I have a 16inch MacBook pro with latest updates (macOS Catalina 10.15.2 (19C57)), the latest version of XCode and Command line tools for macOS (the tools being installed in the usual path /Library/Developer/CommandLineTools/).. Not sure if this is relevant to my issue or not, but I also have the latest version of JetBrains’s CLion installed on my machine (running without issues).

**Here is the problem:** When trying to build a project with cmake, the build FAILS, giving me this error message:

```

In file included from /Users/basavyr/Pipeline/DevWorkspace/Github/xrootd/bindings/python/src/PyXRootDFile.cc:25:

In file included from /Users/basavyr/Pipeline/DevWorkspace/Github/xrootd/bindings/python/src/PyXRootD.hh:28:

In file included from /System/Library/Frameworks/Python.framework/Versions/2.7/include/python2.7/Python.h:38:

/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/string.h:61:15: fatal error:

'string.h' file not found

#include\_next <string.h>

1 error generated.

error: command '/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/cc' failed with exit status 1

make[2]: \*\*\* [bindings/python/python\_bindings] Error 1

make[1]: \*\*\* [bindings/python/CMakeFiles/python\_target.dir/all] Error 2

make: \*\*\* [all] Error 2

```

and this is probably related to my C++ compiler not having the correct path to the include files. To see what the issue could be, I’ve made a simple C++ file and I tried to compile it.

First, I tried with the usual “g++” and it worked just fine:

```

basavyr@Roberts-MacBook-Pro stringTestCLANG % g++ main.cpp

basavyr@Roberts-MacBook-Pro stringTestCLANG % ./a.out

NAMEX% basavyr@Roberts-MacBook-Pro stringTestCLANG %

```

Then, I tried with ` /Applications/Xcode.app/Contents/Developer/usr/bin/g++ main.cpp` and it worked just fine.

Checking the version of “g++” gives me this:

```

g++ -v

Configured with: --prefix=/Applications/Xcode.app/Contents/Developer/usr --with-gxx-include-dir=/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX.sdk/usr/include/c++/4.2.1

Apple clang version 11.0.0 (clang-1100.0.33.17)

Target: x86\_64-apple-darwin19.2.0

Thread model: posix

InstalledDir: /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin

```

And this is interesting, because I was expecting that the compiler is installed in `/usr/bin/`. Going into that “InstalledDir” folder I saw that there is no “g++” binary, but only “clang++” and “c++”, so I tried to compile with both and it turns out that both compilers are giving the same error:

```

basavyr@Roberts-MacBook-Pro stringTestCLANG % /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/clang++ main.cpp

In file included from main.cpp:1:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/iostream:38:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/ios:216:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/\_\_locale:15:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/string:505:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/string\_view:176:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/\_\_string:57:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/algorithm:642:

In file included from /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/cstring:61:

/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../include/c++/v1/string.h:61:15: fatal error:

'string.h' file not found

#include\_next <string.h>

^~~~~~~~~~

1 error generated.

basavyr@Roberts-MacBook-Pro stringTestCLANG %

```

Since I also have Command Line Tools installed, I tried to compile with both “g++” and “clang++” from `/Library/Developer/CommandLineTools/usr/bin/` and the first one compilers successfully, while the second one throws the same error with regards to the string header file.

```

basavyr@Roberts-MacBook-Pro stringTestCLANG % /Library/Developer/CommandLineTools/usr/bin/c++ main.cpp

In file included from main.cpp:1:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/iostream:38:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/ios:216:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/\_\_locale:15:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/string:505:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/string\_view:176:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/\_\_string:57:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/algorithm:642:

In file included from /Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/cstring:61:

/Library/Developer/CommandLineTools/usr/bin/../include/c++/v1/string.h:61:15: fatal error: 'string.h' file not found

#include\_next <string.h>

^~~~~~~~~~

1 error generated.

```

So, I assume that when I build that project with cmake, it is using one of these compilers (from the XCodeDefault.xctoolchain folder) and it has issues with the string header.

How can I solve this issue? And also, why does my “g++” installation directory points to this XCodeDefault.xctoolchain instead of “/usr/bin/’ or “/Applications/Xcode.app/Contents/Developer/usr/bin/”.