Subject: Upp .dll
Posted by nlneilson on Thu, 01 Apr 2010 13:18:16 GMT
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I have several apps in C++.
Using Upp is very good and and easy, with help of course.

I would like to pull some functions out of a Java app and have them as a .dll. The Java app also
uses jogl.dll.

Most of the technical issues on linking will be with the java app but what issues may I run into as
far as a .dll made with Upp?

Subject: Re: Upp .dll
Posted by cbpporter on Thu, 01 Apr 2010 13:22:09 GMT
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Well I have tried before creating a DLL from U++ but for me it did not work with Java. I tried
making a simple C++ client for the DLL and it worked, but when the same function was called
form Java it failed.

I hope you have more luck with this.

Subject: Re: Upp .dll
Posted by nlneilson on Thu, 01 Apr 2010 15:17:55 GMT
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That could be the biggest problem, C++ to Java.
The jogl.dll is also java code AFAIK, it is from Sun.

Using a socket in C++, Upp or Python works with a Java app but for several functions a more
direct link would be preferred.

Subject: Re: Upp .dll
Posted by nlneilson on Fri, 02 Apr 2010 00:01:55 GMT
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This or something similar is probably the way to do it.
 http://www.math.ucla.edu/~anderson/JAVAclass/JavaInterface/J avaInterface.html

Subject: Re: Upp .dll
Posted by cbpporter on Fri, 02 Apr 2010 07:37:20 GMT

As always I have sources all over the place if I don't use version control, but I think I found some of my earlier attempts. Seems quite out of date realative to final attempts though.

File attached.

File Attachments
1) MyApps.rar, downloaded 356 times

Subject: Re: Upp .dll
Posted by nlneilson on Fri, 02 Apr 2010 12:26:40 GMT

I looked at the code in MyApps.rar but didn't understand it.
I found this on the JNI (Java Native Interface)
http://java.sun.com/docs/books/jni/html/intro.html

"It is a tutorial intended for the beginning users who are unfamiliar with the JNI."
Just what I need, sometimes it is hard to understand new concepts until the basics are written down and there is code I can try, debug to step through and make small changes to simple existing code that works.
  Chapter 2 has the Java app code, HelloWorld.java, the C header code, HelloWorld.h for the connection or link to the Hello-World.dll.

Subject: Re: Upp .dll
Posted by nlneilson on Sat, 03 Apr 2010 01:48:25 GMT

I tried this example.
http://java.sun.com/docs/books/jni/html/intro.html

On the command got up to compiling the HelloWorld.c code.
cl -Ic:\java\include -Ic:\java\include\win32 -MD -LD HelloWorld.c -FeHelloWorld.dll

and get this error:
HelloWorld.c
HelloWorld.c(1) : fatal error C1083: Cannot open include file: 'jni.h': No such file or directory

I have included in the path C:\Program Files\Java\jdk1.7.0\include where jni.h is located

PATH=C:\Windows\system32;
C:\Windows;
C:\Windows\System32\Wbem;
C:\Program Files\Java\jdk1.7.0\bin;
C:\Program Files\Java\jdk1.7.0\include;

C:\Program Files\Microsoft Visual Studio 9.0\VC\bin;
C:\Program Files\Microsoft Visual Studio 9.0\Common7\IDE
(the path is all one line)

With cbpporter's MyApps.rar I get the same error when running in theIDE:
C:\MyApps\jni\main.cpp(2) : fatal error C1083: Cannot open include file: 'jni.h': No such file or
directory

How do I get the jni.h seen in theIDE (or on the command line)?

