
Subject: Re: Can't exit DEFINE mode in netCDF File
Posted by [Paul Van Delst\[1\]](#) on Tue, 06 Oct 2009 22:03:33 GMT
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David Fanning wrote:

> David Fanning writes:

>

>> Folks,

>>

>> I am writing my first netCDF file in IDL and I am practically

>> copying the code out of Ken Bowman's book. I open a file:

>>

>> `fID = NCDF_CREATE(filename, /CLOBBER)`

>>

>> Then, I define several global attributes, two dimensions,

>> and two variables. I also define a couple of attributes

>> of the variables. All in that order.

>>

>> Then, I attempt to get out of DEFINE mode and into DATA

>> mode, so I can write the actual variables.

>>

>> `NCDF_CONTROL, fID, /ENDEF`

>>

>> But at this point I get the following error message:

>>

>> `% NCDF_CONTROL: Attempt to take the file out of`

>> `define mode (ENDEF) failed. (NC_ERROR=-45)`

>> `% Execution halted at: TIMESERIES::CREATE_CLIMATOLOGY 2589`

>>

>> Does anyone have ANY idea what this might be about?

>

> The code is pretty simple:

>

> `; Create a netCDF file for storing the climatology.`

> `fID = NCDF_Create(filename, /CLOBBER)`

>

> `; Define dimensions.`

> `xsizeID = NCDF_DIMDEF(fID, 'cols', xsize)`

> `ysizeID = NCDF_DIMDEF(fID, 'rows', ysize)`

> `timeID = NCDF_DIMDEF(fID, 'time', 2)`

>

> `; Define variables.`

> `vid = NCDF_VARDEF(fID, 'time', [timeID], /LONG)`

> `vid = NCDF_VARDEF(fID, 'climatology', [xsizeID, ysizeID], /DOUBLE)`

>

> `; Define variable attributes.`

> `NCDF_ATTPUT, fID, 'time', 'units', 'Days since 1601-01-01 00:00:00'`

> `NCDF_ATTPUT, fID, 'time', 'long_name', 'Start and end time. '`

```

> NCDF_ATTPUT, fID, 'climatology', '_FillValue', fillValue
> NCDF_ATTPUT, fID, 'climatology', 'long_name', 'longish name'
>
> ; Exit DEFINE mode and into DATA mode.
> NCDF_Control, fID, /ENDEF
>
> ; Write the variables.
> NCDF_VarPut, fID, 'time', [time[0], time[timepts-1]]
> NCDF_VarPut, fID, 'climatology', climatology
>
> ; Close the file.
> NCDF_Close, fID
>
> At one time I had global attributes in there, but I took them out
> and the code worked! So I added them back one by one. Then, it
> didn't work again, so I took them all back out. Now it *still*
> doesn't work! Something really, really weird going on here, I think. :-(

```

I think it's related to the `_FillValue` global attribute. I can't remember the details, but I posted here about exactly the same thing a few months ago. Searching the web....

Paul van Delst wrote:

```

> Hello,
>
> I've encountered a strange problem with some netCDF output using IDL.
>
> I define a character string array variable in my output netCDF file like so:
> VarId = NCDF_VARDEF( fid, 'Absorber_Units_Name', [32,n_Absorbers_DimId], /CHAR)
> where the "32" is the maximum string length.
>
> Now if I try to set a fill value attribute for that variable, like so
> NCDF_ATTPUT, fid, VarId, '_FillValue', ' '
> or
> NCDF_ATTPUT, fid, VarId, '_FillValue', 0B
>
> when I run the code I get the following error when I take the file out of define mode:
>
> % NCDF_CONTROL: Attempt to take the file out of define mode (ENDEF) failed.
(NC_ERROR=-45)
>
> If I simply comment out the call to NCDF_ATTPUT for these character variables, there's no
> problem.
>
> I do this sort of thing (i.e. _FillValue of " " for character string variables) all the
> time using the Fortran90 API to netCDF so I assume an empty space is a valid fill value.
>
> Has anyone else encountered this behaviour in IDL? I.e. is this a known bug in the IDL
> netCDF interface, or do I need to do something special with character fill values?

```

>
> Thanks for any info.
>
> cheers,
>
> paulv

Fiğ½LDY Lajos came up with a solution,

> I have found the solution: _FillValue needs to be the same type as the
> variable. ' ' is an IDL string, which is converted to something, probably
> BYTE. So let's add an explicite /CHAR to ncdf_attput:
>
> ncid=ncdf_create('test.nc', /clobber)
> dim32=ncdf_dimdef(ncid, 'dim1', 32)
> n_absorbers_dimid=ncdf_dimdef(ncid, 'dim2', 9)
> varid = ncdf_vardef(ncid, 'absorber_units_name', [dim32,n_absorbers_dimid], /char)
> ncdf_attput, ncid, varid, '_FillValue', ' ', /CHAR
> ncdf_control, ncid, /endef
> ncdf_close, ncid
>
> It works now! :-)
>
> regards,
> lajos

Does that help?

cheers,

paulv
