Subject: Font size appearance in function graphics PNG and EPS output
Posted by Paul Van Delst[1] on Thu, 05 Dec 2013 19:49:24 GMT
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Hello,

I use function graphics to generate both PNG and EPS output of various plots. When I create a PNG output like so:

IDL> p.Save, 'myplot.png', HEIGHT=500

the resulting image looks just like the onscreen plot. However, when I create an EPS file, if I simply do something like

IDL> p.Save, 'myplot.eps'

the size of the fonts (in relation to the rest of the plot) appears to decrease. As such, to make the text readable in EPS form I find myself doing silly things like the following:

```
IDL> font_size = p.font_size
IDL> p.font_size = p.font_size * 2.0
IDL> p.Save, 'myplot.eps'
IDL> p.font_size = font_size
```

That is, I temporarily increase the size of the font so that they are a useful size in the final EPS file.

The above example is an annoyance, but in some more complicated plots I have code like the following:

```
  ; ...Output an EPS file
  ; ......Increase the font size for EPS files
  font_size = HASH()
  FOR band = 1, n_bands DO BEGIN
    osrf[0].Get_Property, band, pRef=p, Debug=debug
    font_size[band] = p.font_size
    p.font_size = p.font_size * 2.0
  ENDFOR
  ; ......Create the EPS file
  w.Save, fileroot+'.eps'
  ; ......Restore the onscreen font sizes
  FOR band = 1, n_bands DO BEGIN
    osrf[0].Get_Property, band, pRef=p, Debug=debug
    p.font_size = font_size[band]
  ENDFOR
```

I've reached the straw/camel point and am asking this newsgroup if they

know what I'm doing wrong to get this weird font-sizing action in the first place? Or is the IDL Postscript output just plain busted?

I created two files like so:

IDL> p.save,'test.png',height=500
IDL> p.save,'test.eps'

and have placed them here:
http://ftp.emc.ncep.noaa.gov/jcsda/CRTM/.plots

If you size the EPS file the same as the PNG image you will see the fonts are proportionally much smaller.

Thanks for any insights.

cheers,

paulv

p.s. In case you were wondering, the EPS files are for documents to allow people to view the plots in an e-document and retain the ability to zoom in and view detail (which you don't get with images like PNG).

---

Subject: Font size appearance in function graphics PNG and EPS output
Posted by Gordon Farquharson on Fri, 06 Dec 2013 20:54:26 GMT
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Hi Paul

I'm surprised nobody has replied to your message yet. I have the same problem, and I'd really like to know why as well.

Chris, can you comment on this?

Gordon

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by chris_torrence@NOSPAM on Fri, 06 Dec 2013 23:27:01 GMT
View Forum Message <> Reply to Message

On Friday, December 6, 2013 1:54:26 PM UTC-7, Gordon Farquharson wrote:
> Hi Paul
>

>
>
> I'm surprised nobody has replied to your message yet. I have the same problem, and I'd really like to know why as well.
>
>
>
> Chris, can you comment on this?
>
>
>
> Gordon

Hi Paul & Gordon,

I do know that there were some problems with font sizes in IDL 8.2 and earlier. We fixed several issues for IDL 8.3.

Do either of you have a simple reproduce case that shows the problem? That way I can try it out and let you know...

Thanks!

-Chris
ExelisVIS

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by Paul Van Delst[1] on Mon, 09 Dec 2013 14:16:29 GMT
View Forum Message <> Reply to Message

I ran this:

```
PRO test_plot
  x = DINDGEN(100)
  y = (x/10.0d0)^2
  p = PLOT(x,y, $
        XTITLE='X axis title', $
        YTITLE='Y axis title', $
        TITLE ='Test plot title', $
        FONT_SIZE=10)
  p.save, 'test.png', HEIGHT=500
  p.save, 'test.eps'
END
```

to generate the two files available at:
http://ftp.emc.ncep.noaa.gov/jcsda/CRTM/.plots

