Subject: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by wlandsman on Thu, 11 Jun 2015 18:19:35 GMT

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I am having problems writing a SCATTERPLOT() to a PDF file.

The following plot displays correctly in a window.

x = randomn(seed,4096)
y = randomn(seed,4096)
p = scatterplot(x,y,/sym_filled,sym_color='blue',symbol='circle')

But when I then try to save to a PDF file, I get the error message:

% SAVE: Error in PDF creation: INVALID_SHADING

I have no problems when saving the plot in other data formats.

There also is no problem if I plot less than 4096 points.

Finally, the problem still exists if I first open a window with /BUFFER and write directly to a PDF file.

Thanks, --Wayne

w = window(dimen=[800,1100],/buffer)
x = randomn(seed,4096)
y = randomn(seed,4096)

p = scatterplot(x,y,/current,/sym_filled,sym_color='blue',symbol ='circle')
w.save,'test.pdf'

IDL> print,!version
{ x86_64 darwin unix Mac OS X 8.4 Sep 27 2014   64   64}

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by Helder Marchetto on Thu, 11 Jun 2015 19:00:49 GMT

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On Thursday, June 11, 2015 at 8:19:37 PM UTC+2, wlandsman wrote:
> I am having problems writing a SCATTERPLOT() to a PDF file.
>
> The following plot displays correctly in a window.
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> { x86_64 darwin unix Mac OS X 8.4 Sep 27 2014   64   64}

Just to add some statistics: I get the same results.
IDL> !version
{
    "ARCH": "x86_64",
    "OS": "Win32",
    "OS_FAMILY": "Windows",
    "OS_NAME": "Microsoft Windows",
    "RELEASE": "8.4.1",
    "BUILD_DATE": "Feb 17 2015",
    "MEMORY_BITS": 64,
    "FILE_OFFSET_BITS": 64
}

Cheers,
Helder

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF
file
Posted by chris_torrence@NOSPAM on Thu, 11 Jun 2015 23:26:19 GMT

On Thursday, June 11, 2015 at 1:00:50 PM UTC-6, Helder wrote:
> On Thursday, June 11, 2015 at 8:19:37 PM UTC+2, wlandsman wrote:
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>   "FILE_OFFSET_BITS": 64
> }
>

> Cheers,
> Helder

I can confirm that this is indeed a bug. I doubt it will get fixed for IDL 8.5. As a workaround, you can use the /BITMAP keyword when saving to the PDF.

Cheers,
Chris

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by chris_torrence@NOSPAM on Mon, 10 Apr 2017 18:18:38 GMT
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On Thursday, June 11, 2015 at 5:26:22 PM UTC-6, Chris Torrence wrote:
> On Thursday, June 11, 2015 at 1:00:50 PM UTC-6, Helder wrote:
>> On Thursday, June 11, 2015 at 8:19:37 PM UTC+2, wlandsman wrote:
>>> I am having problems writing a SCATTERPLOT() to a PDF file.
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>> }
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>> Cheers,
>> Helder
>
> I can confirm that this is indeed a bug. I doubt it will get fixed for IDL 8.5. As a workaround, you can use the /BITMAP keyword when saving to the PDF.
>
> Cheers,
> Chris

It's been a while, but I did some more digging. This is actually a limitation of the PDF 1.4 specification. You can only have up to 4095 shading elements. See the spec here:
 http://www.adobe.com/content/dam/Adobe/en/devnet/pdf/pdfs/pd
f_reference_archives/PDFReference.pdf

So unfortunately there's no way for us to fix this. The best workaround is to use /BITMAP.

