Subject: BINARY FILES
Posted by mohamed_nur on Fri, 13 Oct 2000 07:00:00 GMT
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hello all,
I've been dealing with binary files and every case i had to know before hand the dimensions of the array to setup an IDL variable of the said dimesions and read the unformatted data into.

But is it possible or is there a method (in IDL 5.2/5.3) to read it in with no knowledge of the dimensions of the array.

thanks for the assistance

mohamed nur

Sent via Deja.com http://www.deja.com/
Before you buy.

Subject: Re: BINARY FILES
Posted by mole6e23 on Fri, 13 Oct 2000 07:00:00 GMT
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> At last count (at least on my newsreader) we have two replies (Todd
> Clements' second post doesn't count :o) and five.... well I don't know
> what to call them. That a SNR of 0.4. Oof.

Hmm...not sure if this message will increase that or decrease that. ;>

> I have used both Todd Clements' suggestion, then graduated to Liam's
> tools. I now work (almost) exclusively in netCDF so I avoid:

Of course, I didn't know that Liam's tools existed, so I reinvented the wheel and made my own tools. Then, Of course^2, the advantage to reinventing the wheel is that you can use the correct material and number of spokes you want for the wheel instead of what someone else wants. The routines I've written for our lab are one-liners that do 99% of everything we need. We don't care much about portability, or generalized reading and writing. We write out our own data and read in our own data. For everything else, we use the command line. ;>

And the other advantage (I admit to not being familiar with CDF, so I can't say whether this is supported) is that by writing my own routines, I can take advantage of the file compression capabilities recently built into IDL. Most of the data we write consists of x,y data or x,y and 2-d

image data. The 2-d image data files get rather large even in binary, but they are highly compressible, so we save 80% of our disk space, which is nice.

But then again, I'm the type that even sometimes when the wheel exists, I invent it all over again because I want to know to make my own wheel. (Not to mention I like to ride on one wheel - it's a fun activity - but perhaps there is a connection here...)

Todd

Subject: Re: BINARY FILES
Posted by Paul van Delst on Fri, 13 Oct 2000 07:00:00 GMT
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mohamed_nur@my-deja.com wrote:
>
> hello all,
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> hand the dimensions of the array to setup an IDL variable of the said
> dimesions and read the unformatted data into.
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> thanks for the assistance

At last count (at least on my newsreader) we have two replies (Todd Clements' second post doesn't count :o) and five.... well I don't know what to call them. That a SNR of 0.4. Oof.

I have used both Todd Clements' suggestion, then graduated to Liam's tools. I now work (almost) exclusively in netCDF so I avoid:

a) the problem with needing to know the file format/dimensions/etc,
b) the problems one encounters moving data files from big->little-endian machines and
c) having to use IDL for everything (netCDF has an API in multiple languages and the list is growing).

If you have the ability to create the files and aren't worried about portability, I would suggest Liam's binary tools. If portability is a problem, then (for a bit more effort) I'd say go with netCDF.

If you're stuck with someone else's files, then you're in the schtook. It was only recently I discovered that Fortran sequential binary files aren't as portable as I thought - endian-ness notwithstanding (Those

damn record delimiters!)

paulv
--
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CIMSS @ NOAA/NCEP Fax: (301) 763-8545
Rm.202, 5200 Auth Rd. Email: pvandelst@ncep.noaa.gov
Camp Springs MD 20746

Subject: Re: BINARY FILES
Posted by davidf on Fri, 13 Oct 2000 07:00:00 GMT
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J.D. Smith (jdsmith@astro.cornell.edu) writes:

> Hmm... all ascii letters at any offset:
>
> 0:hH
> 1:Ja
> 2:XF
> 3:
> 4:Qa
> 5:ddvid
> 6:El
> 7:
>
> Offset 5 looks promising. Do we get extra points for detecting typoes?
> Does the german Ja or spanish El count?