If this is fixed in v8.3, that would be good to know. Upgrading software involves some signage away of offspring, so any supporting info helps. :o) (just kidding...mostly)

cheers,

paulv

On 12/06/13 18:27, Chris Torrence wrote:
> On Friday, December 6, 2013 1:54:26 PM UTC-7, Gordon Farquharson
> wrote:
>> Hi Paul
>>
>>
>>
>> I'm surprised nobody has replied to your message yet. I have the
>> same problem, and I'd really like to know why as well.
>>
>>
>>
>> Chris, can you comment on this?
>>
>>
>>
>> Gordon
>
> Hi Paul & Gordon,
>
> I do know that there were some problems with font sizes in IDL 8.2
> and earlier. We fixed several issues for IDL 8.3.
>
> Do either of you have a simple reproduce case that shows the problem?
> That way I can try it out and let you know...
>
> Thanks!
>
> -Chris ExelisVIS
>

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by David Fanning on Mon, 09 Dec 2013 14:24:27 GMT
View Forum Message <> Reply to Message

Paul van Delst writes:

>
> I ran this:

>
> PRO test_plot
>  x = DINDGEN(100)
>  y = (x/10.0d0)^2
>  p = PLOT(x,y, $
>  XTITLE='X axis title', $
>  YTITLE='Y axis title', $
>  TITLE ='Test plot title', $
>  FONT_SIZE=10)
>  p.save, 'test.png', HEIGHT=500
>  p.save, 'test.eps'
> END
>
> to generate the two files available at:
>  http://ftp.emc.ncep.noaa.gov/jcsda/CRTM/.plots
>
> If this is fixed in v8.3, that would be good to know. Upgrading software
> involves some signage away of offspring, so any supporting info helps.
> :o) (just kidding...mostly)

I converted the EPS file to a raster like this:

cgps2raster, 'test.eps', 'test_eps_to_png.png', width=500

Then, rotated it 90 degrees to compare it to the other PNG file. The
difference is obvious.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by Paul Van Delst[1] on Mon, 09 Dec 2013 14:29:46 GMT
View Forum Message <> Reply to Message

Oh yeah! Didn't think to try that. I just did the same using
ImageMagick's convert. Very clear difference in font size.

cheers,

paulv

On 12/09/13 09:24, David Fanning wrote:
> Paul van Delst writes:
>
>>
>> I ran this:
>>
>> PRO test_plot
>>  x = DINDGEN(100)
>>  y = (x/10.0d0)^2
>>  p = PLOT(x,y, $
>>  XTITLE='X axis title', $
>>  YTITLE='Y axis title', $
>>  TITLE ='Test plot title', $
>>  FONT_SIZE=10)
>>  p.save, 'test.png', HEIGHT=500
>>  p.save, 'test.eps'
>> END
>>
>> to generate the two files available at:
>>  http://ftp.emc.ncep.noaa.gov/jcsda/CRTM/.plots
>>
>> If this is fixed in v8.3, that would be good to know. Upgrading software
>> involves some signage away of offspring, so any supporting info helps.
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> I converted the EPS file to a raster like this:
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>
> Then, rotated it 90 degrees to compare it to the other PNG file. The
> difference is obvious.
>
> Cheers,
>
> David
>

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by Paul Van Delst[1] on Mon, 09 Dec 2013 17:40:39 GMT
View Forum Message <> Reply to Message

I forgot to mention:

IDL> print, !version
{ x86_64 linux unix linux 8.2.2 Jan 23 2013  64  64}

On 12/09/13 09:16, Paul van Delst wrote:
> I ran this:
>
> PRO test_plot
>  x = DINDGEN(100)
>  y = (x/10.0d0)^2
>  p = PLOT(x,y, $
>  XTITLE='X axis title', $
>  YTITLE='Y axis title', $
>  TITLE ='Test plot title', $
>  FONT_SIZE=10)
>  p.save, 'test.png', HEIGHT=500
>  p.save, 'test.eps'
> END
>
> to generate the two files available at:
>  http://ftp.emc.ncep.noaa.gov/jcsda/CRTM/.plots
>
> If this is fixed in v8.3, that would be good to know. Upgrading software
> involves some signage away of offspring, so any supporting info helps.
> :o) (just kidding...mostly)
>
> cheers,
>
> paulv
>
> On 12/06/13 18:27, Chris Torrence wrote:
>> On Friday, December 6, 2013 1:54:26 PM UTC-7, Gordon Farquharson
>> wrote:
>>> Hi Paul
>>>
>>>
>>>
>>> I'm surprised nobody has replied to your message yet. I have the
>>> same problem, and I'd really like to know why as well.
>>>
>>>
>>>
>>> Chris, can you comment on this?
>>>
>>>
>>>
>>> Gordon
>>
>> Hi Paul & Gordon,
>>
>> I do know that there were some problems with font sizes in IDL 8.2

