Subject: Re: HDF Data sets containg strings? Posted by davidf on Sun, 01 Nov 1998 08:00:00 GMT

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Richard Penrose (rpenrose@uk.ibm.com) writes:

- > I would very much like to be able to append an array of three character
- > strings to an HDF file using the 'HDF_SD_ADDDATA' command. I have tried
- > to do this without any luck, and can find no documentation to help me
- > with this.

>

- > In the end I have had to resort to appending a 3*n dimensional array,
- > i.e. 3 characters * however many dimensions are required.

>

> Does anyone have a solution to this problem, I would be most grateful!

I'm no HDF expert by any means, but a quick look at the HDF chapter in my IDL Programming Techniques book suggests that the HDF_SD_ADDDATA command is for adding a "slab" of data. I understand "slab" to mean a two or three dimensional array which has been assigned an SDS identifier with the HDF_SD_Create command. For character data, I guess I would use a byte array. Probably something like this:

```
strArray = StrArr(4)

strArray[0] = 'ABC'

strArray[1] = 'DEF'

strArray[2] = 'GHI'

strArray[3] = 'JKL'

hdfFileID = HDF_SD_START('newfile.hdf')

sdsID = HDF_SD_CREATE(hdfFileID, 'Comment Array', [3,4], /Byte)

HDF_SD_ADDDATA, sdsID, Byte(strArray)
```

Another alternative is to add each string to the file as a file attribute with the HDF_SD_AttrSet command.

Cheers,

David

.....

David Fanning, Ph.D.

Fanning Software Consulting E-Mail: davidf@dfanning.com

Phone: 970-221-0438, Toll-Free Book Orders: 1-888-461-0155 Coyote's Guide to IDL Programming: http://www.dfanning.com/

Note: A copy of this article was e-mailed to the original poster.

Subject: Re: HDF Data sets containg strings? Posted by Richard Penrose on Mon, 02 Nov 1998 08:00:00 GMT

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David Fanning wrote:

```
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> Cheers,
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> David
> David Fanning, Ph.D.
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```

David

Thanks very much for you're prompt response.

I had already tried the 'byte' method that you suggested, it just creates a 3 * n dimensional dataset with a byte in each element, I actually did this using '/STRING' instead of '/BYTE' the result is the same but you get characters instead of byte values in each dataset element.

I hadn't thought of the 'HDF_SD_AttrSet' work around, I think I will either use this or just accept that I'll get a dataset element for each character.

Thanks again

Richard

P.S. I thought the newsgroup was pretty good, its the first time I've used it.

Subject: Re: HDF Data sets containg strings?
Posted by davidf on Mon, 02 Nov 1998 08:00:00 GMT
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Martin Schultz (mgs@io.harvard.edu) writes:

- > prompts me to adevrtise my str2byte function that may help you getting byte
- > arrays with fixed length from strings with variable length. Please find it
- > attached below.

I can see some applications for Martin's Str2Byte function, but I wanted to remind you of something I learned from Ray Sterner a long time ago: if you have a string array with strings of variable lengths, you can easily turn that into a 2D byte array, in which each string is as long as the longest string in the array by using the BYTE function.

```
a = StrArr(4)
a[0] = 'hello'
a[1] = 'my name is coyote'
a[2] = 'what is yours?'
a[3] = 'bye'
done = Byte(a)
Help, done
DONE
BYTE = Array[17, 4]
```

Not only that, but they come back out properly!

```
Print, String(done[*,0])
hello

Print, StrLen(String(done[*,0]))
5

Cheers,

David

David Fanning, Ph.D.
```

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Subject: Re: HDF Data sets containg strings?
Posted by Martin Schultz on Mon, 02 Nov 1998 08:00:00 GMT
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- > I'm no HDF expert by any means, [...]

me neither, but what David suggests next

- > [...]. For character data, I guess I would
- > use a byte array. [...]

prompts me to adevrtise my str2byte function that may help you getting byte arrays with fixed length from strings with variable length. Please find it attached below.

Regards, Martin. Dr. Martin Schultz Department for Engineering&Applied Sciences, Harvard University 109 Pierce Hall, 29 Oxford St., Cambridge, MA-02138, USA phone: (617)-496-8318 fax: (617)-495-4551 e-mail: mgs@io.harvard.edu Internet-homepage: http://www-as.harvard.edu/people/staff/mgs/ ; \$ld: str2byte.pro,v 1.1 1998/10/09 19:53:32 mgs Exp \$;-----;+ NAME: STR2BYTE (function) **PURPOSE:** Convert a string into a byte vector of a given length for output in binary data files. CATEGORY: Tools **CALLING SEQUENCE:** bstr = STR2BYTE(string [,length]) **INPUTS**: STRING -> The string to be converted LENGTH -> Length of the byte vector. Default is to use the length of the string. If LENGTH is shorter, the string will be truncated, if it is longer, it will be filled with blanks (32B). **KEYWORD PARAMETERS:** none **OUTPUTS**: A byte vector of the specified length

```
SUBROUTINES:
 REQUIREMENTS:
 NOTES:
 EXAMPLE:
     ; write a 80 character string into a binary file
     openw,lun, 'test.dat', /F77 UNFORMATTED, /get lun
     writeu,lun,str2byte('Test string',80)
     free lun.lun
 MODIFICATION HISTORY:
     mgs, 24 Aug 1998: VERSION 1.00
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; be used commercially or sold as part of a larger package,
 please contact the author to arrange payment.
 Bugs and comments should be directed to mgs@io.harvard.edu
; with subject "IDL routine str2byte"
function str2byte,str,len
  if (n_elements(str) eq 0) then return,[0B]
  ; if len argument is not given, use actual string size
  if (n_elements(len) eq 0) then len=strlen(str)
  if (len le 0) then return,[0B]
  ; convert string to byte; cut if too long
  bytstr = byte(strmid(str,0,len))
  ; make result array of desired length
  result = bytarr(len)+32B; byte array, fill with spaces
  ; copy string into result array
  result[0:n elements(bytstr)-1] = bytstr
```

return, result

File Attachments
1) str2byte.pro, downloaded 85 times