

Exiv2 - Feature #1269

Enable using dynamic runtime libs with when disabling shared libs for Windows

10 Jan 2017 19:04 - Ben Touchette

Status:	Closed	Start date:	10 Jan 2017
Priority:	Normal	Due date:	
Assignee:	Robin Mills	% Done:	100%
Category:	build	Estimated time:	4.00 hours
Target version:	0.26		
Description			
This patch enables using dynamic runtime libraries when using NO_SHARED libraries with cmake instead of the statically linked version. For use and tested in Windows with CMake / MSVC.			

Associated revisions

Revision 4740 - 17 Mar 2017 12:58 - Robin Mills

#1269 Thank You to Ben for reporting this and providing the patch.

Revision 4741 - 17 Mar 2017 16:18 - Robin Mills

#1269 cmakeBuild.cmd --static to set cmake -DEXIV2_ENABLE_DYNAMIC_RUNTIME=OFF (and --shared will set ON)

History

#1 - 09 Feb 2017 20:34 - Robin Mills

- Category set to build
- Status changed from New to Assigned
- Assignee set to Robin Mills
- Target version set to 0.26

#2 - 16 Feb 2017 18:49 - Robin Mills

- % Done changed from 0 to 50
- Estimated time set to 2.00 h

Ben

Thanks for reporting this. We made a policy decision (in 2008) to support "all dlls, or all static". Mikayel asked for "dlls with static run-time". This is a lethal combination which I investigated and discussed in detail. <http://dev.exiv2.org/issues/1157>

The problem is that linking DLLs with static run-time can result in several copies of run-time library because every dll (eg libexiv2.dll contains a static run-time library) and the executable/client app have their own run-time library. If you open a FILE* in libexiv2.dll and fclose() it in the application, the application will crash. That typically does not happen, however memory resources (new/delete) often cross the library boundaries with very bad consequences.

I think static libraries that all use a shared dynamic runtime will work. Thanks for your patch. I'll review this.

#3 - 16 Feb 2017 19:03 - Ben Touchette

The patch was made to leave things the way they work as is, but gives the option of creating a static only lib that requires linking to dynamic runtimes a way to do so. Yes the whole app needs to be linked that way as well else it just won't link i would think :)

#4 - 17 Mar 2017 13:29 - Robin Mills

- Estimated time changed from 2.00 h to 4.00 h

Patch submitted [r4740](#). Thanks very much to be for reporting this, investigating this matter and providing the patch.

The origins of this go back to 2012 when the file CMakeList_msvc.txt was created in the project to support MSVC/CMake. That project was shelved and complete in 2014. The 2014 project does handle static and shared libraries. However I forgot to cause the static library to use the static runtime. Thank You for completing this. The msvc build environment is "all shared" or "all static". With msvc, if you generate a DLL, it will use the dynamic runtime. If you generate a static library, it will use the static runtime.

Three observations:

1) It's very likely that contrib/cmakeBuild.cmd requires an update to convert options **--static/--shared** to set the CMake option: **-DEXIV2_ENABLE_DYNAMIC_RUNTIME=OFF/ON** I will investigate this.

2) Testing on MSVC 2005/8/10/12/13/15 (in 32 and 64 bit) is very time consuming. If this patch survives the nightly build on the buildserver (which builds shared libraries), I'm going to allow it to ship in v0.26 as the patch has *done no harm*.

3) I personally don't care for using the "d" in ./CMakeLists.txt: `set(CMAKE_DEBUG_POSTFIX "d")`. This has the effect of adding a 'd' to library file. So libexiv2.dll becomes libexiv2d.dll This is different from the libraries generated by msvc project files.

#5 - 17 Mar 2017 16:25 - Robin Mills

- Status changed from Assigned to Closed

- % Done changed from 50 to 100

Good News, Ben.

[r4741](#) I've set `-DEXIV2_ENABLE_DYNAMIC_RUNTIME=OFF` for when `cmakeBuild.cmd --static` is used. It's working. I've tested both `--static` and `--shared`. Options `--static` and `--shared` are exclusive because of the architecture of CMake/Visual Studio. I have a feeling it was working correctly anyway (although I'm not sure how!).

I've tested that Debug DLLs use the debug share run-time library and the DLL is `exiv2d.dll` (and it uses the `zlibd.dll`)

```
C:\Users\rmills\gnu\exiv2\build>cmd /c "vcvars 2005 && cmakeBuild --shared --rebuild --pause --config Debug"
```

```
C:\Users\rmills\gnu\exiv2\build\dist\2005\x64\dll\Debug\bin>dir *.dll
Volume in drive C has no label.
Volume Serial Number is 0899-EF40
```

```
Directory of C:\Users\rmills\gnu\exiv2\build\dist\2005\x64\dll\Debug\bin
```

```
2017-03-17 03:56 PM          5,929,984 exiv2d.dll
2017-03-17 03:53 PM          310,784 expat.dll
2017-03-17 03:52 PM          181,760 zlibd.dll
          3 File(s)          6,422,528 bytes
          0 Dir(s) 13,136,359,424 bytes free
```

```
C:\Users\rmills\gnu\exiv2\build\dist\2005\x64\dll\Debug\bin>
```

Files

msvc.diff	5.71 KB	10 Jan 2017	Ben Touchette
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