Subject: Re: Coyote Graphics PS/PDF output size/orientation
Posted by Paul Levine on Wed, 14 Aug 2013 04:47:41 GMT
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On 2013-08-14 03:51:04 +0000, David Fanning said:

> Paul Levine writes:
>
>> Also, I am quite interested in your take on the PNG files I wound up
>> with, where the pixel size of the files was quite different from the
>> xwsize and ywsize specified, and some axis titles and labels were cut
>> off. I don't how related this is to the PDF issue, so if you can only
>> deal with one of these issues at a time, then perhaps you need to pass
>> the other one off to Coyote and see where he gets with it ;-)
>
> Yeah, I'll talk to Coyote about this, but he has me drinking gin and
> tonics tonight to celebrate something or other. It will have to be in
> the morning. Oh, I remember, birthdays! We'll sort it out in the
> morning. :-)
>
> Cheers,
>
> David

Ah, well, in that case, happy birthday! I hope for your sake that you don't see this message until tomorrow morning, but once you do, I have something interesting to report on PNG conversion. It seems that to a certain extent, cgps2raster creates PNG files of a certain size that is determined by the aspect ratio rather than the wxsize/wysize or the cgControl resize keyword. So, for example, any aspect ratio of 4:3 will produce a PNG of 742 x 556 pixels, and any aspect ratio of 1:1 will prodice a PNG of 573 x 573 pixels.

So when I appended my code with the following lines:

```
cgControl, Resize=1, Output='Resize_1x1.png'
cgControl, Resize=50, Output='Resize_50x50.png'
cgControl, Resize=800, Output='Resize_800x800.png'
cgControl, Resize=8000, Output='Resize_8000x8000.png'
cgControl, Resize=25000, Output='Resize_25000x25000.png'
```

each of the resulting PNG files was 573 x 573 pixels.

Now, here's where it gets really interesting. I said "to a certain extent" before because once the size is above a certain threshold, then a different sized file is produced. Resize=32767 and any number below gives me the 573 x 573, but Resize=32768 and any number above that produces a PNG file that is 742 x 390 pixels . Of course, it can't be

a coincidence that the threshold I did pinpoint is the 15th power of 2.
Just for laughs, I decided to try finding out whether there was an even higher threshold. So I tried Resize=2.14748e+09 (2^31), which was still 742 x 390, then I tried to go even higher than that and ended up getting a "Floating illegal operand" error from cgPlot. So I guess cgPlot is not able to handle more than about 2.14748 x 2.14748 billion pixels ;-P

Tomorrow, I will hopefully have access to a windows machine, which I can use for testing

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