Subject: Re: Windows/Linux reading binary data - sign problem
Posted by Nigel Wade on Thu, 10 Jan 2008 16:42:57 GMT
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RussellGrew 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)

This line is redundant.

> sgn=1.

This line is redundant (sgn is never assigned other than here).

> for aa=0,3 do $;data component rows in file.
> begin
> READU,u,bdat
> dat(aa)=bdat
> end

This loop is redundant, just read the byte array.

> dat(0)=dat(0)-64 ; take off 2^30

What is the purpose of this line? What data format does your binary file contain? It's not masking a bit in dat(0), it is subtracting a fixed value and creating a (possibly negative) INT.

> fdat=dat(0)*256.*256.*256.+dat(1)*256.*256.+dat(2)*256.+dat(3)

This appears to be building a floating point number from a 32bit big-endian integer (apart from the "take off 2^30" part). Why make a float when a long would do the job with no inaccuracy?

> fdat=sgn*fdat

This line is redundant, sgn is always 1.0.

> a[j,i]=fdat

Now you convert your floating point number back to an integer...

I don't see how the above code could generate the floating point number -2147.48. There is no fractional part.

> end
> endfor
> free_lun, u
>
> Any ideas? I assume Linux must handle some part of the above
> differently.

I would handle the entire process differently...

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