
Subject: Re: Need help with HDF_VD_WRITE!!!

Posted by [James Kuyper](#) on Thu, 10 Oct 2002 15:35:59 GMT

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> Brian Huether wrote:

>

> This is quite maddening. I am using IDL 5.2 and am working with HDF
> files. Consider an array with 2 columns, where each col is a field and
> each row a record. In the language of HDF, that would be a VDATA. In
> theory, then the following commands should work:

>

> fid=HDF_OPEN('test.hdf',/CREATE)

> Vdat2 = HDF_VD_ATTACH(fid, -1, /WRITE)

Before you can write any records, you first need to call HDF_VD_DEFINE
to define each field in the vdata:

```
IDL> HDF_VD_FDEFINE, Vdat2, 'F1', /FLOAT
```

```
IDL> HDF_VD_FDEFINE, Vdat2, 'F2', /FLOAT
```

> HDF_VD_WRITE, Vdat2, 'F1,F2', fltarr(2,10)

I'm not entirely sure what the field list argument is for in
HDF_VD_WRITE. The corresponding raw HDF function can only write an
entire record, and can only be called for a vdata that has already had
it's fields defined. I tried the following:

```
IDL> HDF_VD_WRITE, Vdat2, 'F1', 1.0
```

```
% HDF_VD_WRITE: Insufficient data in item (<FLOAT ( 1.00000)>)  
to
```

```
write even 1 record.
```

However, the following was accepted:

```
HDF_VD_WRITE, Vdat2, 'F1', [1.0,2.0]
```

And vshow gave me the following results after I closed the file:

FILE: test.hdf

No vgroups in this file

Lone vdatas:

L vs:2 <1962/2> nv=11 i=0 fld [F1,F2] vsize=8 (NoName {})

0: fld [F1], type=5, order=1

1: fld [F2], type=5, order=1

0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000
0.000000

0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000
0.000000

0.000000 0.000000 0.000000 0.000000 1.000000 2.000000

0 attributes.

Which looks to me like it wrote [1.0,2.0] exactly as if I'd indicated "F1,F2", rather than simply "F1". So I'm confused.

--

James Kuyper
MODIS Level 1 Lead
Science Data Support Team
(301) 352-2150

Subject: Re: Need help with HDF_VD_WRITE!!!
Posted by [Brian Huether](#) on Fri, 11 Oct 2002 11:10:08 GMT
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```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML><HEAD>
<META http-equiv=Content-Type content="text/html; charset=iso-8859-1">
<META content="MSHTML 6.00.2800.1106" name=GENERATOR>
<STYLE></STYLE>
</HEAD>
<BODY>
<DIV><FONT face=Arial size=2>I thought I had it. But man this is so complicated.
Say I have one column of data with one field. All the following
fail:</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT>&nbsp;</DIV>
<DIV><FONT face=Arial size=2>IDL&gt;
fileid=HDF_OPEN('e:\huether\test7.hdf',/CREATE)</FONT></DIV >
<DIV><FONT face=Arial size=2>IDL&gt; Vdat = HDF_VD_ATTACH(fileID, -1,
/WRITE)</FONT></DIV>
<DIV><FONT face=Arial size=2>IDL&gt; HDF_VD_WRITE, Vdat, 'PX', indgen(1,10)
</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT>&nbsp;</DIV>
<DIV><FONT face=Arial size=2>and also</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT>&nbsp;</DIV><FONT size=1>
<DIV><FONT face=Arial size=2>IDL&gt;
fileid=HDF_OPEN('e:\huether\test8.hdf',/CREATE)</FONT></DIV >
<DIV><FONT face=Arial size=2>IDL&gt; Vdat = HDF_VD_ATTACH(fileID, -1,
/WRITE)</FONT></DIV>
<DIV><FONT face=Arial size=2>IDL&gt; HDF_VD_FDEFINE,
Vdat,'SS',/FLOAT</FONT></DIV>
<DIV><FONT face=Arial size=2>IDL&gt; HDF_VD_WRITE, Vdat, 'SS',
findgen(1,10)</FONT> </DIV>
<DIV><FONT face=Arial size=2></FONT>&nbsp;</DIV>
<DIV><FONT face=Arial size=2>In each case the error is</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT>&nbsp;</DIV>
<DIV><FONT face=Arial size=2>% HDF_VD_WRITE: Data array dimensioning mismatch
```

(<FLOAT Array[1, 10]>).</DIV>

<DIV> </DIV>

<DIV>This is so annoying. Consider this:</DIV>

<DIV> </DIV>

<DIV>IDL>

fileid=HDF_OPEN('e:\huether\test10.hdf',/CREATE)</DIV >

<DIV>IDL> Vdat = HDF_VD_ATTACH(fileID, -1,

/WRITE)</DIV>

<DIV>IDL> HDF_VD_WRITE, Vdat, 'SS', indgen(10)

</DIV>

<DIV> </DIV>

<DIV>This causes the error</DIV>

<DIV> </DIV><FONT

size=1>

<DIV>HDF_VD_WRITE: Unable to set the VDATA fieldnames to <STRING

('SS')></DIV>

<DIV> </DIV>

<DIV>But consider this:</DIV>

<DIV> </DIV>

<DIV>IDL>

fileid=HDF_OPEN('e:\huether\test11.hdf',/CREATE)</DIV >

<DIV>IDL> Vdat = HDF_VD_ATTACH(fileID, -1,

/WRITE)</DIV></DIV>

<DIV>IDL> HDF_VD_WRITE, Vdat, 'PX', indgen(10)

</DIV>

<DIV> </DIV>

<DIV>This works fine! The only difference is that I am

using the string 'PX'!!!!!!!!!!!!!!!!!!!!</DIV>

<DIV> </DIV>

<DIV>Man I have had it with this. So unbelievably

counterintuitive. Oh, and how is this for more insanity: The above works for

unclear reason as stated, but the form of</DIV>

<DIV>indgen(10) has 10 columns. Try replacing that with

indgen(1,10) and we have the same problem as above.</DIV>

<DIV> </DIV>

<DIV>If the creators of this API are watching, can you

please write a user's manual for HDF_VD alone?</DIV>

<DIV> </DIV>

<DIV>-brian</DIV>

<DIV> </DIV>

<DIV> </DIV>

<DIV>"James Kuyper" <<FONT face=Arial

size=2>kuyper@saicmodis.com> schrieb im

Newsbeitrag <FONT

face=Arial size=2>news:3DA59E5F.F5098369@saicmodis.com<FONT

face=Arial size=2>...</DIV>> > Brian

Huether wrote:
> >
> > This is quite maddening. I am using

[stuff deleted]

Have you considered using the HDF Scientific Data Set model instead?
It's much more flexible and easy to use IMHO. For example:

