

Re: why spinlock raises IRQL to DISPATCH

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- *From:* "David J. Craig" <SeniorDriversWriter@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Fri, 09 Jun 2006 05:07:57 GMT
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I think saying the scheduler runs at DISPATCH_LEVEL will lead to many problems for people to understand it correctly. It runs when the IRQL is going to drop below DISPATCH_LEVEL. If you say that the scheduler runs at DISPATCH_LEVEL you can be lead to believe that multiple threads can run at DISPATCH_LEVEL on the same CPU.

I have always wondered if a CPU is running a thread at DISPATCH_LEVEL and a hardware interrupt occurs, how does the hardware/OS decide to use that CPU or another that might be running at passive. If the other CPU was running at DIRQL, will that thread that was preempted be switched to the first CPU that drops below DIRQL? Keeping the stacks straight might be a problem in doing that. I guess you could have a CPU that is running at passive while another is running at DIRQL and keeping a DISPATCH_LEVEL from running.

"Arkady Frenkel" <arkadyf@xxxxxxxxxxxxxxxxxxxx> wrote in message news:%234VWgvhWFHA.2684@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

Maybe need to add (for full clearance) that the thread scheduler run at DISPATCH_LEVEL , so that's the way of disable sheduling
Arkady

"Don Burn" <burn@xxxxxxxxxxxxxxxxxxxx> wrote in message [news:6z0ie.17732\\$Sv7.4879@xxxxxxxxxxxx](mailto:news:6z0ie.17732$Sv7.4879@xxxxxxxxxxxx)

Because a spinlock has other threads spin on the lock. If you do not disable scheduling you can create a situation where most of your systems CPU time is spent spinning on locks, and where a low priority thread has acquired the lock then is starved by spinning to the point that it taks a long time to release it.

Spin locks are supposed to be low overhead locks for short periods of use. Note: on a uniprocessor implementation the lock is never set, the implementation is just raise to dispatch to disable scheduling.

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