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Fix for Visual Studio 2015 compilation errors with Pylon 4.x

Solution Information

Solution Number	00000921
Status	Ready for Use
Visible in Public Knowledge Base	☐
Converted-to-Knowledge	☐
Legacy - no merge	☒

Detail Information

FAQ Status	FAQ Published
Duplicate of Solution	

Solution Title Fix for Visual Studio 2015 compilation errors with Pylon 4.x

Solution Details [note: Visual Studio 2015 is not officially supported by pylon 4]
[note: the fix works also with Visual Studio 2017, which is also affected]

Visual Studio 2015 introduces user-defined literals and therefore the literal operator `""` (two double quotes, C++11 standard). This new operator conflicts with normal string concatenation behavior, e.g. `"GenApi""_v2_0""_lib"` would result in the string `"GenApi_v2_0.lib"`. As you can see `"GenApi""_v2_0""_lib"` contains the new literal operator. That's why programs containing such a string build successfully with earlier Visual Studio versions, but fail to compile with Visual Studio 2015. When changed to `"GenApi""_v2_0" "_lib"` a program will compile with Visual Studio 2015 because there is no literal operator anymore. String concatenation is often used in preprocessor macros and it is also used in pylon and GenICam.

The following header file fixes must be applied to get the pylon C++ samples to build and run with Visual Studio 2015:

Remove the Token-Pasting operator `##` in pylon/PylonLinkage.h line 83 (pylon 4.2), the Token-Pasting operator removes the space between the string literals and creates a literal operator.

```
#define PYLON_LIB_NAME( module ) module ## PYLON_SUFFIX( PYLON_CONFIGURATION, PYLON_COMPILER_STR, "lib" )
#define PYLON_DLL_NAME( module ) module ## PYLON_SUFFIX( PYLON_CONFIGURATION, PYLON_COMPILER_STR, "dll" )
```

```
#define PYLON_TL_LIB_NAME( module ) module ## PYLON_TL_LIB_SUFFIX
#define PYLON_TL_DLL_NAME( module ) module ## PYLON_TL_DLL_SUFFIX
```

```
#define PYLON_LIB_NAME( module ) module PYLON_SUFFIX( PYLON_CONFIGURATION, PYLON_COMPILER_STR, "lib" )
#define PYLON_DLL_NAME( module ) module PYLON_SUFFIX( PYLON_CONFIGURATION, PYLON_COMPILER_STR, "dll" )
```

```
#define PYLON_TL_LIB_NAME( module ) module PYLON_TL_LIB_SUFFIX
#define PYLON_TL_DLL_NAME( module ) module PYLON_TL_DLL_SUFFIX
```

Add Spaces in GenApi/IEnumerationT.h line 338 (pylon 4.2) the C++ preprocessor expands `FMT_I64` to `"1"` this creates a literal operator again.

```
throw ACCESS_EXCEPTION("Unknown IntValue %"FMT_I64"d", IntValue);
```

```
throw ACCESS_EXCEPTION("Unknown IntValue %" FMT_I64 "d", IntValue);
```

The modified files are attached.

It can well be that there are more places to fix in pylon and GenICam header files. Just add spaces ;-)

For Pylon 5 is this not longer needed and you should be able to direct compile pylon without a modification.

