
Subject: Re: IDL and NetCDF

Posted by [R.Bauer](#) on Wed, 13 Jun 2001 12:33:17 GMT

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"Claus Sielivsteen" wrote:

>
> Is there anyone out there who knows about using NetCDF in IDL programming -
> or knows anybody who does?
> I have recently started using this, and my problems are not answered
> entirely from the IDL online manuals and the "basic" NetCDF homepage,
> www.unidata.ucar.edu/packages/netcdf
> For instance, I am in doubt about 1) how do I use (and when should I use)
> unlimited variables, 2) is it possible to use structures as variables, and
> 3) how do I most properly create my program so that it is easily seen which
> variables belong together?
> I have a long set of observations of radar altimetry measurements of
> significant wave heights and wind speeds. So all measurements are acquired
> at different times. One measurement consists of information about
> acquisition time (year, month, day, decimal hour), lat/lon, SWH, rms of SWH
> measurement, wind speed and others). Note that some variables are integers,
> some are doubles/floats - so I cannot just make a DblArr consisting all
> measurements.
> A file consists of several repeated tracks/cycles and the measurements have
> been put into a grid - therefore several measurements within a file may
> belong to a certain grid point though their acquisition times are different.
> On the other hand, for some grid points there may be no data.
> I hope that someone can help me.
>
> Best regards,
> Claus Sielivsteen
>

Dear Claus,

we have developed a data structure (icg-data-struct).

This structure is used for several of our routines for input and output.

We have read and write netCDF routines for this structure. In addition
several correlate, synchronize and plot routines handling data of this
structure are available in our library.

http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.html

please look at `icg_ts_sync`, `read_ncdf`, `write_ncdf`, `icgs_correlate` and
the examples by `plotxy`
and `plot2d` and so on

http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_source/idl_html/dbase/download/read_ncdf.tar.gz
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_source/idl_html/dbase/download/write_ncdf.tar.gz
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_source/idl_html/dbase/download/icg_ts_sync.tar.gz
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_source/idl_html/dbase/download/icgs_correlate.tar.gz

f_names is a function which reads the short_names from a netCDF File

http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_source/idl_html/dbase/download/f_names.tar.gz

and for further routines and licensing please have a look at

http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.html

The data structure itselfs is with a lot of examples described in
details in
my publication:

<http://www.fz-juelich.de/zb/text/publikation/juel3786.html>

hope this helps a bit

Reimar

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Reimar Bauer

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<http://www.fz-juelich.de/icg/icg1/>

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a IDL library at Forschungszentrum Juelich

http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.html

<http://www.fz-juelich.de/zb/text/publikation/juel3786.html>

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read something about linux / windows

<http://www.suse.de/de/news/hotnews/MS.html>

Subject: Re: IDL and NetCDF

Posted by [m.hadfield](#) on Wed, 13 Jun 2001 21:08:44 GMT

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From: "Claus Sjölvsteen" <cls@fomfrv.dk>

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- > unlimited variables, 2) is it possible to use structures as variables, and
- > 3) how do I most properly create my program so that it is easily seen which
- > variables belong together?

These are really netCDF questions rather than IDL questions, and you might want to take them a netCDF newsgroup. (I think it's sci.data.formats. It's ages since I looked at that. I wonder if it's still active?) You could also look in the documentation, eg...

<http://www.unidata.ucar.edu/packages/netcdf/guide/>

...from which you can extract (with some searching) information about netCDF concepts.

But, to have a stab at your questions:

1) Unlimited variables (there can only be one per netCDF file) are used to represent dimensions, like time, whose size is not known in advance.

2) IDL structures can't be stored directly in netCDF variables, but you can break the structure up into its constituent tags and store each of these as a variable, unless the tag is itself a structure in which case you have to break it up, unless ...

3) netCDF has no explicit mechanism for recording the fact that certain variables belong with each other. But you can use naming conventions to make that fact clear. E.g. if you have a structure called "velocity" with tags "u", "v" and "w" you could store these in netCDF as "velocity_u", "velocity_v", "velocity_w".

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- > been put into a grid - therefore several measurements within a file may
- > belong to a certain grid point though their acquisition times are different.
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- > I hope that someone can help me.

Hmmm. This may require some ingenuity on your part, and you may decide that netCDF is not the best format for you. It can almost certainly store the data, but it may not be able to represent all the relationships inherent in the data. (It's not clear to me exactly what those relationships are.) Perhaps you could make an unlimited dimension called "acquisition", then variables called time (Julian date) or "time_year", "time_month", ..., "lon", "lat", "swl", "swl_rms" etc all varying with "acquisition". The grid (if it's spatially fixed) can be stored in the same file, and then position on the grid for each acquisition can be described by one or more variables dimensioned as "acquisition".

Hope this helps...

Mark Hadfield
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National Institute for Water and Atmospheric Research

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Posted from clam.niwa.cri.nz [202.36.29.1]
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