

Robotics Service Bus - Bug #1285

converter template class breaks linking on windows

12/07/2012 03:53 PM - J. Wienke

Status:	Resolved	Start date:	12/07/2012
Priority:	Normal	Due date:	
Assignee:	J. Wienke	% Done:	100%
Category:	C++	Estimated time:	0.00 hour
Target version:	rsb-0.7		

Description

This happens on windows when the protocol buffer converter is used in the client code:

```
boost::shared_ptr< rsb::converter::ProtocolBufferConverter<rst::generic::ListFloat> >
  converter(new rsb::converter::ProtocolBufferConverter<rst::generic::ListFloat>());
rsb::converter::converterRepository<std::string>()->registerConverter(converter);
try {
  occFieldsInformer = factory.createInformer<rst::generic::ListFloat>(rsb::Scope(outScopeOccupiedFields));
  fixatedFieldInformer = factory.createInformer<string>(rsb::Scope(outScopeFixatedField));
```

```
Error 58 error LNK2005: "public: virtual __thiscall rsb::converter::Converter<class std::basic_string<char,struct
std::char_traits<char>,class std::allocator<char> > >::~~Converter<class std::basic_string<char,struct
std::char_traits<char>,class std::allocator<char> > >(void)"
(??1?$Converter@V?$basic_string@DU?$char_traits@D@std@@V?$allocator@D@2@@@std@@@converter@rsb@@@UAE@XZ) already
defined in rsbcore.lib(rsbcore.dll) C:\isy\ChessBoardFinder\build\ResultPublisher.obj ChessBoardFinder
```

Associated revisions

Revision 091c8d0e - 12/10/2012 02:48 PM - J. Wienke

Prevent linking errors on windows with the ProtocolBufferConverter.

Due to extending Convert<string> multiple conflicting template instantiation from the Converter base class could occur if the ProtocolBufferConverter was used across multiple compilation units.

- Added a test case to reproduce the behavior
- Added dll import statements to prevent the bug

Merge branch 'bug-1285'

refs #1285

Revision cac97a94 - 12/10/2012 02:54 PM - J. Wienke

Backport: Prevent linking errors on windows with the ProtocolBufferConverter.

Due to extending Convert<string> multiple conflicting template instantiation from the Converter base class could occur if the ProtocolBufferConverter was used across multiple compilation units.

- Added a test case to reproduce the behavior

- Added dll import statements to prevent the bug

fixes #1285

Revision 9ead44d4 - 12/18/2012 03:52 PM - J. Wienke

Fix further compilation errors on windows.

The converter template base class needs to be exported explicitly for the string specialization.

refs #1285

Merge branch 'bug-1285'

Revision c81524f3 - 12/18/2012 03:57 PM - J. Wienke

Backport: Fix further compilation errors on windows.

The converter template base class needs to be exported explicitly for the string specialization.

fixes #1285

History

#1 - 12/07/2012 04:49 PM - J. Wienke

I tried to reproduce this with commit `commit:rsb-cpp|0e96d5e4239bb2dee80dcaa4ee7b3d0fe70a1216`. However, this built perfectly on our continuous integration server:

https://ci.cor-lab.org/job/rsb-cpp-trunk-windows-merge-simulator/VS_VERSION=100,label=windows/9/console

Michael:

- Do you see a difference in the source code I added in `ProtocolBufferConverterTest.cpp` to you own source code?
- Can you provide us the whole file that causes the compilation error?
- Is `rsb` linked statically or dynamically against your own project.
- What are you building? An executable or a library (static/shared)?

#2 - 12/08/2012 12:04 PM - M. Zeunert

- *File `DataReader.h` added*
- *File `ResultPublisher.h` added*
- *File `ResultPublisher.cpp` added*
- *File `ChessBoardFinder.cpp` added*
- *File `DataReader.cpp` added*

1. The main difference is that we include/use `RSB` in multiple files. If I register the converter in the main, it seems to work (receiving not tested).
2. `chessboardfinder.cpp` (l. 59 -61 working code) `resultpublisher.cpp` (l. 23ff not working code)
`datareader.cpp/h` other class that uses `rsb`
3. I think its linked dynamically (not sure)
4. executable

#3 - 12/10/2012 11:24 AM - J. Wienke

@Michael: Thanks for the information. Is ChessBoardFinder.cpp built in the same executable as the main method where it works or is it built in a (static/dynamic) library which you in turn link to your main code?

