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Subject: Re: shade\_volume and quality change causes IDLDE to crash?

Posted by [Karl Schultz](#) on Wed, 10 Dec 2003 20:05:03 GMT

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"Karl Schultz" <[kschultz\\_no\\_spam@rsinc.com](mailto:kschultz_no_spam@rsinc.com)> wrote in message  
news:vtem2mledak48c@corp.supernews.com...

>  
> "David Yip" <[dcw\\_yip@yahoo.com](mailto:dcw_yip@yahoo.com)> wrote in message  
> news:201431cc.0312091537.3fee6cbe@posting.google.com...  
>> It doesn't crash with software rendering or on other machines with  
>> different cards. I've already tried updating both XP and the drivers  
>> to no avail. My graphics card isn't bad per se. It works just fine  
>> with other apps. The driver must have a bad interaction with IDL.  
>  
> It is probable that IDL is just using a feature of OpenGL that is buggy in  
> your driver. Read on.  
>  
>> Strangely this card is a professional level OpenGL card unlike most of  
>> the cards people buy to play games at home. It is one of the  
>> recommended cards for high end professional 3D graphics work.  
>  
> I'm surprised that this card is giving you trouble, as nVidia usually does  
a  
> good job on their drivers.

Another thing to try is to play with your card's configuration settings.  
Many cards, the higher-range ones in particular, offer dozens of OpenGL  
settings that you can tweak via the Display Properties applet. In fact,  
some of the more expensive cards come with "application profiles" that  
adjust the card to work well with certain well-known apps like SoftImage.  
These settings are usually performance-related, but may actually be  
important enough just to make things just work. Some settings might also  
trade off standards compliance for performance. There may be some  
super-duper quick-and-dirty fast rendering feature you can try turning off  
to see if it helps.

>  
>>  
>> David  
>>  
>> David Fanning <[david@dfanning.com](mailto:david@dfanning.com)> wrote in message  
> news:<[MPG.1a3edbe2a2e3224a989775@news.frii.com](mailto:MPG.1a3edbe2a2e3224a989775@news.frii.com)>...  
>>> David Yip writes:  
>>>  
>>>> The code I'm working on uses shade\_volume. Whenever, I switch  
the  
>>>> quality of the window from high to low or medium and back to high  
>>>> IDLDE crashes out.

>  
> The quality change is interesting here. Are you drawing the polygon mesh  
> filled or wireframe? Using hidden lines? If hidden and wireframe, then  
the  
> rendering method, and hence OpenGL calls, used to draw the mesh varies  
quite  
> a bit depending on the quality setting and the version of OpenGL. It is  
> possible that the switching back and forth between rendering methods is  
> exposing a flaw in the driver that is causing the crash.  
>  
> If you can, please try running IDL under a debugger, make it crash, and  
then  
> examine the call stack. If the crash is in an nvidia component (like a  
DLL  
> that starts with nv), then it is likely a driver problem. If it looks  
like  
> it is in IDL, then you'd need to report the problem to RSI tech support.  
> Sometimes a graphics driver can hose itself so badly that there is no  
> recognizable stack trace, in which case, I'd still think of it as a driver  
> problem.  
>  
>>>> It doesn't happen if I sub in isosurface for  
>>>> shade\_volume.  
>  
> This is odd. Shade\_volume generates quad meshes that generally have fewer  
> polygons and vertices than the tri meshes generated by isosurface.  
>  
> One weakness of shade\_volume is that it is susceptible to the famous  
> marching cubes ambiguity problem. This problem can cause the code to  
> generate a self-intersecting "bow-tie" quad in the mesh. A graphics  
driver  
> and/or its hardware can really trip over this geometry when it tries to  
> render it. Sometimes you can spot a bow-tie as a hole in your mesh, if  
you  
> can get it draw on a different card or with the software renderer.  
> Otherwise, they are pretty easy to find analytically. The isosurface  
> function does not suffer from the ambiguity problem because it uses a  
> different algorithm.

And if you do find a bow-tie, you can fix it in your mesh and avoid the  
rendering problem.

>  
> I really can't guess at much more without seeing the data or knowing more  
> about how the mesh is rendered.  
>  
> Karl  
>

>>>> This only happens on one machine but unfortunately it's  
>>>> my development machine. It's an XP Pro machine with a Nvidia Quadro  
>>>> FX 1000 graphics card. Has anyone else experienced this?  
>>>  
>>> Try software rendering. This will rule out the most  
>>> likely candidate: a bad graphics card. :-)  
>>>  
>>> Cheers,  
>>>  
>>> David  
>>>  
>>> P.S. You can try updating your driver if this is the  
>>> case, or--sometimes--software is even faster than  
>>> hardware.  
>  
>

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