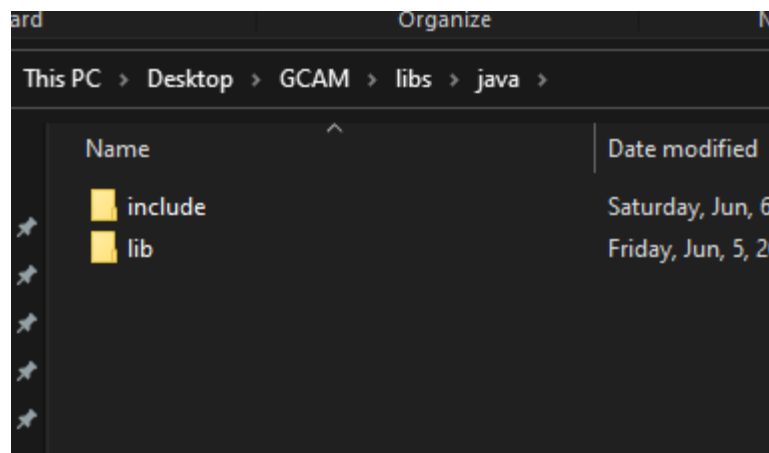
```
mkdir build
cd build
cd ..
cmake -G "Visual Studio 16 2019" -DCMAKE_INSTALL_PREFIX=<GCAM
Workspace>\xercesc . (这一步用 cmake -help 可以查看可用的 VS 版本)
cmake --build . --config Debug
ctest -V -C Debug -j 4
cmake --build . --config Debug --target install
```

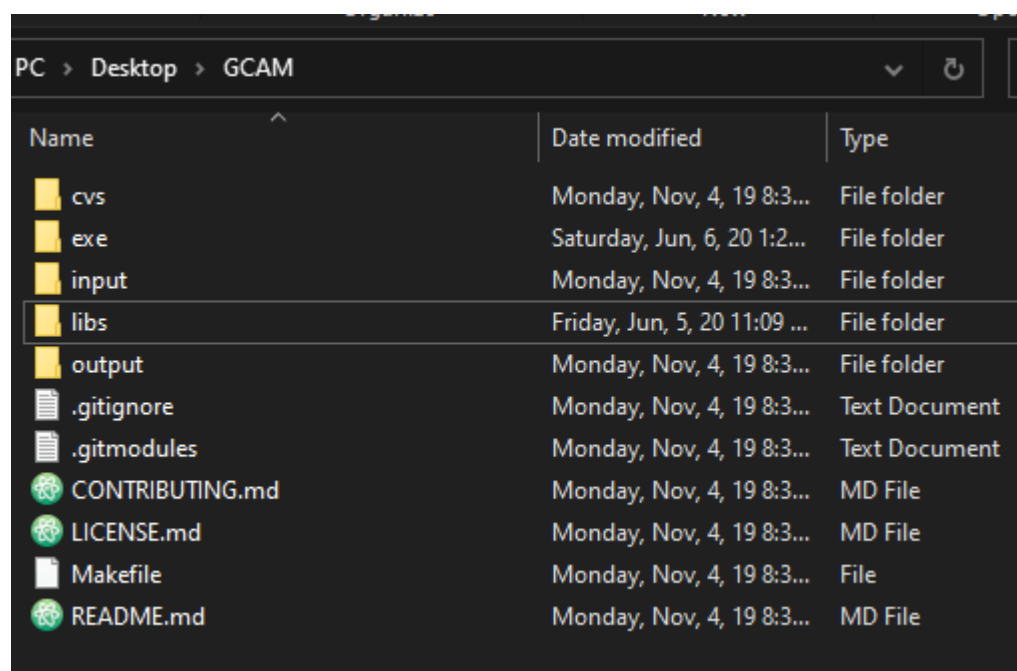
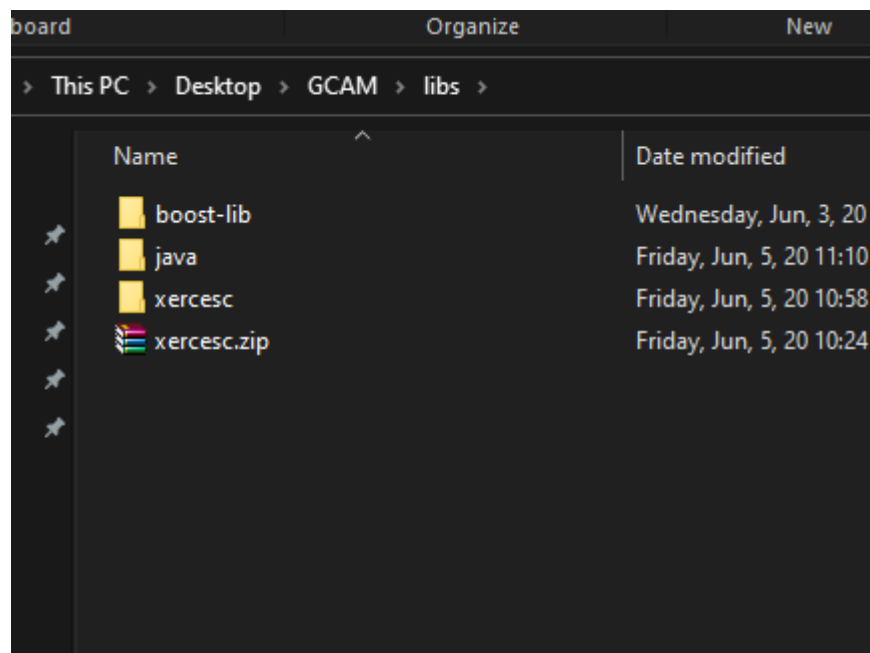
2-2, Copy <GCAM Workspace>\libs\xercesc\bin\xerces-c\_3\_2D.dll to  
<GCAM Workspace>\exe