Oh, JD, I knew *you* would get it! And I was going
to send you a book anyway, just because I always
learn something every time you post. :-)

Cheers,

David

P.S. Humm. I was *sure* I typed an A there. :-(
--
David Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438 E-Mail: davidf@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: BINARY FILES
Posted by John-David T. Smith on Fri, 13 Oct 2000 07:00:00 GMT
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David Fanning wrote:
>
> mohamed nur (mohamed_nur@my-deja.com) writes:
>
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>>
>> But is it possible or is there a method (in IDL 5.2/5.3) to read it in
>> with no knowledge of the dimensions of the array.
>
> A free Second Edition IDL Programming Techniques book
> to the first person who can find the simple word I
> embedded in this binary sequence:
>
> 0 1 1 0 1 0 0 0 0 0 0 0 0 1 1 0 0 1
> 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 1 0 0 0
> 0 0 0 0 0 0 0 0 1 1 1 0 1 1 0 0 0 0 0
> 0 0 0 0 0 1 1 0 1 0 0 1 0 0 0 0 0 0 0
> 0 0 1 1 0 0 1 0 0 1 0 1 0 0 0 1 0 1 1
> 0 0 0 0 1 0 0 0 1 1 0 1 1 0 0 0 0 1 0
>

Hmm... all ascii letters at any offset:

0:hH
1:Ja
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6:El
7:

Offset 5 looks promising. Do we get extra points for detecting typoes?
Does the german Ja or spanish El count?

JD

--
J.D. Smith | WORK: (607) 255-6263
Cornell Dept. of Astronomy | (607) 255-5842
304 Space Sciences Bldg. | FAX: (607) 255-5875

Ithaca, NY 14853 |

Subject: Re: BINARY FILES
Posted by mole6e23 on Fri, 13 Oct 2000 07:00:00 GMT
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Silly me -

Of course, you need to divide by the size of each element when using the
fstat function to get the array size:

array = fltarr(stat.size / 4) ;; 4 bytes to a float

Todd

> I always use the fstat routine, which gets a bunch of information about
> the file, but the only one I ever use is the size field:
>
> ;-----
> openr,lun,'file.dat',/get_lun
> stat = fstat(lun)
>
> array = fltarr(stat.size)
>
> readu,lun,array
>
> free_lun, lun
> ;----
>
> Alternatively, if you're on UNIX, you can use the /nostdio keyword which
> lets you just read willy nilly until the end of the file, and then get the
> transfer count from the readu procedure. It's not a good way of doing
> things, in my opinion, but it works:
>
> ;; Allocate a much bigger array than you need
> array = fltarr(1e5)
> openr,lun,'file.dat',/get_lun,/nostdio
> readu,lun,array,transfer_count=count
> array = temporary(array)[0:count-1]
> free_lun, lun

Subject: Re: BINARY FILES
Posted by davidf on Fri, 13 Oct 2000 07:00:00 GMT
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Martin Schultz (martin.schultz@dkrz.de) writes:

> Hmmmm, David: please count the digits next time -- these truely don't
> make sense.

No, I threw in a few extra digits to make the problem more
"real world-like". It simulates the problem of thinking you
have an integer value when you really have a byte value. :-)

Cheers,

David

P.S. The book is still available!

--
David Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438 E-Mail: davidf@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: BINARY FILES
Posted by Liam E. Gumley on Fri, 13 Oct 2000 07:00:00 GMT
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mohamed_nur@my-deja.com wrote:
> I've been dealing with binary files and every case i had to know before
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> dimesions and read the unformatted data into.
>
> But is it possible or is there a method (in IDL 5.2/5.3) to read it in
> with no knowledge of the dimensions of the array.

The following may be of interest:
http://cimss.ssec.wisc.edu/~gumley/binarytools.html

Cheers,
Liam.
http://cimss.ssec.wisc.edu/~gumley

Subject: Re: BINARY FILES
Posted by Martin Schultz on Fri, 13 Oct 2000 07:00:00 GMT
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David Fanning wrote:
>
> mohamed nur (mohamed_nur@my-deja.com) writes:
>
>> I've been dealing with binary files and every case i had to know before
>> hand the dimensions of the array to setup an IDL variable of the said
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>> But is it possible or is there a method (in IDL 5.2/5.3) to read it in
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> A free Second Edition IDL Programming Techniques book
> to the first person who can find the simple word I
> embedded in this binary sequence:
>
> 0 1 1 0 1 0 0 0 0 0 0 0 0 1 1 0 0 1
> 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 1 0 0 0
> 0 0 0 0 0 0 0 0 1 1 1 0 1 1 0 0 0 0 0
> 0 0 0 0 0 0 1 1 0 1 0 0 1 0 0 0 0 0 0 0
> 0 0 1 1 0 0 1 0 0 1 0 1 0 0 0 1 0 1 1
> 0 0 0 0 1 0 0 0 1 1 0 1 1 0 0 0 0 1 0
>
> Cheers,
>
> David
>
> P.S. Let's just say this is a *much* easier problem
> than the one you propose. :-)
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting
> Phone: 970-221-0438 E-Mail: davidf@dfanning.com
> Coyote's Guide to IDL Programming: http://www.dfanning.com/
> Toll-Free IDL Book Orders: 1-888-461-0155

Hmmmm, David: please count the digits next time -- these truely don't
mnake sense.
Yet, I tried - first padding the string with a few more zero's.

