## Subject: Re: readu sees unexpected records
Posted by Paul Van Delst[1] on Wed, 04 May 2005 13:49:04 GMT

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Hjalti Sig wrote:
> Hello group
> I found out that when reading unformatted data, written with a fortran
> 90 program, the readu command detects a couple of extra records before
> and after each line written with the fortran program.  For example, I
> wrote a 10x10 array, containing the numbers from 1-100 in a file.
> Reading the file using readu, the content of the file appears as a
> 14x10 array, with very small numbers in columns 1, 2, 13 and 14,
> (producing floating underflow), and the correct numbers in the columns
> 3-12.
> In the data file I actually had to read there are three extra records
> before and two after each line.
> These extra records do certainly not appear when reading the files
> with a fortran program.

Fortran (currently) only really supports record-based I/O. For *sequential* access output
in Fortran, each variable length output record is preceded and followed with a a record
marker indicating the length of the record (the prefix marker is for checking the length,
the suffix marker for facilitating BACKSPACE-ing). To get IDL to emulate this type of I/O,
do as DFanning suggested and use the /F77_UNFORMATTED keyword in your OPENR
statement. If
your output records are all the same length, you can modify your Fortran code to output in
*direct* access and you will no longer have the record marker problem.

FWIW, the Fortran2003 standard has a new type of I/O access called "STREAM" (along with
the venerable SEQUENTIAL and DIRECT) which produces the output that just about every
non-Fortran programming type expects. A few Fortran compilers already support this feature
(some fully standard, others only sorta.)

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