
Subject: Re: strange behaviour of bytscl by large arrays

Posted by [Klemen](#) on Mon, 23 Apr 2012 20:54:28 GMT

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Hmm today I don't have just the usual problems with IDL, but also with thist post... I would assume that everything is online once you press post... Anyway, short version once again.

Lajos, thank you very much. It's nice to know that I am not the only one seeing a miracle. :) Although the sky is not falling. :) And what I find really interesting is that you observed also the correlation to the number of CPU.

David, sorry that I was not clear in the first post. Yes the thing is that using BYTSCL and HIST_EQAL have some difficulties when processing large arrays. Using the above example of Lajos, see the output of the histogram.

```
pro test
cpu, tpool_nthreads=1
n=10l^8
nn=n-1
a3=fltarr(n)
count=0ll
for j=0l, nn do a3[j]=count++ ; better implementation
h = histogram(a3, binsize=10L^6)
print, h
b = byte(a3)
h = histogram(b)
print, h
end
```

IDL prints:

1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	999999	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	999999	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	999998	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	1000000	1000000	1000000	1000000	1000000
1000000	1000000	4				
2073833	65536	131072	65536	655360	65536	131072

65536	1816871	65536	131072	65536	655360	65536
131072	65536	2073833	65536	131072	65536	655360
65536	131072	65536	1816871	65536	131072	65536
655360	65536	131072	65536	2073833	65536	131072
65536	655360	65536	131072	65536	1816871	65536
131072	65536	655360	65536	131072	65536	2073833
65536	131072	65536	655360	65536	131072	65536
1816871	65536	131072	65536	655360	65536	131072
65536	2073833	65536	131072	65536	655360	65536
131072	65536	1816871	65536	131072	65536	655360
65536	131072	65536	2073833	65536	131072	65536
655360	65536	131072	65536	1816871	65536	131072
65536	655360	65536	131072	65536	2073833	65536
131072	65536	655360	65536	131072	65536	1816871
65536	131072	65536	655360	65536	131072	65536
2073833	65536	131072	65536	655360	65536	131072
65536	1816871	65536	131072	65536	655360	65536
131072	65536	2073833	65536	131072	65536	655360
65536	131072	65536	1816871	65536	131072	65536
655360	65536	131072	65536	2073833	65536	131072
65536	655360	65536	131072	65536	1816871	65536
131072	65536	655360	65536	131072	65536	2073833
65536	131072	65536	655360	65536	131072	65536
1816871	65536	131072	65536	655360	65536	131072
65536	2073833	65536	131072	65536	655360	65536
131072	65536	1816871	65536	131072	65536	655360
65536	131072	65536	2073833	65536	131072	65536
655360	65536	131072	65536	1816871	65536	131072
65536	655360	65536	131072	65536	2073833	65536
131072	65536	655360	65536	131072	65536	1816871
65536	131072	65536	655360	65536	131072	65536
2073833	65536	131072	65536	655360	65536	131072
65536	1816871	65536	131072	65536	655360	65536
131072	65536	2073833	65536	131072	65536	655360
65536	131072	65536	1816871	65536	131072	65536
655360	65536	131072	65536			

Isn't that strange - after scaling to BYTE each histogram bin should contain the same number of values, just like the original histogram. This is not a problem if I set n no 10^7.

Cheers, Klemen