Compile XLiFE++ libraries for CodeBlocks on Windows, using cmake

Eric Lunéville Poems

Requirements

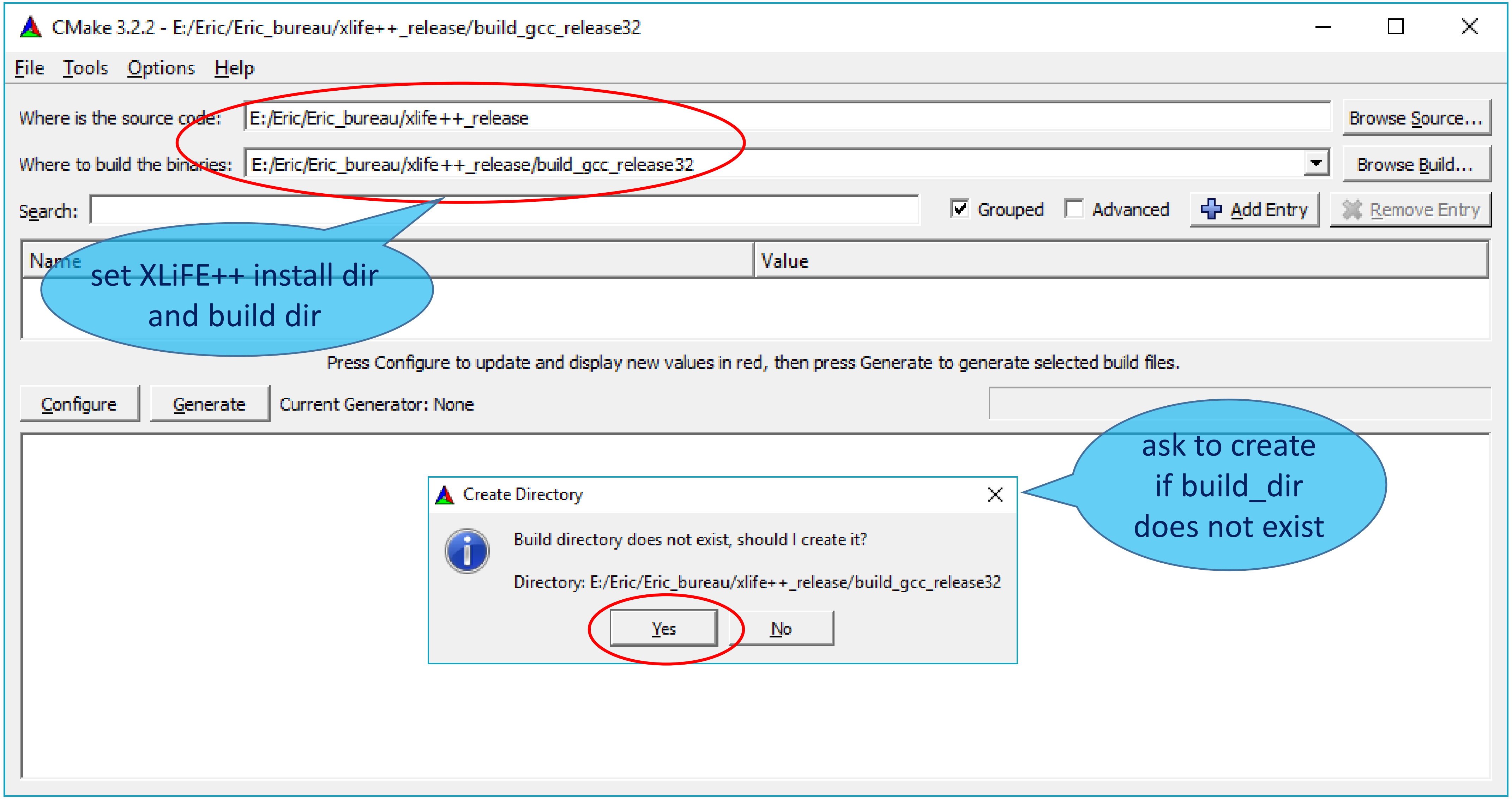
- **XLiFE++ source installed**

  http://uma.ensta-paristech.fr/soft/XLiFE++/?module=main&action=dl
- **CodeBlocks** ***http://www.codeblocks.org/downloads***
- **cmake installed (>2.8.2)** ***https://cmake.org/download/***
- **paraview installed** ***http://www.paraview.org/download/***
- **gmsh installed** ***http://gmsh.info/#Download***

Extra libraries (optionnal)

blas, lapack, suitesparse, arpack

Run cmake



CMake 3.2.2 - E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Where is the source code: E:/Eric/Eric_bureau/xlife++_release

Where to build the binaries: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

set XLiFE++ install dir and build dir

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

Current Generator: None

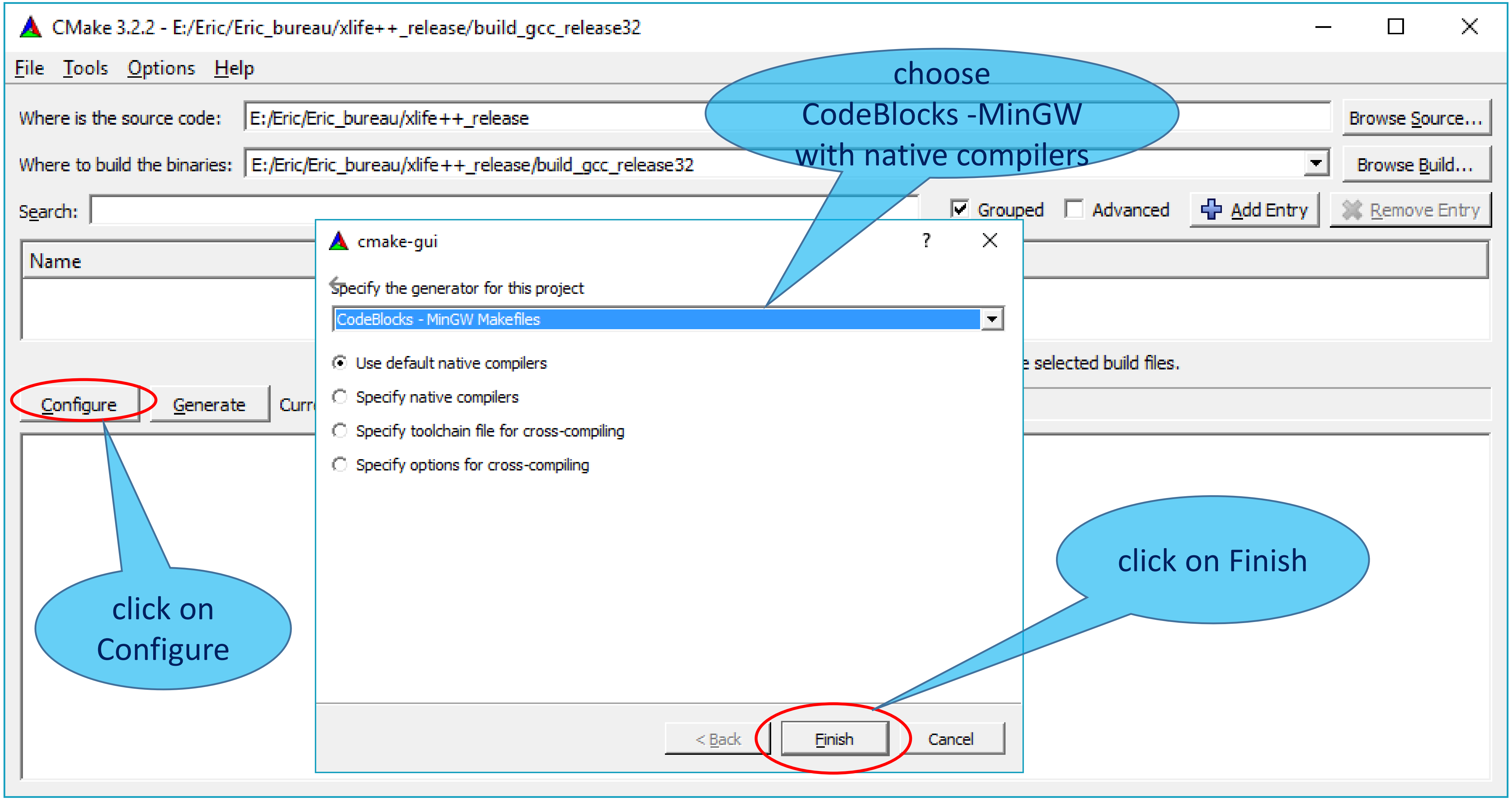
Create Directory

Build directory does not exist, should I create it?

Directory: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

ask to create if build_dir does not exist

Choose CodeBlocks as builder



CMake 3.2.2 - E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Where is the source code: E:/Eric/Eric_bureau/xlife++_release

Where to build the binaries: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Search:

☑ Grouped □ Advanced

cmake-gui

Specify the generator for this project

CodeBlocks - MinGW Makefiles

● Use default native compilers

○ Specify native compilers

○ Specify toolchain file for cross-compiling

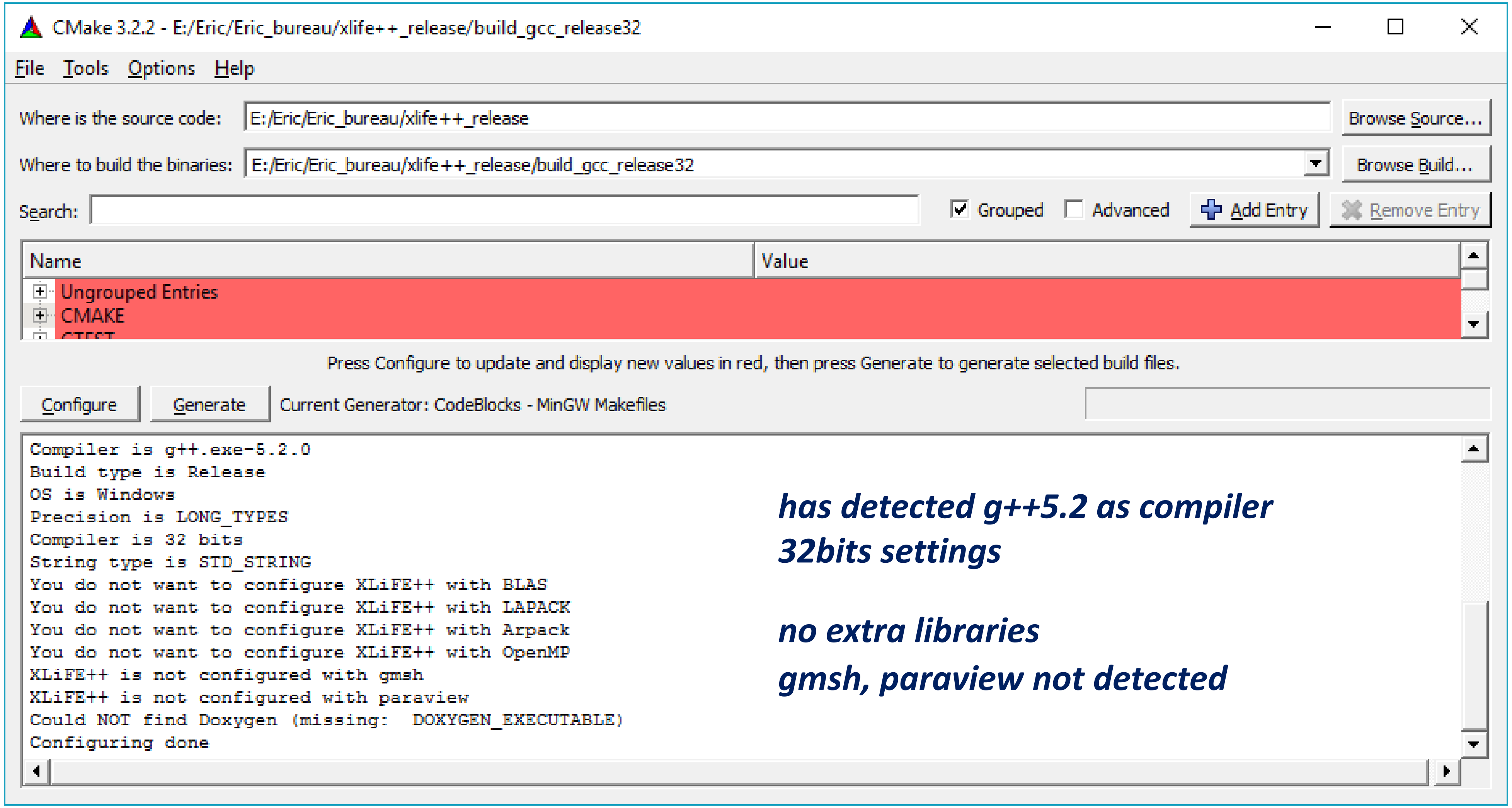
○ Specify options for cross-compiling

choose CodeBlocks -MinGW with native compilers

click on Configure

click on Finish

First configure



Where is the source code: E:/Eric/Eric_bureau/xlife++_release

Where to build the binaries: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

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

Current Generator: CodeBlocks - MinGW Makefiles

```
Compiler is g++.exe-5.2.0
Build type is Release
OS is Windows
Precision is LONG_TYPES
Compiler is 32 bits
String type is STD_STRING
You do not want to configure XLiFE++ with BLAS
You do not want to configure XLiFE++ with LAPACK
You do not want to configure XLiFE++ with Arpack
You do not want to configure XLiFE++ with OpenMP
XLiFE++ is not configured with gmsh
XLiFE++ is not configured with paraview
Could NOT find Doxygen (missing:  DOXYGEN_EXECUTABLE)
Configuring done
```

