Subject: Re: strange behaviour of bytscl by large arrays
Posted by Craig Markwardt on Tue, 24 Apr 2012 12:32:03 GMT
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On Monday, April 23, 2012 4:22:08 PM UTC-4, Chris Torrence wrote:
> On Monday, April 23, 2012 10:14:21 AM UTC-6, fawltyl...@gmail.com wrote:
>>
>> I think IDL's FINDGEN() implementation is wrong: it uses a float counter instead of an integer one. The following test shows the difference:
>>
>> pro test
>> cpu, tpool_nthreads=1
>> n=10l^8
>> nn=n-1
>> a1=findgen(n) ; real FINDGEN()
>> a2=fltarr(n)
>> count=0.0
>> for j=0l, nn do a2[j]=count++ ; IDL's implementation
>> a3=fltarr(n)
>> count=0ll
>> for j=0l, nn do a3[j]=count++ ; better implementation
>> print, a1[nn], a2[nn], a3[nn], format='(3F15.3)'
>> end
>>
>> (Multithreading must be disabled because the starting values for the threads are calculated as an integer. So the result of FINDGEN() depends on the number of your CPU cores, too :-)
>>
>> regards,
>> Lajos
>
> Well, wrong is perhaps too strong of a word. The real word is "fast". I just did a test where I changed the internal implementation of FINDGEN to use an integer counter. The "float" counter is 4 times faster than using an integer counter and converting it to floats.
>
> However, perhaps we could look at the size of the input array, and switch to using the slower integer counter if it was absolutely necessary. I'll give it a thought.

It's pretty awesome when the product vendor tweaks the product for you just to test a hunch. :-)

Craig