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Subject: Again ReadMemoryBarrier() etc  
Posted by [arturbac](#) on Sun, 08 Jul 2007 11:09:26 GMT  
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Mirek

You dont need to use sfence and write Your own functions as it is now  
There are intrinsics for this on both x86 ad x64  
[http://msdn2.microsoft.com/en-us/library/65tt87y8\(VS.80\).aspx](http://msdn2.microsoft.com/en-us/library/65tt87y8(VS.80).aspx)

the \_WriteBarrier function forces writes to memory to complete at the point of the call. After the call, other threads can access the memory without fear that the thread that made the call might have a pending write to the memory.

<intrin.h>

\_ReadBarrier, \_WriteBarrier, and \_ReadWriteBarrier

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Subject: Re: Again ReadMemoryBarrier() etc  
Posted by [mirek](#) on Mon, 09 Jul 2007 07:49:30 GMT  
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Sorry, but this is the complete misunderstanding of the issue from several points of view.

First of all, these intrinsics are about COMPILER reordering! They do not emit any instructions, they just tell the compiler not to perform certain optimizations.

Second, they are not available on GCC and they behave differently on previous MSC versions.

Third, lfence / sfence are SSE instructions and believe or not, we still have to support CPUs without SSE.

Fourth, the idea that "the \_WriteBarrier function forces writes to memory to complete at the point of the call. After the call, other threads can access the memory without fear that the thread that made the call might have a pending write to the memory." is wrong as well, even if you would think that it emits actual CPU write barrier. This is not what a write barrier does for you... (but your mistake is quite understandable, because I was under this false impression too a couple of months ago....)

Mirek

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Subject: Re: Again ReadMemoryBarrier() etc  
Posted by [arturbac](#) on Mon, 09 Jul 2007 08:50:18 GMT  
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luzr wrote on Mon, 09 July 2007 09:49 Sorry, but

Fourth, the idea that "the `_WriteBarrier` function forces writes to memory to complete at the point of the call. After the call, other threads can access the memory without fear that the thread that made the call might have a pending write to the memory." is wrong as well, even if you would think that it emits actual CPU write barrier. This is not what a write barrier does for you... (but your mistake is quite understandable, because I was under this false impression too a couple of months ago....)

Mirek

This is not my mistake this is from MSDN info about how this instrinsic work.

Who has right You or Microsoft ?

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Subject: Re: Again ReadMemoryBarrier() etc  
Posted by [mirek](#) on Mon, 09 Jul 2007 09:07:56 GMT  
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arturbac wrote on Mon, 09 July 2007 04:50luzr wrote on Mon, 09 July 2007 09:49Sorry, but

Fourth, the idea that "the `_WriteBarrier` function forces writes to memory to complete at the point of the call. After the call, other threads can access the memory without fear that the thread that made the call might have a pending write to the memory." is wrong as well, even if you would think that it emits actual CPU write barrier. This is not what a write barrier does for you... (but your mistake is quite understandable, because I was under this false impression too a couple of months ago....)

Mirek

This is not my mistake this is from MSDN info about how this instrinsic work.

Who has right You or Microsoft ?

Actually, Microsoft documentation is quite often wrong or misleading about MT issues...

Anyway, read more carefully into the link you posted:

Quote:

As part of its optimization algorithms, the Visual C++ compiler might reorder memory reads and writes in unpredictable ways between explicit accesses to a variable. As a result, the value of that variable might not have a predictable value between each explicit use of the variable. This could cause problems in multithreaded programming.

You can also look here:

[http://forums.microsoft.com/MSDN/ShowPost.aspx?PostID=177456\\_1&SiteID=1](http://forums.microsoft.com/MSDN/ShowPost.aspx?PostID=177456_1&SiteID=1)

Mirek

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Subject: Re: Again ReadMemoryBarrier() etc  
Posted by [arturbac](#) on Mon, 09 Jul 2007 09:14:41 GMT  
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rofl.

nice.

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