Subject: Re: histogram and UINT

Posted by Kenneth P. Bowman on Wed, 17 Mar 2010 18:36:48 GMT

In article
<ab4b613a-31e0-48ab-9472-6c840fb0fafa@o30g2000yqb.googlegroups.com>,
 Jeremy Bailin <astroconst@gmail.com> wrote:

> I've discovered an interesting "feature" in histogram... I'm sure it's
> the expected behaviour, but in this case it had a consequence that
> bit me.
>
> I have some unsigned integer input data that I want to histogram. I'm
> looking at things right around the saturation level, so most of the
> data is exactly 65535, but I also want a bin past that. The following
> works:
>
> h = histogram(data, min=65500ul, max=65535ul)
>
> But the following doesn't:
>
> h = histogram(data, min=65500ul, max=65536ul)
> % HISTOGRAM: Illegal binsize or max/min.
>
> What seems to be happening is that the min/max values are cast into
> the same data type as data, in this case giving a nonsensical max of
> 0u. To do what I want, I need to cast data into a ULONG in this
> histogram call... or use max=65535u and append an appropriate number
> of 0s onto h.
>
> -Jeremy.

It seems logical to me that HISTOGRAM would take type information
from the input variable, not the keywords. (The keywords are optional.)

And since integer arithmetic 'wraps around'

IDL> print, 65535US + 1US
       0

the result is to be expected.

I did notice that with IDL 7.1.1 on Mac OS X, using the U suffix
creates a ULONG, not a UINT. This clearly contradicts the documentation.

IDL> help, 65U, 65US
<Expression>   ULONG   =   65
<Expression>   UINT   =   65

You have to use US to create a UINT.

Ken Bowman