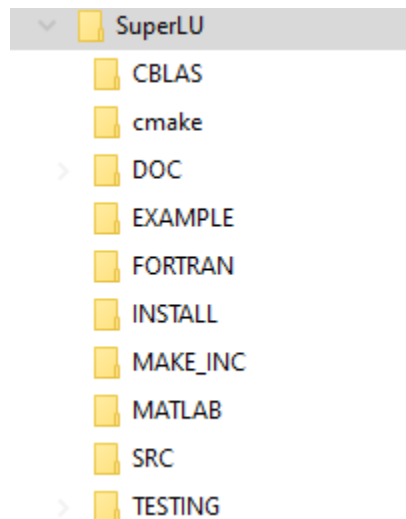


Installing, Compiling and Testing SuperLU on Windows 10

The following instructions are for how to build SuperLU on Windows 10. This is only necessary if you are not using the SuperLU “built” version linked on the MYSTRAN forum (which has already been built for Windows 10). The following instructions are specific to SuperLU 5.2.2, but are expected to work for other SuperLU versions as well. For the following instructions, we use the C:\SuperLU directory. However, you may use whatever directory you want, provided it is consistent with this entire document.

1. Download (binary distribution – MSI file) and install CMake from www.cmake.org/download. Be sure to check the “Add CMake to the System PATH for all users” or for the current user. Otherwise the following batch file will not work. Also, you may need to restart the computer for the path to be recognized. Otherwise, CMake may not work.
2. Download SuperLU from <https://portal.nersc.gov/project/sparse/superlu/>. Unzip the contents to C:\SuperLU such that it looks like the following (5.2.2 is shown below):



3. Copy w.bat script (see below) to C:\SuperLU
4. Start Windows CMD terminal and change to C:\SuperLU
5. Run w.bat

6. From the build_win10 subdirectory in the CMD window, enter “make” to build SuperLU
7. Create a new directory \libs under C:\SuperLU
8. Copy libblas.a from C:\SuperLU\build_win10\CBLAS to C:\SuperLU\libs
9. Copy linsuperlu.a from C:\SuperLU\build_win10\SRC to C:\SuperLU\libs

To test SuperLU with example g20.rua

1. First, you will need to have gfortan installed on the system. This is discussed in the other document for how to compile MYSTRAN for Windows.
2. From a CMD window, change to C:\SuperLU\FORTRAN
3. Copy df77.bat (see below) to the FORTRAN subdirectory
4. Run df77.bat to create f77_main.exe.
5. Copy g20.rua from C:\SuperLU\EXAMPLE back to the FORTRAN subdirectory
6. From the C:\SuperLU\FORTRAN directory, type “f77_main <g20.rua”. The output will be written to the console and should look like the text labeled “g20.rua console output” below:

w.bat:

@echo off

REM -----

REM WIN64 build file for SuperLU with gcc for win

REM by ceanwang@gmail.com

REM 20201114

REM -----

MKDIR build_win10

CD build_win10

cmake -DCMAKE_MAKE_PROGRAM=make -DCMAKE_C_COMPILER=gcc -G "Unix Makefiles" ..

rem make

df77.bat

rem DF77EXM = f77_main.o hbcode1.o c_fortran_dgssv.o

gfortran -IC:\SuperLU\SRC -c f77_main.f

gfortran -IC:\SuperLU\SRC -c hbcode1.f

gcc -IC:\SuperLU\SRC -c c_fortran_dgssv.c

gfortran -IC:\SuperLU\SRC -lm -o f77_main.exe f77_main.f hbcode1.o c_fortran_dgssv.o C:\SuperLU\libs\libsuperlu.a

C:\SuperLU\libs\libblas.a

g20.rua console output

No of nonzeros in factor L = 6143

No of nonzeros in factor U = 6143

No of nonzeros in L+U = 12286

L\U MB 0.127 total MB needed 0.270

Factorization succeeded

Solve succeeded

31.806499793568026
31.806499793568033
31.806499793568026

30.796628708197645
32.306499793568015
28.816343480874966

30.796628708197638
32.306499793568030

31.316370878938429
31.806499793568030