
Subject: Re: shade_volume and quality change causes IDLDE to crash?

Posted by [David Fanning](#) on Tue, 09 Dec 2003 02:05:42 GMT

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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. It doesn't happen if I sub in isosurface for
> shade_volume. 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.

--

David W. Fanning, Ph.D.

Fanning Software Consulting, Inc.

Phone: 970-221-0438, E-mail: david@dfanning.com

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: shade_volume and quality change causes IDLDE to crash?

Posted by [Rick Towler](#) on Tue, 09 Dec 2003 20:28:40 GMT

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I agree with David. If you can live with software rendering than that is that, but since you have a Quadro under the hood I doubt that you will. Pick up the latest driver for your graphics adapter from nVidia. If you

already have the latest, then try a newer beta driver (hard to find for the Quadros) or an older driver.

You *might* be able to use the... what are they calling them this week... "forceware" drivers with your quadro (53.03 is out today). You lose the benefits of the special OpenGL drivers that ship with the Quadro but to be honest, I don't think that IDL gains much from these anyway. RSI doesn't optimize their renderer for specific GPU's and nVidia doesn't optimize their drivers for IDL.

-Rick

Subject: Re: shade_volume and quality change causes IDLDE to crash?
Posted by [dcw_yip](#) on Tue, 09 Dec 2003 23:37:56 GMT
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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. 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.

David

David Fanning <david@dfanning.com> wrote in message
news:<MPG.1a3edbe2a2e3224a989775@news.frii.com>...

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Subject: Re: shade_volume and quality change causes IDLDE to crash?

Posted by [Karl Schultz](#) on Wed, 10 Dec 2003 17:32:57 GMT

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"David Yip" <dcw_yip@yahoo.com> wrote in message
news:201431cc.0312091537.3fee6cbe@posting.google.com...

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It is probable that IDL is just using a feature of OpenGL that is buggy in
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I'm surprised that this card is giving you trouble, as nVidia usually does a
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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.

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

Karl

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Subject: Re: shade_volume and quality change causes IDLDE to crash?

Posted by [dcw_yip](#) on Wed, 10 Dec 2003 19:41:16 GMT

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Thanks for the tip about the forceware drives. I'll give them a shot. Using the software renderer really isn't an option. It runs so slowly as to make the program unusable.

David

"Rick Towler" <rtowler@u.washington.edu> wrote in message news:<[br5beb\\$19m\\$1@nntp6.u.washington.edu](mailto:br5beb$19m$1@nntp6.u.washington.edu)>...

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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> wrote in message
news:vtem2mledak48c@corp.supernews.com...
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> 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.

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And if you do find a bow-tie, you can fix it in your mesh and avoid the
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Subject: Re: shade_volume and quality change causes IDLDE to crash?
Posted by [dcw_yip](#) on Thu, 11 Dec 2003 17:16:14 GMT
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Thanks Karl! As usual, you are treasure trove of useful information.
I appreciate it. I'll run IDL under Visual Studio and see where the

actual crash is.

David

dcw_yip@yahoo.com (David Yip) wrote in message
news:<201431cc.0312101141.38e43641@posting.google.com>...
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