Subject: Re: CDF vs. netCDF
Posted by Mark Hadfield on Sun, 16 Mar 1997 08:00:00 GMT
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I have used both CDF and (more recently) netCDF for most of my data storage/transfer needs for some time now. They're pretty similar really, but in choosing between them you might like to consider the following random comments:

General:

* IDL implementations of the scientific data formats are typically one or two versions behind the latest release, so if there's a specific feature you want, check if it's available in the IDL implementation.

* Recent devlopments in the scientific data formats relate mainly to sparse data & compression.

* The scientific data formats are much more pleasant to use than unformatted binary because they're self-cataloguing.

* Compared with unformatted binary, file sizes are similar (with just a little overhead for catalogue information) but I/O is definitely slower.

CDF vs netCDF:

* CDF has a more flexible data model (through the use of Z variables). With netCDF (and with CDF Z variables) all dimensions but one must have their sizes fixed before data can be written.

* If interchange of data with other groups is an issue, check out which package is most often used in your area. In my area (meteorology/oceanography) netCDF is the norm.

* If access by non-IDL code is an issue, then I would recommend netCDF over CDF because it has a better interface. (The CDF interface uses variable-length argument lists and is a little TOO clever IMHO.)

* netCDF is slower, in my experience, particularly in retrieving large numbers of records over a network link.

Finally:

* If you're using IDL for Windows, then netCDF is the clear winner, because
the IDL CDF routines can't access data in chunks of more than 64KB.

(This
   is a thoroughly unnecessary restriction that wasn't present in the
earliest
   versions of CDF for IDL and has been the subject of several emails from
   me to RSI. Nevertheless it's still there in the IDL 5.0 pre-release. I
   still get angry just thinking about it .....!!!!!!!!!!!!!!)

Hope this helps.

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Michael Ochs <m_ochs@fccc.edu> wrote in article <3329913C.685F@fccc.edu>...
> We are converting a moderately large set of programs to
> IDL for distribution. I am reviewing options for the
> data format to use and downloaded the CDF and netCDF
> user's guides. What is not clear from what I have seen
> are the advantages and disadvantages to the two formats.
>
> Any comments on this would be useful. Our software handles
> large MRI images and spectra (thus IDL) and is going to
> be designed to run on many platforms (thus IDL again). One
> thing I would like to know is whether netCDF adds significantly
> to file size and how both compare to using IDL's unformatted
> routines like ASSOC.
>
> -- Mike
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