

## art - Support #18043

### UPS GCC 6.3.0 include configuration borked on OSX 10.12 (Sierra)

10/26/2017 03:23 PM - Gianluca Petrillo

<b>Status:</b>	Closed	<b>Start date:</b>	10/26/2017
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Lynn Garren	<b>% Done:</b>	0%
<b>Category:</b>	Infrastructure	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>		<b>Spent time:</b>	0.20 hour
<b>Scope:</b>	Internal	<b>SSI Package:</b>	
<b>Experiment:</b>	-		

#### Description

The distribution of GCC for OSX Sierra is borked enough that it's not possible to use g++ to compile standard things. For example, including iostream does not work:

```
setup gcc v6_3_0
g++ -c -xc++ -o /dev/null - <<< "#include <iostream>"
```

fails to find wchar.h.

The problem appears to be that the system include path does not include standard C libraries. Please compare GCC output:

```
$ echo | gcc -E -Wp,-v -
ignoring nonexistent directory "/Users/petrillo/physics/LArSoft/software/products/gcc/v6_3_0/Darwin64bit+16/bin/../lib/gcc/x86_64-apple-darwin16.3.0/6.3.0/../../../../x86_64-apple-darwin16.3.0/include"
ignoring duplicate directory "/Users/petrillo/physics/LArSoft/software/products/gcc/v6_3_0/Darwin64bit+16/bin/../lib/gcc/../../../../lib/gcc/x86_64-apple-darwin16.3.0/6.3.0/include"
ignoring duplicate directory "/Users/petrillo/physics/LArSoft/software/products/gcc/v6_3_0/Darwin64bit+16/bin/../lib/gcc/../../../../lib/gcc/x86_64-apple-darwin16.3.0/6.3.0/include-fixed"
ignoring nonexistent directory "/Users/petrillo/physics/LArSoft/software/products/gcc/v6_3_0/Darwin64bit+16/bin/../lib/gcc/../../../../lib/gcc/x86_64-apple-darwin16.3.0/6.3.0/../../../../x86_64-apple-darwin16.3.0/include"
ignoring nonexistent directory "/usr/include"
#include "... " search starts here:
#include <...> search starts here:
 /Users/petrillo/physics/LArSoft/software/products/gcc/v6_3_0/Darwin64bit+16/bin/../lib/gcc/x86_64-apple-darwin16.3.0/6.3.0/include
 /Users/petrillo/physics/LArSoft/software/products/gcc/v6_3_0/Darwin64bit+16/bin/../lib/gcc/x86_64-apple-darwin16.3.0/6.3.0/include-fixed
 /usr/local/include
 /Users/petrillo/physics/LArSoft/software/products/gcc/v6_3_0/Darwin64bit+16/bin/../lib/gcc/../../../../include
 /System/Library/Frameworks
 /Library/Frameworks
End of search list.
# 1 "<stdin>"
# 1 "<built-in>"
# 1 "<command-line>"
# 1 "<stdin>"
```

with Clang (which works *in the same shell where GCC fails*):

```
$ echo | clang -E -Wp,-v -
clang -ccl version 8.1.0 (clang-802.0.42) default target x86_64-apple-darwin16.7.0
ignoring nonexistent directory "/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.12.sdk/usr/local/include"
ignoring nonexistent directory "/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.12.sdk/Library/Frameworks"
```

```
#include ".." search starts here:
#include <...> search starts here:
/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/../lib/ccla
ng/8.1.0/include
/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/include
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.12.s
dk/usr/include
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.12.s
dk/System/Library/Frameworks (framework directory)
End of search list.
# 1 "<stdin>"
# 1 "<built-in>" 1
# 1 "<built-in>" 3
# 330 "<built-in>" 3
# 1 "<command line>" 1
# 1 "<built-in>" 2
# 1 "<stdin>" 2
```

Since compilation via `cetbuildtools` *does work*, I suppose there is some magic that it does and that users need to do as well.

Tested on OSX 10.12 (Sierra) with Xcode 8.3.3 (according to `xcodebuild -version`, build version 8E3004b).

## History

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### #1 - 10/26/2017 04:31 PM - Lynn Garren

- Status changed from *New* to *Feedback*

We are unable to reproduce the problem. However, we suspect that the problem might be related to your installation of the command line tools. Did you reinstall the older command line tools when you downgraded to Xcode 8.3.3?

On a working laptop:

```
$ xcodebuild -version
Xcode 8.3.3
Build version 8E3004b
$ xcode-select --version
xcode-select version 2347.
$ g++ -c -xc++ -o /dev/null - <<< "#include <iostream>"
(no complaints)
```

### #2 - 10/30/2017 12:29 PM - Lynn Garren

- Status changed from *Feedback* to *Resolved*

We note that `/usr/include/wchar.h` should exist on macOS. Reinstalling the command line tools has fixed the problem.

### #3 - 10/30/2017 12:29 PM - Gianluca Petrillo

I report an important information from Lynn:

```
mac-126940:~ garren$ ls -l /usr/include/wchar.h
-r--r--r-- 1 root wheel 10079 Feb  4 2017 /usr/include/wchar.h
```

meaning that in a complete installation the missing header *should* be provided by the system.

### #4 - 10/30/2017 12:31 PM - Lynn Garren

- Assignee set to *Gianluca Petrillo*

Leon has already reinstalled the command line tools and resolved the problem.

### #5 - 10/30/2017 12:31 PM - Lynn Garren

- Assignee changed from *Gianluca Petrillo* to *Lynn Garren*

### #6 - 10/30/2017 02:07 PM - Leon Rochester

The fix was to re-install the command-line tools:

```
xcode-select --install
```

**#7 - 10/30/2017 06:14 PM - Gianluca Petrillo**

I confirm that the command from Leon fixes the issue on my laptop, too.

**#8 - 11/06/2017 11:25 AM - Kyle Knoepfel**

- *Tracker changed from Bug to Support*

- *Status changed from Resolved to Closed*