Subject: Re: reading multiple HDF files
Posted by Juggernaut on Tue, 15 Jul 2008 13:36:40 GMT
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On Jul 15, 7:41 am, julia.waltersp...@gmail.com wrote:
> Hi!
> I'm a newbie to IDL (I used to program in MATLAB but the place i work
> at only has IDL licences) and i need to get some things here done
> asap.
> I've been struggling with reading HDF files from MODIS for quiet some
> time now and I def need some good input!
> Here's the thing:
>
> I downloaded a bunch (hundrets) of MODIS data (e.g. MOD_06, Cloud
> product, daily data, years 2000-2008) in HDF format from which I need
> to extract the SDS "Cloud_Fraction" and plot it as a time series for a
> specific geographical region (Switzerland). I managed to read the
> files with the program hdf_read by David fanning and I have a vague
> idea what to do in order to read in multiple hdf files (I guess this
> is done with a FOR loop).
>
> HOWEVER: I simply cannot imagine how it is possible to link single
> SDS' (e.g. "Cloud_Fraction") from multiple hdf files, and I don't even
> wanna think about displaying them as a time series or on a map of a
> geographic region.
>
> Can anybody give me some good hints? anything would be greatly
> appreciated!!!
> many many thanks
> Julia

You should check out Liam Gumley's hdf_sd_varread and hdf_sd_vardir.
Then you can do something like...

varnames = hdf_sd_vardir(hdfid)

index = hdf_sd_nametoindex(hdfid, varnames[i]) ;- 'i' is whichever
index of varnames your Cloud_Fraction is

varid = hdf_sd_select(hdfid, index)

hdf_sd_getdata, varid, data ;- Your cloud_fraction data will be
stored in 'data' for you to use

hdf_sd_endaccess, varid

Subject: Re: reading multiple HDF files
Posted by David Fanning on Tue, 15 Jul 2008 13:41:42 GMT
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Juggernaut writes:

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> Then you can do something like...
>
> varnames = hdf_sd_vardir(hdfid)
>
> index = hdf_sd_nametoindex(hdfid, varnames[i]) ;- 'i' is whichever
> index of varnames your Cloud_Fraction is
>
> varid = hdf_sd_select(hdfid, index)
>
> hdf_sd_getdata, varid, data ;- Your cloud_fraction data will be
> stored in 'data' for you to use
>
> hdf_sd_endaccess, varid

Yes, I second this. The program HDFRead you found on my web page
is *not* designed to read any HDF file, but just the one created
with HDFWrite. You can use the HDF_BROWSER if you have to, to
learn the name of your cloud_fraction variable, then use Liam's
routines to read the data you need from your files.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: reading multiple HDF files
Posted by Juggernaut on Tue, 15 Jul 2008 13:41:48 GMT
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On Jul 15, 7:41 am, julia.waltersp...@gmail.com wrote:
> Hi!
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> at only has IDL licences) and i need to get some things here done
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> I downloaded a bunch (hundrets) of MODIS data (e.g. MOD_06, Cloud
> product, daily data, years 2000-2008) in HDF format from which I need
> to extract the SDS "Cloud_Fraction" and plot it as a time series for a
> specific geographical region (Switzerland). I managed to read the
> files with the program hdf_read by David fanning and I have a vague
> idea what to do in order to read in multiple hdf files (I guess this
> is done with a FOR loop).
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> HOWEVER: I simply cannot imagine how it is possible to link single
> SDS' (e.g. "Cloud_Fraction") from multiple hdf files, and I don't even
> wanna think about displaying them as a time series or on a map of a
> geographic region.
>
> Can anybody give me some good hints? anything would be greatly
> appreciated!!!
> many many thanks
> Julia

Also...as for the loop you can simply do a file_search() routine (just
run a help inquiry on it for syntax) and find all
hdf files in a certain directory. You can use the 'count' variable it
uses to determine the loop size and then use the hdf reader
stuff I mentioned above to plot the data against each other using
'oplot' to plot over successive plots.
Hope this helps a bit.

Subject: Re: reading multiple HDF files
Posted by julia.walterspiel on Tue, 15 Jul 2008 14:51:06 GMT
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great, thanks guys! I'll try this, too.
In the meantime I did the file_search and read in file by file with a
for-loop. But I guess this solution does not append the "newly" read
Variable to the other ones so that I can do a plot of a time series..?
@david: yeah, lucky me it didnt take me too long to figure out what I
needed to change on your hdf_read program so that it works with my
variables :) (i used the filename = read_hdf() at the IDL command line
to check for the SDS variable names)

Subject: Re: reading multiple HDF files
Posted by David Fanning on Tue, 15 Jul 2008 15:05:47 GMT
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julia.walterspiel@gmail.com writes:

> In the meantime I did the file_search and read in file by file with a
> for-loop. But I guess this solution does not append the "newly" read
> Variable to the other ones so that I can do a plot of a time series..?

