Subject: Re: Fortran and byte swapping Posted by Tim Patterson on Fri, 13 Dec 1996 08:00:00 GMT View Forum Message <> Reply to Message

If the DEC Fortran on the OSF side supports the byteswap flag, perhaps you could use some Fortran code and CALL_EXTERNAL to read in the data, or convert the datafile before using IDL?

Neither solution is particularly elegant.

Tim

Subject: Re: Fortran and byte swapping Posted by Simon Williams on Fri, 13 Dec 1996 08:00:00 GMT View Forum Message <> Reply to Message

Liam Gumley wrote:

>

- > 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,

- > First, open the file without the /F77_UNFORMATTED keyword.
- Create a record length index array by reading (READU) the first lengthword, 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.

Thanks Liam,

What you suggested is more or less what I've come up with - (although I'd not come across SWAP_ENDIAN - my documentation's out of date - thanks).

However it doesn't really solve the problem - I've been given a stack of read code which runs on a SUN and contains MANY lines like this:

```
readu, lun, param1, param2 .....paramN
readu, lun, next_param1, next_param2 ....
. . . .
```

where the parameters may be scalars or arrays of any type. If I can possibly avoid it I'd rather not have to call swap endian for each parameter after each readu call - I'd have to do it for several hundred named parameters. It would be much nicer to incorporate the swapping into a "readu-like" call, but I can't see any way of doing it. I'm likely to have to do similar things with other datasets in the future, so a more general solution would be welcome.

Simon Williams

Simon Williams British Atmospheric Data Centre

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Subject: Re: Fortran and byte swapping Posted by Liam Gumley on Fri, 13 Dec 1996 08:00:00 GMT

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Cheers, Liam.