Subject: Re: Windows/Linux reading binary data - sign problem
Posted by russell.grew on Thu, 10 Jan 2008 02:17:38 GMT
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Note that if I start IDL in linux with "idl -32" I still have the same
problem.

Thanks.

On Jan 10, 10:36 am, RussellGrew <russell.g...@gmail.com> wrote:
> Hi Nigel,
>
> The number is the result of further manipulation. I think the
> manipulation may be the problem here.
>
> I have tried the code on IDL 6.3 64 bit and IDL 6.1 32 bit in linux
> [both little endian machines] - both with the same problem!
>
> Code extract follows. The final values are stored in the 'a' matrix. I
> dont have the documentation for the binary file format handy.
>
> openr,u,fnm, /get_lun
> status = FSTAT(u)
> dd = status.size / (4*60)
>
> a=lonarr(dd,60)
> bdat=byte(1)
> dat=bytarr(4)
>
> for j=0,dd-1 do $;Loop to count total data rows and
> begin
> for i=0,59 do $
> begin
> fdat=double(0.0)
> sgn=1.
> for aa=0,3 do $;data component rows in file.
> begin
> READU,u,bdat
> dat(aa)=bdat
> end
> dat(0)=dat(0)-64 ; take off 2^30
> fdat=dat(0)*256.*256.*256.+dat(1)*256.*256.+dat(2)*256.+dat(3)
> fdat=sgn*fdat
> a[j,i]=fdat
> end
> endfor
> free_lun, u

>
> Any ideas? I assume Linux must handle some part of the above
> differently.
>
> Thanks.
>
> Russell.
>
> On Jan 9, 9:06 pm, Nigel Wade <n...@ion.le.ac.uk> wrote:
>
>> RussellGrew wrote:
>>> Hello,
>
>>> Interesting scenario here. I have some code (not written by myself)
>>> that reads a bunch of data series from a binary file.
>
>>> Most of the data series contain positive floating point numbers. One
>>> of them contains negative numbers. On windows, this works fine. On
>>> linux, whenever the negative numbers should appear, the values have
>>> reverted to -2147.48. The series with only positive numbers reads fine
>>> on both machines.
>
>> That looks very suspicious. It's 32bit -MAXINT, with a decimal scaling factor.
>
>>> There is some manipulation to produce the data series.
>
>> Is the number above what is read by IDL, or the result of the "manipulation"?
>
>>> Both machines are little endian, checked with
>
>> http://www.dfanning.com/tips/endian_machines.html,
>
>>> using IDL6.3 in both cases. Linux is 64bit gentoo, windows is a 64bit
>>> processor running 32 bit windows.
>
>>> Ideas? Perhaps there is some obvious difference between platforms that
>>> I am unaware of?
>
>> There shouldn't be. What method are you using to read the floating point binary
>> data? Are you running a 32bit or 64bit version of IDL on Linux, and are the
>> floating point numbers 32bit or 64bit (float or double)? READU should work the
>> same on all platforms provided the data is in the correct machine format and
>> you ask it to read floats/doubles.
>
>> For example, this writes a 32bit and 64bit floating point values to a file, then
>> reads them back. The platform is 64bit Linux and IDL is 64bit.
>
>> IDL Version 6.4 (linux x86_64 m64). (c) 2007, ITT Visual Information Solutions

>> IDL> a=float(-32.0)
>> IDL> b=double(-64)
>> IDL> openw,1,'tmp.tmp'
>> IDL> writeu,1,a,b
>> IDL> close,1
>> IDL> openr,2,'tmp.tmp'
>> IDL> c=float(1)
>> IDL> d=double(1)
>> IDL> readu,2,c,d
>> IDL> print,c,d
>>   -32.0000   -64.000000
>> IDL> exit
>
>> I can also read it back using 32bit IDL:
>
>> IDL Version 6.4 (linux x86 m32). (c) 2007, ITT Visual Information Solutions
>> IDL> c=float(1)
>> IDL> d=double(1)
>> IDL> openr,2,'tmp.tmp'
>> IDL> readu,2,c,d
>> IDL> print,c,d
>>   -32.0000   -64.000000
>
>> If I transfer the binary file tmp.tmp to a 32bit Windows machine I can still
>> read it using the same code.
>
>> --
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