#4 - 12/10/2012 11:54 AM - M. Zeunert

The chessboardfinder.cpp contains the main. When i put it in the Resultpublisher.cpp which is included in the chessboardfinder.cpp it produces this linking errors.

#5 - 12/10/2012 12:25 PM - J. Wienke

Ok, thanks for the info. I was able to reproduce the problem:

https://ci.cor-lab.org/job/rsb-cpp-trunk-windows-merge-simulator/VS_VERSION=100,label=windows/10/console

I will try to find a solution.

#6 - 12/10/2012 01:10 PM - J. Wienke

Great, this seems to be a harsh missconception of the MSVC C++ compiler:

<http://www.codesynthesis.com/~boris/blog/2010/01/18/dll-export-cxx-templates/>

#7 - 12/10/2012 02:57 PM - J. Wienke

- Status changed from *In Progress* to *Resolved*

- % Done changed from 0 to 100

Applied in changeset rsb-cpp|commit:cac97a942106cb72aba67fe996a83836b8941a64.

#8 - 12/10/2012 03:02 PM - J. Wienke

Michael, should be working now again. Please reopen this if it still does not work.

#9 - 12/18/2012 08:38 AM - V. Losing

after the update I'm getting a compiler error, when I try to compile our project.

```
:\test\environment_deb\include\rsb\converter\protocolbufferconverter.h(39): error C2961: 'rsb::converter::Converter<WireType>' : inconsistent explicit instantiations, a previous explicit instantiation did not specify '___declspec(dllexport)'
```

```
1>     with
1>     [
1>         WireType=std::string
1>     ]
```

#10 - 12/18/2012 10:50 AM - J. Wienke

- Status changed from *Resolved* to *In Progress*

- % Done changed from 100 to 60

sigh In which file is this compilation error?

#11 - 12/18/2012 11:18 AM - V. Losing

rsb\converter\protocolbufferconverter.h(39)

it points on this code peace

```
#if defined(RSB_IMPORT_TEMPLATES)
template class __declspec(dllexport) rsb::converter::Converter<std::string>;
#endif
```

#12 - 12/18/2012 11:20 AM - J. Wienke

But the error appears when you are compiling your own project? So in which file of your own project is this error generated?

#13 - 12/18/2012 11:29 AM - V. Losing

- File *ChessConverter.h* added
- File *ChessConverter.cpp* added

its generated in any of our own converter i've added one as an example.

#14 - 12/18/2012 12:36 PM - J. Wienke

Can you please try whether the git branch bug-1285 fixes your problem? I have added a completely new converter to the unit tests so that it is compiled like in any other client application. With this it builds on the CI server.

#15 - 12/18/2012 02:29 PM - V. Losing

It seems that the branch bug-1285 is based on RSB 0.8. We use RSB 0.7, and rsc 0.7. Could you provide a fix-branch for 0.7?

#16 - 12/18/2012 02:52 PM - J. Wienke

- File *0001-Fix-compilation-on-windows-again.patch* added

Oh right. Attached is a patch file based on 0.7.

#17 - 12/18/2012 03:15 PM - V. Losing

It compiles now, thanks.

#18 - 12/18/2012 03:58 PM - J. Wienke

- Status changed from *In Progress* to *Resolved*
- % Done changed from 60 to 100

Applied in changeset rsb-cpp|commit:c81524f3ae842b30a416c83b08f62b29135a5272.

Files

DataReader.h	1.73 KB	12/08/2012	M. Zeunert
ResultPublisher.h	1.31 KB	12/08/2012	M. Zeunert
ResultPublisher.cpp	2.09 KB	12/08/2012	M. Zeunert
ChessBoardFinder.cpp	18.4 KB	12/08/2012	M. Zeunert
DataReader.cpp	2.91 KB	12/08/2012	M. Zeunert
ChessConverter.h	721 Bytes	12/18/2012	V. Losing
ChessConverter.cpp	2.46 KB	12/18/2012	V. Losing
0001-Fix-compilation-on-windows-again.patch	8.16 KB	12/18/2012	J. Wienke