Cheers,
Chris

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by Heinz Stege on Fri, 14 Apr 2017 17:21:58 GMT
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On Mon, 10 Apr 2017 11:18:38 -0700 (PDT), Chris Torrence wrote:

If shading is not important for you and you have installed ghostscript
on your system, you can try "good old direct graphics". Here is a demo
for Windows. It should need only small changes for Linux and Mac.

psfile='scatterplot_demo.ps'
pdffile='scatterplot_demo.pdf'

```
page_width=29.7
page_height=21.

set_plot,'ps'
device,/color,/isolatin1
 device,xsize=page_width-3.,ysize=page_height-2.5,xoff=1.5,yo ff=1.
device,file=psfile

temp=findgen(17)*!pi/8.
usersym,cos(temp),sin(temp),/fill
blue='ff5000'x
tvlct,byte(blue,0,1,3),10

x=randomn(seed,4096)
y=randomn(seed,4096)
plot,x,y,/nodata
oplot,x,y,psym=8,syms=.5,color=10

device,/close

factor=720./2.54
command='"'+getenv('ProgramFiles')+'\gs\gs8.61\bin\gswin32c.exe "'+$
    ' -q -dNOPAUSE -dBATCH -sDEVICE=pdfwrite'+$
    ' -dPDFSETTINGS=/prepress'+$
    ' -dDEVICEWIDTH='+strtrim(round(page_width*factor),2)+$
    ' -dDEVICEHEIGHT='+strtrim(round(page_height*factor),2)+$
    ' -sOutputFile="'+pdffile+'" "'+psfile+'"'
spawn,command,stdout,stderr,/noshell
if stdout ne '' then print,stdout
if stderr ne '' then print,stderr
```

Cheers, Heinz

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by lecacheux.alain on Fri, 14 Apr 2017 19:26:01 GMT
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Le lundi 10 avril 2017 20:18:40 UTC+2, Chris Torrence a écrit :
> On Thursday, June 11, 2015 at 5:26:22 PM UTC-6, Chris Torrence wrote:
>> On Thursday, June 11, 2015 at 1:00:50 PM UTC-6, Helder wrote:
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f_reference_archives/PDFReference.pdf
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>
> Cheers,
> Chris

In the meantime (IDL 8.7 ?), a simple solution would be to insert your plot, first saved in PNG format for instance, into some program like WORD or POWERPOINT, and then save it to a PDF file. Not a big task.
alx.

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by chris_torrence@NOSPAM on Mon, 17 Apr 2017 18:26:39 GMT
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On Friday, April 14, 2017 at 1:26:04 PM UTC-6, alx wrote:
> Le lundi 10 avril 2017 20:18:40 UTC+2, Chris Torrence a écrit :
>
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Or, you can still save it to a PDF, just use the /BUFFER keyword. It will produce the same end result, without having to go thru a PNG.

```
x = randomn(seed,4096)
y = randomn(seed,4096)
p =  scatterplot(x,y,/sym_filled,sym_color='blue',symbol='circle' )
p.save, 'out.pdf', /BITMAP
```

Cheers,
Chris

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by lecacheux.alain on Tue, 18 Apr 2017 09:13:26 GMT
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Le lundi 17 avril 2017 20:26:40 UTC+2, Chris Torrence a écrit :
> On Friday, April 14, 2017 at 1:26:04 PM UTC-6, alx wrote:
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> p.save, 'out.pdf', /BITMAP
>
> Cheers,
> Chris

Is the resolution actually preserved in using /BITMAP ?
Cheers,
alx.

Subject: Re: Problem writing SCATTERPLOT() with more than 4096 points to PDF file
Posted by chris_torrence@NOSPAM on Thu, 18 May 2017 16:54:34 GMT
View Forum Message <> Reply to Message

On Tuesday, April 18, 2017 at 3:13:27 AM UTC-6, alx wrote:
> Le lundi 17 avril 2017 20:26:40 UTC+2, Chris Torrence a écrit :
>> On Friday, April 14, 2017 at 1:26:04 PM UTC-6, alx wrote:
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>>

>> Cheers,
>> Chris
>
> Is the resolution actually preserved in using /BITMAP ?
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> alx.

The default resolution is 300 dots-per-inch. You can change that with the RESOLUTION keyword
if you need higher or lower.

-Chris