>> and earlier. We fixed several issues for IDL 8.3.
>>
>> Do either of you have a simple reproduce case that shows the problem?
>> That way I can try it out and let you know...
>>
>> Thanks!
>>
>> -Chris ExelisVIS
>>

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by chris_torrence@NOSPAM on Mon, 09 Dec 2013 17:50:19 GMT
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Hi Paul,

Well, there are a couple of things going on. The PNG assumes that your screen is 96 dots-per-inch, and scales the fonts accordingly. Since EPS is a vector format on a "piece of paper", you need to set your EPS width to match the PNG image width. Something like this:

```
p.save, 'test.eps', HEIGHT=500.0/96  ; height in inches
```

However, there is something wrong with our postscript code where it doesn't draw the plot lines correctly, so this isn't going to work, even in IDL 8.3.

I'm not sure if you have to use EPS, but as a possible workaround, you could use PDF output instead. If you do try PDF, you just need to make sure that you set the "paper" width to be the same as the png image. Something like this:

```
x = DINDGEN(100)
y = (x/10.0d0)^2
p = PLOT(x,y, $
  XTITLE='X axis title', $
  YTITLE='Y axis title', $
  TITLE ='Test plot title', $
  FONT_SIZE=10)
p.save, 'test.png', HEIGHT=500
p.save, 'test.pdf', HEIGHT=500.0/96  ; height in inches
```

I have logged the EPS issues as bug IDL-68997, and marked it for IDL 8.3.1. Sorry about the bug...

-Chris
ExelisVIS

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by Paul Van Delst[1] on Mon, 09 Dec 2013 18:32:49 GMT

Hi Chris,

Excellent, thanks. The "HEIGHT=500.0/96" tip is also useful - despite the strange line plotting.

The EPS files are included inside LaTeX (and, in some cases, Word) documents. I've never tried embedding PDFs inside those (since the final result is to create a PDF for distro) but I'll give it a shot.

cheers,

paulv

p.s. Schedule for 8.3.1 release?

On 12/09/13 12:50, Chris Torrence wrote:
> Hi Paul,
>
> Well, there are a couple of things going on. The PNG assumes that
> your
screen is 96 dots-per-inch, and scales the fonts accordingly. Since EPS is a vector format on a "piece of paper", you need to set your EPS width to match the PNG image width. Something like this:
> p.save, 'test.eps', HEIGHT=500.0/96 ; height in inches However, there
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>
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> y = (x/10.0d0)^2
> p = PLOT(x,y, $
> XTITLE='X axis title', $
> YTITLE='Y axis title', $
> TITLE ='Test plot title', $
> FONT_SIZE=10)
> p.save, 'test.png', HEIGHT=500
> p.save, 'test.pdf', HEIGHT=500.0/96 ; height in inches
>
> I have logged the EPS issues as bug IDL-68997, and marked it for IDL 8.3.1. Sorry about the bug...
>

> -Chris
> ExelisVIS
>

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by chris_torrence@NOSPAM on Mon, 09 Dec 2013 19:20:42 GMT
View Forum Message <> Reply to Message

On Monday, December 9, 2013 11:32:49 AM UTC-7, Paul van Delst wrote:
> Hi Chris,
>
>
>
> Excellent, thanks. The "HEIGHT=500.0/96" tip is also useful - despite
>
> the strange line plotting.
>
>
>
> The EPS files are included inside LaTeX (and, in some cases, Word)
>
> documents. I've never tried embedding PDFs inside those (since the final
>
> result is to create a PDF for distro) but I'll give it a shot.
>
>
>
> cheers,
>
>
>
> paulv
>
>
>
> p.s. Schedule for 8.3.1 release?
>
>
>
> On 12/09/13 12:50, Chris Torrence wrote:
>
>> Hi Paul,
>
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>
>> Well, there are a couple of things going on. The PNG assumes that
>