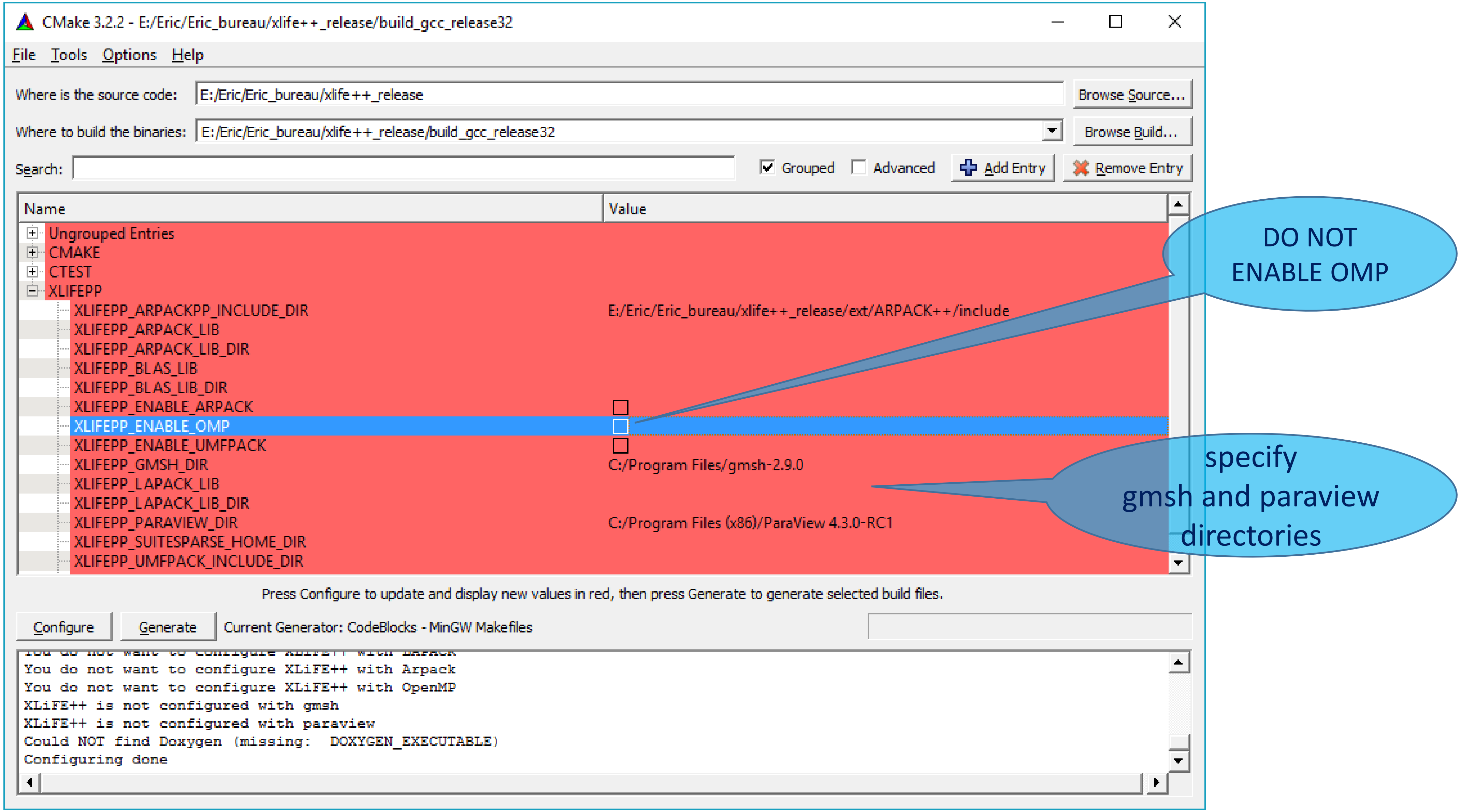
has detected g++5.2 as compiler

32bits settings

no extra libraries

gmsh, paraview not detected

Second configure



CMake 3.2.2 - E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Where is the source code: E:/Eric/Eric_bureau/xlife++_release

Where to build the binaries: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Name	Value
⊞ Ungrouped Entries	
⊞ CMAKE	
⊞ CTEST	
⊟ XLIFEPP	
XLIFEPP_ARPACKPP_INCLUDE_DIR	E:/Eric/Eric_bureau/xlife++_release/ext/ARPACK++/include
XLIFEPP_ARPACK_LIB	
XLIFEPP_ARPACK_LIB_DIR	
XLIFEPP_BLAS_LIB	
XLIFEPP_BLAS_LIB_DIR	
XLIFEPP_ENABLE_ARPACK	☐
XLIFEPP_ENABLE_OMP	☐
XLIFEPP_ENABLE_UMFPACK	☐
XLIFEPP_GMSH_DIR	C:/Program Files/gmsh-2.9.0
XLIFEPP_LAPACK_LIB	
XLIFEPP_LAPACK_LIB_DIR	
XLIFEPP_PARAVIEW_DIR	C:/Program Files (x86)/ParaView 4.3.0-RC1
XLIFEPP_SUITESPARSE_HOME_DIR	
XLIFEPP_UMFPACK_INCLUDE_DIR	

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

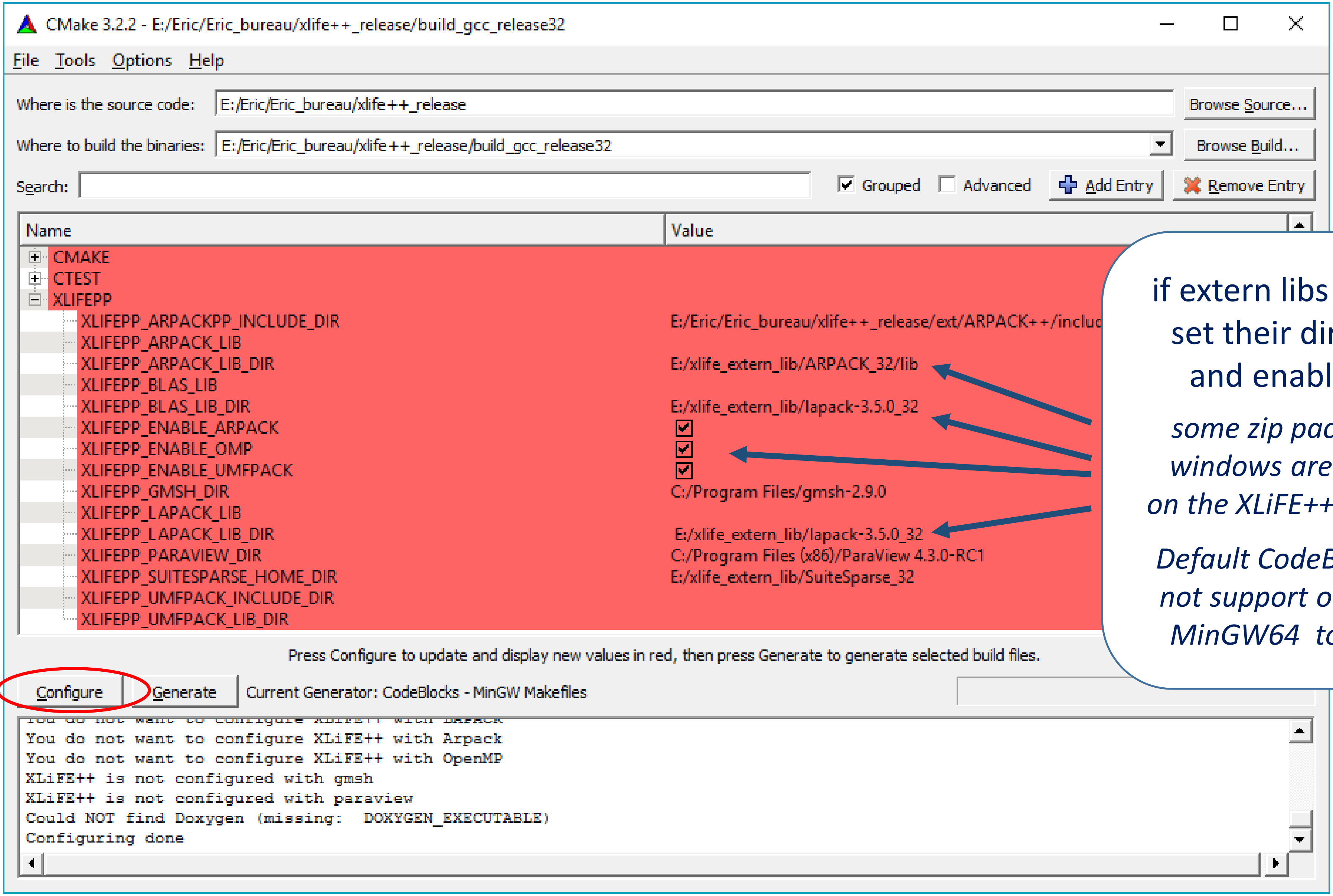
Current Generator: CodeBlocks - MinGW Makefiles

```
You do not want to configure XLiFE++ with LAPACK
You do not want to configure XLiFE++ with Arpack
You do not want to configure XLiFE++ with OpenMP
XLiFE++ is not configured with gmsh
XLiFE++ is not configured with paraview
Could NOT find Doxygen (missing:  DOXYGEN_EXECUTABLE)
Configuring done
```

DO NOT ENABLE OMP

specify gmsh and paraview directories

Second configure



Where is the source code: E:/Eric/Eric_bureau/xlife++_release

Where to build the binaries: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Search: ☑ Grouped ☐ Advanced

Name	Value
⊞ CMAKE	
⊞ CTEST	
⊟ XLIFEPP	
XLIFEPP_ARPACKPP_INCLUDE_DIR	E:/Eric/Eric_bureau/xlife++_release/ext/ARPACK++/incluc
XLIFEPP_ARPACK_LIB	
XLIFEPP_ARPACK_LIB_DIR	E:/xlife_extern_lib/ARPACK_32/lib
XLIFEPP_BLAS_LIB	
XLIFEPP_BLAS_LIB_DIR	E:/xlife_extern_lib/lapack-3.5.0_32
XLIFEPP_ENABLE_ARPACK	☑
XLIFEPP_ENABLE_OMP	☑
XLIFEPP_ENABLE_UMFPACK	☑
XLIFEPP_GMSH_DIR	C:/Program Files/gmsh-2.9.0
XLIFEPP_LAPACK_LIB	
XLIFEPP_LAPACK_LIB_DIR	E:/xlife_extern_lib/lapack-3.5.0_32
XLIFEPP_PARAVIEW_DIR	C:/Program Files (x86)/ParaView 4.3.0-RC1
XLIFEPP_SUITESPARSE_HOME_DIR	E:/xlife_extern_lib/SuiteSparse_32
XLIFEPP_UMFPACK_INCLUDE_DIR	
XLIFEPP_UMFPACK_LIB_DIR	

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

Current Generator: CodeBlocks - MinGW Makefiles

```
You do not want to configure XLiFE++ with LAPACK
You do not want to configure XLiFE++ with Arpack
You do not want to configure XLiFE++ with OpenMP
XLiFE++ is not configured with gmsh
XLiFE++ is not configured with paraview
Could NOT find Doxygen (missing:  DOXYGEN_EXECUTABLE)
Configuring done
```

if extern libs available, set their directories and enable them

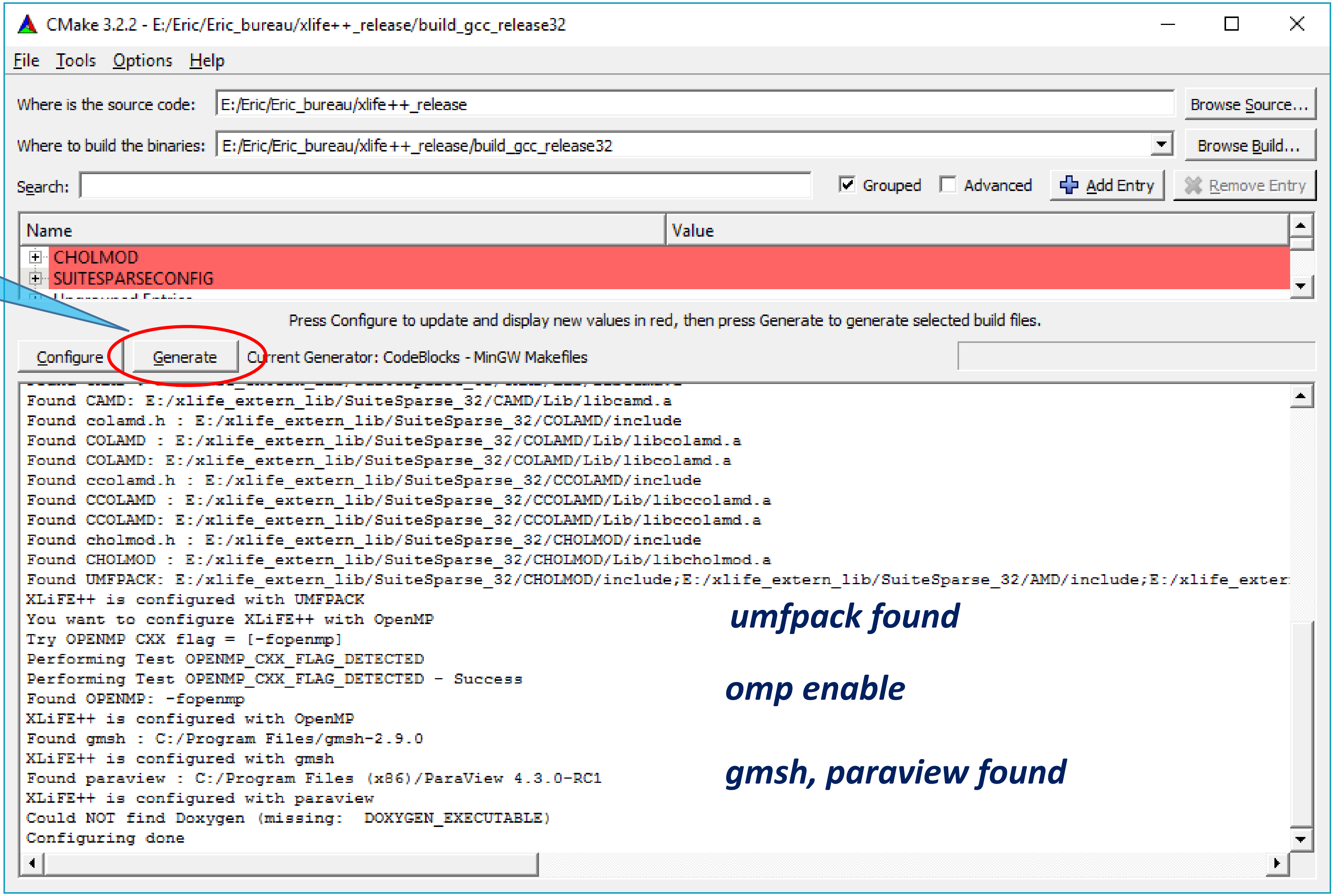
some zip packages for windows are available on the XLiFE++ homepage

Default CodeBlocks does not support omp, install MinGW64 to get omp

click on Configure

Now generate

click on Generate



CMake 3.2.2 - E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32
File Tools Options Help

Where is the source code: E:/Eric/Eric_bureau/xlife++_release

Where to build the binaries: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Name	Value
CHOLMOD	
SUITESPARSECONFIG	

