Subject: Re: writing fixed-length string arrays to netcdf-4
Posted by David Fanning on Mon, 04 Nov 2013 18:21:32 GMT
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Chris O'Dell writes:

> Nice try but no cigar. I tried that but honestly they were already fixed length strings in IDL anyway (in my case, length=14). NetCDF simply doesn't care. You have to somehow tell it to make the variable in the output netCDF file be an array of fixed-length strings, ideally through the NCDF_VARDEF command. But I don't know how, and there doesn't seem to be any documentation anywhere that explains it.
>
> Like I said, you can define the netCDF variable as a 2D character array (using /CHAR in the call to NCDF_VARDEF), or as an array of variable-length strings (using the /STRING keyword in the call to NCDF_VARDEF).
>
> If you do get something to work, and get HDFView to tell you the data type in the output netCDF file is "String, length = 8" (or whatever your string length is, so long as it is > 1) please post the code to do so!

Well, I don't know. My NCDF_File object seems to do it just fine.

```
;---------------------------------------------------------- -----------
; Create a ncdf file with variable length and fixed length strings.
fileObj = Obj_New('ncdf_file', 'test.nc', /Clobber, /Create)
fileObj -> WriteDim, 'length', [10], OBJECT=dimObj
v1 = 'cat'
v2 = 'coyote'
v3 = 'elephant'
v4 = String(v1, Format='(A10)')
v5 = String(v2, Format='(A10)')
v6 = String(v3, Format='(A10)')
fileObj -> WriteVarDef, 'v11', 'length', DATATYPE='STRING', OBJECT=v1Obj
fileObj -> WriteVarDef, 'v22', 'length', DATATYPE='STRING', OBJECT=v2Obj
fileObj -> WriteVarDef, 'v33', 'length', DATATYPE='STRING', OBJECT=v3Obj
fileObj -> WriteVarDef, 'v44', 'length', DATATYPE='STRING', OBJECT=v4Obj
fileObj -> WriteVarDef, 'v55', 'length', DATATYPE='STRING', OBJECT=v5Obj
fileObj -> WriteVarDef, 'v66', 'length', DATATYPE='STRING', OBJECT=v6Obj

fileObj -> WriteVarData, v1Obj, v1
fileObj -> WriteVarData, v2Obj, v2
fileObj -> WriteVarData, v3Obj, v3
fileObj -> WriteVarData, v4Obj, v4
fileObj -> WriteVarData, v5Obj, v5
fileObj -> WriteVarData, v6Obj, v6

fileObj -> Sync
Obj_Destroy, fileObj
```

```
; Read the data out of the file.
fObj = Obj_New('ncdf_file', 'test.nc')
v_1 = fObj -> GetVarData('v11')
v_4 = fObj -> GetVarData('v44')
Help, v_1, v_4
v_2 = fObj -> GetVarData('v22')
v_5 = fObj -> GetVarData('v55')
Help, v_2, v_5
v_3 = fObj -> GetVarData('v33')
v_6 = fObj -> GetVarData('v66')
Help, v_3, v_6

END
 ;------------------------------------------------------------ -----------
```

Here are the results I get when I run the code above:

```
IDL> .go
V_1             STRING    = 'cat'
V_4             STRING    = '       cat'
V_2             STRING    = 'coyote'
V_5             STRING    = '    coyote'
V_3             STRING    = 'elephant'
V_6             STRING    = '  elephant'
```

Cheers,

David
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Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")