Subject: Re: Upp .dll
Posted by nlneilson on Sun, 04 Apr 2010 05:19:50 GMT
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Gave up on JNI.
Too many links on the web re include files that were not solved.
Including the directories in the Win PATH didn't help.
After changing the command line include
 -Ic:\"Program Files"\Java\jdk1.7.0\include the double quotes still split between Program and Files
Copied the Java directory to C:\
 -Ic:\Java\jdk1.7.0\include finds jni.h but
 -Ic:\Java\jdk1.7.0\win32 does not find jni_md.h

In the PATH is:
C:\Program Files\Microsoft Visual Studio 9.0\VC\bin;C:\Program Files\Microsoft Visual Studio
9.0\Common7\IDE;C:\Program Files\Microsoft Visual Studio 9.0\VC\include
 "Cannot open include file: 'stdio.h': No such file or directory

I looked at JNA but will try GCC/GCJ CNI.

Subject: Re: Upp .dll
Posted by cbpporter on Mon, 05 Apr 2010 12:47:03 GMT
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You must configure the include path from TheIDE or your command line. I has nothing to do with
PATH.

I don't know exactly how the command line must look, but -Ic:\"Program
Files"\Java\jdk1.7.0\include seems wrong to me. Try
-I"c:\Program Files\Java\jdk1.7.0\include".

Subject: Re: Upp .dll
Posted by nlneilson on Mon, 05 Apr 2010 13:45:43 GMT
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"You must configure the include path from TheIDE on your command line." I will need to find out how that is done. For Eclipse and MSVC that was done in the IDE.

I tried several different ways for the double quotes, it still split between Program and Files.

"The Visual Studio 2005 Command Prompt automatically sets up the correct path to the Visual C++ compiler and any needed libraries, so it is used instead of the regular Command Prompt window."
      http://msdn.microsoft.com/en-us/library/ms235639%28VS.80%29. aspx

This was important for the C++ includes, admin. privileges (even though UAC is off). Then they compiled OK with:
cl -I"c:\Program Files\Java\jdk1.7.0\include" -I"c:\Program Files\Java\jdk1.7.0\include\win32" -MD -LD HelloWorld.c -FeHelloWorld.dll

The files look good, have not been able to run it yet.

Apparently GCC/GCJ CNI and Swig depend on the JNI or similar.
It is just the interface from Java to Native code.

The necessary changes to the JNI files can be compiled on the command line.
It would be good to do it in theIDE.

Once this is set up a C++ .dll can be made with Upp.
The Java app code will be changed with Eclipse.

File Attachments
1) Hello.zip, downloaded 337 times

Subject: Re: Upp .dll
Posted by nlneilson on Mon, 05 Apr 2010 22:41:27 GMT
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Previously, after copying the Java directory, it compiled with:
 cl -Ic:\Java\jdk1.7.0\include -Ic:\Java\jdk1.7.0\include\win32 -MD -LD HelloWorld.c -FeHelloWorld.dll

My PATH originally was: C:\Windows\system32;C:\Windows
I added the Java but that probably was not necessary as that worked before.
After running the MS SDK CMD Shell (which is SetEnv.cmd) this is the PATH, what a mess.

PATH=C:\Program Files\Microsoft Visual Studio 9.0\VC\Bin;C:\Program Files\Micros oft Visual Studio 9.0\VC\vcpackages;C:\Program Files\Microsoft Visual Studio 9.0

\Common7\IDE;C:\Program Files\Microsoft SDKs\Windows\v7.0\Bin;C:\Windows\Microso
ft.NET\Framework\v3.5;C:\Windows\Microsoft.NET\Framework\v2. 0.50727;C:\Program F
iles\Microsoft   SDKs\Windows\v7.0\Setup;C:\Windows\system32;C:\Windows;C:\Wi ndows
\System32\Wbem;C:\Java\jdk1.7.0\bin;C:\Java\jdk1.7.0\include ;C:\Program Files\Mi
crosoft Visual Studio 9.0\VC\bin;C:\Program Files\Microsoft Visual Studio 9.0\Co
mmon7\IDE;C:\Program Files\Microsoft Visual Studio 9.0\VC\include