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

Current Generator: CodeBlocks - MinGW Makefiles

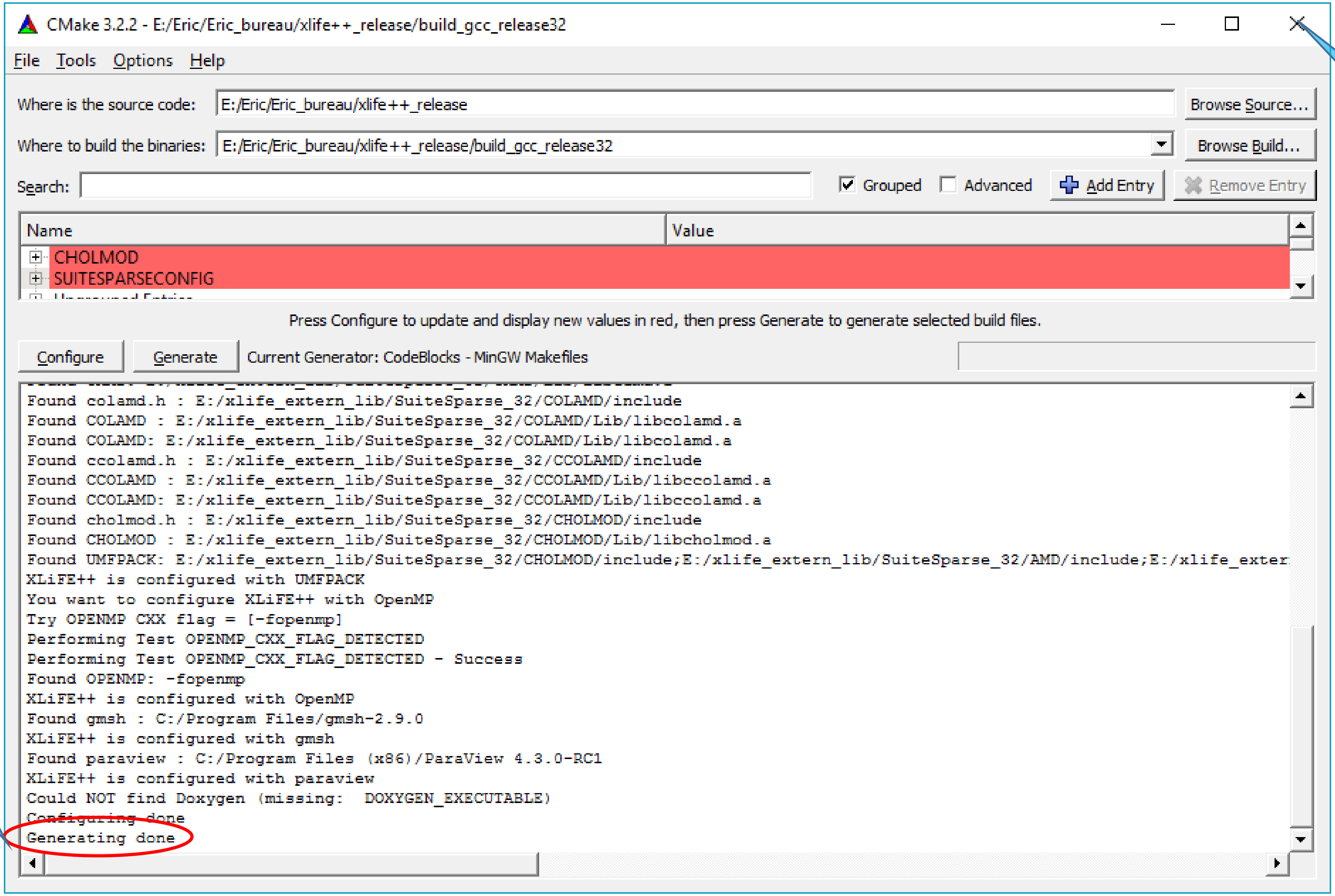
```
Found CAMD: E:/xlife_extern_lib/SuiteSparse_32/CAMD/Lib/libcamd.a
Found colamd.h : E:/xlife_extern_lib/SuiteSparse_32/COLAMD/include
Found COLAMD : E:/xlife_extern_lib/SuiteSparse_32/COLAMD/Lib/libcolamd.a
Found COLAMD: E:/xlife_extern_lib/SuiteSparse_32/COLAMD/Lib/libcolamd.a
Found ccolamd.h : E:/xlife_extern_lib/SuiteSparse_32/CCOLAMD/include
Found CCOLAMD : E:/xlife_extern_lib/SuiteSparse_32/CCOLAMD/Lib/libccolamd.a
Found CCOLAMD: E:/xlife_extern_lib/SuiteSparse_32/CCOLAMD/Lib/libccolamd.a
Found cholmod.h : E:/xlife_extern_lib/SuiteSparse_32/CHOLMOD/include
Found CHOLMOD : E:/xlife_extern_lib/SuiteSparse_32/CHOLMOD/Lib/libcholmod.a
Found UMFPACK: E:/xlife_extern_lib/SuiteSparse_32/CHOLMOD/include;E:/xlife_extern_lib/SuiteSparse_32/AMD/include;E:/xlife_exter
XLiFE++ is configured with UMFPACK
You want to configure XLiFE++ with OpenMP
Try OPENMP CXX flag = [-fopenmp]
Performing Test OPENMP_CXX_FLAG_DETECTED
Performing Test OPENMP_CXX_FLAG_DETECTED - Success
Found OPENMP: -fopenmp
XLiFE++ is configured with OpenMP
Found gmsh : C:/Program Files/gmsh-2.9.0
XLiFE++ is configured with gmsh
Found paraview : C:/Program Files (x86)/ParaView 4.3.0-RC1
XLiFE++ is configured with paraview
Could NOT find Doxygen (missing:  DOXYGEN_EXECUTABLE)
Configuring done
```

umfpack found

omp enable

gmsh, paraview found

Build is completed



Where is the source code: E:/Eric/Eric_bureau/xlife++_release

Where to build the binaries: E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32

Search:

☑ Grouped □ Advanced

Name	Value
⊞ CHOLMOD	
⊞ SUITESPARSECONFIG	
⊞ Ungrouped Entries	

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

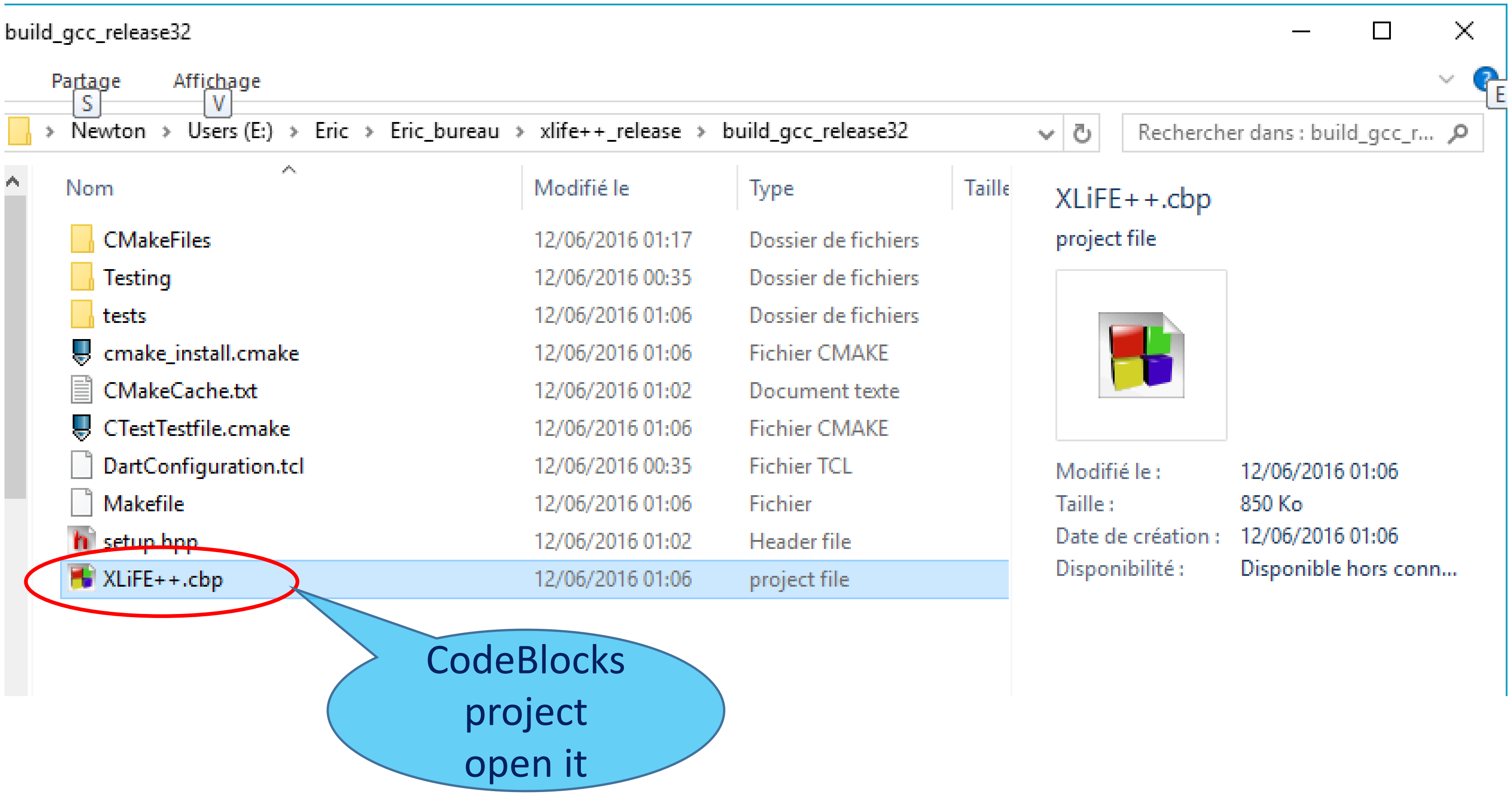
Current Generator: CodeBlocks - MinGW Makefiles

```
Found colamd.h : E:/xlife_extern_lib/SuiteSparse_32/COLAMD/include
Found COLAMD : E:/xlife_extern_lib/SuiteSparse_32/COLAMD/Lib/libcolamd.a
Found COLAMD: E:/xlife_extern_lib/SuiteSparse_32/COLAMD/Lib/libcolamd.a
Found ccolamd.h : E:/xlife_extern_lib/SuiteSparse_32/CCOLAMD/include
Found CCOLAMD : E:/xlife_extern_lib/SuiteSparse_32/CCOLAMD/Lib/libccolamd.a
Found CCOLAMD: E:/xlife_extern_lib/SuiteSparse_32/CCOLAMD/Lib/libccolamd.a
Found cholmod.h : E:/xlife_extern_lib/SuiteSparse_32/CHOLMOD/include
Found CHOLMOD : E:/xlife_extern_lib/SuiteSparse_32/CHOLMOD/Lib/libcholmod.a
Found UMFPACK: E:/xlife_extern_lib/SuiteSparse_32/CHOLMOD/include;E:/xlife_extern_lib/SuiteSparse_32/AMD/include;E:/xlife_exter
XLiFE++ is configured with UMFPACK
You want to configure XLiFE++ with OpenMP
Try OPENMP CXX flag = [-fopenmp]
Performing Test OPENMP_CXX_FLAG_DETECTED
Performing Test OPENMP_CXX_FLAG_DETECTED - Success
Found OPENMP: -fopenmp
XLiFE++ is configured with OpenMP
Found gmsh : C:/Program Files/gmsh-2.9.0
XLiFE++ is configured with gmsh
Found paraview : C:/Program Files (x86)/ParaView 4.3.0-RC1
XLiFE++ is configured with paraview
Could NOT find Doxygen (missing:  DOXYGEN_EXECUTABLE)
Configuring done
Generating done
```

close Cmake

Ok

Build is completed



build_gcc_release32

Newton › Users (E:) › Eric › Eric_bureau › xlife++_release › build_gcc_release32

Rechercher dans : build_gcc_r...

Nom	Modifié le	Type	Taille
CMakeFiles	12/06/2016 01:17	Dossier de fichiers	
Testing	12/06/2016 00:35	Dossier de fichiers	
tests	12/06/2016 01:06	Dossier de fichiers	
cmake_install.cmake	12/06/2016 01:06	Fichier CMAKE	
CMakeCache.txt	12/06/2016 01:02	Document texte	
CTestTestfile.cmake	12/06/2016 01:06	Fichier CMAKE	
DartConfiguration.tcl	12/06/2016 00:35	Fichier TCL	
Makefile	12/06/2016 01:06	Fichier	
setup.hpp	12/06/2016 01:02	Header file	
XLiFE++.cbp	12/06/2016 01:06	project file	

XLiFE++.cbp

project file

Modifié le : 12/06/2016 01:06

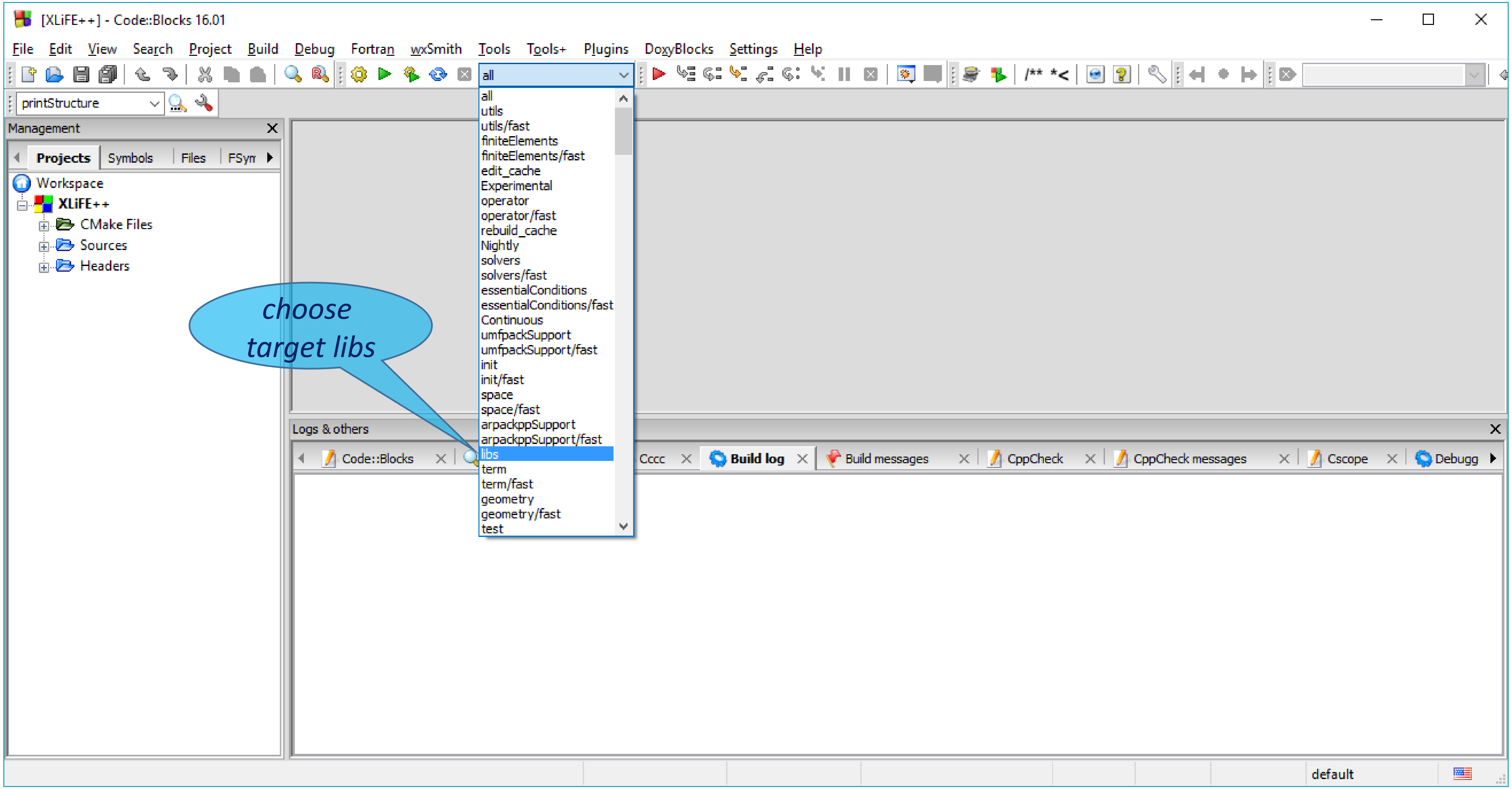
Taille : 850 Ko

Date de création : 12/06/2016 01:06

Disponibilité : Disponible hors conn...