>> your
>
> screen is 96 dots-per-inch, and scales the fonts accordingly. Since EPS
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> is a vector format on a "piece of paper", you need to set your EPS width
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> to match the PNG image width. Something like this:
>
>> p.save, 'test.eps', HEIGHT=500.0/96 ; height in inches However, there
>
>> is something wrong with our postscript code where it
>
> doesn't draw the plot lines correctly, so this isn't going to work, even
>
> in IDL 8.3.
>
>>
>
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>
>> you
>
> could use PDF output instead. If you do try PDF, you just need to make
>
> sure that you set the "paper" width to be the same as the png image.
>
> Something like this:
>
>>
>
>> x = DINDGEN(100)
>
>> y = (x/10.0d0)^2
>
>> p = PLOT(x,y, $
>
>> XTITLE='X axis title', $
>
>> YTITLE='Y axis title', $
>
>> TITLE ='Test plot title', $
>
>> FONT_SIZE=10)
>
>> p.save, 'test.png', HEIGHT=500
>
>> p.save, 'test.pdf', HEIGHT=500.0/96 ; height in inches
>

>>
>
>> I have logged the EPS issues as bug IDL-68997, and marked it for IDL
>
> 8.3.1. Sorry about the bug...
>
>>
>
>> -Chris
>
>> ExelisVIS
>
>>

Hi Paul,
One other tip - if you aren't trying to edit the EPS files, but you are just embedding them, then you might be better off just going straight to a bitmap file:
  p.save, 'test.png', BORDER=10, RESOLUTION=600 ; dots-per-inch
PNG is a pretty efficient file format, so your files won't be too large. You could even cut the resolution down to 300 depending upon the journal requirements.
I also tend to use the BORDER keyword when creating bitmap output. That way I don't have to worry about too much whitespace around the outside of my plots. But that is optional.

Cheers,
Chris

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by David Fanning on Mon, 09 Dec 2013 19:32:41 GMT
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Chris Torrence writes:

> One other tip - if you aren't trying to edit the EPS files, but you are just embedding them, then you might be better off just going straight to a bitmap file:
>  p.save, 'test.png', BORDER=10, RESOLUTION=600 ; dots-per-inch
> PNG is a pretty efficient file format, so your files won't be too large. You could even cut the resolution down to 300 depending upon the journal requirements.
> I also tend to use the BORDER keyword when creating bitmap output. That way I don't have to worry about too much whitespace around the outside of my plots. But that is optional.

My book printer requires figures that can be printed at 300 dpi. I
supply them as PNG files embedded into my Framemaker documents. To
create the figures, I simply create PostScript output and then convert
it to PNG with this command:

  cgPS2Raster, 'figure.ps', DENSITY=300, RESIZE=100

This gives me an image with enough pixels that it looks great when printed at 300 dpi. When I import the image into Framemaker, I have to indicate that it will be printed at 300 dpi. Framemaker then scales it appropriately for the document on the screen and I see it taking up the same relative amount of space on my display as it will in the printed output.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by Phillip Bitzer on Mon, 09 Dec 2013 19:42:15 GMT
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On Monday, December 9, 2013 12:32:49 PM UTC-6, Paul van Delst wrote:

> The EPS files are included inside LaTeX (and, in some cases, Word)
>
> documents. I've never tried embedding PDFs inside those (since the final
>
> result is to create a PDF for distro) but I'll give it a shot.
>

This is why I prefer EPS files as well, in general.

But, if you're not tied to latex (specifically) and can use pdflatex instead, it handles PDF and PNG just fine. (In fact, there's a epstopdf package for just this sort of thing.)

