

## CoCoALib - Support #1591

### Compilation of Normaliz

30 Apr 2021 09:28 - Anna Maria Bigatti

<b>Status:</b>	Closed	<b>Start date:</b>	30 Apr 2021
<b>Priority:</b>	High	<b>Due date:</b>	
<b>Assignee:</b>	Anna Maria Bigatti	<b>% Done:</b>	100%
<b>Category:</b>	Documentation	<b>Estimated time:</b>	5.01 hours
<b>Target version:</b>	CoCoALib-0.99800	<b>Spent time:</b>	4.40 hours
<b>Description</b>			
With my new computer I cannot compile libnormaliz succesfully.			
MacOS 10.15 Catalina with personal installation of GMP-6.2.0			
Investigate and write proper instructions in <a href="http://cocoa.dima.unige.it/cocoalib/doc/html/ExternalLibs-Normaliz.html">http://cocoa.dima.unige.it/cocoalib/doc/html/ExternalLibs-Normaliz.html</a>			
<b>Related issues:</b>			
Related to CoCoALib - Support #1494: Normaliz 3.8.9		<b>Closed</b>	<b>30 Sep 2020</b>
Related to CoCoALib - Support #1592: Normaliz 3.8.10		<b>Closed</b>	<b>06 May 2021</b>
Related to CoCoALib - Design #1655: Remove ability to compile CoCoALib agains...		<b>Closed</b>	<b>28 Jan 2022</b>
Related to CoCoALib - Support #618: Instructions for compiling libnormaliz		<b>Closed</b>	<b>09 Sep 2014</b>
Related to CoCoALib - Support #1665: Compilation on Windows: problems for nor...		<b>New</b>	<b>15 Feb 2022</b>

### History

#### #1 - 30 Apr 2021 22:29 - John Abbott

I suggest as a first step we try to contact Bruns to whether the Normaliz people can fix this quickly and easily.  
If the Normaliz people are reluctant then we must find an alternative solution (modifying someone-else's build system... urgh).

#### #2 - 02 May 2021 20:14 - John Abbott

Following on from an email discussion between Winfried Bruns and Anna...

Anna is simulating a set-up where a user, **without "sudo" capability**, wishes to compile CoCoALib/CoCoA-5 from source.  
Currently the simulation involves using a compiled-but-not-installed version of GMP; this means that the relative path from libgmp.a to the header file is "unusual".

Now I wonder whether it may not be better in the simulation to **install GMP somewhere below the user's home directory**, and then supply as the path for GMP the location of this installed version. Such an approach should then also work well with other libraries which use GMP (so long as the right path can be specified).

A further point is that, in principle, installation of GMP might do more than simply copy files from one place to another; so it could, in principle, be unsafe/incorrect to use files from inside the compilation tree.

What do you think, Anna?

#### #3 - 05 May 2021 13:29 - Anna Maria Bigatti

It seems that I managed to compile libnormaliz.a with my gmp.

(info in our doc file, when I see it working)

But now we have another problem: both me and John get this error message when we compile

```
ExternalLibs-Normaliz.C:276:43: error: no member named 'getTriangulationGenerators' in  
  'libnormaliz::Cone<__gmp_expr<mpz_t, mpz_t> >'  
  ConvertFromNormaliz(v, c->myConeMPZ.getTriangulationGenerators());  
                                ~~~~~^
```

Investigate.

**#4 - 05 May 2021 14:45 - John Abbott**

- Related to Support #1494: Normaliz 3.8.9 added

**#5 - 06 May 2021 07:23 - Anna Maria Bigatti**

The data types in Normaliz have changed. Now we need to understand what we should pick. I tried

```
//ConvertFromNormaliz(v, c->myConeMPZ.getTriangulationGenerators()); /// v 3.8.9  
ConvertFromNormaliz(v, (c->myConeMPZ.getTriangulation()).first); /// v 3.8.10
```

but does not compile, nor with second.

ConvertFromNormaliz is

```
void ConvertFromNormaliz(std::vector<std::vector<BigInt> >& v, const std::vector<std::vector<mpz_class> >& l)  
{
```

In conclusion: investigate if first or second, and also why neither compile.

**#6 - 06 May 2021 07:29 - Anna Maria Bigatti**

- Related to Support #1592: Normaliz 3.8.10 added

**#7 - 03 Nov 2021 18:58 - John Abbott**

- Status changed from New to In Progress
- % Done changed from 0 to 10

What is the status of this issue?  
Have it been resolved? Is there documentation? It would be good to close it, if possible.