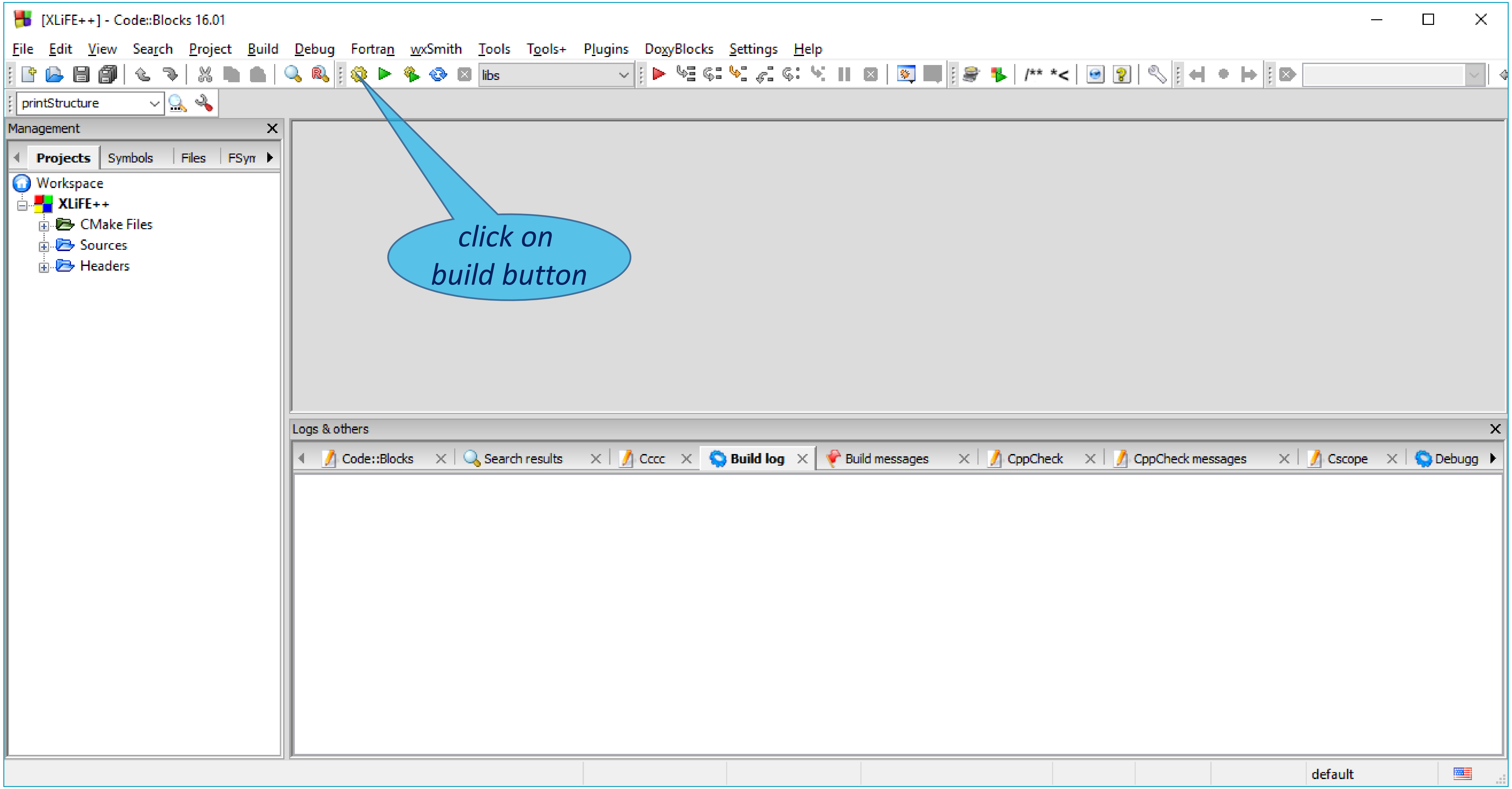
CodeBlocks project open it

CodeBlocks Project



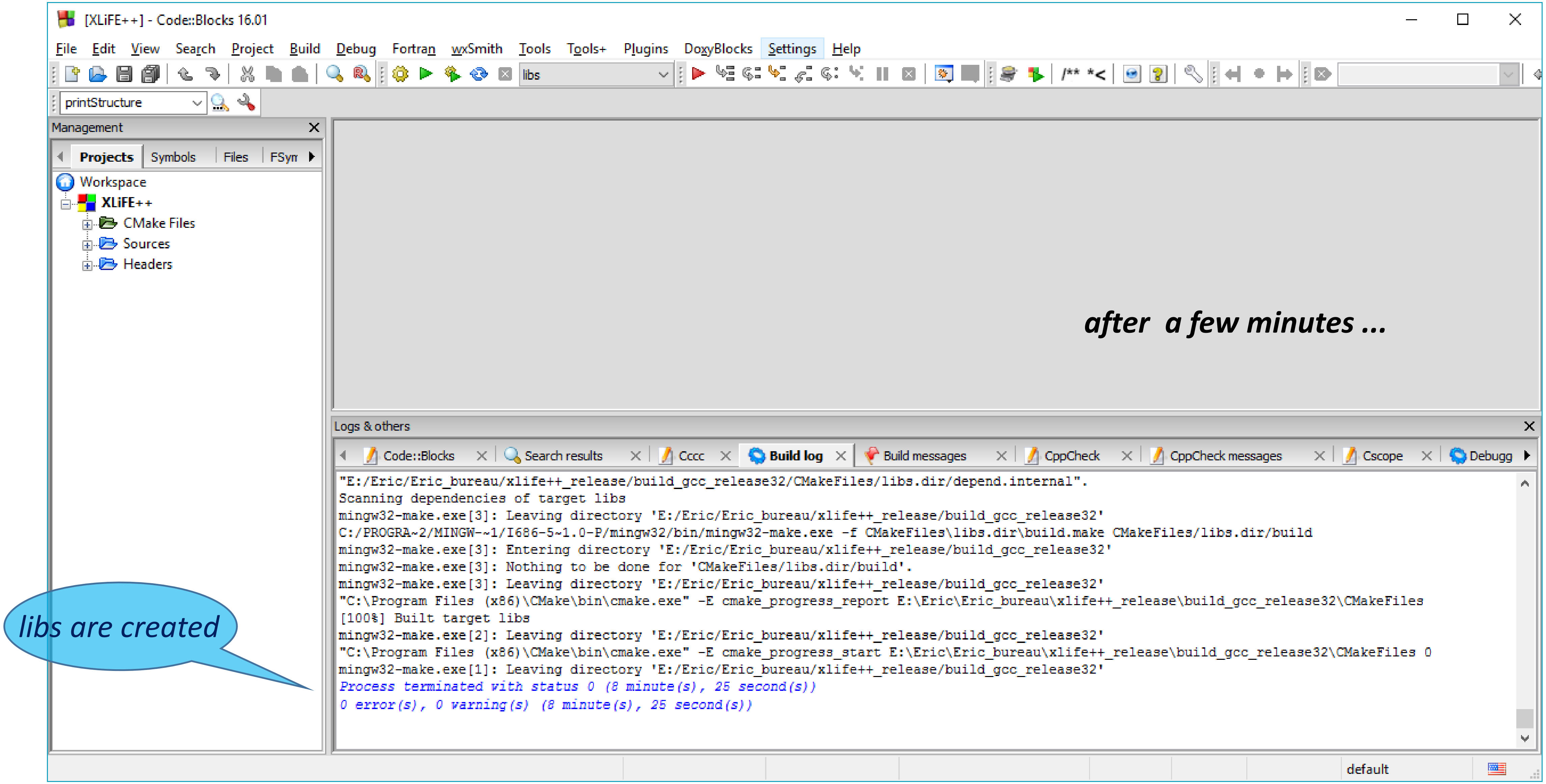
choose target libs

Compile libraries


[XLiFE++] - Code::Blocks 16.01
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
libs
printStructure
Management
Projects Symbols Files FSym
Workspace
XLiFE++
CMake Files
Sources
Headers
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck CppCheck messages Cscope Debugg
default

click on build button

Compile librairies

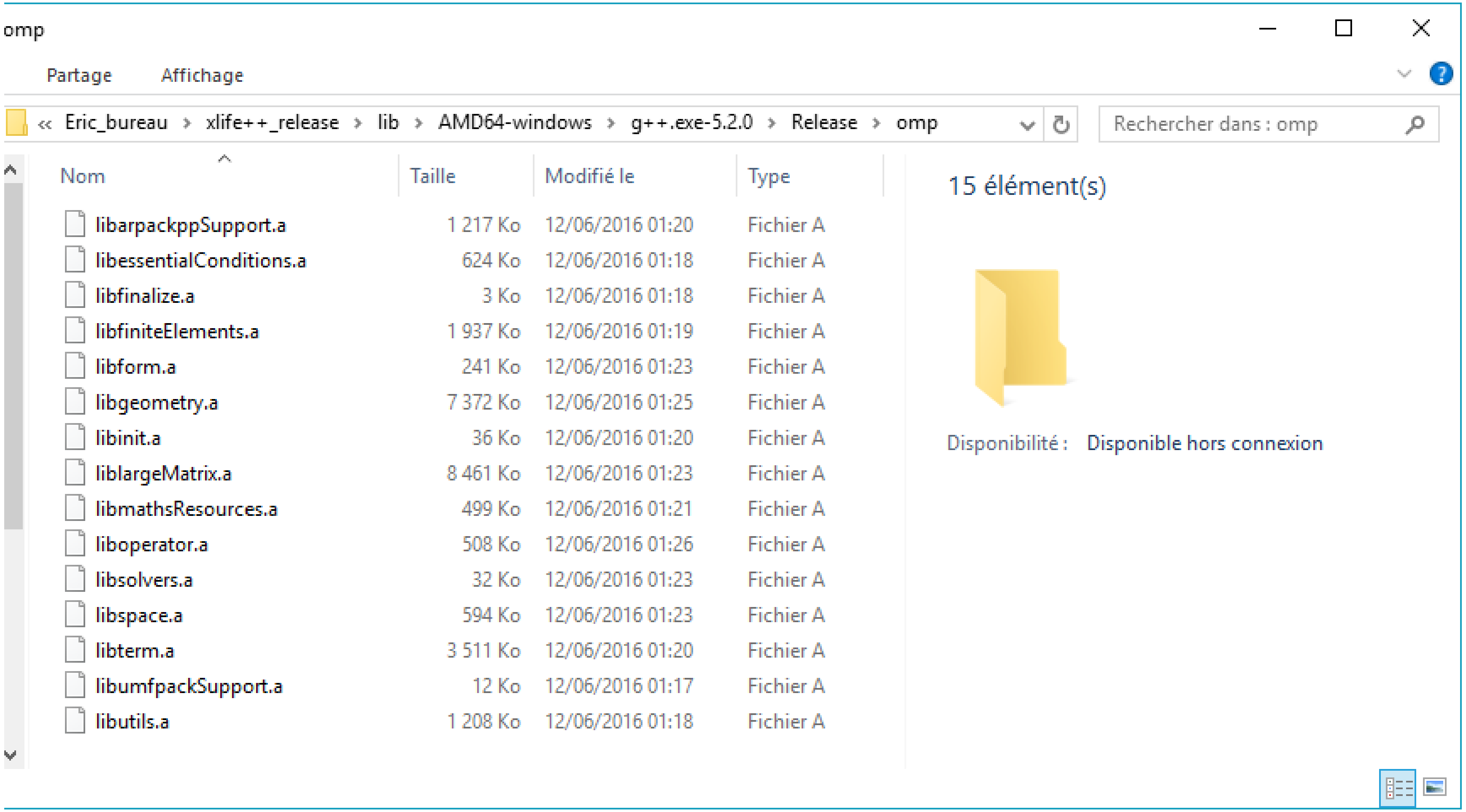


```
"E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32/CMakeFiles/libs.dir/depend.internal".
Scanning dependencies of target libs
mingw32-make.exe[3]: Leaving directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
C:/PROGRA~2/MINGW-~1/I686-5~1.0-P/mingw32/bin/mingw32-make.exe -f CMakeFiles\libs.dir\build.make CMakeFiles/libs.dir/build
mingw32-make.exe[3]: Entering directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
mingw32-make.exe[3]: Nothing to be done for 'CMakeFiles/libs.dir/build'.
mingw32-make.exe[3]: Leaving directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
"C:\Program Files (x86)\CMake\bin\cmake.exe" -E cmake_progress_report E:\Eric\Eric_bureau\xlife++_release\build_gcc_release32\CMakeFiles
[100%] Built target libs
mingw32-make.exe[2]: Leaving directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
"C:\Program Files (x86)\CMake\bin\cmake.exe" -E cmake_progress_start E:\Eric\Eric_bureau\xlife++_release\build_gcc_release32\CMakeFiles 0
mingw32-make.exe[1]: Leaving directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
Process terminated with status 0 (8 minute(s), 25 second(s))
0 error(s), 0 warning(s) (8 minute(s), 25 second(s))
```

after a few minutes ...

libs are created

Libraries are created



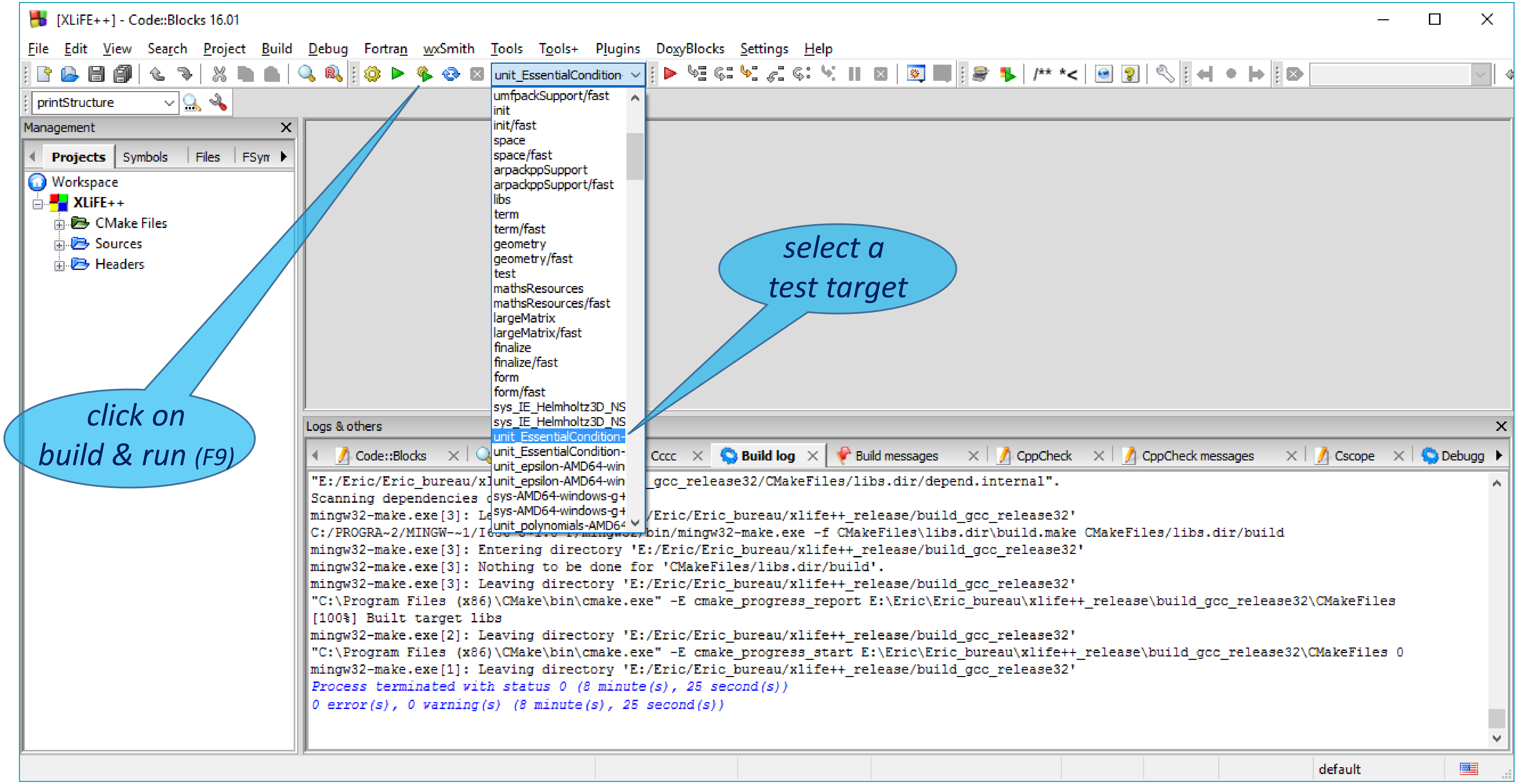
« Eric_bureau › xlife++_release › lib › AMD64-windows › g++.exe-5.2.0 › Release › omp

