Subject: Re: No HDF5 info type functions?
Posted by James Kuyper on Tue, 05 Jul 2005 17:30:16 GMT
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ellips@yahoo.com wrote:
> I'm trying to find the names and numbers of HDF5 groups/datasets
> in IDL. This was done for HDF 4 files with functions like
> hdf_sd_fileinfo. I don't see any equivalent types of functions
> for the HDF5 interface. It seems you need to know the group/dataset
> names before you can access them. I want to be very general and
> rely on the file contents to tell me what's in the file.
>
> I'd like to query the HDF5 file for the number of top level groups,
> loop through them to get their names and go on down the tree.
> How do you get the name of the top level group?

Note: everything I say below is based upon reading the built-in IDL documentation and HDF5 documentation from <http://hdf.ncsa.uiuc.edu/HDF5/doc/>. None of it represents actual experience with using those functions, as I have no HDF5 files to test with, nor time to perform the tests.

HDF5 groups have a naming structure similar to that of UNIX file systems. Therefore, the top level group is always named '/'. All of the other group names can be obtained from that one, by iterating over the group members, and if a group member is itself a group, recursively iterating over it's members.

Once you've opened a given group, the number of members of that group can be found by using H5G_Get_Nmembers(). That will allow you to iterate over the members by number to get their names by calling H5G_Get_Member_Name(). Use the member name to determine the object type with H5G_Get_Objinfo(). If the object type is itself a group, recursively iterate over the members of that group. If the object type is a dataset, Call H5D_Get_Type() to determine it's data type.

> The IDL docs show many functions taking loc_id to be a file OR group id.

When providing a file ID, the group name must be an absolute name, such as /Data/Cdata. However, if you provide a group ID, you can use a name relative to that group. For instance, you can open /Data/Cdata using the groupID for "/Data", and a relative group name of "Cdata".