

Re: Problems about MS DV Encoder/Decoder

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<http://www.tech-archive.net/Archive/Development/microsoft.public.win32.programmer.directx.video/2005-12/msg00>

- *From:* "Peter Duniho" <NpOeStPeAdM@xxxxxxxxxxxxxxxxxxxx>
 - *Date:* Thu, 1 Dec 2005 11:02:02 -0800
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"zyy" <yayu_zhang@xxxxxxxxxxxx> wrote in message
<news:1133421790.100428.310370@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>
> [...]
> The CPU of my computer is P4 3.0 HyperThread. When the application is
> running, the usage of CPU is upto 50%, even more decoding thread i
> start. Is there the limitation that the MS DV decoder will use only on
> CPU?

A couple of notes on Hyperthreading:

- 1) A process using 100% of the capacity of a single execution unit will be reported as 50% CPU utilization.
- 2) Using both virtual execution units on a Hyperthreading CPU may or may not improve performance and in fact, if there is significant cache contention, throughput may actually be *lower* when Hyperthreading is enabled (even though utilization may actually be reported as 100% instead of the 50% you'd see on a single execution unit).

The bottom line is that Hyperthreading can be very effective for allowing two different processes to execute simultaneously with improved performance, but for multiple threads within the same process to take advantage of Hyperthreading, they need to be written carefully so as to avoid cache contention, otherwise Hyperthreading will hurt rather than help.

(The main reason separate processes share the cache okay is simply that they are usually different enough that the chance of them interfering with each other's use of the cache is low...there's no guarantee they actually won't).

> There problem of MS DV Encoder is that: If there are two encoding thread
> in one process, the application will crash. The image format and size
> set to the two MS DV Encoder are same.

I have seen messages in this newsgroup in the past saying that there is a bug in DirectShow that can lead to crashes when Hyperthreading is enabled. I would think the bug would be present any time there is more than one CPU, virtual or otherwise, but the issue has only been mentioned in the context of Hyperthreading, as far as I can recall. That may be because

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Hyperthreading CPUs are much more common than actual multiple-CPU computers. I don't know.

Generally speaking, if you do have a crash like that, you can make it go away by disabling the second CPU. This can either be done machine-wide (setting in BIOS), or per-process (set the CPU affinity in the Task Manager). Of course, that means you can't take advantage of the extra CPU, but with Hyperthreading that may be no big loss.

Pete

- **References:**

- ◆ **Problems about MS DV Encoder/Decoder**

- ◇ *From: zyy*

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