## Subject: Some small issues with TheIDE and DLLs
Posted by cbpporter on Wed, 01 Jul 2009 02:58:23 GMT

I need to generate a DLL from TheIDE which exports some functions with implementations that use U++ classes.

First I tried setting the "All shared" option. This was a long shot and I was sure it wouldn't work, but the build process crashed. It shouldn't crash.

After some searching on the site I found that you are supposed to set the "DLL" configuration flag. This seems to have worked. I get a rather large DLL (probably the linker doesn't know what to exclude and includes all), an ".exp" file and a ".lib" file. Everything seems to work. Except when I hit run, I get a nice error message that the DLL can't be run (which is true of course) and a nice crash. It shouldn't crash.

But when building with MINGW I don't get the ".lib". This is needed if I don't do manual loading of the DLL. (Also the DLL is more than twice as big when compared to the MSC version, but I guess this is to be expected).

I have a few questions:
1. Should I compile with USEMALLOC option. Will U++'s malloc implementation cause problems if I free in the client application something allocated by the host? Will it be okay if all allocation and freeing is done by calls to the DLL?
2. Will there be issues with "icpp"s and other initialization tricks that U++ uses?
3. Can I use the the "DLL" flag under Linux or must it be changed to "SO". Same issue, I don't want a .so for every package, I want one big one.
4. Is there some macro provided by U++ as a platform independent equivalent of __declspec(dllexport) for writing DLLs?
5. What happens to global variables. What if my functions alter such variables. Will there be multiple such instances for different clients or will they override each other. Can this cause problems with all the global variables U++ uses internally? And is this behavior consistent across platforms?

Thank You

## Subject: Re: Some small issues with TheIDE and DLLs
Posted by mr_ped on Wed, 01 Jul 2009 06:18:00 GMT

Can't help with any of your question, but I have something to add about those crashes...

Sometimes I use TheIDE for PHP editing, and sometimes I get confused when switching a lot between browser, and I hit F5 = refresh in TheIDE => instant crash. (the project contains only some php and css files) (some older svn version of theIDE, probably 3-4 months old)

## Subject: Re: Some small issues with TheIDE and DLLs
Posted by cocob on Wed, 01 Jul 2009 06:58:12 GMT

for the linux question, i was able to make a so file with the dll flag, but i needed to add a compiler option entry in the package organizer

options(DLL && GCC) -fPIC

cocob

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## Subject: Re: Some small issues with TheIDE and DLLs
Posted by mirek on Wed, 01 Jul 2009 08:58:44 GMT

cbpporter wrote on Tue, 30 June 2009 22:58I need to generate a DLL from TheIDE which exports some functions with implementations that use U++ classes.

First I tried setting the "All shared" option. This was a long shot and I was sure it wouldn't work, but the build process crashed. It shouldn't crash.


With MSC?

Quote:
After some searching on the site I found that you are supposed to set the "DLL" configuration flag. This seems to have worked. I get a rather large DLL (probably the linker doesn't know what to exclude and includes all), an ".exp" file and a ".lib" file. Everything seems to work. Except when I hit run, I get a nice error message that the DLL can't be run (which is true of course) and a nice crash. It shouldn't crash.


Definitely. Will look into it ASAP.

Quote:
But when building with MINGW I don't get the ".lib". This is needed if I don't do manual loading of the DLL. (Also the DLL is more than twice as big when compared to the MSC version, but I guess this is to be expected).


Not sure we even want to support mingw there....

Quote:
I have a few questions:
1. Should I compile with USEMALLOC option. Will U++'s malloc implementation cause problems if I free in the client application something allocated by the host? Will it be okay if all allocation and freeing is done by calls to the DLL?

Depends.If all allocations / freeing is done by calls to the DLL, then AFAIK it should be ok.

If not, then AFAIK you can have problems with USEMALLOC as well...

Generally, DLL interfaces are designed so that either memory is handled by Win32 API, or handled by calls to DLL (no explicit frees).

Quote:
2. Will there be issues with "icpp"s and other initialization tricks that U++ uses?


I believe not, or not really big, as long as compiler/linker supports global constructors/destructors.

Quote:
3. Can I use the the "DLL" flag under Linux or must it be changed to "SO". Same issue, I don't want a .so for every package, I want one big one.


It is still DLL (although it produces SO).

Quote:
4. Is there some macro provided by U++ as a platform independent equivalent of __declspec(dllexport) for writing DLLs?


No.

Quote:
5. What happens to global variables. What if my functions alter such variables. Will there be multiple such instances for different clients or will they override each other. Can this cause problems with all the global variables U++ uses internally? And is this behavior consistent across platforms?


In POSIX, everything behaves exactly as normal.

