Memory Ordering in Modern Microprocessors, Part I

Jun 30, 2005 By Paul E. McKenney (/user/1001349)
in

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One important difference among CPU families is how they allow memory accesses to be reordered. Linux has to support them all.

Conclusions

As noted earlier, the good news is Linux's memory-ordering primitives and synchronization primitives make it unnecessary for most Linux kernel hackers to worry about memory barriers. This is especially good news given the large number of CPUs and systems that Linux supports and the resulting wide variety of memory-consistency models. However, there are times when knowing about memory barriers can be helpful, and I hope that this article has served as a good introduction to them.

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First article I've seen on CPU reordering that explained *why* it happens. Great stuff.

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The updated table of memory-ordering constraints is shown on Page 16 of the above URL.