Subject: Re: the sky is falling down again
Posted by R.Bauer on Wed, 31 Jan 2007 13:35:46 GMT
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JD Smith wrote:
> On Tue, 30 Jan 2007 16:01:31 +0100, Paolo Grigis wrote:
>
>
>>
>> Reimar Bauer wrote:
>>
>>> Hi all
>>>
>>> here is another example which is very funny if you see it the first time
>>>
>>> a=indgen(10)*1D-7
>>> b=a
>>> plot,a,b,psym=1
>>> oplot,[0,10],[0,10]
>>>
>>> because the coordination system is defined by plot it could be a bug too
>>> and not only a question about precisions
>>>
>>>
>>> Any idea what is happen here?
>>
>> I think that maybe plot tries to find out the pixel coordinates
>> corresponding to the far end of the line. If it uses long, signed
>> integers for that, then it will overflow around pixel 2^31, which
>> seems roughly where the line is supposed to be with your settings
>> (which should be something like 500 pixel times 10 divided by 1d-6).
>
>
> In fact this has to be the right explanation. If instead of a wide
> window, you create a tall one:
>
> window,xsize=600,YSIZE=800
>
> Then the line falls below the points. And if you make an exactly square
> plotting window:
>
> window,xsize=800,ysize=800
> a=indgen(10)*1D-7
> b=a
> plot,a,b, psym=1,xstyle=3,ystyle=3,POSITION=[.1,.1,.9,.9],/NORMAL
> oplot,[0,10],[0,10]
>
> Then it all lines up well. The direction with the largest pixel count per

> unit data value ends up "truncating" first: i.e. the longer dimension of
> the plotting window. You can see where it truncates by gradually altering
> the values until the line just starts deviating:
>
> for k=2.,5.,.1 do begin & print,k & oplot,[0,k],[0,k] & wait,1 & endfor
>
> At some point, both clip, and you get a min and max angle (the size of
> which is related to the aspect angle of your plotting window). The first
> deviation for me was near k=2.3. What's close to that number?
>
> IDL> print,!X.CRANGE[0]+((!X.CRANGE[1]-!X.CRANGE[0])/ $
> ((!X.WINDOW[1]-!X.WINDOW[0])*!D.X_SIZE)) * 2.^31
> 2.2700673
>
> Aha. This is precisely the data coordinate where the implied device
> pixel coordinate with this plotting range hits 2.^31, the limit for a
> signed long integer. At that point, it clips to this value, while the
> Y-axis, not having clipped yet, continues to move up, until it too
> clips. Your number may differ depending on your window size.
>
> JD
>

Thanks

So may be there should be L64 used instead.

cheers
Reimar

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Reimar Bauer

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a IDL library at ForschungsZentrum Juelich
http://www.fz-juelich.de/icg/icg-i/idl_icglib/idl_lib_intro. html
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