```
;- Create the file
hdfid = hdf_sd_start('test.hdf', /create)
varid = hdf_sd_create(hdfid, 'SS', [10, 10], /float)
hdf_sd_adddata, varid, findgen(10, 10)
hdf_sd_endaccess, varid
hdf_sd_end, hdfid
```

```
;- Read the file
hdfid = hdf_sd_start('test.hdf')
index = hdf_sd_nametoindex(hdfid, 'SS')
varid = hdf_sd_select(hdfid, index)
hdf_sd_getdata, varid, data
hdf_sd_endaccess, varid
hdf_sd_end, hdfid
```

For more details see my book Chapter 4, pp. 182-192, or the HDF routines
at

http://www.gumley.com/PIP/Free_Software.html

Cheers,
Liam.
Practical IDL Programming
<http://www.gumley.com/>

Subject: Re: Need help with HDF_VD_WRITE!!!
Posted by [R.Bauer](#) on Sun, 13 Oct 2002 13:13:41 GMT
[View Forum Message](#) <> [Reply to Message](#)

Liam E. Gumley wrote:
>> Brian Huether wrote:
>>
>> I thought I had it. But man this is so complicated. Say I have one
>> column of data with one field. All the following fail:
>>
>> IDL> fileid=HDF_OPEN('e:\huether\test7.hdf',/CREATE)
>> IDL> Vdat = HDF_VD_ATTACH(fileID, -1, /WRITE)
>> IDL> HDF_VD_WRITE, Vdat, 'PX', indgen(1,10)
>
> [stuff deleted]
>
> Have you considered using the HDF Scientific Data Set model instead?

```

> It's much more flexible and easy to use IMHO. For example:
>
> ;- Create the file
> hdfid = hdf_sd_start('test.hdf', /create)
> varid = hdf_sd_create(hdfid, 'SS', [10, 10], /float)
> hdf_sd_adddata, varid, findgen(10, 10)
> hdf_sd_endaccess, varid
> hdf_sd_end, hdfid
>
> ;- Read the file
> hdfid = hdf_sd_start('test.hdf')
> index = hdf_sd_nametoindex(hdfid, 'SS')
> varid = hdf_sd_select(hdfid, index)
> hdf_sd_getdata, varid, data
> hdf_sd_endaccess, varid
> hdf_sd_end, hdfid
>
> For more details see my book Chapter 4, pp. 182-192, or the HDF routines
> at

```

Just for discussion:

Most time I am seeing HDF files the users don't care about coordination variables or dimension names.

By the hand HDF was developed after netCDF and the mostly from the declaration is nearly the same. Why not using the internal logic of netCDF too.

Normally there is a bit of logic behind the data which is stored in a scientific data format. But most people using HDF did not use the internal mechanism. They always define for every variable all dimensions again. So if you have 10 vectors by 10 values they wrote 10 dimensions to the file. Normally one is enough. And for example if one of the vectors has a realation to each of the others, e.g. time to temperature then in netCDF the dimension name is 'time' and then you know by reading 'temperature' automaticly that's the vector 'time' belongs to this parameter. By this mechanism it is very easy to mix multidimensional data and vector data into one file and always to read the right parameters. I won't wonder if they write a short_name as attribute to the file.

Reimar

--

Reimar Bauer

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a IDL library at ForschungsZentrum Juelich
http://www.fz-juelich.de/icg/icg-i/idl_icglib/idl_lib_intro.html
=====