Nom	Taille	Modifié le	Type
libarpackppSupport.a	1 217 Ko	12/06/2016 01:20	Fichier A
libessentialConditions.a	624 Ko	12/06/2016 01:18	Fichier A
libfinalize.a	3 Ko	12/06/2016 01:18	Fichier A
libfiniteElements.a	1 937 Ko	12/06/2016 01:19	Fichier A
libform.a	241 Ko	12/06/2016 01:23	Fichier A
libgeometry.a	7 372 Ko	12/06/2016 01:25	Fichier A
libinit.a	36 Ko	12/06/2016 01:20	Fichier A
liblargeMatrix.a	8 461 Ko	12/06/2016 01:23	Fichier A
libmathsResources.a	499 Ko	12/06/2016 01:21	Fichier A
liboperator.a	508 Ko	12/06/2016 01:26	Fichier A
libsolvers.a	32 Ko	12/06/2016 01:23	Fichier A
libspace.a	594 Ko	12/06/2016 01:23	Fichier A
libterm.a	3 511 Ko	12/06/2016 01:20	Fichier A
libumfpackSupport.a	12 Ko	12/06/2016 01:17	Fichier A
libutils.a	1 208 Ko	12/06/2016 01:18	Fichier A

15 élément(s)

Disponibilité : Disponible hors connexion

Compile a test

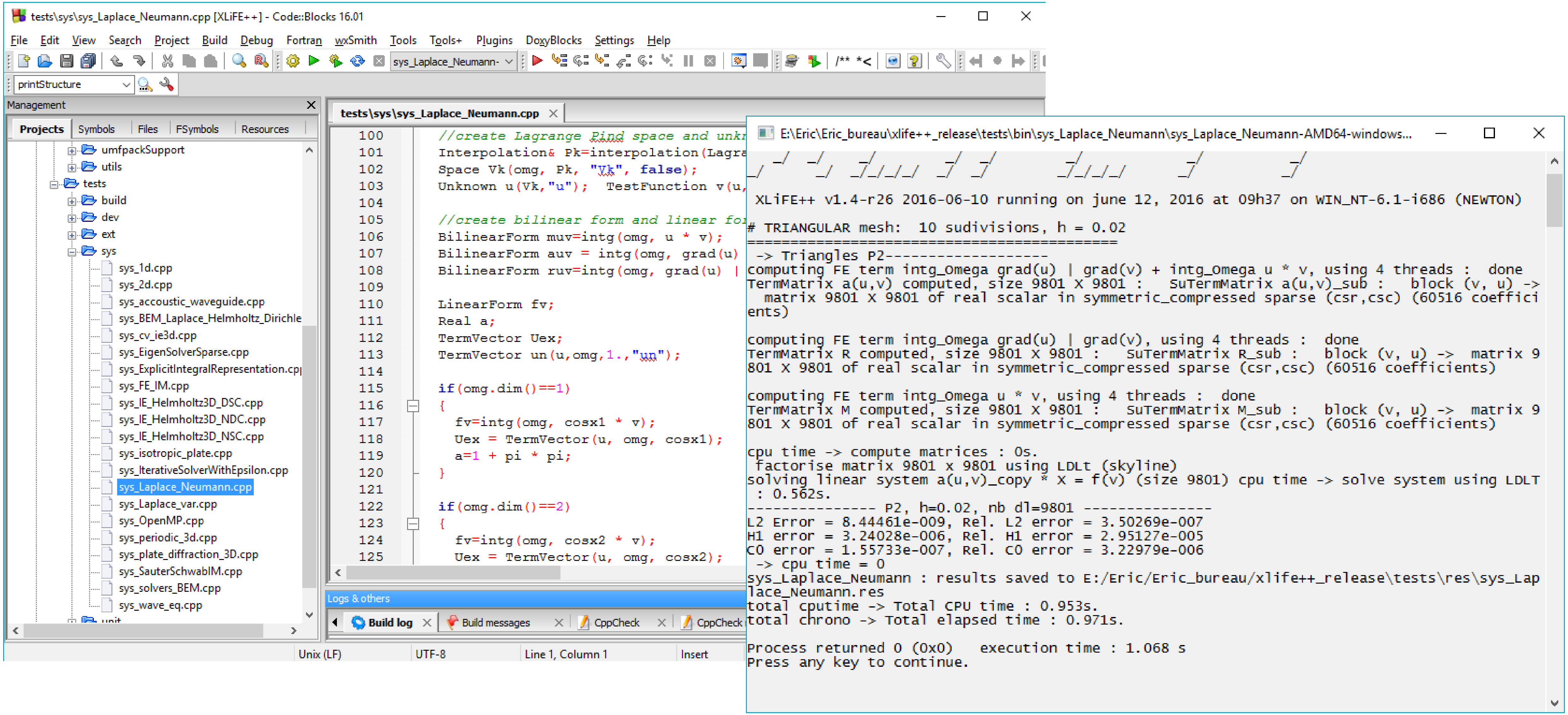


```
"E:/Eric/Eric_bureau/xl                  _gcc_release32/CMakeFiles/libs.dir/depend.internal".
Scanning dependencies o
mingw32-make.exe[3]: Le                   /Eric/Eric_bureau/xlife++_release/build_gcc_release32'
C:/PROGRA~2/MINGW-~1/I                   bin/mingw32-make.exe -f CMakeFiles\libs.dir\build.make CMakeFiles/libs.dir/build
mingw32-make.exe[3]: Entering directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
mingw32-make.exe[3]: Nothing to be done for 'CMakeFiles/libs.dir/build'.
mingw32-make.exe[3]: Leaving directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
"C:\Program Files (x86)\CMake\bin\cmake.exe" -E cmake_progress_report E:\Eric\Eric_bureau\xlife++_release\build_gcc_release32\CMakeFiles
[100%] Built target libs
mingw32-make.exe[2]: Leaving directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
"C:\Program Files (x86)\CMake\bin\cmake.exe" -E cmake_progress_start E:\Eric\Eric_bureau\xlife++_release\build_gcc_release32\CMakeFiles 0
mingw32-make.exe[1]: Leaving directory 'E:/Eric/Eric_bureau/xlife++_release/build_gcc_release32'
Process terminated with status 0 (8 minute(s), 25 second(s))
0 error(s), 0 warning(s) (8 minute(s), 25 second(s))
```

click on build & run (F9)

select a test target

Run test


tests\sys\sys_Laplace_Neumann.cpp [XLiFE++] - Code::Blocks 16.01
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
sys_Laplace_Neumann-
printStructure
Management
Projects Symbols Files FSymbols Resources
umfpackSupport
utils
tests
build
dev
ext
sys
sys_1d.cpp
sys_2d.cpp
sys_accoustic_waveguide.cpp
sys_BEM_Laplace_Helmholtz_Dirichle
sys_cv_ie3d.cpp
sys_EigenSolverSparse.cpp
sys_ExplicitIntegralRepresentation.cp
sys_FE_IM.cpp
sys_IE_Helmholtz3D_DSC.cpp
sys_IE_Helmholtz3D_NDC.cpp
sys_IE_Helmholtz3D_NSC.cpp
sys_isotropic_plate.cpp
sys_IterativeSolverWithEpsilon.cpp
sys_Laplace_Neumann.cpp
sys_Laplace_var.cpp
sys_OpenMP.cpp
sys_periodic_3d.cpp
sys_plate_diffraction_3D.cpp
sys_SauterSchwablM.cpp
sys_solvers_BEM.cpp
sys_wave_eq.cpp
unit
tests\sys\sys_Laplace_Neumann.cpp
Logs & others
Build log
Build messages
CppCheck
CppCheck
Unix (LF)
UTF-8
Line 1, Column 1
Insert
E:\Eric\Eric_bureau\xlife++_release\tests\bin\sys_Laplace_Neumann\sys_Laplace_Neumann-AMD64-windows...

```
//create Lagrange Pind space and unk
Interpolation& Pk=interpolation(Lagra
Space Vk(omg, Pk, "Vk", false);
Unknown u(Vk,"u");  TestFunction v(u,

//create bilinear form and linear fo
BilinearForm muv=intg(omg, u * v);
BilinearForm auv = intg(omg, grad(u)
BilinearForm ruv=intg(omg, grad(u) |

LinearForm fv;
Real a;
TermVector Uex;
TermVector un(u,omg,1.,"un");

if(omg.dim()==1)
{
  fv=intg(omg, cosx1 * v);
  Uex = TermVector(u, omg, cosx1);
  a=1 + pi * pi;
}

if(omg.dim()==2)
{
  fv=intg(omg, cosx2 * v);
  Uex = TermVector(u, omg, cosx2);
```

```
  _/   _/     _/         _/   _/          _/               _/            _/
_/        _/  _/_/_/_/  _/   _/        _/_/_/_/          _/            _/

 XLiFE++ v1.4-r26 2016-06-10 running on june 12, 2016 at 09h37 on WIN_NT-6.1-i686 (NEWTON)

# TRIANGULAR mesh:  10 sudivisions, h = 0.02
===========================================
 -> Triangles P2-------------------
computing FE term intg_Omega grad(u) | grad(v) + intg_Omega u * v, using 4 threads :  done
TermMatrix a(u,v) computed, size 9801 X 9801 :   SuTermMatrix a(u,v)_sub :   block (v, u) ->
  matrix 9801 X 9801 of real scalar in symmetric_compressed sparse (csr,csc) (60516 coeffici
ents)

computing FE term intg_Omega grad(u) | grad(v), using 4 threads :  done
TermMatrix R computed, size 9801 X 9801 :   SuTermMatrix R_sub :   block (v, u) ->  matrix 9
801 X 9801 of real scalar in symmetric_compressed sparse (csr,csc) (60516 coefficients)

computing FE term intg_Omega u * v, using 4 threads :  done
TermMatrix M computed, size 9801 X 9801 :   SuTermMatrix M_sub :   block (v, u) ->  matrix 9
801 X 9801 of real scalar in symmetric_compressed sparse (csr,csc) (60516 coefficients)

cpu time -> compute matrices : 0s.
 factorise matrix 9801 x 9801 using LDLt (skyline)
solving linear system a(u,v)_copy * X = f(v) (size 9801) cpu time -> solve system using LDLT
 : 0.562s.
---------------- P2, h=0.02, nb dl=9801 ----------------
L2 Error = 8.44461e-009, Rel. L2 error = 3.50269e-007
H1 error = 3.24028e-006, Rel. H1 error = 2.95127e-005
C0 error = 1.55733e-007, Rel. C0 error = 3.22979e-006
 -> cpu time = 0
sys_Laplace_Neumann : results saved to E:/Eric/Eric_bureau/xlife++_release\tests\res\sys_Lap
lace_Neumann.res
total cputime -> Total CPU time : 0.953s.
total chrono -> Total elapsed time : 0.971s.

Process returned 0 (0x0)   execution time : 1.068 s
Press any key to continue.
```

Build XLiFE++ in 64bits with omp

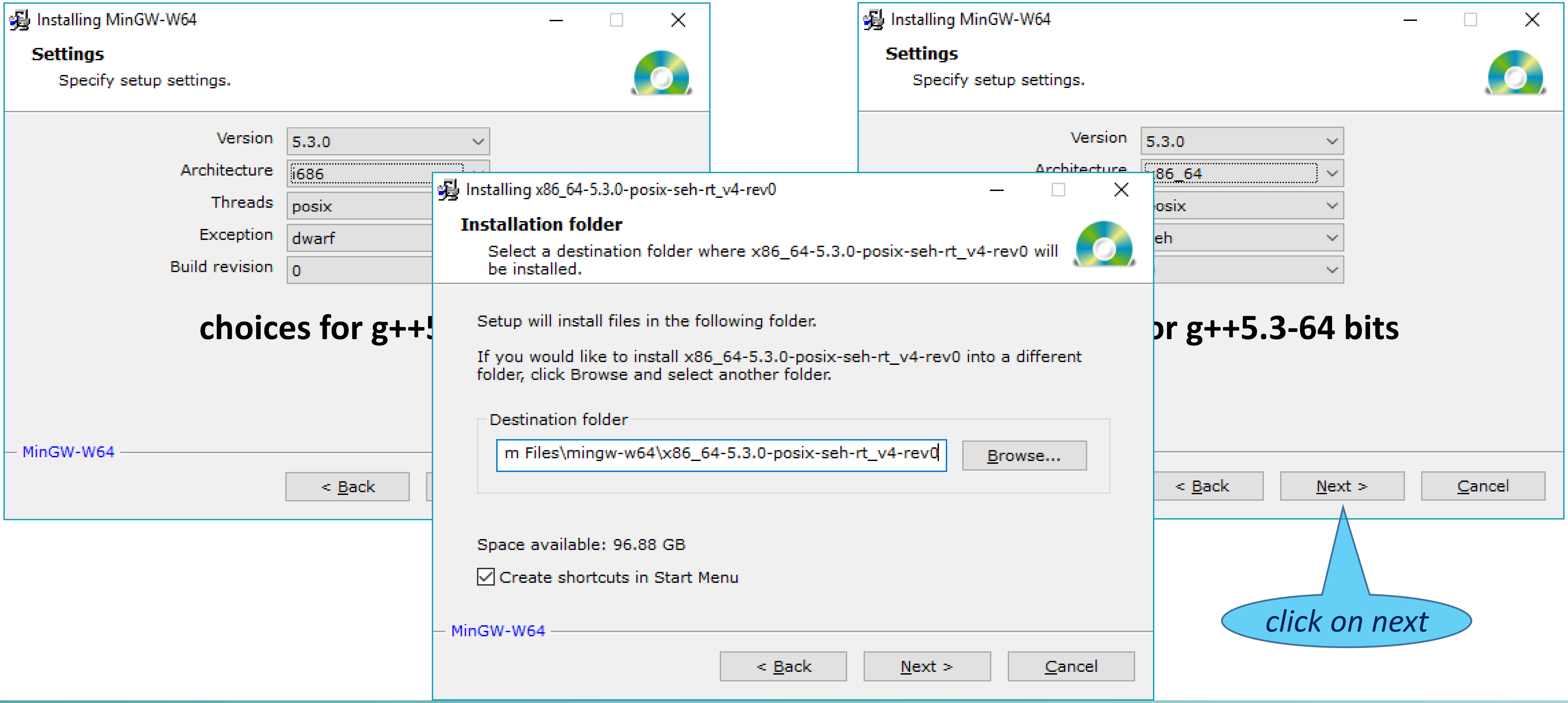
**By default, CodeBlocks-MinGW provides a g++ 32 bits compiler with no omp support
so you have to install a new MinGW package to get a g++ 64 bits compiler with omp support :**

https://sourceforge.net/projects/mingw-w64/files/latest/download

MinGW -64 provide 32bits and 64bits g++4.xx or g++5.xx compilers supporting omp

Install MinGW-64

- ❑ **First download at https://sourceforge.net/projects/mingw-w64/files/latest/download the minGW-W64 installer and run it :**



Installing MinGW-W64

Settings

Specify setup settings.

