Subject: Re: Longword plotting problems...
Posted by Andy Loughe on Mon, 22 Jun 1998 07:00:00 GMT
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Geraint H. Jones wrote:

```
>
>  ; Example code
>
>          time=lindgen(10)+13254100
>
>          data=findgen(10)
>
>          plot,time,data
>
>  ; Just to show that time should increase smoothly in the plot
>
>          print,time
```

Hmmm!?
Here is a work-around...

```
num_pts=10
time=lindgen(num_pts)+13254100
data=findgen(num_pts)

xticknames=strtrim(time,2)

plot, time-13254100, data, xtickname=xticknames, xticks=num_pts-1, $
     /xstyle, xmargin=[9,9], ymargin=[7,7],                    $
     xtitle='Time', ytitle='Data Values',                   $
     title='A Decent Plot', subtitle='(Seconds since 1950)'
```

--
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 ---------- ----------
"I do not feel obliged to believe that the same God who has endowed us
with
sense, reason, and intellect has intended us to forego their use."
-Galileo

Subject: Re: Longword plotting problems...
Posted by menakkis on Mon, 22 Jun 1998 07:00:00 GMT
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"Geraint H. Jones" <g.h.jones@ic.ac.uk> wrote:
> I'm handling data files (well, trying to!) in which the time is recorded
> as the number of seconds since the beginning of 1950 (I know it's not
> the easiest format to deal with, but it's what I have to work with). In
> order to get precision to the level of seconds, I have to use longword
> arrays.
>
> This is all fine, but the problem is plotting using the longword arrays.
> Whatever plot ranges I choose, the time values in the plots are
> quantized, i.e. they do not increase smoothly, even though the values
> in the array itself increase smoothly. I've attached a short piece of
> example code below to demonstrate this...
>
> ; Example code
>
> time=lindgen(10)+13254100
>
> data=findgen(10)
>
> plot,time,data

I think that there's no way to do this the way you'd like. What's happening is that your times are using well over 24 bits in the longwords, and the FLOAT format can only represent integers accurately if they use about 24 bits - any more is simply lost (from the "small end"). Unfortunately, the PLOT routine (& friends) converts its arguments to FLOAT. A "double misfortune" (sorry :-) - even if you pass DOUBLE arguments to PLOT, it will convert them to FLOAT!

Perhaps you could plot offset-removed seconds across X; i.e., first subtract the smallest time value.

(BTW, I had to use time=lindgen(10)+'0fffffff'x to get your example to really kick.)

Peter Mason