You will probably have to do that yourself. :-)

But, I imagine this array can get pretty big. I think I would
write the files to disk, then read them back in using
the associated variable method (ASSOC) when you need them.

```
  OpenW, outlun, 'mybigfile.dat', /Get_Lun
  FOR thisFile = 0, count-1 DO BEGIN
thisImage = HDF_READ(files[thisFile], ....)
     WriteU, outlun, thisImage
  ENDFOR
  Free_Lun, outlun
```

Then, later:

```
  OpenR, lun, 'mybigfile.dat', /Get_Lun
  imageStack = Assoc(lun, IntArr(xsize, ysize))
```

To display the 4th image:

```
  TV, imageStack[3]
```

Or, whatever else you want to do with them.

If you want them all, of course:

```
  stack = IntArr(xsize, ysize, count)
  OpenR, lun, 'mybigfile.dat', /Get_Lun
  ReadU, lun, stack
  Free_Lun, lun
```

Of course, your images might not be integer arrays, and
I have no idea what size these are, etc., etc. Use this
code at your discretion. :-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.

Subject: Re: reading multiple HDF files
Posted by Juggernaut on Tue, 15 Jul 2008 17:50:22 GMT
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On Jul 15, 11:05 am, David Fanning <n...@dfanning.com> wrote:
> julia.waltersp...@gmail.com writes:
>> In the meantime I did the file_search and read in file by file with a
>> for-loop. But I guess this solution does not append the "newly" read
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>
> You will probably have to do that yourself. :-)
>
> But, I imagine this array can get pretty big. I think I would
> write the files to disk, then read them back in using
> the associated variable method (ASSOC) when you need them.
>
>   OpenW, outlun, 'mybigfile.dat', /Get_Lun
>   FOR thisFile = 0, count-1 DO BEGIN
>   thisImage = HDF_READ(files[thisFile], ...)
>   WriteU, outlun, thisImage
>   ENDFOR
>   Free_Lun, outlun
>
> Then, later:
>
>   OpenR, lun, 'mybigfile.dat', /Get_Lun
>   imageStack = Assoc(lun, IntArr(xsize, ysize))
>
> To display the 4th image:
>
>   TV, imageStack[3]
>
> Or, whatever else you want to do with them.
>
> If you want them all, of course:
>
>   stack = IntArr(xsize, ysize, count)
>   OpenR, lun, 'mybigfile.dat', /Get_Lun
>   ReadU, lun, stack
>   Free_Lun, lun
>
> Of course, your images might not be integer arrays, and
> I have no idea what size these are, etc., etc. Use this
> code at your discretion. :-)

>
> Cheers,
>
> David
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

If you want to compare these in a plot you'll probably need to
normalize your time series as this could be different for them all
although I don't know if MODIS has a 0 start of collect time or a zulu
start of collect time, etc...

Subject: Re: reading multiple HDF files
Posted by bulrushmower on Tue, 15 Jul 2008 20:37:21 GMT
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On Jul 15, 12:50 pm, Juggernaut <juggernau...@gmail.com> wrote:
> On Jul 15, 11:05 am, David Fanning <n...@dfanning.com> wrote:
>
>
>
>
>
>> julia.waltersp...@gmail.com writes:
>>> In the meantime I did the file_search and read in file by file with a
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>> the associated variable method (ASSOC) when you need them.
>
>>   OpenW, outlun, 'mybigfile.dat', /Get_Lun
>>   FOR thisFile = 0, count-1 DO BEGIN
>>   thisImage = HDF_READ(files[thisFile], ...)
>>   WriteU, outlun, thisImage
>>   ENDFOR
>>   Free_Lun, outlun
>
>> Then, later:
>
>>   OpenR, lun, 'mybigfile.dat', /Get_Lun

```
>>    imageStack = Assoc(lun, IntArr(xsize, ysize))
>
>> To display the 4th image:
>
>>    TV, imageStack[3]
>
>> Or, whatever else you want to do with them.
>
>> If you want them all, of course:
>
>>    stack = IntArr(xsize, ysize, count)
>>    OpenR, lun, 'mybigfile.dat', /Get_Lun
>>    ReadU, lun, stack
>>    Free_Lun, lun
>
>> Of course, your images might not be integer arrays, and
>> I have no idea what size these are, etc., etc. Use this
>> code at your discretion. :-)
>
>> Cheers,
>
>> David
>> --
>> David Fanning, Ph.D.
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> If you want to compare these in a plot you'll probably need to
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> although I don't know if MODIS has a 0 start of collect time or a zulu
> start of collect time, etc...- Hide quoted text -
>
> - Show quoted text -
```

Try this link
 http://groups.google.com/group/comp.lang.idl-pvwave/browse_t
hread/thread/cae923b1cd9c393b/da2b8712b63af341?hl=en&lnk
=gst&q=HDF#da2b8712b63af341