Subject: Re: Fortran unformatted data: Big or little endian
Posted by thompson on Wed, 30 Apr 2003 15:05:58 GMT
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David Fanning <david@dfanning.com> writes:

> Michael Schroeter (schroeter@muk.uni-hannover.de) writes:

>> and it works (up to now ;-)).

> I suspect it works *most* of the time. I don't see anything
> in there to *cause* the error. :-)

> You can certainly read data any way you like. It's not
> until you try to make *sense* of the data that you are
> likely to run into trouble. In your case, you might try
> reading a known data value from the file. It that value
> is total nonsense (your were expecting 45 and you get
> -20435), then you could "throw" an error, rewind the file,
> and read the data again with the SWAP_ENDIAN keyword set.

My experience has been that if one reads in floating point data with the wrong byte-order, not only is the result garbage, but that one ends up with some extremely large numbers, both positive and negative. For example, I reversed the byte-order of an ordinary array, and ended up with an array with values of 2.70437e+38 and -1.90746e+38. One can use this to augment the procedure you already have, by checking for values beyond a (generously defined) reasonable range. In a sense, this is the same idea as David's, extended to where you may not know what the exact value is that you expect, but you can recognize a ridiculous value when you see one.

Cheers,

Bill Thompson