In Win32, global variables exist, but are not accessible from outside of DLL.

One special consideration is TLS variables in Win32 - they are mutually exclusive with run-time loading of .dll (if that is the right term, I mean loading .dll explicitly, not by linker).

Mirek

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## Subject: Re: Some small issues with TheIDE and DLLs

Posted by mirek on Wed, 01 Jul 2009 09:05:10 GMT

cbpporter wrote on Tue, 30 June 2009 22:585. What happens to global variables. What if my functions alter such variables. Will there be multiple such instances for different clients or will they override each other.


Ah, now noticed this one

Well, of course, each process has its own copy of .dll (.so) global data. In fact, only code sections are shared (as they are for multiple process of single binary).

Mirek

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Subject: Re: Some small issues with TheIDE and DLLs
Posted by cbpporter on Fri, 03 Jul 2009 11:35:17 GMT

Even with problems stated above, I managed to get things working.

(I guess DLL mechanism is smart enough to call the code that initializes all the global class variables).

There is just one issue. I can't create TopWindows with code from the DLL. Even in simple cases, a function exported by the DLL which creates a TopWindow and calls OpenMain won't show it (if called without DLL the windows appears and is unresponsive until event loop; I would like the same behavior with DLLs), and a function which starts the EventLoop will try to write to NULL.

Is this related to the TLS issue you mentioned above? I'm loading the DLL with LoadLibrary/GetProcAddress.

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Subject: Re: Some small issues with TheIDE and DLLs
Posted by tojocky on Wed, 15 Jul 2009 15:26:03 GMT

Ok!
About static and dynamic libraries.
I tried to export from visual studio project to u++ example and can't to simulate same situation in U++. Maybe I'm not know U++ so all!

I attached Both variants, visual studio c++ 2008 expres edition and U++ version.
For MSC expres compiles and works fine but for U++ I cant compiled.

This example contains 4 packages(project):

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myengine - core project that compiles in dll and links in all other packages as static link
myapplication - main console exe file
opengl_plugin - dll plugin
zip_plugin - dll plugin

If anybody can help me on this simple example I will can to continue my test on linux too. I'm interesting in plugin framework. Short good wiki founded here, here and here:

Thanks for attention!

Add:
For details in U++ on I compile package "myengine" I have following error:
Quote:
----- myengine ( DLL MYENGINE_EXPORTS MAIN MSC9 DEBUG DEBUG_FULL BLITZ WIN32 MSC )
cd D:\ILupascu\sourcecode\cpp\upp\plugin_cpp_example1\myengine
BLITZ: storage_server.cpp myengine.cpp
$blitz.cpp
"C:\Program Files\Microsoft Visual Studio 9.0\Vc\Bin\cl.exe" -nologo -W3 -GR -c
-I"D:\ILupascu\sourcecode\cpp\upp\plugin_cpp_example1" -I"C:\Progra
 m Files\Microsoft SDKs\Windows\v6.0A\Include" -I"C:\Program Files\Microsoft Visual Studio
9.0\Vc\Include" -I"C:\upp\sdl\include" -DflagDLL -Dfl
 agMYENGINE_EXPORTS -DflagMAIN -DflagMSC9 -DflagDEBUG -DflagDEBUG_FULL
-DflagBLITZ -DflagWIN32 -DflagMSC -DbmYEAR=2009 -DbmMONTH=7 -DbmDAY=16 -D
 bmHOUR=14 -DbmMINUTE=32 -DbmSECOND=41 -EHsc -Zi  -MTd -Od -Gy -Fd"
C:/upp/out/myengine/MSC9.Debug.Debug_full.Dll.Main.Myengine_ exports\myengine-
 1.pdb" -Tp " C:/upp/out/myengine/MSC9.Debug.Debug_full.Dll.Main.Myengine_
exports\$blitz.cpp " -Fo"C:/upp/out/myengine/MSC9.Debug.Debug_full.Dll.M
 ain.Myengine_exports\$blitz.obj"
myengine: 2 file(s) built in (0:00.96), 484 msecs / file, duration = 985 msecs, parallelization 0%
Linking...
link -nologo -machine:I386 -pdb:"
C:\upp\out\MSC9.Debug.Debug_full.Dll.Myengine_exports\myengi ne.pdb "
-out:"C:\upp\out\MSC9.Debug.Debug_full.Dll.Mye
 ngine_exports\myengine.dll" -incremental:yes -debug -OPT:NOREF -subsystem:console -DLL
-LIBPATH:"C:\Program Files\Microsoft SDKs\Windows\v6.0A\
 Lib" -LIBPATH:"C:\Program Files\Microsoft Visual Studio 9.0\Vc\Lib" -LIBPATH:"C:\upp\sdl\lib"
"C:\upp\out\myengine\MSC9.Debug.Debug_full.Dll
 .Main.Myengine_exports\$blitz.obj"
   Creating library  C:\upp\out\MSC9.Debug.Debug_full.Dll.Myengine_exports\myengi ne.lib and
object C:\upp\out\MSC9.Debug.Debug_full.Dll.Myengine_exp
 orts\myengine.exp
$blitz.obj : error LNK2019: unresolved external symbol "public: __thiscall
MyEngine::Plugin::~Plugin(void)" (??1Plugin@MyEngine@@QAE>@XZ) referenced
 in function "public: void __thiscall MyEngine::Kernel::loadPlugin(class
std::basic_string<char,struct std::char_traits<char>,class std::alloca
 tor<char> > const &)"
(?loadPlugin@Kernel>@MyEngine@@QAEXABV?$basic_string@DU?$char_traits@D>@std@