### 3, java

Java 的安装目录找到 copy 到 <GCAM Workspace>\libs 中

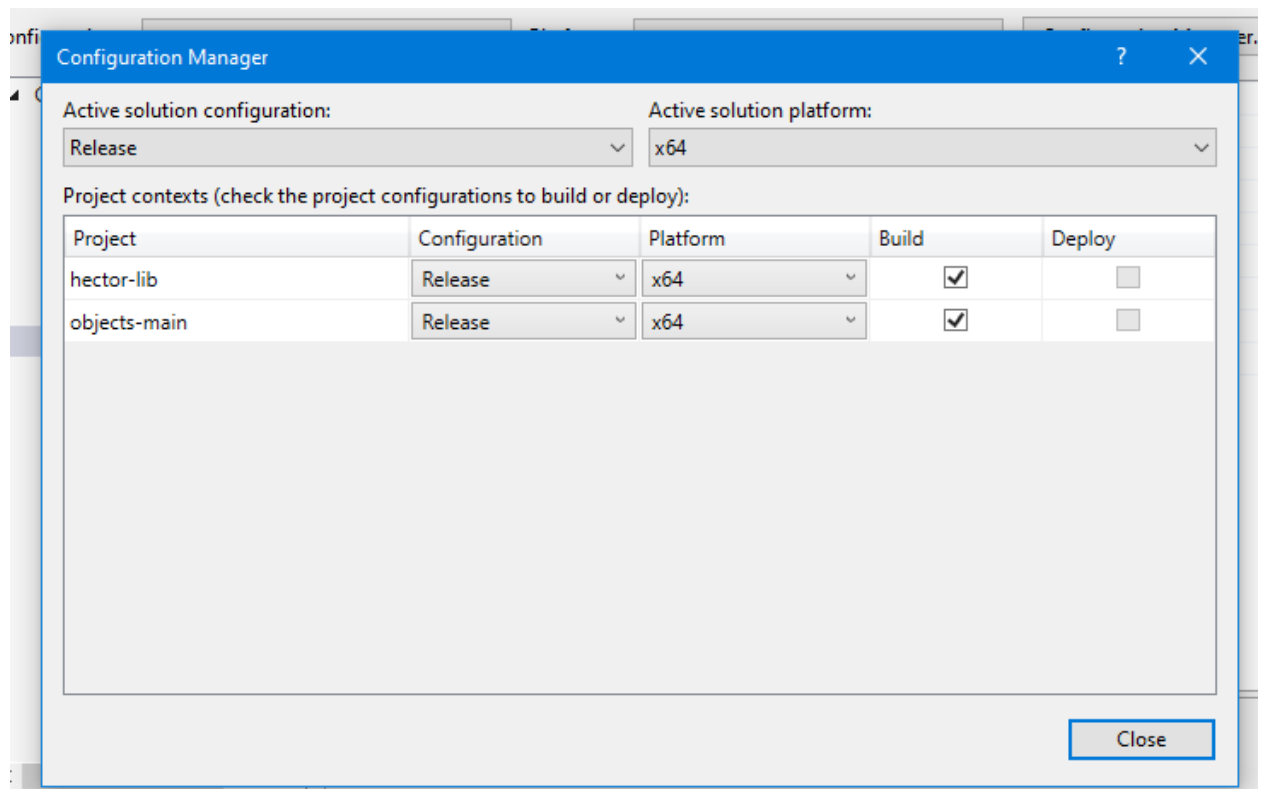
```
libs/java/include/jni.h
libs/java/include/jni_md.h
libs/java/lib/jvm.lib
```

