

Re: Win32 and Win64

Source: <http://coding.derkeiler.com/Archive/Delphi/borland.public.delphi.non-technical/2005-03/1632.html>

From: Captain Jake (*jake[nospam]*)

Date: 03/05/05

Date: Fri, 4 Mar 2005 23:09:10 -0600

"Will DeWitt Jr." <edge@NOSPAM.icehouse.net> wrote in message <42293314\$1@newsgroups.borland.com>

>

> > *OK, good. We now have you on record as agreeing with me that*

> > *dual-core and HT offers more gains for the user than 64-bit.*

>

> *At significantly more cost to developers and more complexity in their applications.*

Not necessarily. "Single-threaded" apps actually run several threads that the developer did not design and trigger himself. In addition, dual core allows two single-thread processes to run simultaneously. So even if the developer uses only single-threaded architectures, the end user can benefit from dual-core and hyperthreading.

In addition, most server applications are already multi-threaded, as are many high-end client applications. For these apps there is no cost at all involved in the gains from HT and dual-core.

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> *Recompiling for native 64-bit is far simpler.*

And far less effective. According to the Intel web site, the average speed increase for apps converted to 64-bit applications was 40-50% on average. But there are several types of applications where the speed up from multithreading is FAR greater. A perfect example of this is downloading messages from newsgroups. Most of the time used in downloading messages from an NNTP server is spent waiting for the server to respond with the next block of bytes, and for the TCP/IP stack to retrieve them. A single download uses very little bandwidth, roughly 30% or so of a 56K connection at any one point in time. The CPU usage sits at almost zero the whole time, since downloading uses so little CPU time. This is a perfect candidate for multi-threading. While one thread is waiting for the next block of bytes, another is getting its block of bytes. A multi-threaded downloader can download several times what a single-threaded downloader can get in the same amount of time. For a 56K connection I found the speed increase to be roughly 300% by multi-threading the download process. The increase in speed from multi-threading is even

higher for a broadband connection. Now, are you going to honestly tell me that users of 64-bit single-thread downloaders are going to see that kind of speed up compared to 32-bit single-thread downloaders? I don't think so. When it comes to newsreaders, HT and dual-core are far better news than simply moving to 64-bit would be.

[Note for those of the Dennis Landi School of Thought Regarding Captain Jake: In this discussion with Will, I am using newsreaders as an example because I have some experience in multi-threaded newsreaders, not because I am posting my "resume" or think myself personally important to the functioning of the universe. The fact of the matter is, as shocking as this must be to some, that the universe goes about it's business remarkably unfettered by any reference to my ideas, opinions or statements. I express opinions based on my personal experience and my understanding of logical analyses applied to my perceptions of the world around me, and even on those few occasions where I am correct in the way I apply this process, the universe seems singularly uninterested. I have a theory, that is obviously untestable by myself, that my existence is finite and will end, and on that date, the universe will still remain singularly uninterested in my ideas, opinions, and statements. On the other hand, I have little doubt that the universe does not dare to spin even a single electron without first consulting Mr Landi, so important is he that he holds all of existence together by the sheer force of his mind.]

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