@V?$allocator@D>@2@@std@@@Z)
$blitz.obj : error LNK2019: unresolved external symbol "public: __thiscall
MyEngine::Plugin::Plugin(class std::basic_string<char,struct std::char_t
 raits<char>,class std::allocator<char> > const &)"
(??0Plugin@MyEngine@@QAE>@ABV?$basic_string@DU?$char_traits@D>@std@@V?$alloc
ator@D>@2@@std@@@Z)
  referenced in function "public: void __thiscall MyEngine::Kernel::loadPlugin(class
std::basic_string<char,struct std::char_traits<char>,class
 std::allocator<char> > const &)"
(?loadPlugin@Kernel>@MyEngine@@QAEXABV?$basic_string@DU?$char_traits@D>@std@
@V?$allocator@D>@2@@std@@@Z)
$blitz.obj : error LNK2019: unresolved external symbol "public: __thiscall
MyEngine::Plugin::Plugin(class MyEngine::Plugin const &)" (??0Plugin@MyE
 ngine@@QAE>@ABV01@@Z) referenced in function "public: __thiscall std::pair<class
std::basic_string<char,struct std::char_traits<char>,class std:
 :allocator<char> > const ,class MyEngine::Plugin>::pair<class std::basic_string<char,struct
std::char_traits<char>,class std::allocator<char> >
  const ,class MyEngine::Plugin>(class std::basic_string<char,struct std::char_traits<char>,class
std::allocator<char> > const &,class MyEngine:
 :Plugin const &)"
(??0?$pair@$$CBV?$basic_string@DU?$char_traits@D>@std@@V?$allocator@D>@2@@std
@@VPlugin>@MyEngine@@@std@@QAE>@ABV?$basic_string@DU
 ?$char_traits@D>@std@@V?$allocator@D>@2@@1>@ABVPlugin>@MyEngine@@@Z)
 C:\upp\out\MSC9.Debug.Debug_full.Dll.Myengine_exports\myengi ne.dll : fatal error LNK1120: 3
unresolved externals
"C:\Program Files\Microsoft Visual Studio 9.0\Vc\Bin\link.exe" -nologo -machine:I386
-pdb:"C:\upp\out\MSC9.Debug.Debug_full.Dll.Myengine_exports\my
 engine.pdb" -out:" C:\upp\out\MSC9.Debug.Debug_full.Dll.Myengine_exports\myengi ne.dll "
-incremental:yes -debug -OPT:NOREF -subsystem:console -DL
 L -LIBPATH:"C:\Program Files\Microsoft SDKs\Windows\v6.0A\Lib" -LIBPATH:"C:\Program
Files\Microsoft Visual Studio 9.0\Vc\Lib" -LIBPATH:"C:\upp\
 sdl\lib"    " C:\upp\out\myengine\MSC9.Debug.Debug_full.Dll.Main.Myengine_ exports\$blitz.obj "
Error executing "C:\Program Files\Microsoft Visual Studio 9.0\Vc\Bin\link.exe" -nologo
-machine:I386 -pdb:"C:\upp\out\MSC9.Debug.Debug_full.Dll.Mye
 ngine_exports\myengine.pdb" -out:"
C:\upp\out\MSC9.Debug.Debug_full.Dll.Myengine_exports\myengi ne.dll " -incremental:yes
-debug -OPT:NOREF -subsy
 stem:console -DLL -LIBPATH:"C:\Program Files\Microsoft SDKs\Windows\v6.0A\Lib"
-LIBPATH:"C:\Program Files\Microsoft Visual Studio 9.0\Vc\Lib" -
 LIBPATH:"C:\upp\sdl\lib"    " C:\upp\out\myengine\MSC9.Debug.Debug_full.Dll.Main.Myengine_
exports\$blitz.obj "
Exitcode: 1120

