Subject: Re: HDF_SD_ADDDATA problem
Posted by brodzik@nsidc.org on Tue, 22 Apr 2008 14:23:38 GMT
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On Apr 21, 5:24 pm, adfra...@utas.edu.au wrote:
> Dear Everyone,
>
> I'm having trouble writing to an HDF file using HDF_SD_ADDDATA, but
> let me set the scene quickly first.
>
> I'm using a multispectral satellite imagery dataset in its native L1B
> (HDF-EOS, it's MODIS for those who care!) format. When ordering the
> data, one has the option to channel subset the data to reduce size.
>
> I've written IDL programs to cloud mask the data, which involves
> manipulating an SDS within the HDF. My programs all work fine using
> the full, un-subsetted data, but whenever I try them on the subsetted
> HDFs, they fall over with this error.
>
> ---------- ----------
> % HDF_SD_ADDDATA: Unable to write the specified HDF-SD slice.
> % Execution halted at: HDFEDITSDS 28 /array/work/adfraser/
> MODIS
> images/18_4_08 processing of winter2 data/output/HDFeditSDS.pro
> % $MAIN$
> ---------- ----------
>
> Here is the code which I've been using to write successfully to the
> unsubsetted data but unsuccessfully to the subsetted data:
>
> ---------- ----------
> PRO HDFeditSDS, filename, sdsname, newdata
>
> sdfileid=hdf_sd_start(filename, /rdwr)
>
> ; Find the index of the "Gridded Data" SDS.
> index = HDF_SD_NAMETOINDEX(sdFileID, sdsname)
>
> ; Select the Gridded Data SDS.
> thisSdsID = HDF_SD_SELECT(sdFileID, index)
>
> HDF_SD_AddData, thisSdsID, newdata
>
> hdf_sd_end, sdfileid
>
> END
> ---------- ----------
>

> I've checked all the obvously stupid things (file access permissions
> are identical, and the SDS name exists within the HDF). I'm at a loss,
> please help!
>
> Cheers,
> Alex.
>
> Alex Fraser
> Ph.D. candidate
> University of Tasmania
> Antarctic Climate and Ecosystems Cooperative Research Centre
> Sandy Bay Campus
> Tasmania 7001

Alex,

I have also been working with MODIS HDF data lately, and sympathize with your troubles.

The workings of HDF routines are very murky to me. As a result, my behavior reduces to superstitious little rules like these. Makes me understand how ignorance during the Middle Ages led people to do all kinds of crazy things.

My wacky rules are:

a) always check return codes--they often behave in strange ways when the object interface gets confused
b) always bracket an hdf_sd_select call with an hdf_sd_endaccess, (I think you're missing an hdf_sd_endaccess in your sample, but that doesn't explain why it works for unsubsetted data but not subsetted)
c) likewise with hdf_sd_start and hdf_sd_end

and, finally, after I recently added a new SD to a MODIS tile using the HDF_SD interface, I learned that I really needed to use the EOS_GD interface, so the new SD was really part of the HDF-EOS grid object and other software (the MODIS reprojection tool) was only looking in the grid object, and was ignoring any other SDs in the file. Just an aside, but it might affect whatever you're doing downstream.

Ohmygosh, I never thought it would happen to me, but I'm speaking HDF-bot...need to go get some Listerine.

Good luck,
Mary Jo

Subject: Re: HDF_SD_ADDDATA problem
Posted by brodzik@nsidc.org on Tue, 22 Apr 2008 14:25:50 GMT
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Actually, I just thought of something else: do the types and
dimensions of the file's SD and your newdata match?

MJ

Subject: Re: HDF_SD_ADDDATA problem
Posted by UV_Catastrophe on Tue, 22 Apr 2008 20:57:56 GMT
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On Apr 21, 7:24 pm, adfra...@utas.edu.au wrote:
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> Cheers,
> Alex.
>
> Alex Fraser
> Ph.D. candidate
> University of Tasmania
> Antarctic Climate and Ecosystems Cooperative Research Centre
> Sandy Bay Campus
> Tasmania 7001

Hi Alex,

As Mary Jo pointed out, before calling HDF_SD_END, you should insert the following command: "HDF_SD_ENDACCESS, sdfileid". However, as she said, that doesn't explain why your code was working for unsubsetted data.

Could you provide a little more information about the data that you're working with? Specifically:

- Have you tried running your code with various different data subsets? (You probably have, but it doesn't hurt to ask.)

- When you channel subset the data, which bands are you keeping?

- Out of curiosity, why aren't you just using the pre-masked data? (I believe that the website can provide you with data that has already been cloud masked.)

Ben Ripman
MODIS IOT

Subject: Re: HDF_SD_ADDDATA problem
Posted by adfraser on Thu, 24 Apr 2008 02:17:22 GMT
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Thanks a lot, Mary Jo, for your comments and suggestions.

I recently added the endaccess call, but unsurprisingly there was no chance to my problems!

I haven't checked out the return codes, that might provide some insight, hopefully!

Also, I hadn't used the EOS_GD interface before, I must check that out one day. It looks interesting, is a part of the IDL standard distribution?

HDF-bot: I know the feeling!

Thanks again, Alex.

Subject: Re: HDF_SD_ADDDATA problem
Posted by adfraser on Thu, 24 Apr 2008 02:18:31 GMT
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The types and dimensions both match, however the code I've posted (top) still works regardless of whether the dimensions match. HDF_SDS_ADDDATA is nice like that (when it works!).

Subject: Re: HDF_SD_ADDDATA problem
Posted by adfraser on Thu, 24 Apr 2008 02:23:27 GMT
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Thanks, Ben.
Yep, I added the endaccess call, but still no luck.
The data I'm working with are LAADS-subsetted L1B 1km-resolution MODIS data, obtained from ladsweb.nascom.nasa.gov
I'm using bands 31 and 32. I've tried it with many subsetted files (even from different batches), but the same result occurs.
I'm not performing the channel subsetting myself, they are ordered as subsetted files "from the factory" (at laads).

To answer your curiosity, I'm performing some important polar-specific fine-tuning of the cloud masks before application.

Thanks again!
Alex.
