Subject: Re: Fortran and byte swapping
Posted by Liam Gumley on Fri, 13 Dec 1996 08:00:00 GMT
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Simon Williams wrote:
> I have a large dataset which is in Unformatted variable-length
> records written in FORTRAN on a SUN (big endian). I want to
> read it on a DEC alpha running OSF (little endian) using IDL.
> It is not really practical to convert the whole dataset.
>
> 1. I Can't use "openr, ... ,/f77_unformatted" because the
> record length information stored in the file is byte-swapped
> so it falls over on the first read.
>
> 2. I could drop the /f77_unformatted keyword and handle the
> record structure myself, but even then I can't see a simple
> way of doing it - I would need an IDL function which behaves
> like readu, so that I can pass an arbitrary number of arguments
> to it or I will have to clog up my routine with a load of
> calls to byteorder for each parameter I read.
>
> Any ideas? The nicest solution would be a "byteswap keyword" to
> the open routines - like the one provided by dec fortran, but I
> guess that's a bit much to ask!

If you don't want to convert the datafile, then:

First, open the file without the /F77_UNFORMATTED keyword.

Create a record length index array by reading (READU) the first length word, swapping it using SWAP_ENDIAN, store it in the array, skip to the next length word (POINT_LUN), swap it, etc. to the end of the file.

You now have a record length index array that you can use to read the file. Point back to the beginning of the file, and skip the length word, read the number of data words indicated in the length array, and then swap the data array using SWAP_ENDIAN.

Seems simple enough. I'd write some code for you but I haven't had my coffee yet.

Cheers,
Liam.