Subject: MT with speed optimization fails
Posted by dolik.rce on Sun, 31 Jan 2010 21:26:01 GMT
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Hi!

I encountered a MT related bug while building theide. In speed mode, with flags GUI, NOGTK and MT flags, linking fails withundefined reference to 'Upp::ReadMemoryBarrier()'.
With optimal mode, there is no problem. Also adding SSE2 removes the problem.

The function ReadMemoryBarrier() is defined in Core/MT.cpp, on line 266 as inlined. As far as I can tell that is the problem. If I remove the inline keyword, everything compiles correctly. I'm almost sure, that this issue is a result of the speed optimizations. For some reasons WriteMemoryBarrier is not defined as inline and works fine. If inline is added, 'undefined reference' appears when linking in speed mode.

I believe either ReadMemoryBarrier() should not be inline or both Read- and Write- should be inline and moved to MT.h, in similar manner as they are defined for SSE2 enabled case. I tried this and I attach the modified files. Please note that I don't have any idea about how the code works and I'm not sure if it won't cause any performance troubles! It just works and appears to me to represent equivalent code.

Additional info: I have i386 processor (Intel Atom) and use gcc4.4.3 on Arch Linux.$ gcc -v
Using built-in specs.
Target: i686-pc-linux-gnu
Configured with: ../configure --prefix=/usr --enable-shared
--enable-languages=c,c++,fortran,objc,obj-c++,ada
--enable-threads=posix --mandir=/usr/share/man --infodir=/usr/share/info --enable-__cxa_atexit
--disable-multilib --libdir=/usr/lib --libexecdir=/usr/lib --enable-clocale=gnu --disable-libstdcxx-pch
--with-tune=generic
Thread model: posix
gcc version 4.4.3 (GCC)

Best regards,
Honza

File Attachments

1) MT.zip, downloaded 409 times

Subject: Re: MT with speed optimization fails
Posted by mirek on Mon, 01 Feb 2010 12:53:55 GMT
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dolik.rce wrote on Sun, 31 January 2010 16:26Hi!

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OK, 'inline' removed. Thanks.

The question is whether SSE2 should not be default... (and NOSSE2 exist instead).

Quote:
Additional info: I have i386 processor (Intel Atom)

How does it run U++?

Subject: Re: MT with speed optimization fails
Posted by dolik.rce on Mon, 01 Feb 2010 13:39:01 GMT
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Hi Mirek!

Thanks for fix. Having NOSSE2 seems ok, there's not much CPUs running without it anymore... And a lot of poeple doesn't know that SSE2 flag exist, so they don't use it.
luzr wrote on Mon, 01 February 2010 13:53Quote:Additional info: I have i386 processor (Intel Atom)How does it run U++?
I recently bought MSI U100 netbook, thinking it will be just a mobile remote terminal to access my old computer. Well, I was really surprised by the performance of the N280 processor! It is probably even faster than my old single core Athlon which was running on 1,8GHz. The hyperthreading on Atom does a really good job together with build parallelization in theide. Probably also the fact that it has twice as much RAM as the old one plays its part in the speedup
I can do some benchmarks, if you're interested.

Honza
