
Subject: StaticMutex/ONCELOCK question
Posted by [Novo](#) on Tue, 03 Feb 2009 05:28:01 GMT
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I couldn't understand completely several things with StaticMutex and ONCELOCK.

StaticMutex will never call destructor of a contained Mutex object. Is this meant to be?

```
#define ONCELOCK \
for(static volatile bool o_b_; !ReadWithBarrier(o_b_);) \
for(static StaticMutex o_ss_; !o_b_;) \
for(Mutex::Lock o_ss_lock__(o_ss_); !o_b_; BarrierWrite(o_b_, true))
```

How the above code actually works?

TIA

Subject: Re: StaticMutex/ONCELOCK question
Posted by [mirek](#) on Tue, 03 Feb 2009 06:41:36 GMT
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Novo wrote on Tue, 03 February 2009 00:28I couldn't understand completely several things with StaticMutex and ONCELOCK.

StaticMutex will never call destructor of a contained Mutex object. Is this meant to be?

Yes. OS will clean that up when program exits.

Quote:

```
#define ONCELOCK \
for(static volatile bool o_b_; !ReadWithBarrier(o_b_);) \
for(static StaticMutex o_ss_; !o_b_;) \
for(Mutex::Lock o_ss_lock__(o_ss_); !o_b_; BarrierWrite(o_b_, true))
```

How the above code actually works?

TIA

Do not get fooled by 3 'for' loops - these are just syntactic sugar to make ONCELOCK work on C statements and blocks - they in fact simulate the outer block

```

{
    static volatile bool o_b_;
    if(!ReadWithBarrier(o_b_)) {
        static StaticMutex mutex;
        mutex.Enter();
        {
            do_the_initialization - the statement 'body'
            BarrierWrite(o_b_);
        }
    }
}

```

The purpose is to avoid locking mutex in subsequent passes of ONCELOCK - you need the barrier code to do that.

Note that both compilers we use optimize the for loops away.

Mirek

Subject: Re: StaticMutex/ONCELOCK question
 Posted by [Novo](#) on Tue, 03 Feb 2009 19:28:05 GMT
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luzr wrote on Tue, 03 February 2009 01:41
 Do not get fooled by 3 'for' loops - these are just syntactic sugar to make ONCELOCK work on C statements and blocks - they in fact simulate the outer block

Thanks. I understand the idea with loops. I'm using similar technique to handle transactions myself.

What I do not understand is how uninitialized o_b_ works.

```

{
    static volatile bool o_b_;
    if(!ReadWithBarrier(o_b_)) {
        ...
    }
}

```

Subject: Re: StaticMutex/ONCELOCK question
Posted by [Novo](#) on Sun, 08 Feb 2009 02:09:19 GMT
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Novo wrote on Tue, 03 February 2009 14:28
What I do not understand is how uninitialized o_b_ works.

```
{
    static volatile bool o_b_;
    if(!ReadWithBarrier(o_b_)) {
        ...
    }
}
```

I finally figured out that myself. ANSI-compatible compiler initializes all static POD data with zeroes before a very first function call. So, this static variable is always initialized in a thread-safe way.

There is always something to learn about C.
