Subject: HDF files and memory leak
Posted by Jacques on Fri, 10 Aug 2001 11:08:01 GMT
View Forum Message <> Reply to Message

Hi all

I am trying to find out how to stop a memory leak when reading HDF files.

Here is a chunk of the code where I restore a template, and free up the
memory that it uses, and all is fine.

```
 ------------------------------------------------------------ ------
IDL Version 5.4 (linux x86). (c) 2000, Research Systems, Inc.

IDL> help, /heap
Heap Variables:
    # Pointer: 0
    # Object : 0
IDL> file = 'hdfaa.000'
IDL> restore, 'energy.template'
IDL> help, /heap
Heap Variables:
    # Pointer: 55
    # Object : 0

<PtrHeapVar1>   STRUCT    = -> <Anonymous> Array[1]
<PtrHeapVar2>   LONG      =          63

....

IDL> ptr_free, template.sd.sds.attributes
IDL> ptr_free, template.sd.sds.dims
IDL> ptr_free, template.sd.sds.dim_info
IDL> help, /heap
Heap Variables:
    # Pointer: 0
    # Object : 0
IDL>

 ------------------------------------------------------------ ------
```

However, when I actually read data from an HDF file...

```
 ------------------------------------------------------------ ------
IDL Version 5.4 (linux x86). (c) 2000, Research Systems, Inc.

IDL> help, /heap
Heap Variables:
    # Pointer: 0
    # Object : 0
```

```
IDL> file = 'hdfaa.000'
IDL> restore, 'energy.template'
IDL> help, /heap
Heap Variables:
    # Pointer: 55
    # Object : 0

<PtrHeapVar1>   STRUCT    = -> <Anonymous> Array[1]
<PtrHeapVar2>   LONG      =          63

...

IDL> temp = hdf_read(file, template=template)
% Restored file: HDF_READ.
% Restored file: HDF_MAP.
% Compiled module: REVERSE.
% Loaded DLM: HDF.
IDL> help, /heap
Heap Variables:
    # Pointer: 165
    # Object : 0

<PtrHeapVar1>   STRUCT    = -> <Anonymous> Array[1]
<PtrHeapVar2>   LONG      =          63

...

IDL> ptr_free, template.sd.sds.attributes
IDL> ptr_free, template.sd.sds.dims
IDL> ptr_free, template.sd.sds.dim_info
IDL> help, /heap
Heap Variables:
    # Pointer: 110
    # Object : 0

<PtrHeapVar56>  STRUCT    = -> <Anonymous> Array[1]
<PtrHeapVar57>  LONG      =          63

...

IDL> help, temp, /structure
** Structure <81ec2fc>, 4 tags, length=1000212, refs=1:
   FILENAME        STRING    'hdfaa.000'
   VERSION         STRING    '1.1'
   DATE            STRING    'Fri Jul 27 09:42:22 2001'
   _HDFAA_SD_19
                   FLOAT     = Array[63, 63, 63]
 ---------------------------------------------------------- ------
```

So hdf_read takes up a chunk of the heap, and there are no pointers in the variable "temp".

The HDF_BROWSER online help states:
"The user is required to clean up the heap variable references when done with them."

So I try to run
IDL> heap_gc
IDL> help, /heap
Heap Variables:
    # Pointer: 0
    # Object : 0

So that seems fine, but the problem is that the memory is not freed up and after a couple of hours (and reading hundreds of HDF files) the memory usage (as reported by top) is up to 220MB. Nothing can free up the memory (I've tried heap_gc and .full_reset_session).

Can anyone tell me what I need to do to free up this memory?

Thanks,
Jacques