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by David Fanning on Mon, 09 Dec 2013 19:51:02 GMT
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Phillip Bitzer writes:

> This is why I prefer EPS files as well, in general.
>
> But, if you're not tied to latex (specifically) and can use pdflatex instead, it handles PDF and PNG just fine. (In fact, there's a epstopdf package for just this sort of thing.)

I don't use Latex, obviously, and I very rarely ever use EPS files. I think because I have a nagging suspicion the bounding box IDL uses in EPS file is screwed up. Have you ever had any problems with this when working with EPS files?

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by Phillip Bitzer on Mon, 09 Dec 2013 22:00:03 GMT
View Forum Message <> Reply to Message

On Monday, December 9, 2013 1:51:02 PM UTC-6, David Fanning wrote:

> I don't use Latex, obviously, and I very rarely ever use EPS files. I
>
> think because I have a nagging suspicion the bounding box IDL uses in
>
> EPS file is screwed up. Have you ever had any problems with this when
>
> working with EPS files?
>
>

Negatory. In fact, I prefer EPS _because_ it has a bounding box, which plays very nicely with LaTeX. I haven't had a problem with IDL EPS files with latex or pdflatex. (For reference, I use PS_START/END, ... er cgPS_OPEN/CLOSE with /ENCAP set.) Generally speaking, journals prefer EPS, although most (all?) accept PDF as well. To hear Adobe tell it, PDF is more "advanced" than Postscript.

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by David Fanning on Mon, 09 Dec 2013 22:14:40 GMT
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Phillip Bitzer writes:

> Negatory. In fact, I prefer EPS _because_ it has a bounding box, which plays very nicely with LaTeX. I haven't had a problem with IDL EPS files with latex or pdflatex. (For reference, I use PS_START/END, ... er cgPS_OPEN/CLOSE with /ENCAP set.) Generally speaking, journals prefer EPS, although most (all?) accept PDF as well. To hear Adobe tell it, PDF is more "advanced" than Postscript.

Yes, Adobe has a very high opinion of its software. I've recently
switched to the FoxIt PDF Reader so I no longer have to deal with the
Adobe Reader and all the &^$*#@ shortcuts it puts on my desktop when it
installs itself. :-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by laura.hike on Thu, 01 May 2014 23:40:51 GMT
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Q: Will this problem be fixed anytime soon? I went to great lengths to make what I consider a beautiful plot using function graphics and found that the appearance changed completely (both lines and fonts) when I tried to save it in a vector format (eps or pdf). Using a bitmap format works fine. The whole point is that I want to be able to edit the plots. This all works fine using the old style graphics, but I don't think there's a box plot routine for that. (Well, Dave F. probably has one....)

Incidentally, why are colors always altered in going from RGB to CMYK representation? Surely all imaginable colors can be represented in either system.

Thx,

Laura

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by chris_torrence@NOSPAM on Fri, 02 May 2014 00:41:47 GMT
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On Thursday, May 1, 2014 5:40:51 PM UTC-6, laura...@gmail.com wrote:
> Q: Will this problem be fixed anytime soon? I went to great lengths to make what I consider a

beautiful plot using function graphics and found that the appearance changed completely (both lines and fonts) when I tried to save it in a vector format (eps or pdf). Using a bitmap format works fine. The whole point is that I want to be able to edit the plots. This all works fine using the old style graphics, but I don't think there's a box plot routine for that. (Well, Dave F. probably has one....)
>
>
>
> Incidentally, why are colors always altered in going from RGB to CMYK representation? Surely all imaginable colors can be represented in either system.
>
>
>
> Thx,
>
>
>
> Laura

Hi Laura,

Which version of IDL are you using? There were some bugs related to changing lines & fonts in new graphics, but many of them have been fixed as of IDL 8.3. If you're using IDL 8.3, could you post some sample code which shows the problem?

Cheers,
Chris
ExelisVIS

---

Subject: Re: Font size appearance in function graphics PNG and EPS output
Posted by David Fanning on Fri, 02 May 2014 00:53:03 GMT
View Forum Message <> Reply to Message

laura.hike@gmail.com writes:

> (Well, Dave F. probably has one....)

Yeah, cgBoxplot probably works like you expect it to. :-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

---