Version: 5.3.0

Architecture: i686

Threads: posix

Exception: dwarf

Build revision: 0

choices for g++!

MinGW-W64

Installing MinGW-W64

Settings

Specify setup settings.

Version: 5.3.0

Architecture: x86_64

osix

eh

or g++5.3-64 bits

Installing x86_64-5.3.0-posix-seh-rt_v4-rev0

Installation folder

Select a destination folder where x86_64-5.3.0-posix-seh-rt_v4-rev0 will be installed.

Setup will install files in the following folder.

If you would like to install x86_64-5.3.0-posix-seh-rt_v4-rev0 into a different folder, click Browse and select another folder.

Destination folder: m Files\mingw-w64\x86_64-5.3.0-posix-seh-rt_v4-rev0

Space available: 96.88 GB

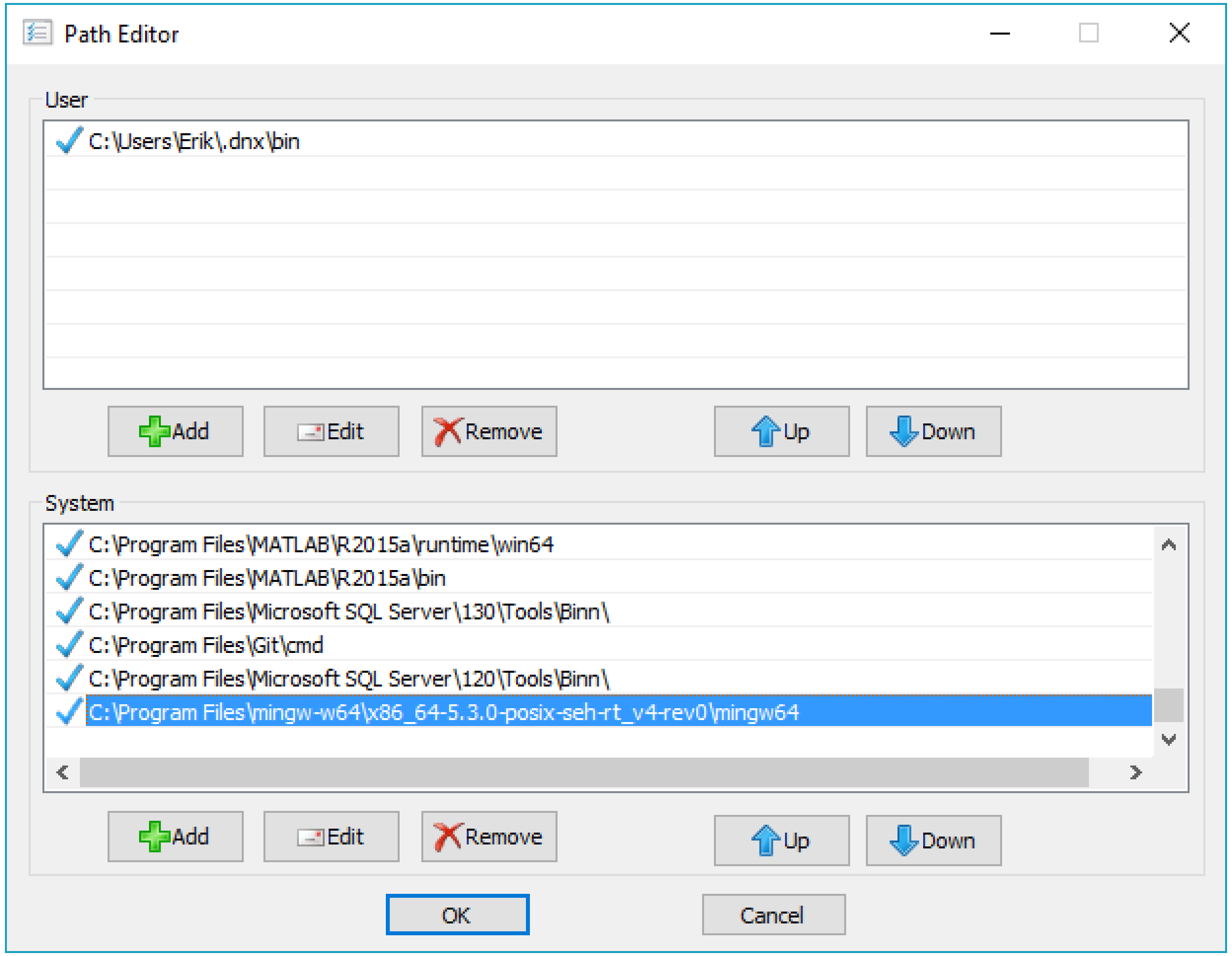
☑ Create shortcuts in Start Menu

MinGW-W64

click on next

Install MinGW-64

- ❑ **add the bin folder of your Mingw-64 to the windows path**



Path Editor

User

- ✓ C:\Users\Erik\.dnx\bin

System

- ✓ C:\Program Files\MATLAB\R2015a\runtime\win64
- ✓ C:\Program Files\MATLAB\R2015a\bin
- ✓ C:\Program Files\Microsoft SQL Server\130\Tools\Binn\
- ✓ C:\Program Files\Git\cmd
- ✓ C:\Program Files\Microsoft SQL Server\120\Tools\Binn\
- ✓ C:\Program Files\mingw-w64\x86_64-5.3.0-posix-seh-rt_v4-rev0\mingw64

by using the friendly PathEditor executable (https://patheditor2.codeplex.com/)

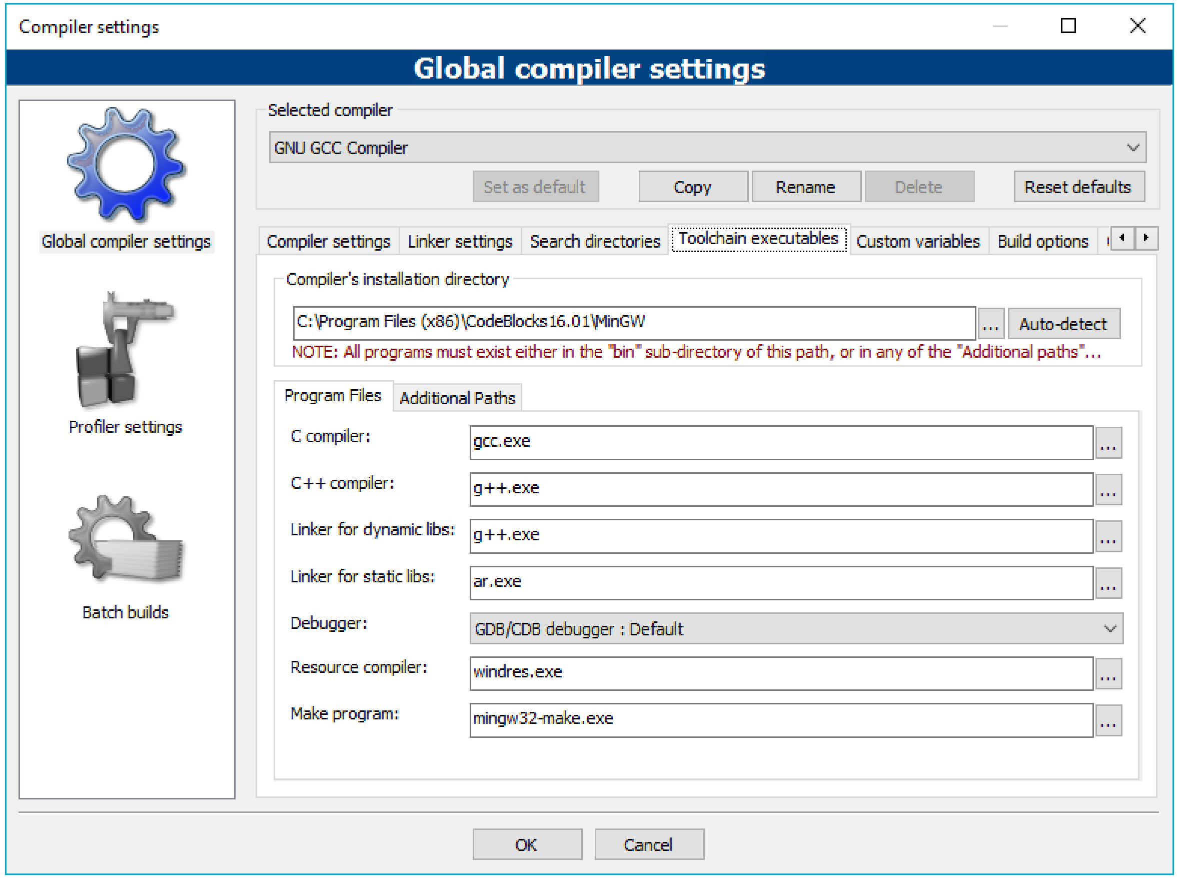
reboot your pc !

now cmake will use the MinGW64 compiler you install, either 32 or 64 bits both supporting omp

Reconfigure CodeBlocks

CodeBlocks default compiler is 32 bits,
but as cmake will detect MinGW64 compilers, it will be used by XLiFE++ project (no trouble)

If you want CodeBlocks works always with MinGW64, go to Settings->Compiler->ToolchainExecutables **and change the** Compiler's installation directory **by specifying your MinGW-64 directory**



Selected compiler: GNU GCC Compiler

Compiler's installation directory: C:\Program Files (x86)\CodeBlocks16.01\MinGW

NOTE: All programs must exist either in the "bin" sub-directory of this path, or in any of the "Additional paths"...

C compiler: gcc.exe
C++ compiler: g++.exe
Linker for dynamic libs: g++.exe
Linker for static libs: ar.exe
Debugger: GDB/CDB debugger : Default
Resource compiler: windres.exe
Make program: mingw32-make.exe

Other method :
replace original MinGW folder of CodeBlocks
by your MinGW-64 folder

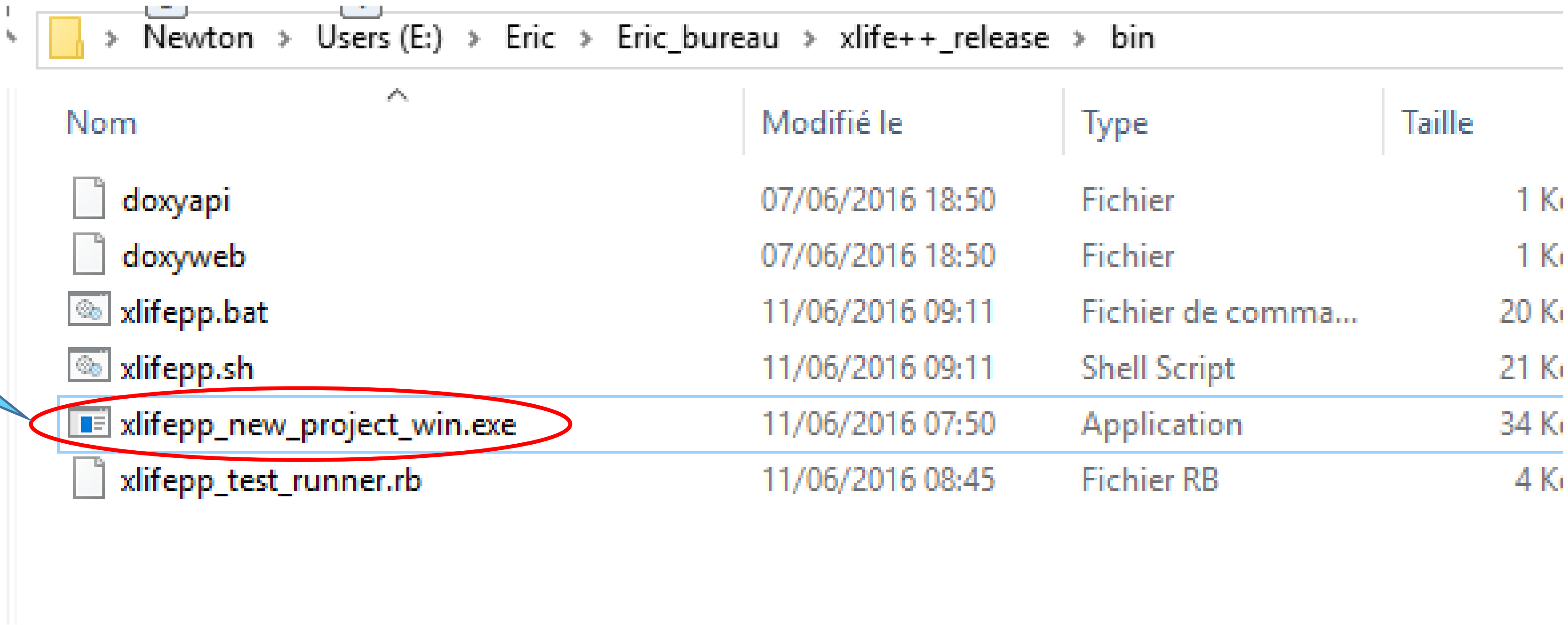
Create new XLiFE++ application using CodeBlocks on Windows,

Eric Lunéville

Requirements

- XLiFE++ source installed
- XLifE++ libraries built from CodeBlocks generator
- XLifE++ libraries compiled with CodeBlocks

