

Hello,

On 05/01/13 17:58, Chris Torrence wrote:

- > Hi all,
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- > Well, there is both good news and bad news. The new graphics are
- > indeed faster in IDL 8.2.x, but for your particular problem, it
- > doesn't make much difference. The real bottleneck is just object
- > graphics and OpenGL. Here is a reproduce case which compares both
- > pure object graphics and new graphics:

[example snipped]

- > On my Win7 laptop, running 64-bit IDL, with hardware rendering, this
- > takes 10.5 seconds for object graphics, and 24.0 seconds for new
- > graphics.
- >
- > So the new graphics is only off by a factor of 2 from pure object
- > graphics. Now we can certainly try to chip away at that difference in
- > future releases, but we're only going to be able to get it down to 10
- > seconds without lifting the hood on object graphics.
- >
- > I think the main problem is that there are 790,000 points, each of
- > which is a filled circle which has 25 vertices.
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- > Fundamentally, it comes down to the difference between direct
- > graphics, where you are just "burning" pixels into the screen, versus
- > object graphics, where you are maintaining an object model in both
- > memory and in the graphics card. One is fast, the other can be
- > modified later.
- >
- > Thoughts?

Well, my initial thought is that, by definition I guess, New Graphics cannot be used for on-the-fly investigations into largish datasets.

I mean... that's really the point here, right?

I just spent about 30minutes in a colleague's cubicle while he plotted and mapped -- using direct graphics routines -- said 750K-1M points of satellite data (two sets - one for the operational result, another for experimental results) in several different ways, many times, changing ranges, data quantities, etc. We learned a lot about the data in that 30minutes. The guy couldn't type fast enough to keep up with the

requests to plot the data versus wind speed, or water temperature, or land coverage fraction, or <insert quantity of choice>.

That is an impossible task for New (or Object) graphics. Last night I and another colleague did something similar and producing several maps of data took minutes (and I was doing it locally. My DG colleague was using IDL on a computer several hundred miles away!) That 10seconds seems like an eternity when you do it again and again and again...

For the data we were looking at, we could plot/map different stuff in DG several times over (limited more by person typing speed) in the time it took to create one NG plot/map.

So, basically, for largish datasets, the interesting task of actually studying the data (the main objective, no?) MUST be done using direct graphics. The decidedly uninteresting task of creating a plot suitable for publication can be done with New graphics (but doesn't have to be).

The fact that I have 1M points plotted with circles that have 25 vertices within an object model are implementation details I am not really interested in (that's why we pay \$\$\$\$ for IDL). Besides, the resulting "object model" is useless for actually manipulating the contained objects in real time due to the slow refresh/rendering when changes are made.

Nowadays satellite/weather/climate datasets are measured in terabytes. If IDL NG chokes on 1M points (which I do not consider a large number) then I would definitely suggest "lifting the hood" on object/New graphics.

cheers,

paulv
