

Re: help w/ mutex

Source:

<http://www.tech-archive.net/Archive/Development/microsoft.public.win32.programmer.kernel/2004-05/0148.html>

From: Gary Chanson (*gchanson_at_No.Spam.TheWorld.net*)

Date: 05/05/04

Date: Wed, 5 May 2004 15:08:41 -0400

"andrea catto" <acatto@dataflight.com> wrote in message
news:uGWWVBsMEHA.2976@TK2MSFTNGP10.phx.gbl...

> *Here is what I empirically found,*

>

> *Mutexes vs. Semaphores.*

> *Microsoft claims Mutexes are quicker, who knows how much though.*

> *Mutexes are thread-dependant, as already stated, if you try to 'get the*

> *ownership' of a mutex with in the same thread, even from a different*

> *function.*

> *that same call will return positively as if you indeed just got it when in*

> *reality you already got it at the first call.*

> *Mutexes are 'binary' therefore the idea is, either you get the ownership*

or

> *you dont, and may possibly wait until the current owner will release it to*

> *you.*

>

> *Semaphores are non binary (only), they are based on a count-down, you can*

> *use them in most cases to do the same things you could do with a mutex but*

> *you have to define more parameters so it's easier in most cases to use*

> *Mutexes.*

> *On top of it all the MAJOR difference is semaphores are not*

> *thread-dependant, they are merely count down dependant.*

> *if you create a semaphore with 'count down' 3 until it gets to 0 it won't*

> *trigger, and if you 'accidentally' call the waitforsingleobject twice on*

the

> *same semaphore within the same thread you are screwed.*

Another reason to not use a semaphore in place of a mutex is the priority inversion problem. A semaphore can block a high priority thread while a lower priority thread executes, effectively lowering the priority of the high priority thread to that of the lower priority thread. Mutexes deal with this problem by temporarily raising the priority of the low priority thread to that of the higher priority thread while it is blocked.

--

-GJC [MS Windows SDK MVP]

-Software Consultant (Embedded systems and Real Time Controls)

microsoft.public.win32.programmer.kernel: Re: help w/ mutex

- <http://www.mvps.org/ArcaneIncantations/consulting.htm>
- gchanson@mvps.org