Run xlifepp_setup_win_project



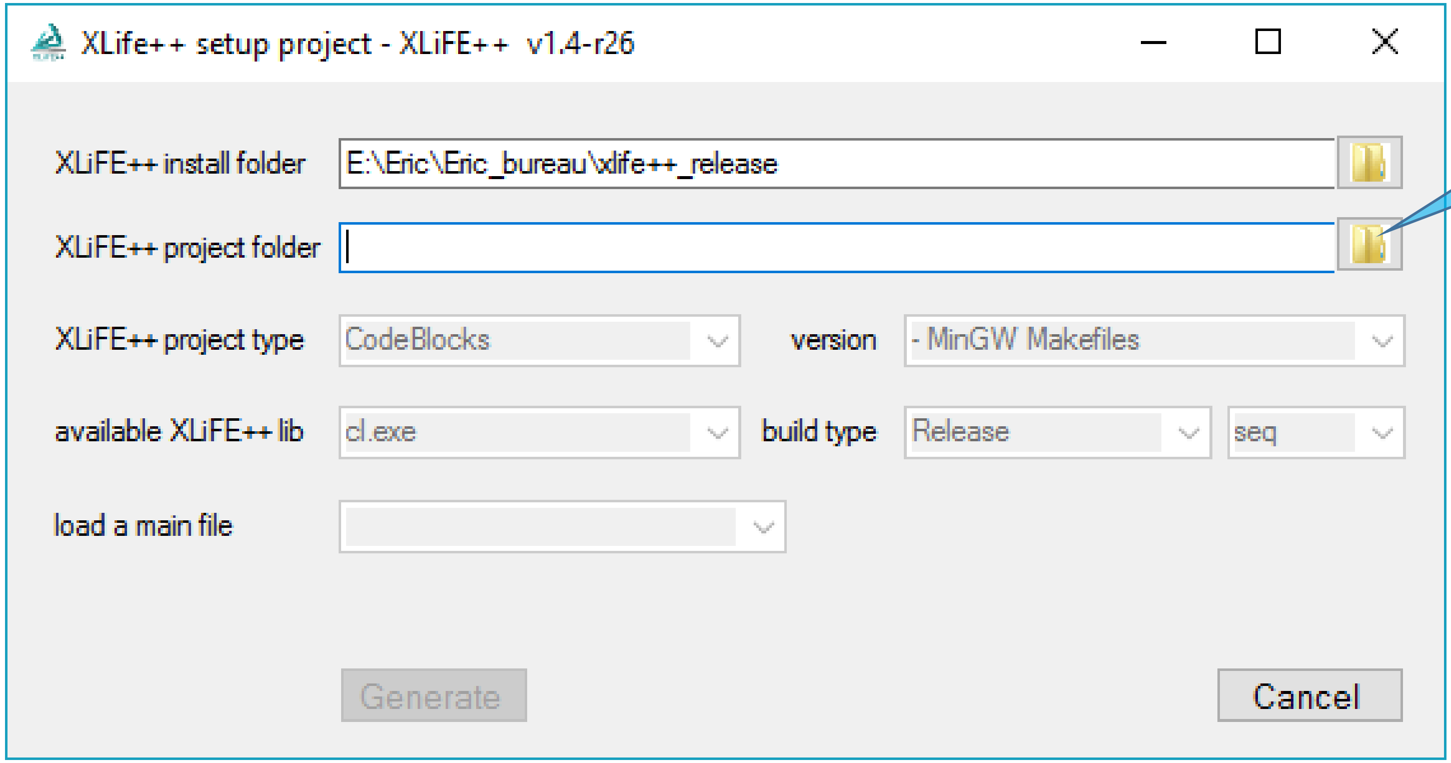
Newton › Users (E:) › Eric › Eric_bureau › xlife++_release › bin

Nom	Modifié le	Type	Taille
doxyapi	07/06/2016 18:50	Fichier	1 K
doxyweb	07/06/2016 18:50	Fichier	1 K
xlifepp.bat	11/06/2016 09:11	Fichier de comma...	20 K
xlifepp.sh	11/06/2016 09:11	Shell Script	21 K
xlifepp_new_project_win.exe	11/06/2016 07:50	Application	34 K
xlifepp_test_runner.rb	11/06/2016 08:45	Fichier RB	4 K

double click on

Run xlifepp_setup_win_project

XLifE++ install folder name should be up to date, if not set it yourself



XLife++ setup project - XLiFE++ v1.4-r26

XLiFE++ install folder: E:\Eric\Eric_bureau\xlife++_release

XLiFE++ project folder:

XLiFE++ project type: CodeBlocks

version: - MinGW Makefiles

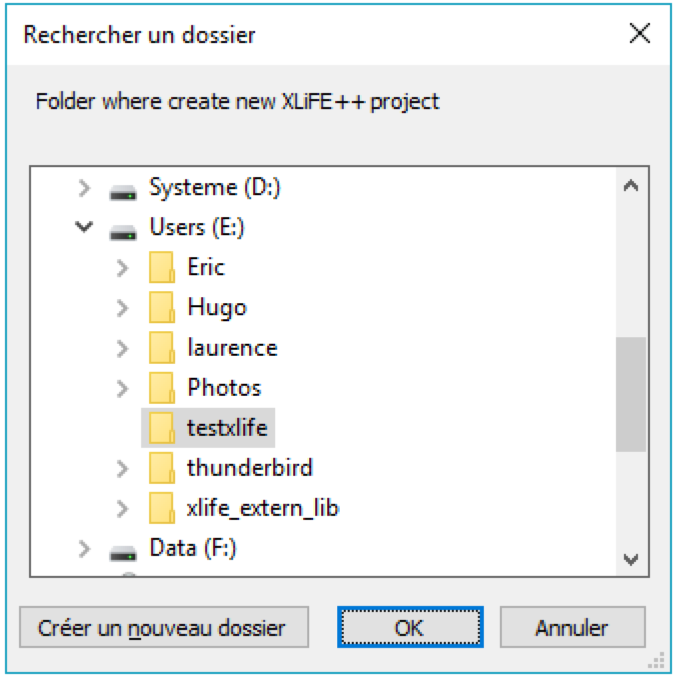
available XLiFE++ lib: cl.exe

build type: Release

seq

load a main file:

choose folder where create new application



Rechercher un dossier

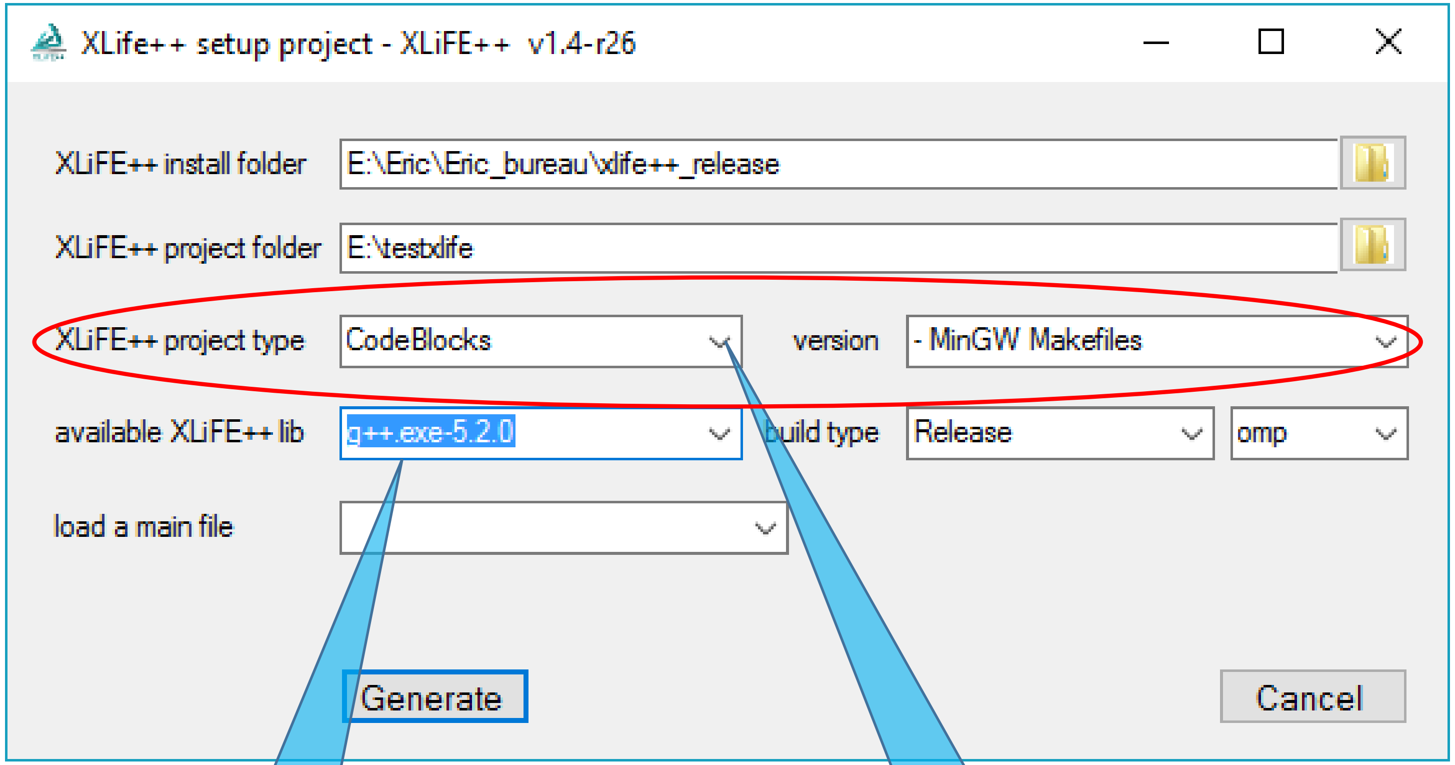
Folder where create new XLiFE++ project

- Systeme (D:)
- Users (E:)
  - Eric
  - Hugo
  - laurence
  - Photos
  - testxlife
  - thunderbird
  - xlife_extern_lib
- Data (F:)

if XLiFE++ project folder does not exist, you can create it

if XLiFE++ project folder exists and contains some old files, it is recommanded to clean it

Run xlifepp_setup_win_project



XLife++ setup project - XLiFE++ v1.4-r26

XLiFE++ install folder: E:\Eric\Eric_bureau\xlife++_release

XLiFE++ project folder: E:\testxlife

XLiFE++ project type: CodeBlocks

version: - MinGW Makefiles

available XLiFE++ lib: g++.exe-5.2.0

build type: Release

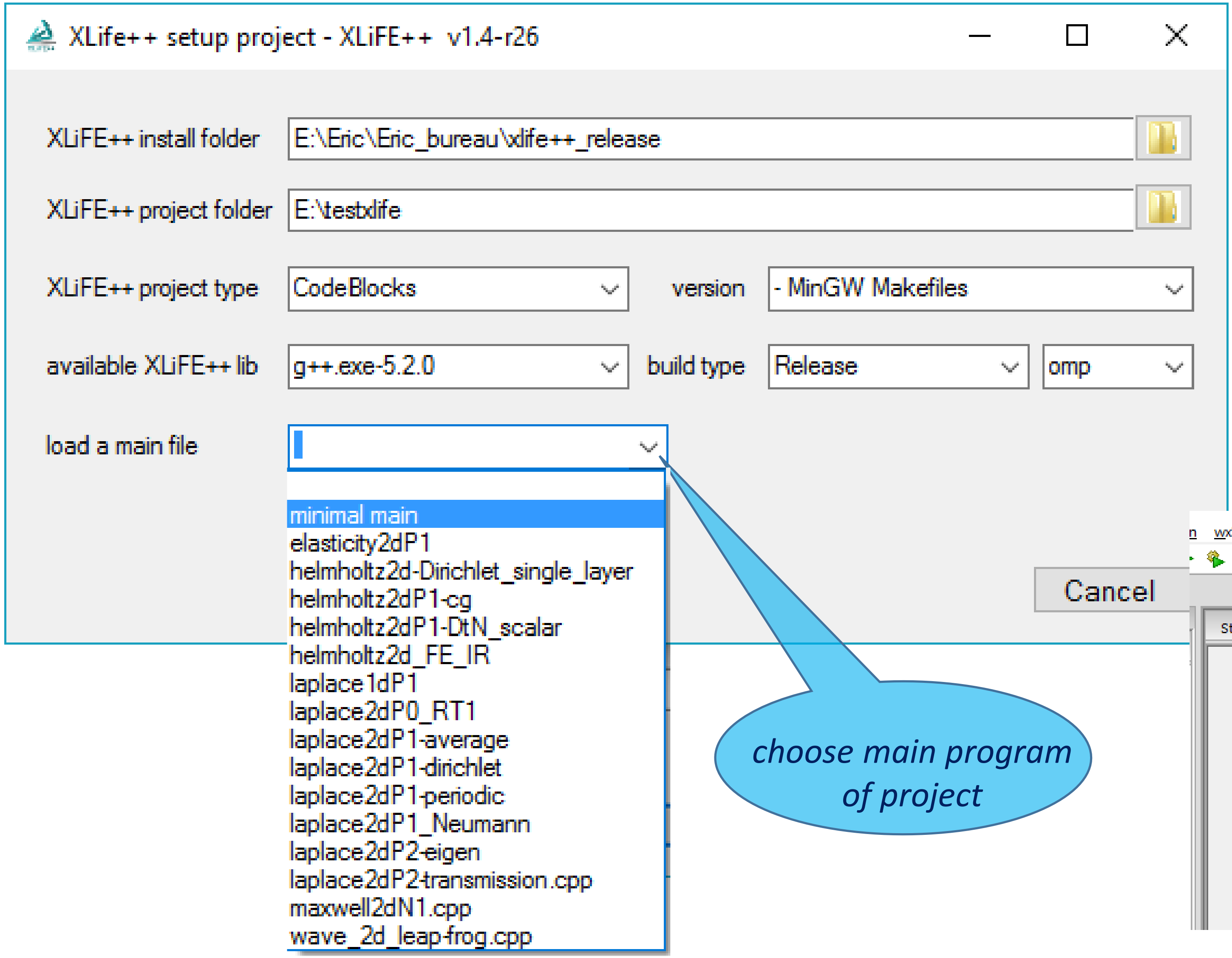
omp

load a main file:

choose compiler (g++xxx)

choose CodeBlocks as project type

Run xlifepp_setup_win_project



XLife++ setup project - XLiFE++ v1.4-r26

XLiFE++ install folder: E:\Eric\Eric_bureau\xlife++_release

XLiFE++ project folder: E:\testxlife

XLiFE++ project type: CodeBlocks

version: - MinGW Makefiles

available XLiFE++ lib: g++.exe-5.2.0

build type: Release

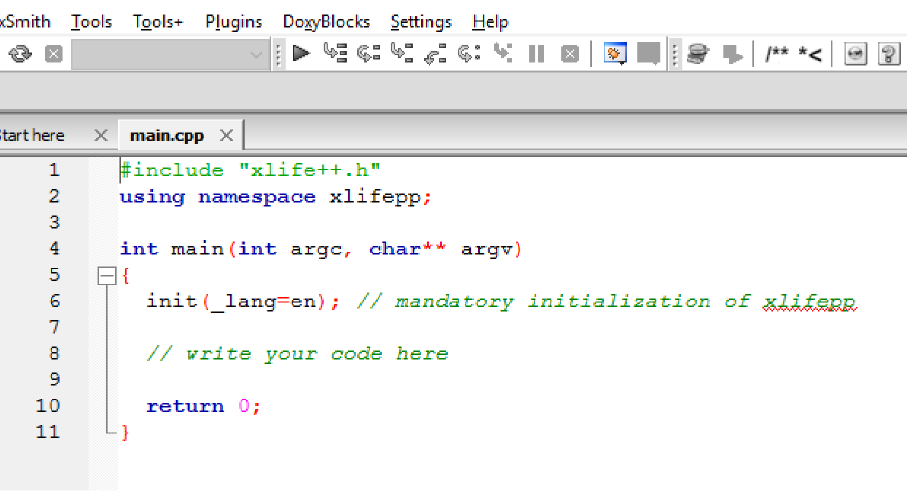
omp

load a main file

- minimal main
- elasticity2dP1
- helmholtz2d-Dirichlet_single_layer
- helmholtz2dP1-cg
- helmholtz2dP1-DtN_scalar
- helmholtz2d_FE_IR
- laplace1dP1
- laplace2dP0_RT1
- laplace2dP1-average
- laplace2dP1-dirichlet
- laplace2dP1-periodic
- laplace2dP1_Neumann
- laplace2dP2-eigen
- laplace2dP2-transmission.cpp
- maxwell2dN1.cpp
- wave_2d_leap-frog.cpp

