

GammaLib - Bug #488

GammaLib unit test compilation fails on Mac OS 10.6 with gcc 4.3 & 4.4 compilers

09/16/2012 09:37 PM - Knödlseeder Jürgen

Status:	Closed	Start date:	09/16/2012
Priority:	Normal	Due date:	
Assigned To:	Knödlseeder Jürgen	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:			
Description			
Using the MacPorts gcc 4.3 or 4.4 compiler, the compilation of the test suite fails on Mac OS 10.6.			
To compile with MacPorts gcc 4.4 compiler, I used			
<pre>\$ export CXX=g++-mp-4.4 \$ export CC=gcc-mp-4.4 \$./configure --disable-python-binding \$ make \$ make check</pre>			
This led to the following error:			
<pre>Making check in test make test_GSupport test_GVector test_GMatrix test_GSymMatrix test_GSparseMatrix test_GNumerics test_GFits test_GXml test_GApplication test_GModel test_GSky test_GOptimizer test_GObservation test_MWL test_CTA test_LAT make[2]: *** No rule to make target `test_GSupport-test_GSupport.', needed by `test_GSupport'. Stop. make[1]: *** [check-am] Error 2 make: *** [check-recursive] Error 1</pre>			

History

#1 - 09/16/2012 09:39 PM - Knödlseeder Jürgen

- Status changed from New to In Progress

- % Done changed from 0 to 10

It turned out that the OBJEXT variable was not set to the object extension in the Makefile. The variable reads

```
OBJEXT =
```

Setting

```
OBJEXT = o
```

made the compilation work.

It remains to be understood why the OBJEXT variable is not set correctly.

#2 - 09/16/2012 09:53 PM - Knödseder Jürgen

Note that after fixing the above mentioned problem, another problem occurred. Compilation of the test_GObservation executable failed with the following message:

```
ld: duplicate symbol _gomp_thread_attr in ../src/.libs/libgamma.a(GTestSuite.o) and test_GObservation-test_GObservation.o for architecture x86_64
collect2: ld returned 1 exit status
make[2]: *** [test_GObservation] Error 1
make[1]: *** [check-am] Error 2
make: *** [check-recursive] Error 1
```

This is due to the OpenMP section in test_GObservation.cpp:

```
#ifdef _OPENMP
#include <omp.h>
#ifdef __APPLE__
#ifdef __MACH__
#include <pthread.h>
pthread_attr_t gomp_thread_attr;
#endif
#endif
#endif
```

Note that a similar section exists in GTestSuite.cpp. I therefore deleted the corresponding section in test_GObservation.cpp.

#3 - 09/16/2012 10:24 PM - Knödseder Jürgen

- Status changed from In Progress to Feedback

- Assigned To set to Knödseder Jürgen

- % Done changed from 10 to 100

The OBJEXT problem was also solved. The missing object extension was due to the Mac OS X clang kluge that has been introduced to make clang preceeding the gcc compiler in case that the system is Mac OS X >= 10.7.

#4 - 09/16/2012 11:56 PM - Knödseder Jürgen

The problem was a little bit more complex, as the Apple gcc compiler needs both inclusions, while the MacPorts gcc compiler did not like this.

I added a specific test to the configure script that checks the type of code that is needed. This sets then the compiler definition HAVE_OPENMP_DARWIN_KLUGE so that the respective code section can be written as:

```
#ifdef _OPENMP
#include <omp.h>
#ifdef HAVE_OPENMP_DARWIN_KLUGE
#include <pthread.h>
pthread_attr_t gomp_thread_attr;
#endif
#endif
```

Now the global variable gomp_thread_attr is only defined when it's really needed.

#5 - 12/01/2012 09:52 PM - Knödlseher Jürgen

- *Status changed from Feedback to Closed*