Subject: Re: Log IDLgrAxis
Posted by david[2] on Thu, 09 Aug 2001 18:42:38 GMT
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Pavel A. Romashkin writes:

> Is there a trick to making a log object axis to display properly? I have
> a linear axis perfectly working, but as soon as I try to set /log
> property, I get a message "infinite plot range" and the axis is
> collapsed to a point, with all labels piled up on top of one another.
> What is happening?

Sounds to me like you are forgetting to scale
it back into your arbitrary coordinate system.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438 E-Mail: davidf@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Log IDLgrAxis
Posted by Pavel A. Romashkin on Thu, 09 Aug 2001 19:36:00 GMT
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David Fanning wrote:
>
> Sounds to me like you are forgetting to scale
> it back into your arbitrary coordinate system.

I am setting /log before any Range or Coord_conv are specified - at the
time of creating the new axis. All normalization happens afterwards and
is the same as for linear axis.

Pavel

Subject: Re: Log IDLgrAxis
Posted by david[2] on Thu, 09 Aug 2001 19:56:37 GMT
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Pavel A. Romashkin writes:

> I am setting /log before any Range or Coord_conv are specified - at the
> time of creating the new axis. All normalization happens afterwards and
> is the same as for linear axis.

Now I'm remembering something, let me look...

Aha, here is an article I wrote about this
some time ago:
##

Subject: Re: IDLgrAxis object with /LOG keyword
From: davidf@dfanning.com (David Fanning)
Date: Thu, 18 Jan 2001 12:14:49 -0700

Marc Schellens (m_schellens@hotmail.com) writes:

> I want to create a loarithmic plot with object graphics.
> So I thought I just set the /LOG keyword to the IDLgrAxis object and
> scale the data accordingly.
> But with the /LOG keyword the Axis is drawn on a different location.
> Does anybody have an example how to do it right?

Humm. This gave me some trouble too. Then I remembered that
CRANGE returns the log of the range when axes are set to
log type. So, to get things to work, I had to scale the
axis (Z-Axis in this case) differently from the data in
the Z direction.

Here is how I modified my FSC_SURFACE program to get
it to work with a log Z axis. (I set the LOG keyword
on the IDLgrAxis command for the Z axis.)

```
 ********************************************************** ***********
    ; The axes may not use exact axis scaling, so the ranges may
    ; have changed from what they were originally set to. Get
    ; and update the range variables.

xAxis->GetProperty, CRange=xrange
yAxis->GetProperty, CRange=yrange
zAxis->GetProperty, CRange=zrange
zrange_surf = [10^zrange[0], 10^zrange[1]]

    ; Set scaling parameters for the surface and axes so that everything
    ; is scaled into the range -0.5 to 0.5. We do this so that when the
    ; surface is rotated we don't have to worry about translations. In
    ; other words, the rotations occur about the point (0,0,0).
```

```
xs = Normalize(xrange, Position=[-0.5,0.5])
ys = Normalize(yrange, Position=[-0.5,0.5])
zs = Normalize(zrange, Position=[-0.5,0.5])
zsurf = Normalize(zrange_surf, Position=[-0.5,0.5])

    ; Scale the axes and place them in the coordinate space.
    ; Note that not all values in the Location keyword are
    ; used. (I've put really large values into the positions
    ; that are not being used to demonstate this.) For
    ; example, with the X axis only the Y and Z locations are used.

xAxis->SetProperty, Location=[9999.0, -0.5, -0.5], XCoord_Conv=xs
yAxis->SetProperty, Location=[-0.5, 9999.0, -0.5], YCoord_Conv=ys
zAxis->SetProperty, Location=[-0.5,  0.5, 9999.0], ZCoord_Conv=zs

    ; Scale the surface.

thisSurface->SetProperty, XCoord_Conv=xs, YCoord_Conv=ys, $
   ZCoord_Conv=zsurf
 ************************************************************ ***********
```

I put this example program here if you want to try it out:

ftp://ftp.dfanning.com/oub/outgoing/misc/fsc_surface_log.pro

I ran it like this:

```
IDL> .Compile fsc_surface_log
IDL> fsc_surface, dist(50)*40 > 1
```

Cheers,

David

--
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Subject: Re: Log IDLgrAxis
Posted by Pavel A. Romashkin on Thu, 09 Aug 2001 20:01:48 GMT
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David Fanning wrote:
>
> Pavel A. Romashkin writes:
>
> Sounds to me like you are forgetting to scale
> it back into your arbitrary coordinate system.