choose main program of project

minimal main



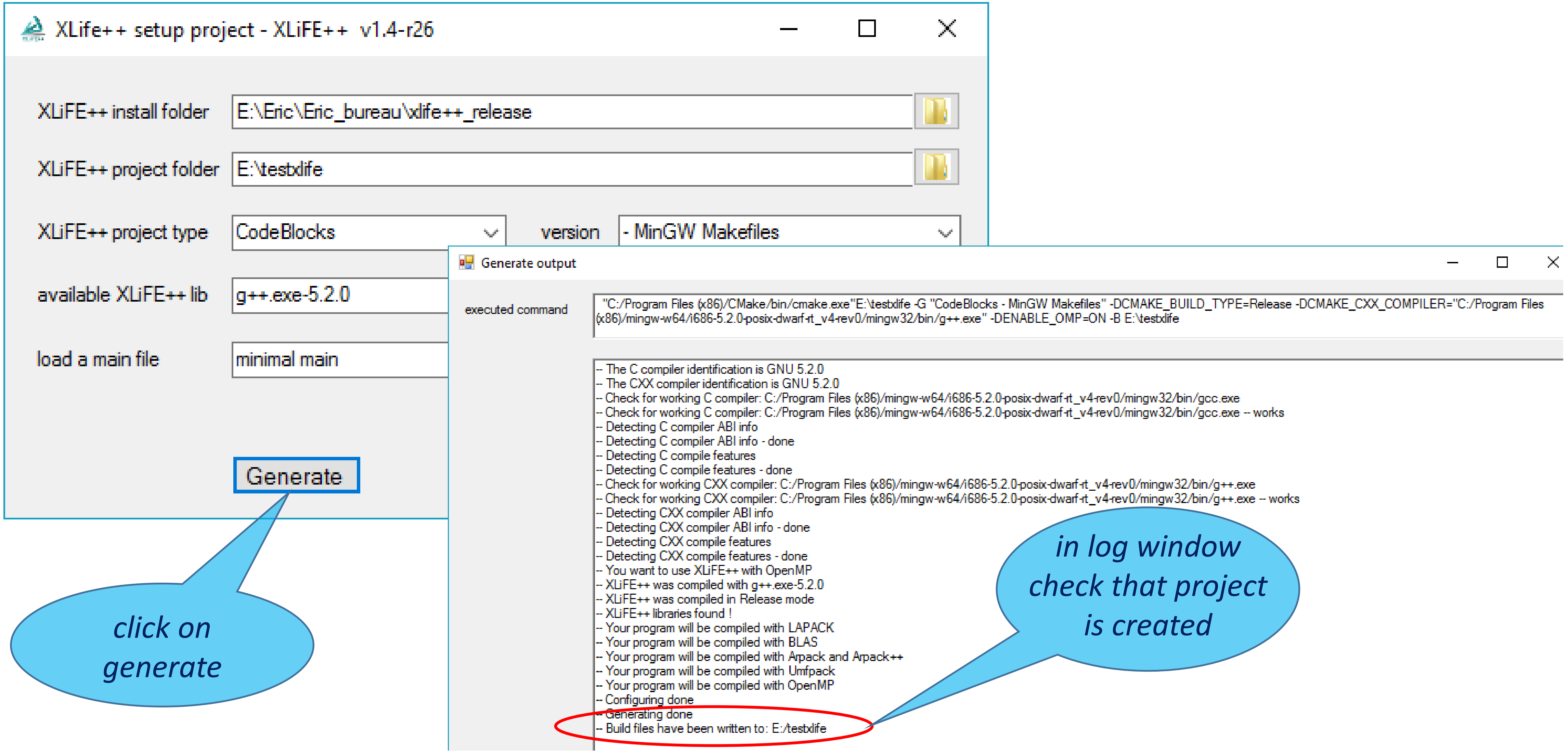
```
#include "xlife++.h"
using namespace xlifepp;

int main(int argc, char** argv)
{
  init(_lang=en); // mandatory initialization of xlifepp

  // write your code here

  return 0;
}
```

Run xlifepp_setup_win_project



XLife++ setup project - XLiFE++ v1.4-r26

XLiFE++ install folder: E:\Eric\Eric_bureau\xlife++_release

XLiFE++ project folder: E:\testxlife

XLiFE++ project type: CodeBlocks

version: - MinGW Makefiles

available XLiFE++ lib: g++.exe-5.2.0

load a main file: minimal main

Generate output

executed command:

```
 "C:/Program Files (x86)/CMake/bin/cmake.exe"E:\testxlife -G "CodeBlocks - MinGW Makefiles" -DCMAKE_BUILD_TYPE=Release -DCMAKE_CXX_COMPILER="C:/Program Files
(x86)/mingw-w64/i686-5.2.0-posix-dwarf-rt_v4-rev0/mingw32/bin/g++.exe" -DENABLE_OMP=ON -B E:\testxlife
```

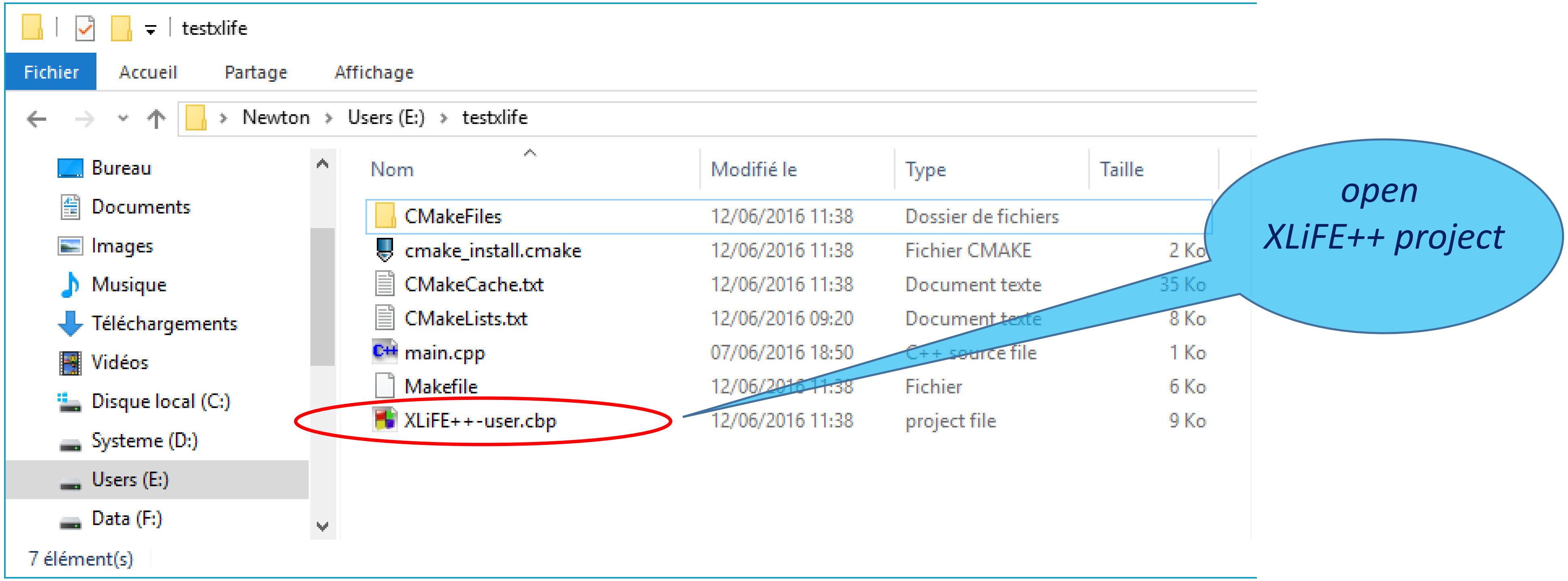
```
-- The C compiler identification is GNU 5.2.0
-- The CXX compiler identification is GNU 5.2.0
-- Check for working C compiler: C:/Program Files (x86)/mingw-w64/i686-5.2.0-posix-dwarf-rt_v4-rev0/mingw32/bin/gcc.exe
-- Check for working C compiler: C:/Program Files (x86)/mingw-w64/i686-5.2.0-posix-dwarf-rt_v4-rev0/mingw32/bin/gcc.exe -- works
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Detecting C compile features
-- Detecting C compile features - done
-- Check for working CXX compiler: C:/Program Files (x86)/mingw-w64/i686-5.2.0-posix-dwarf-rt_v4-rev0/mingw32/bin/g++.exe
-- Check for working CXX compiler: C:/Program Files (x86)/mingw-w64/i686-5.2.0-posix-dwarf-rt_v4-rev0/mingw32/bin/g++.exe -- works
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- You want to use XLiFE++ with OpenMP
-- XLiFE++ was compiled with g++.exe-5.2.0
-- XLiFE++ was compiled in Release mode
-- XLiFE++ libraries found !
-- Your program will be compiled with LAPACK
-- Your program will be compiled with BLAS
-- Your program will be compiled with Arpack and Arpack++
-- Your program will be compiled with Umfpack
-- Your program will be compiled with OpenMP
-- Configuring done
-- Generating done
-- Build files have been written to: E:/testxlife
```

click on generate

in log window check that project is created

Run CodeBlocks

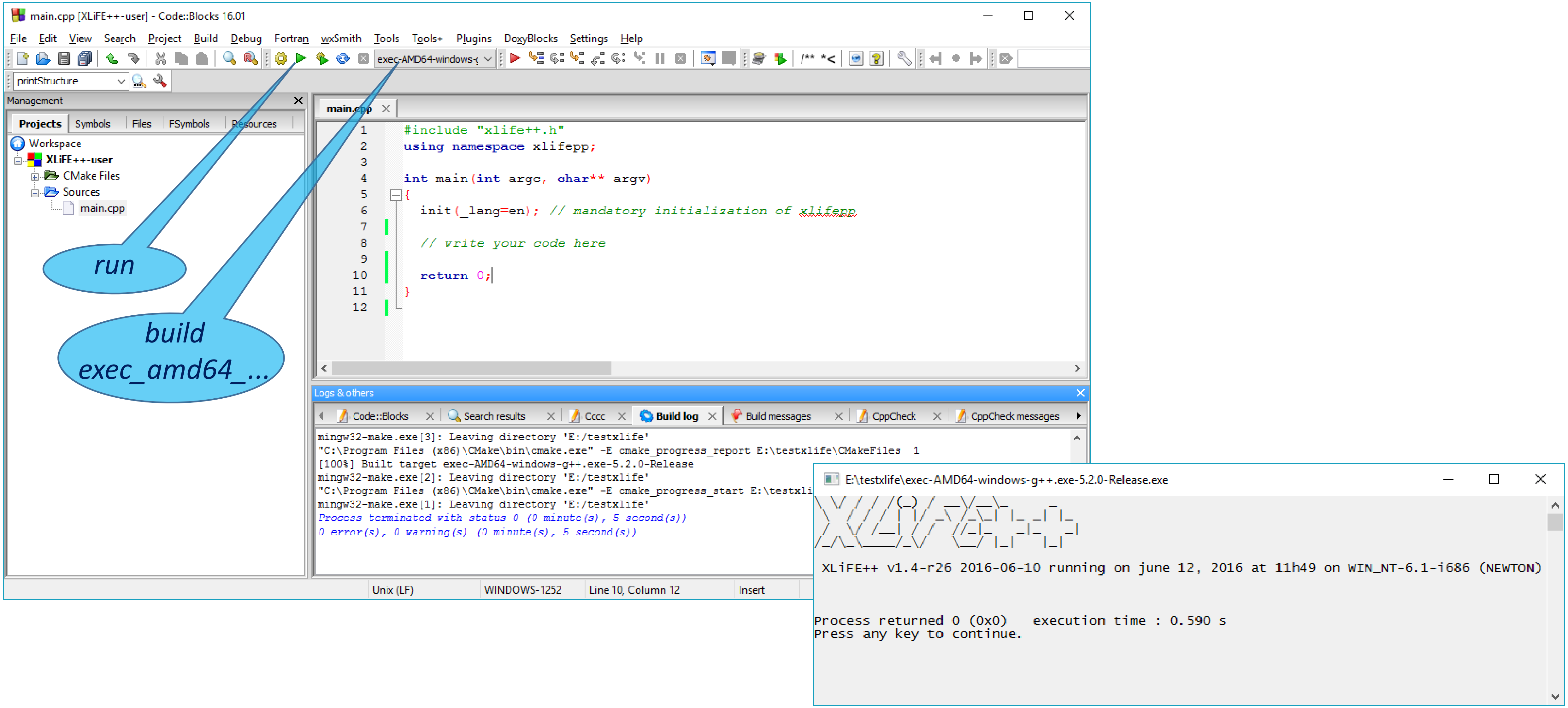
close all windows of setup project and goto project folder



Nom	Modifié le	Type	Taille
CMakeFiles	12/06/2016 11:38	Dossier de fichiers	
cmake_install.cmake	12/06/2016 11:38	Fichier CMAKE	2 Ko
CMakeCache.txt	12/06/2016 11:38	Document texte	35 Ko
CMakeLists.txt	12/06/2016 09:20	Document texte	8 Ko
main.cpp	07/06/2016 18:50	C++ source file	1 Ko
Makefile	12/06/2016 11:38	Fichier	6 Ko
XLiFE++-user.cbp	12/06/2016 11:38	project file	9 Ko

open XLiFE++ project

Run CodeBlocks


main.cpp [XLiFE++-user] - Code::Blocks 16.01
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
exec-AMD64-windows-(
printStructure
Management
Projects Symbols Files FSymbols Resources
Workspace
XLiFE++-user
CMake Files
Sources
main.cpp
run
build
exec_amd64_...
main.cpp
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck CppCheck messages
Unix (LF) WINDOWS-1252 Line 10, Column 12 Insert
E:\testxlife\exec-AMD64-windows-g++.exe-5.2.0-Release.exe

```
#include "xlife++.h"
using namespace xlifepp;

int main(int argc, char** argv)
{
  init(_lang=en); // mandatory initialization of xlifepp

  // write your code here

  return 0;
}

```

```
mingw32-make.exe[3]: Leaving directory 'E:/testxlife'
"C:\Program Files (x86)\CMake\bin\cmake.exe" -E cmake_progress_report E:\testxlife\CMakeFiles  1
[100%] Built target exec-AMD64-windows-g++.exe-5.2.0-Release
mingw32-make.exe[2]: Leaving directory 'E:/testxlife'
"C:\Program Files (x86)\CMake\bin\cmake.exe" -E cmake_progress_start E:\testxli
mingw32-make.exe[1]: Leaving directory 'E:/testxlife'
Process terminated with status 0 (0 minute(s), 5 second(s))
0 error(s), 0 warning(s) (0 minute(s), 5 second(s))
```

```
\ \/ / / /(_) / __\/ __\_      _
 \  / / / | |/ _\ / _\| |_ _| |_
 /  \/ /__| | / / / /__|_   _|_   _|
/_/\_\____/_\/   \____/ |_|   |_|

 XLiFE++ v1.4-r26 2016-06-10 running on june 12, 2016 at 11h49 on WIN_NT-6.1-i686 (NEWTON)


Process returned 0 (0x0)   execution time : 0.590 s
Press any key to continue.
```

Run CodeBlocks

Now have fun with XLiFE++