After removing any changes to the original and re doing the javac, javah and cl and trying java
HelloWorld:
Exception in thread "main" java.lang.UnsatisfiedLinkError: C:\MyApps\JNIex\HelloWorld.dll: Can't
find dependent libraries
        at java.lang.ClassLoader$NativeLibrary.load(Native Method)
        at java.lang.ClassLoader.loadLibrary0(ClassLoader.java:1922)
        at java.lang.ClassLoader.loadLibrary(ClassLoader.java:1848)
        at java.lang.Runtime.loadLibrary0(Runtime.java:840)
        at java.lang.System.loadLibrary(System.java:1078)
        at HelloWorld.<clinit>(HelloWorld.java:7)

line 7:   printf("Hello World!\n");
then the C/C++ cl compiled .h/.dll

Attached is the code as in the original example.

File Attachments
1) Hello.zip, downloaded 554 times

Subject: Re: Upp .dll
Posted by nlneilson on Tue, 06 Apr 2010 04:07:01 GMT
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Downloaded Dependency Walker (depends.exe)
http://dependencywalker.com/

Running this on HelloWorld.dll
MSVCR90.DLL cannot be found
That is in the Microsoft Visual C++ 2008 Redistributable Package
 http://www.microsoft.com/downloads/details.aspx?familyid=9B2
DA534-3E03-4391-8A4D-074B9F2BC1BF&displaylang=en

It is not included in the links provided when installing Upp, I left the Redistributable selected but it
was not in there, I may be wrong on this.

I added this to my PATH:
C:\Program Files\Microsoft Visual Studio 9.0\VC\redist\x86\Microsoft.VC90.CRT

depends.exe finds MSVCR90.DLL but "java HelloWorld" now gives this error:

R6034
An application has made an attempt to load the C runtime library incorrectly

I tried copying MSVCR90.DLL to the same directory as HelloWorld.dll and got the same error.

Subject: Re: Upp .dll
Posted by mr_ped on Tue, 06 Apr 2010 07:58:52 GMT
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TheIDE -> setup -> build methods -> INCLUDE paths

Subject: Re: Upp .dll
Posted by nlneilson on Tue, 06 Apr 2010 08:24:48 GMT
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mr_ped wrote on Tue, 06 April 2010 09:58TheIDE -> setup -> build methods -> INCLUDE paths
Could this be limited to just one project?

Subject: Re: Upp .dll
Posted by mr_ped on Tue, 06 Apr 2010 08:48:06 GMT
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TheIDE -> project -> package organizer -> select the package which should be affected, right click into the large area on right, select "New internal includes..", enter directory's full path.

update:
It will affect compilation of all project's packages, no matter where you put that setting, but if the other packages are used in different projects, they will be compiled without it, so make sure you put that setting into every package which actually really needs that include path, it will carry it over to all projects where that package is used.

Subject: Re: Upp .dll
Posted by nlneilson on Tue, 06 Apr 2010 13:33:45 GMT
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R6034
An application has made an attempt to load the C runtime library incorrectly

This error needs a manifest embedded in the .dll
  http://msdn.microsoft.com/en-us/library/ms235591%28v=VS.80%2 9.aspx

Is there a way to do this in Upp?

Subject: Re: Upp .dll
Posted by nlneilson on Mon, 19 Apr 2010 14:20:41 GMT
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Got the basics of a JNI working from the command line.
Getting the depends paths was a hassle as in the previous posts.
To embed the manifest in the .dll it can be done with mt.exe, which
is included in the MS SDK when installing U++

Here is a .zip with everything. The HW.bat will do it all except
setting the paths.

Making a .dll in U++ and then embedding the manifest with mt.exe may work after changing the
.java and .h files as required for an app.

File Attachments
1) JNIex.zip, downloaded 332 times

Subject: Re: Upp .dll
Posted by nlneilson on Mon, 19 Apr 2010 23:56:08 GMT
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With the ability to set the paths in theIDE as mr_ped mentioned this should be much easier than
adding to PATH.