Internal Notes

Created By Matthew Breit, 20/08/2015 23:43

Last Modified By Christian Gerstand, 09/11/2018 20:07

Cases

73631777

Subject	Fwd: Basler Contact Information
Priority	Medium
Date/Time Opened	23/10/2015 20:36
Status	Closed - Advice or Training
Owner	Jacob Vingless
Description	Hi Guys I spoke with Bennett at Apple yesterday. I've copied him on this email. Below is a description of his issue. Would you mind looking int it? Please respond to him directly.Thank you. Best Regards, Jim Begin forwarded message: From: Bennett Wilburn <bwilburn@apple.com<mailto:bwilburn@apple.com>> Date: October 22, 2015 at 8:31:14 PM PDT To: "Brazil Jr., Jim" <jim.brazil@baslerweb.com<mailto:jim.brazil@baslerweb.com>> Subject: Re: Basler Contact Information Hi Jim, Thanks for contacting me today. Turns out I ran into some trouble trying to compile the sample programs. I thought I'd send you the details. Hopefully your application engineers have seen my issue before and know the fix. Here are the details: I'm running Windows 8.1, 64-bit and am using Visual Studio 2015, Professional. I installed pylon and have the pylon camera software running. I can view live video. I tried to compile the GUI_ImageWindow project in Visual Studio 2015. I copied that project folder and the include folder, let Visual Studio update the solution, and tried to build it. I get the error shown below. Let me know if someone there knows the cause of this problem. Thanks, Bennett <pre> 1>----- Build started: Project: GUI_ImageWindow, Configuration: Debug x64 ----- 1> GUI_ImageWindow.cpp 1>C:\Program Files\Basler\pylon 4\pylon\include\pylon\PylonUtilityIncludes.h(44): warning C4081: expected 'string'; found 'user-defined string literal' 1>C:\Program Files\Basler\pylon 4\pylon\include\pylon\PylonIncludes.h(100): warning C4081: expected 'string'; found 'user-defined string literal' 1>C:\Program Files\Basler\pylon 4\pylon\include\pylon\PylonGUI.h(32): warning C4081: expected 'string'; found 'user-defined string literal' 1>C:\Program Files\Basler\pylon 4\genicam\library\CPP\include\GenApi\IEnumerationT.h(338): error C3688: invalid literal suffix 'FMT_I64'; literal operator or literal operator template 'operator ""FMT_I64' not found 1> C:\Program Files\Basler\pylon 4\genicam\library\CPP\include\GenApi\IEnumerationT.h(328): note: while compiling class template member function 'Basler_ImageFormatConverterParams::OutputBitAlignmentEnums GenApi::CEnumerationTRef<Basler_ImageFormatConverterParams::OutputBitAlignmentEnums>::GetValue (bool,bool)' 1> C:\Program Files\Basler\pylon 4\genicam\library\CPP\include\GenApi\IEnumerationT.h(347): note: see reference to function template instantiation 'Basler_ImageFormatConverterParams::OutputBitAlignmentEnums GenApi::CEnumerationTRef<Basler_ImageFormatConverterParams::OutputBitAlignmentEnums>::GetValue (bool,bool)' being compiled 1> C:\Program Files\Basler\pylon 4\pylon\include\pylon/_ImageFormatConverterParams.h(259): note: see </pre>

```
reference to class template instantiation
'GenApi::CEnumerationTRef<Basler_ImageFormatConverterParams::OutputBitAlignmentEnums>' being
compiled
===== Build: 0 succeeded, 1 failed, 0 up-to-date, 0 skipped =====
```

On Oct 22, 2015, at 2:00 PM, Brazil Jr., Jim <jim.brazil@baslerweb.com<mailto:jim.brazil@baslerweb.com>> wrote:

Hi Bennett,

Thank you for speaking with me today. As I mentioned, I'm your account manager, and reside on the west coast.

I live on the West Coast, so can easily meet on short notice.

For reference, I've attached the Apple mutual NDA that we signed last year.
Please don't hesitate to contact me, Bennett.

Best regards,

Jim Brazil Jr.
Regional Sales Manager
[http://baslerweb.com/baslermedia/socialmediaicons_email_signature/AIA_CVP_Basic_Logo_67px.png]

[BASLER-Logo_for_Signature]<<http://www.baslerweb.com/>>

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<Apple NDA 7-28-2014.pdf>

Solution History

04/04/2018 16:23

User **Wojciech Plowiec**

Action **Changed Solution Details.**

02/12/2016 01:12

User **Matthew Breit**

Action **Changed FAQ Status from FAQ Accepted to FAQ Published.**

20/09/2016 21:21

User **Santhirarajah Mathimugan**

Action **Changed Solution Details.**

18/08/2016 02:35

User **Matthew Breit**
 Action **Changed **FAQ Status** from FAQ Check in Progress to **FAQ Accepted**.**

13/01/2016 22:43

User **Matthew Breit**
 Action **Changed **FAQ Status** from Possibly a FAQ to **FAQ Check in Progress**.**

24/11/2015 22:16

User **Volkan Demirayak**
 Action **Changed **Solution Details**.**

20/08/2015 23:43

User **Matthew Breit**
 Action **Changed **FAQ Status** to **Possibly a FAQ**. Changed **Status** from Draft to **Ready for Use**.**

20/08/2015 23:43

User **Matthew Breit**
 Action **Created.**

Attachments

PylonLinkage.h		IEnumerationT.h	
Size	3KB	Size	13KB
Ownership	Santhirarajah Mathimugan	Ownership	Santhirarajah Mathimugan
View	View file	View	View file
Last Modified	20/09/2016 21:20	Last Modified	20/09/2016 21:19

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