First step:
copy the text into a string (mouse)
IDL> a='0 1 1 0 1 0 0 0 0 0 0 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 0 1
1 0 0 1 0 0 0 ...'

Then:
a=strcompress(a,/remove_all)3
print,strlen(a)

```
;   114   (which divided by 8 is 14.25)
a=a+'000000'
b=bytarr(8,15)
reads,a,b,format='(120a1)'
value=lonarr(15)
for i=0,14 do
value =long(b[0,i])+2*(b[1,i]+2*(b[2,i]+2*(b[3,i]+2*(b[4,i]+2*(b[5 ,i]+2*(b[6,i]+2*b[7,i]))))))
print,string(byte(value))

; (doesn't make sense, though ...)
```

Cheers,
Martin

--
[[[[[[[[[[
[[Dr. Martin Schultz   Max-Planck-Institut fuer Meteorologie   [[
[[Bundesstr. 55, 20146 Hamburg   [[
[[phone: +49 40 41173-308   [[
[[fax: +49 40 41173-298   [[
[[martin.schultz@dkrz.de   [[
[[[[[[[[[[

Subject: Re: BINARY FILES
Posted by Nick Bower on Sun, 15 Oct 2000 07:00:00 GMT
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>
> The following may be of interest:
> http://cimss.ssec.wisc.edu/~gumley/binarytools.html
>

I use Liam's tools exclusively, as netCDF was overkill for my purposes.
They rock. Which reminds me, I've been meaning to do a python port of
theses tools too.

nick

Subject: Re: BINARY FILES
Posted by Aaron Birenboim on Mon, 16 Oct 2000 07:00:00 GMT
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Todd Clements <mole6e23@hotmail.com> wrote:
: mohamed_nur@my-deja.com wrote:

:>I've been dealing with binary files and every case i had to know before
:>hand the dimensions of the array to setup an IDL variable of the said
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:>But is it possible or is there a method (in IDL 5.2/5.3) to read it in
:>with no knowledge of the dimensions of the array.

: I always use the fstat routine, which gets a bunch of information about
: the file, but the only one I ever use is the size field:

: ;-----
: openr,lun,'file.dat',/get_lun
: stat = fstat(lun)

: array = fltarr(stat.size)

: readu,lun,array

: free_lun, lun

After that, you can resize the array to the desired dimensions.
I do that frequently.

I have even used a correlation algorithm to determine
widths of image data that is not necessarily aligned!
Hopefully, your problem is not that tricky.
--
Aaron Birenboim
Albuquerque, NM
aaron@ptree.abq.nm.us
http://www.swcp.com/~aaron

Subject: Re: BINARY FILES
Posted by Aaron Birenboim on Mon, 16 Oct 2000 07:00:00 GMT
View Forum Message <> Reply to Message

Paul van Delst <pvandelst@ncep.noaa.gov> wrote:
: mohamed_nur@my-deja.com wrote:

: I have used both Todd Clements' suggestion, then graduated to Liam's
: tools. I now work (almost) exclusively in netCDF so I avoid:

How about HDF?
Is it falling out of favor in some communities?

--
Aaron Birenboim
Albuquerque, NM
aaron@ptree.abq.nm.us
http://www.swcp.com/~aaron

Subject: Re: binary files
Posted by penteado on Thu, 10 Mar 2011 02:03:57 GMT
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On Mar 9, 8:43 pm, BigDaveII <davidharri...@yahoo.com> wrote:
> I am new to learning IDL, I have looked at all the Web Seminars, even
> order books Gumley, Bowman, & Fanning and have been reading them . I
> am just having trouble with the basic. I am trying to set my directory
> for where my data is located. I tried running a simple program to read
> a binary file but can not get it to work. Can anyone please give me
> some advice on how to solve this problem.

Unless NDVI is some standard that people here might recognize, this is
not enough information. What data does the file contain? Organized in
what way?