**#8 - 28 Jan 2022 10:31 - John Abbott**

I have just checked, and observe that there is now Normaliz 3.9.1.  
I shall try compiling.

**UPDATE** Compiled without any apparent problem (took about 3 mins). Also make check was OK. Not yet tried compiling CoCoALib...

**#9 - 28 Jan 2022 10:45 - John Abbott**

- Related to Design #1655: Remove ability to compile CoCoALib against UNINSTALLED gmp? added

**#10 - 04 Feb 2022 21:12 - John Abbott**

- % Done changed from 10 to 30

I compiled Normaliz without any problems: here are my notes:

```
cd normaliz-3.9.1
export GMP_INSTALLDIR=/usr/local
./configure --disable-shared --disable-openmp
make # took about 2.8 mins' CPU
--> result is in source/libnormaliz.la or source/.libs/libnormaliz.a
make check # took about 1 minute
```

**#11 - 04 Feb 2022 21:40 - John Abbott**

- Related to Support #618: Instructions for compiling libnormaliz added

**#12 - 04 Feb 2022 22:11 - John Abbott**

- Status changed from In Progress to Feedback
- % Done changed from 30 to 90

**#13 - 05 Feb 2022 20:17 - John Abbott**

I compiled normaliz on my old MacBook without any problems (following the instructions above, in comment 10).

**#14 - 09 Feb 2022 19:43 - John Abbott**

I have also had success with normaliz-3.9.2 (just released). I did see several compiler warnings (about normaliz code) when compiling with -Wextra.

I hope Anna can confirm everything is OK, and close this issue tomorrow.

## #15 - 10 Feb 2022 10:59 - Anna Maria Bigatti

John Abbott wrote:

I compiled Normaliz without any problems: here are my notes:  
[...]

They didn't work for me (still looking in /usr/local instead of my GP dir). I followed the guidelines from ./configure --help@:

```
cd normaliz-3.9.2
./configure --disable-shared --disable-openmp --with-gmp=/Users/bigatti/0.99/GMP
make
--> I get source/libnormaliz.la, but not source/libnormaliz.a
```

But with this error:

```
libtool: link: g++ -std=gnu++14 -Wall -pedantic -Wno-unknown-pragmas -Wno-sign-compare -g -O2 -Wl,-s -o normaliz normaliz.o -Wl,-bind_at_load -L/Users/bigatti/0.99/GMP/lib ../libs/libnormaliz.a /Users/bigatti/0.99/GMP/lib/libgmpxx.dylib /usr/local/lib/libgmp.dylib /Users/bigatti/0.99/GMP/lib/libgmp.dylib
clang: error: no such file or directory: '/usr/local/lib/libgmp.dylib'
make[1]: *** [normaliz] Error 1
make: *** [all-recursive] Error 1
```

why /usr/local/lib/libgmp.dylib?  
and why dylib, with --disabled-shared?

## #16 - 10 Feb 2022 12:38 - John Abbott

Did you try following comment 10?

## #17 - 10 Feb 2022 13:05 - Anna Maria Bigatti

John Abbott wrote:

Did you try following comment 10?

yes, did not work: \$GMP\_INSTALLDIR not used, that's why I had to use "--with-gmp" to specify the path, but somewhere it still looks for /usr/local/lib/libgmp.dylib, and I cannot find how to disable it. Still investigating.

**#18 - 10 Feb 2022 13:26 - John Abbott**

Try

<https://developer.apple.com/library/archive/documentation/DeveloperTools/Conceptual/DynamicLibraries/100-Articles/DynamicLibraryUsageGuidelines.html>

**#19 - 10 Feb 2022 14:07 - Anna Maria Bigatti**

This worked for me:

```
cd normaliz-3.9.2
./configure --disable-openmp --with-gmp=/Users/bigatti/0.99/GMP
make
```

I get the same error as before, but I have what I need: source/.libs/libnormaliz.a !

Compiled with CoCoA, works.

**#20 - 15 Feb 2022 10:19 - Anna Maria Bigatti**

- Related to Support #1665: Compilation on Windows: problems for normaliz added

**#21 - 15 Feb 2022 10:21 - Anna Maria Bigatti**

- Status changed from Feedback to Closed

- % Done changed from 90 to 100

Mac and Linux now done. I made a new issue for windows/cygwin [#1665](#)

**#22 - 07 Mar 2022 10:06 - Anna Maria Bigatti**

- Estimated time set to 5.01 h