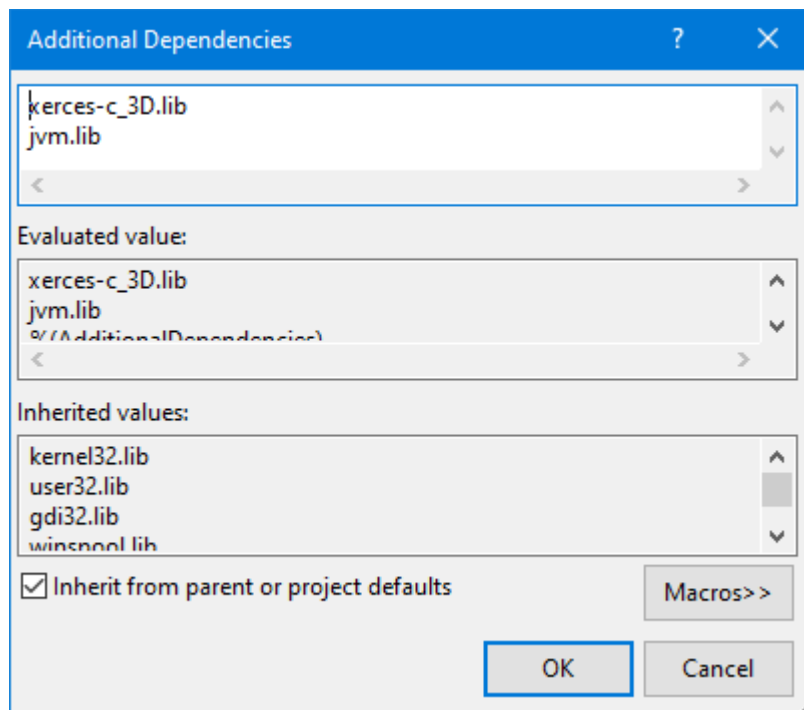
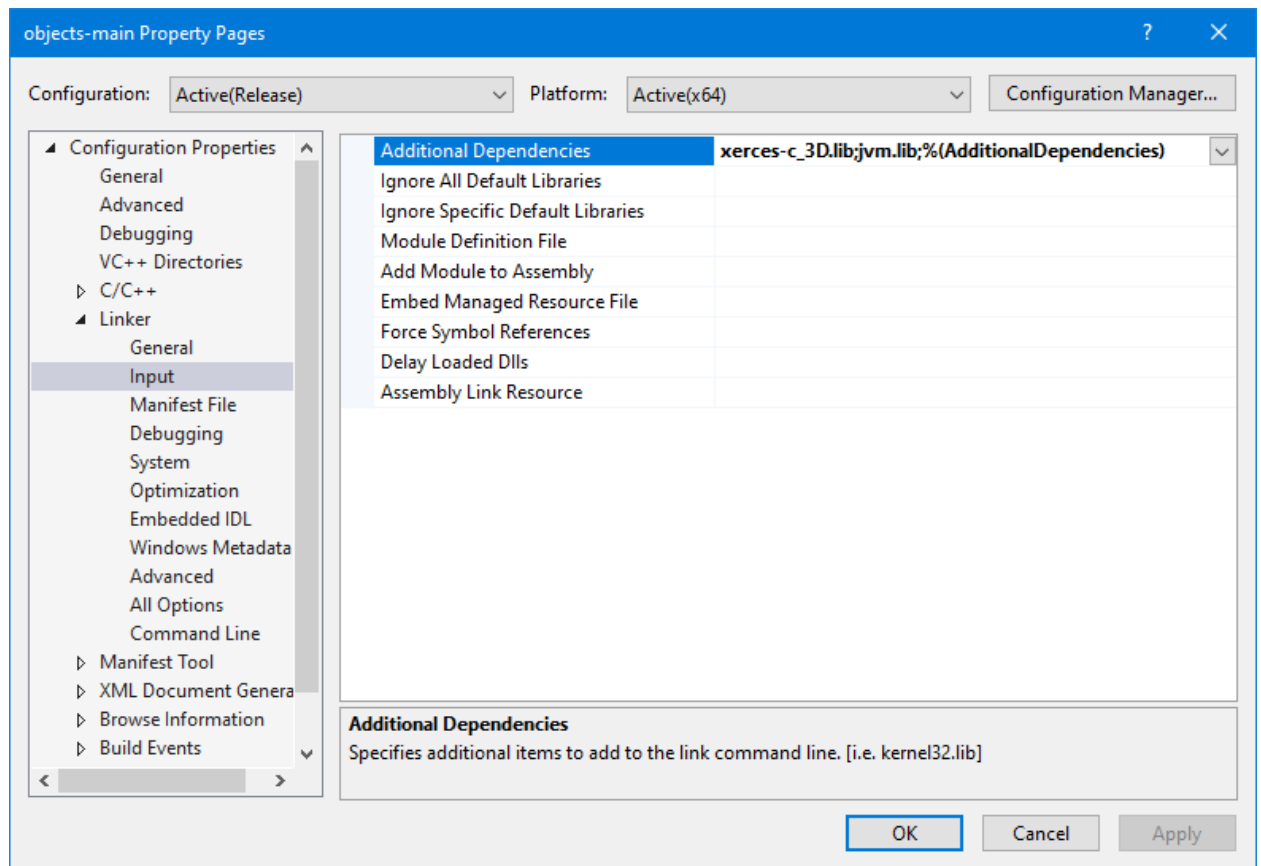