There were errors. (0:01.15)

In visual studio build I have folowing command lines:

Quote:Creating temporary file " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin e\Debug\RSP0000016923892.rsp " with contents
[
/Od /D "WIN32" /D "_DEBUG" /D "_WINDOWS" /D "_USRDLL" /D "MYENGINE_EXPORTS" /D "_VC80_UPGRADE=0x0710" /D "_WINDLL" /D "_MBCS" /Gm /EHsc /RTC1 /MDd /Fo"Debug\\" /Fd"Debug\vc90.pdb" /W3 /c /Wp64 /ZI /TP .\storage_server.cpp

.\plugin.cpp

.\myengine.cpp
]
Creating command line "cl.exe
@d:\ILupascu\help\programming\cpp\best_plugin_example\myengi ne\Debug\RSP0000016923892.rsp /nologo /errorReport:prompt"
Creating temporary file " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin e\Debug\TMP0000026923892.tmp " with contents
[
2 /* ISOLATIONAWARE_MANIFEST_RESOURCE_ID */ 24 /* RT_MANIFEST */ ".\\Debug\\myengine.dll.embed.manifest"
]
Creating command line "rc.exe /fo".\Debug\myengine.dll.embed.manifest.res" d:\ILupascu\help\programming\cpp\best_plugin_example\myengin e\Debug\TMP0000026923892.tmp "
Creating temporary file " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin e\Debug\RSP0000036923892.rsp " with contents
[
/OUT:"../Debug/myengine.dll" /INCREMENTAL /DLL /MANIFEST /MANIFESTFILE:"Debug\myengine.dll.intermediate.manifest" /MANIFESTUAC:"level='asInvoker' uiAccess='false'" /DEBUG /PDB:"../Debug/myengine.pdb" /SUBSYSTEM:WINDOWS /DYNAMICBASE:NO /IMPLIB:"../Debug/myengine.lib" /MACHINE:X86 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib

".\Debug\myengine.obj"

".\Debug\plugin.obj"

".\Debug\storage_server.obj"

".\Debug\myengine.dll.embed.manifest.res"
]
Creating command line "link.exe
@d:\ILupascu\help\programming\cpp\best_plugin_example\myengi ne\Debug\RSP0000036923892.rsp /NOLOGO /ERRORREPORT:PROMPT"
Creating temporary file " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin e\Debug\RSP0000046923892.rsp " with contents
[
/out:.\Debug\myengine.dll.embed.manifest /notify_update /manifest

.\Debug\myengine.dll.intermediate.manifest
]
Creating command line "mt.exe
@d:\ILupascu\help\programming\cpp\best_plugin_example\myengi
ne\Debug\RSP0000046923892.rsp /nologo"
Creating temporary file " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin
e\Debug\BAT0000056923892.bat " with contents
[
@echo Manifest resource last updated at %TIME% on %DATE% > .\Debug\mt.dep
]
Creating command line " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin
e\Debug\BAT0000056923892.bat "
Creating temporary file " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin
e\Debug\TMP0000066923892.tmp " with contents
[
2 /* ISOLATIONAWARE_MANIFEST_RESOURCE_ID */ 24 /* RT_MANIFEST */
".\\Debug\\myengine.dll.embed.manifest"
]
Creating command line "rc.exe /fo".\Debug\myengine.dll.embed.manifest.res"
d:\ILupascu\help\programming\cpp\best_plugin_example\myengin
e\Debug\TMP0000066923892.tmp "
Creating temporary file " d:\ILupascu\help\programming\cpp\best_plugin_example\myengin
e\Debug\RSP0000076923892.rsp " with contents
[
/OUT:"../Debug/myengine.dll" /INCREMENTAL /DLL /MANIFEST
/MANIFESTFILE:"Debug\myengine.dll.intermediate.manifest" /MANIFESTUAC:"level='asInvoker'
uiAccess='false'" /DEBUG /PDB:"../Debug/myengine.pdb" /SUBSYSTEM:WINDOWS
/DYNAMICBASE:NO /IMPLIB:"../Debug/myengine.lib" /MACHINE:X86 kernel32.lib user32.lib
gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib

".\Debug\myengine.obj"

".\Debug\plugin.obj"

".\Debug\storage_server.obj"

".\Debug\myengine.dll.embed.manifest.res"
]
Creating command line "link.exe
@d:\ILupascu\help\programming\cpp\best_plugin_example\myengi
ne\Debug\RSP0000076923892.rsp /NOLOGO /ERRORREPORT:PROMPT"


File Attachments
1) plugin_example.7z, downloaded 307 times