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Subject: Re: A whine about default device settings  
Posted by [David Fanning](#) on Sun, 10 Feb 2008 19:43:03 GMT  
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Kenneth P. Bowman writes:

```
> Unfortunately, some of the default device settings are different between
> the Z-buffer device and the X-Windows device. (I haven't checked the
> WIN device because I don't have a Windows machine).
>
> IDL> window, xsize=1024, ysize=768
> IDL> help, !d, /str
> ** Structure !DEVICE, 17 tags, length=84, data length=84:
>   NAME      STRING  'X'
>   X_CH_SIZE  LONG      6
>   Y_CH_SIZE  LONG     10
> IDL> set_plot, 'z'
> IDL> device, set_resolution = [1024, 768], set_pixel_depth = 24
> IDL> help, !d, /str
> ** Structure !DEVICE, 17 tags, length=84, data length=84:
>   NAME      STRING  'Z'
>   X_CH_SIZE  LONG      8
>   Y_CH_SIZE  LONG     12
>
> Because IDL scales margins and plot sizes based on the character size,
> switching devices means that the resulting graphs are not identical,
> despite identical window/device sizes.
>
> This can be rectified by setting the character size of the Z-buffer
> device with
>
> DEVICE, SET_CHARACTER_SIZE = [6, 10]
>
> or doing the reverse for the X-Windows device, but this seems to me to
> be a pointless and unnecessary device dependence.
>
> I am annoyed enough to post about this because I just spend longer than
> I should have figuring out why the graphics output from the two devices
> was not identical.
```

Yes, this is a LONG standing problem. I think I first ran into this problem nearly 20 years ago. :-(

Cheers,

David

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David Fanning, Ph.D.

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Subject: Re: A whine about default device settings  
Posted by [Kenneth P. Bowman](#) on Mon, 11 Feb 2008 03:18:26 GMT  
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In article <MPG.221901b29e38c3ae9896b2@news.frii.com>,  
David Fanning <[news@dfanning.com](mailto:news@dfanning.com)> wrote:

> Kenneth P. Bowman writes:  
>  
>> Unfortunately, some of the default device settings are different between  
>> the Z-buffer device and the X-Windows device. (I haven't checked the  
>> WIN device because I don't have a Windows machine).  
>  
> Yes, this is a LONG standing problem. I think I first ran into this  
> problem nearly 20 years ago. :-(  
>  
> Cheers,  
>  
> David

I ran into another similar issue later

```
IDL> help, !d, /str
** Structure !DEVICE, 17 tags, length=84, data length=84:
  NAME      STRING  'X'
  X_PX_CM    FLOAT      40.0000
  Y_PX_CM    FLOAT      40.0000
```

```
IDL> help, !d, /str
** Structure !DEVICE, 17 tags, length=84, data length=84:
  NAME      STRING  'Z'
  X_PX_CM    FLOAT      26.0000
  Y_PX_CM    FLOAT      26.0000
```

The pixels-per-centimeter parameters are read-only and cannot be set by the user. Why that is the case for a virtual device that has no physical size is beyond me.

This artificial difference in "resolution" means that you have to adjust the SCALE factor on MAP\_SET to make maps match when switching devices. (I try to avoid using SCALE, but for some projections it is the best way to make a map work right.)

Ken

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Subject: Re: A whine about default device settings  
Posted by [Craig Markwardt](#) on Mon, 11 Feb 2008 13:51:50 GMT  
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"Kenneth P. Bowman" <k-bowman@null.edu> writes:

> The new 24-bit Z-buffer device is nice for generating graphics on a  
> device without a display, as is common with servers, for example. It is  
> easier to configure and use than Xvfb, for example.  
>  
> Unfortunately, some of the default device settings are different between  
> the Z-buffer device and the X-Windows device. (I haven't checked the  
> WIN device because I don't have a Windows machine).

Wait, you're asking for consistency from IDL. .... I'm having a  
does-not-compute moment just now.... :-)

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Subject: Re: A whine about default device settings  
Posted by [Bob\[3\]](#) on Mon, 11 Feb 2008 16:59:08 GMT  
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On Feb 9, 4:42 pm, "Kenneth P. Bowman" <k-bow...@null.edu> wrote:

> The new 24-bit Z-buffer device is nice for generating graphics on a  
> device without a display, as is common with servers, for example. It is  
> easier to configure and use than Xvfb, for example.  
>  
> Unfortunately, some of the default device settings are different between  
> the Z-buffer device and the X-Windows device. (I haven't checked the  
> WIN device because I don't have a Windows machine).

>  
> IDL> window, xsize=1024, ysize=768  
> IDL> help, !d, /str  
> \*\* Structure !DEVICE, 17 tags, length=84, data length=84:  
> NAME STRING 'X'  
> X\_CH\_SIZE LONG 6  
> Y\_CH\_SIZE LONG 10  
> IDL> set\_plot, 'z'  
> IDL> device, set\_resolution = [1024, 768], set\_pixel\_depth = 24  
> IDL> help, !d, /str  
> \*\* Structure !DEVICE, 17 tags, length=84, data length=84:  
> NAME STRING 'Z'  
> X\_CH\_SIZE LONG 8  
> Y\_CH\_SIZE LONG 12  
>

Win (note: v6.4) values:

```
IDL> window, xsize=1024, ysize=768
```

```
IDL> help, !d, /str
```

```
** Structure !DEVICE, 17 tags, length=84, data length=84:
```

|           |        |         |
|-----------|--------|---------|
| NAME      | STRING | 'WIN'   |
| X_CH_SIZE | LONG   | 7       |
| Y_CH_SIZE | LONG   | 10      |
| X_PX_CM   | FLOAT  | 32.0000 |
| Y_PX_CM   | FLOAT  | 32.0000 |

Fun-wow! :D

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Subject: Re: A whine about default device settings

Posted by [Kenneth P. Bowman](#) on Mon, 11 Feb 2008 18:34:39 GMT

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In article

<c2b95dea-5ffe-403d-9e5e-7851aed78324@d4g2000prg.googlegroups.com>,

Bob Crawford <Snowman42@gmail.com> wrote:

>> The new 24-bit Z-buffer device is nice for generating graphics on a

>> easier to configure and use than Xvfb, for example.

>>

>> Unfortunately, some of the default device settings are different between

>> WIN device because I don't have a Windows machine).

>>

>> IDL> window, xsize=1024, ysize=768

>> IDL> help, !d, /str

>> \*\* Structure !DEVICE, 17 tags, length=84, data length=84:

>> IDL> set\_plot, 'z'

>> IDL> device, set\_resolution = [1024, 768], set\_pixel\_depth = 24

>> IDL> help, !d, /str

>> \*\* Structure !DEVICE, 17 tags, length=84, data length=84:

>>

>

```
> Win (note: v6.4) values:
>
> IDL> window, xsize=1024, ysize=768
> IDL> help, !d, /str
> ** Structure !DEVICE, 17 tags, length=84, data length=84:
>   NAME          STRING   'WIN'
>   X_CH_SIZE     LONG      7
>   Y_CH_SIZE     LONG     10
>   X_PX_CM       FLOAT    32.0000
>   Y_PX_CM       FLOAT    32.0000
>
>
> Fun-wow! :D
```

Oh good, the X, Z, and WIN devices all have different default character sizes and pixels per centimeter.

Ken

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