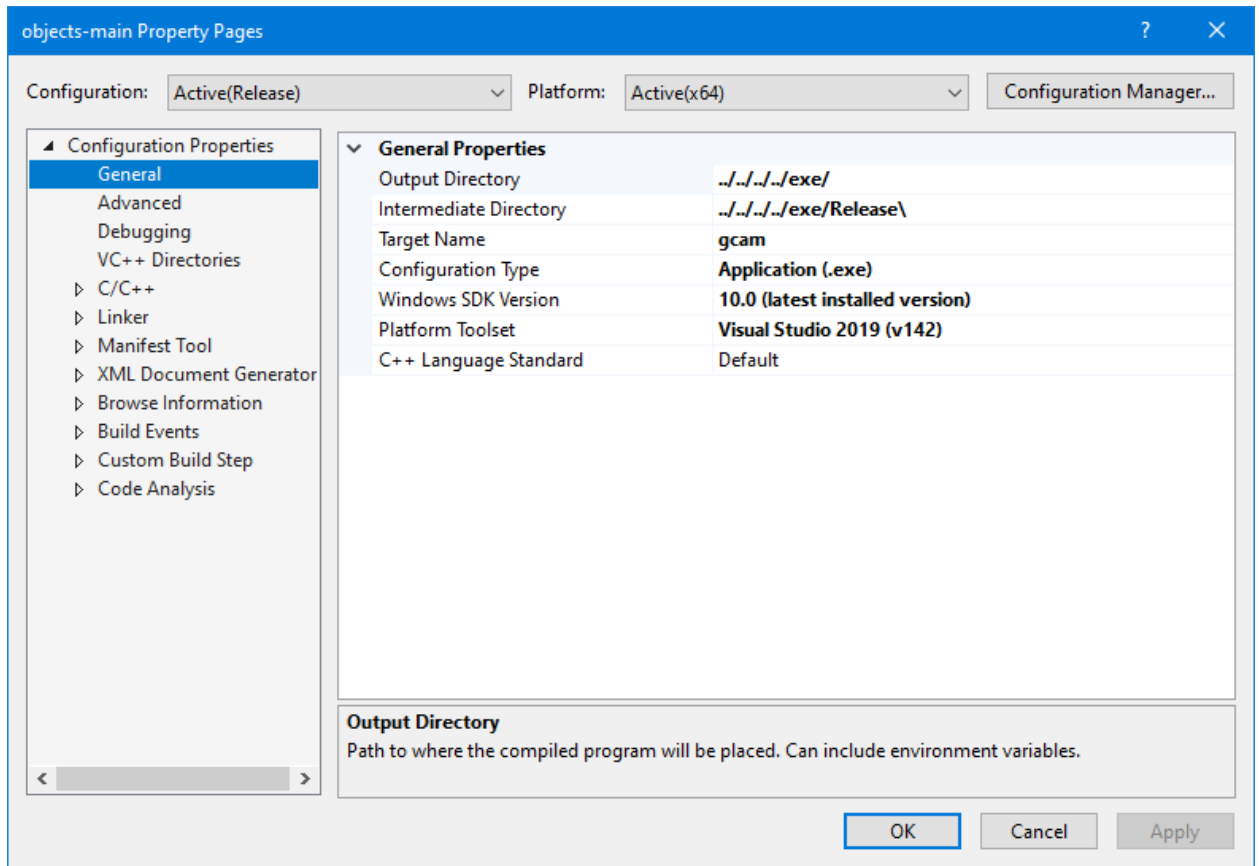


4, vs2019 setting

Error list display = Ctrl+\+E







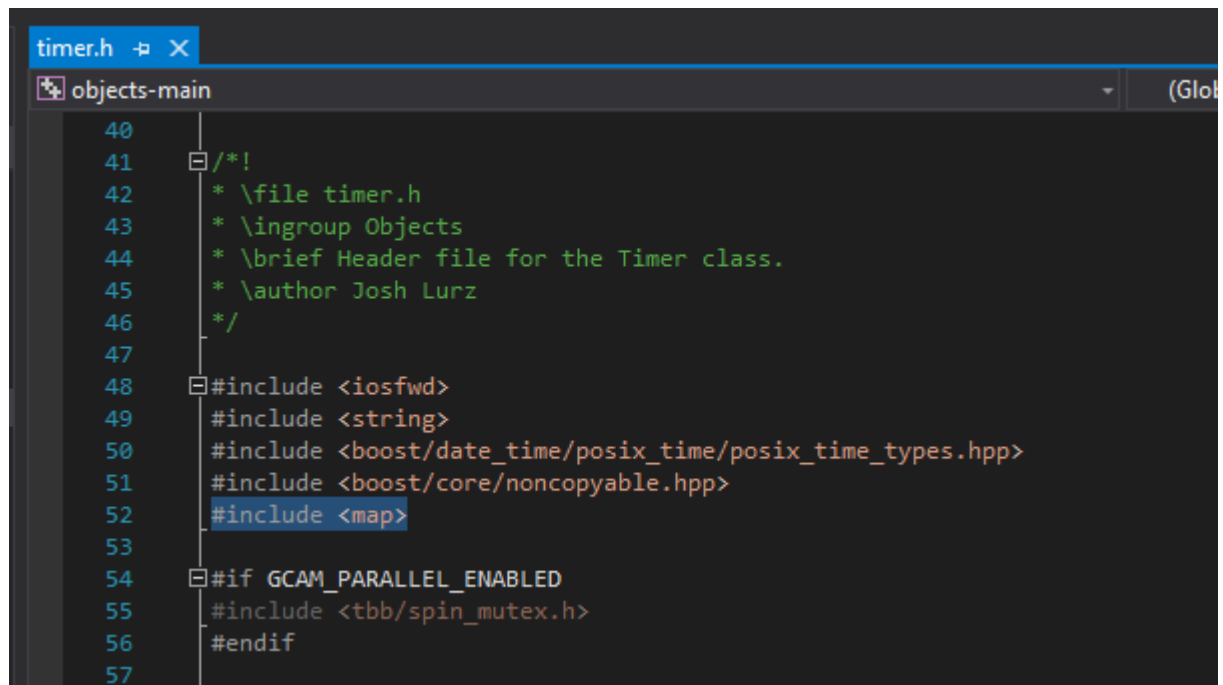
## 5, GCAM V5.2 project bug

1, had better use HECTOR V2.0 (<https://github.com/JGCRI/gcam-core/issues/80>)

<https://github.com/JGCRI/hector/releases/tag/v2.0.0>

2, add #include <map> to timer.h (52)

```
<GCAM Workspace>\cvs\objects\util\base\include\timer.h (52)
```



```
40
41  /*!
42   * \file timer.h
43   * \ingroup Objects
44   * \brief Header file for the Timer class.
45   * \author Josh Lurz
46   */
47
48  #include <iosfwd>
49  #include <string>
50  #include <boost/date_time/posix_time/posix_time_types.hpp>
51  #include <boost/core/noncopyable.hpp>
52  #include <map>
53
54  #if GCAM_PARALLEL_ENABLED
55      #include <tbb/spin_mutex.h>
56  #endif
57
```