Well, this is what I see:

```
IDL> junk = obj_new('idlgraxis')
IDL> junk -> setproperty, /log
% IDLGRAXIS::SETPROPERTY: Warning: Infinite plot range.
IDL> junk -> setproperty, range=[0., 10000.], xcoord_conv =
normalize([0., 10000.])
% Compiled module: NORMALIZE.
% IDLGRAXIS::SETPROPERTY: Warning: Infinite plot range.
```

???
Pavel

Subject: Re: Log IDLgrAxis
Posted by david[2] on Thu, 09 Aug 2001 20:35:59 GMT
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Pavel A. Romashkin writes:
>
> Well, this is what I see:
>
> IDL> junk = obj_new('idlgraxis')
> IDL> junk -> setproperty, /log
> % IDLGRAXIS::SETPROPERTY: Warning: Infinite plot range.
> IDL> junk -> setproperty, range=[0., 10000.], xcoord_conv =
> normalize([0., 10000.])
> % Compiled module: NORMALIZE.
> % IDLGRAXIS::SETPROPERTY: Warning: Infinite plot range.
>
> ???

Well, I'm not surprised. Log plots have never
cared for zeros too much. :-(

How about this:

```
IDL> junk = obj_new('idlgraxis', range=[1,1000])
IDL> junk -> setproperty, /log
IDL> junk -> setproperty, range=[1., 10000.], $
IDL>       xcoord_conv =normalize([1., 10000.])
```

Remember that the default range on a axis object
is 0 to 1.

Cheers,

David
--
David Fanning, Ph.D.
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Subject: Re: Log IDLgrAxis
Posted by Pavel A. Romashkin on Thu, 09 Aug 2001 20:53:47 GMT
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Thank you David. I went throgh some older messages on this subject and
experimented for a couple of hours, and found that log object axes are
useless for me, just like I can't find use for IDLgrContour. Changing
data contents of plots to go to log axes is too much for me :-(
One more reason DG will never be outdated.
Cheers,
Pavel

Subject: Re: Log IDLgrAxis
Posted by david[2] on Thu, 09 Aug 2001 21:27:59 GMT
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Pavel A. Romashkin writes:

> Thank you David. I went throgh some older messages on this subject and
> experimented for a couple of hours, and found that log object axes are
> useless for me, just like I can't find use for IDLgrContour. Changing
> data contents of plots to go to log axes is too much for me :-(
> One more reason DG will never be outdated.

Nuts. OK, I'll scratch you off that list of five
people who were going to buy that object graphics
book I'm writing. :-(

Cheers,

David

--
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Subject: Re: Log IDLgrAxis
Posted by david[2] on Thu, 09 Aug 2001 21:29:06 GMT
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Whoops! I wrote just a moment ago...

> Nuts. OK, I'll scratch you off that list of five
> people who were going to buy that object graphics
> book I'm writing. :-(

I meant, of course, the book I'm **SUPPOSED**
to be writing.

Cheers,

David

--
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Subject: Re: Log IDLgrAxis
Posted by Doug Reynolds on Mon, 13 Aug 2001 13:32:27 GMT
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"Pavel A. Romashkin" wrote:

> David Fanning wrote:
>>
>> Pavel A. Romashkin writes:
>>
>> Sounds to me like you are forgetting to scale
>> it back into your arbitrary coordinate system.
>

> Well, this is what I see:
>
> IDL> junk = obj_new('idlgraxis')
> IDL> junk -> setproperty, /log
> % IDLGRAXIS::SETPROPERTY: Warning: Infinite plot range.
> IDL> junk -> setproperty, range=[0., 10000.], xcoord_conv =
> normalize([0., 10000.])
> % Compiled module: NORMALIZE.
> % IDLGRAXIS::SETPROPERTY: Warning: Infinite plot range.
>
> ???
> Pavel

I'm not overly familiar with object graphics, but it looks like you have a log axis with a minimum value of zero? This seems likely to be a source of problems.

Doug
