Subject: Device's bits_per_pixel keyword
Posted by Charles Cavanaugh on Wed, 11 Nov 1998 08:00:00 GMT
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<HTML>
I have a program that generates color postscript plots, and I want to make
the files
<BR>smaller.  I have tried :

<P>set_plot, 'PS'
<BR>device, bits_per_pixel = 2
<BR>.
<BR>.
<BR>.
<BR>device, /close

<P>but the file generated is only very slightly smaller than when I do
not use the
<BR>bits_per_pixel keyword.  I've also tried bits_per_pixel = 1, 4
and 8, but the file
<BR>size change is so very slight (and in some cases larger then when the
keyword
<BR>is not used).

<P>If anyone has been able to generate considerably smaller postscript
files by using
<BR>the bits_per_pixel keyword, please let me know how to do that. 
Thank you.

<P>I'm using IDL 5.1 on an SGI workstation running IRIX 6.5.1.
<BR> 

<P>Charles
<PRE>-- 
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 </HTML>

Subject: Re: Device's bits_per_pixel keyword
Posted by thompson on Fri, 13 Nov 1998 08:00:00 GMT
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Harald Frey <hfrey@ssl.berkeley.edu> writes:

> bits_per_pixel  has nothing to do with the size of the PS output, it is
> just the number of bits that is adjusted to each pixel and allows
> display in black/white or in any of 255 grey-levels. You have to use the
> xsize and ysize keywords.

> set_plot,'ps'
>  device,xsize=15.,ysize=15.,xoffset=3.,yoffset=5.,scale_facto r=1.,bits=8,/color

> .
> .
> device,/close

I think there's some confusion over the word "size" here.  The above commands will affect the size of the plot on the page, but will have no effect on how much disk space the file takes up.  BITS_PER_PIXEL does have an effect on the file size, but only for greyscale rendering, as discussed in my previous posting.

William Thompson

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Subject: Re: Device's bits_per_pixel keyword
Posted by thompson on Fri, 13 Nov 1998 08:00:00 GMT
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Charles Cavanaugh <cavanaug@nicole.eos.ucar.edu> writes:

> ----------9F3C599E53254C11EEDF762F
> Content-Type: text/plain; charset=us-ascii
> Content-Transfer-Encoding: 7bit

> I have a program that generates color postscript plots, and I want to make the files
> smaller.  I have tried :

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> .
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> bits_per_pixel keyword.  I've also tried bits_per_pixel = 1, 4 and 8, but the file
> size change is so very slight (and in some cases larger then when the keyword

> is not used).

> If anyone has been able to generate considerably smaller postscript files by using
> the bits_per_pixel keyword, please let me know how to do that. Thank you.

> I'm using IDL 5.1 on an SGI workstation running IRIX 6.5.1.

The BITS_PER_PIXEL keyword can be used to generate smaller PostScript files, in the sense of how much disk space the file takes up. For example, here are the file sizes of two otherwise identical PostScript files, where bit_per_pixel=8 for the first one and bits_per_pixel=2 for the second one:

```
-rw-rw-r--   1 thompson users    2020755 Nov 13 17:27 idl.ps
-rw-rw-r--   1 thompson users     508255 Nov 13 17:28 idl2.ps
```

The second file is almost four times smaller, as one would expect. However, this saving is only realizable for images displayed through TV or TVSCL, or any other routine which works through shade-rendering. There are no savings to be made for line-drawn graphics. Also, this savings in disk space comes at a price. With only 2 bits/pixel, it's only possible to show 4 colors at a time. (Or 4 shades in each of red, green, and blue for true-color images.) That's a pretty drastic reduction in image quality.

(This is the case for direct graphics--I'm not sure what the effect would be for object graphics, but expect the same principles would apply.)

William Thompson

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