Subject: Importing Binary Images
Posted by rschick on Fri, 18 Jan 2002 14:38:56 GMT
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I'm new to idl, and am trying to import a binary grid that was created
on a windows machine into idl on a linux machine. It's least
significant byte first, 1561 rows, 2041 cols.

I searched the archives and found a thread that suggested used the
following syntax:

```
IDL>  openr, 1, 'gom15dd.dat'
IDL>  ms = bytarr(1561, 2041)
IDL> readu, 1, ms
IDL>  tv, ms
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While this 'works', the image displayed is incorrect - sort of looks
like speckled white noise. Any thoughts on what I may be doing wrong.
For a newbie, what's the difference between using readu, and
read_binary? The online help didn't help. Thanks.

Subject: Re: Importing Binary Images
Posted by Med Bennett on Fri, 18 Jan 2002 16:51:10 GMT
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rob schick wrote:

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>  like speckled white noise. Any thoughts on what I may be doing wrong.
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```

What is the image 'supposed' to look like? It could depend on whether or
not the software that created the image created it in row-major or
column-major order. Try this:

IDL> openr, 1, 'gom15dd.dat'
IDL> ms = bytarr(2041,1561)
IDL> readu, 1, ms
IDL> ms = transpose(ms)
IDL> tv, ms

Subject: Re: Importing Binary Images
Posted by Martin Downing on Fri, 18 Jan 2002 17:05:03 GMT
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"rob schick" <rschick@neaq.org> wrote in message
news:240cd6d2.0201180638.46419bb3@posting.google.com...
> I'm new to idl, and am trying to import a binary grid that was created
> on a windows machine into idl on a linux machine. It's least
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> like speckled white noise. Any thoughts on what I may be doing wrong.
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> read_binary? The online help didn't help. Thanks.

Rob, I am a little confused (nothing new for a friday afternoon). Do you
mean you have BYTE data of size 1561 x 2041? If so then to my knowledge
there is no byte swapping issue. Endian-ness comes into play with data types
which are larger than one byte, eg INT, LONG, FLOAT etc. With these types
you swap the byte pairs from unix to windows, idl does this for you with the
routine:
unix_data = SWAP_ENDIAN(win_data)

If you know the file derives from windows (little endian), you can add a
keyword to the openr command:

openr, lun, filename, /SWAP_IF_LITTLE_ENDIAN

you then do not have to worry about swapping, as long as you read the data
in as the correct data type.
readu is the basic binary read for variables.

It would be a good idea to check exactly what type of data you have in this file, start by checking its file size in bytes and seeing how many multiples of (1561x2041) you have. If 1 then it really is bye, If 2 then its INT or UINT, if 4 then it is LONG, ULONG or FLOAT
hope this helps

good luck

Martin

Subject: Re: Importing Binary Images
Posted by Craig Markwardt on Fri, 18 Jan 2002 18:53:53 GMT
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rschick@neaq.org (rob schick) writes:

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> on a windows machine into idl on a linux machine. It's least
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Question: If the data is formatted "least significant byte first," usually that means there is more than one byte per grid cell. That implies that using a BYTARR is too small. So presumably you want to use INTARR(1561,2041) instead? That is not clear from your note.

Second, in general, the byte ordering of the data may have to be dealt with. This is usually easiest accomplished with one of the ENDIAN keywords to the OPENR procedure. If you are on an Wintel machine, then the processor is already little-endian, and so is your data (according to you), so this should not be an issue.

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> like speckled white noise. Any thoughts on what I may be doing wrong.
> For a newbie, what's the difference between using readu, and
> read_binary? The online help didn't help. Thanks.

For reading a bulk data array, READU is appropriate. READ_BINARY is most useful when reading structures of data.

Craig

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-- -------------
Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
-- -------------

Subject: Re: Importing Binary Images
Posted by rschick on Thu, 24 Jan 2002 15:56:07 GMT
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rschick@neaq.org (rob schick) wrote in message
news:<240cd6d2.0201180638.46419bb3@posting.google.com>...
> I'm new to idl, and am trying to import a binary grid that was created
> on a windows machine into idl on a linux machine. It's least
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> read_binary? The online help didn't help. Thanks.

Ok - thanks to all for the replies. The program creating the image, is
in row-major. I created the image on an NT machine, and am using IDL
on a linux machine (intel processor).

I tried
IDL> openr, 1, 'gom15dd.dat', /swap_if_little_endian
IDL> ms = intarr(2041,1561)
IDL> readu, 1, ms
IDL> tvscl, ms

and this looks better. I don't think it's quite correct, so my
questions as related to the suggestions are:

If my image is indeed not byte, do I do something different, e.g.
-rw-r--r-- 1 robs robs 12744004 Jan 17 14:38 gom15dd.dat

that value divided by (1561x2041) = 4 ?

Do I do anything differently to account for the row-major output?
(specifying columns first in the openr line made the image appear more
normal...

Thanks, Rob

Subject: Re: Importing Binary Images
Posted by Nigel Wade on Thu, 24 Jan 2002 17:03:00 GMT
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rob schick wrote:

> rschick@neaq.org (rob schick) wrote in message
> news:<240cd6d2.0201180638.46419bb3@posting.google.com>...
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> that value divided by (1561x2041) = 4 ?

With those figures it appears the data is 32bit. Try lonarr() in place of intarr(). You should not need to do any byte swapping.

>
> Do I do anything differently to account for the row-major output?
> (specifying columns first in the openr line made the image appear more
> normal...
>
> Thanks, Rob

All you need to do is match the dimensions. Try it with (2041,1561) and (1561,2041). One will match the vertical/horizontal size of the image. If the row/column order is not correct I think the image will just appear rotated - try TRANSPOSE() on the array.

--

Nigel Wade, System Administrator, Space Plasma Physics Group,
University of Leicester, Leicester, LE1 7RH, UK
E-mail : nmw@ion.le.ac.uk
Phone : +44 (0)116 2523568, Fax : +44 (0)116 2523555

Subject: Re: Importing Binary Images
Posted by Craig Markwardt on Thu, 24 Jan 2002 17:06:33 GMT
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rschick@neaq.org (rob schick) writes:
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Umm, BYTE = 1 byte, INT = 2 bytes, LONG = 4 bytes (ignoring
distinction between unsigned and signed). So, looks like you want a
LONARR, not an INTARR.

Good luck,
Craig

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Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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Subject: Re: Importing Binary Images
Posted by Martin Downing on Tue, 29 Jan 2002 18:09:42 GMT
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> Umm, BYTE = 1 byte, INT = 2 bytes, LONG = 4 bytes (ignoring
> distinction between unsigned and signed). So, looks like you want a
> LONARR, not an INTARR.

As I said previously, once you have established that you have 4 bytes per pixel (and no remainder, then your image could be of type LONG, ULONG or FLOAT. So just try loading each of them in 1561x2041 (and try reforming to 2041x1561).
Easy test is: load as LONG. If it looks fairly good but has half the image highlighted, then you have a ULONG type, if the image looks like a snow storm then you have (a) an image of a snow storm (b) a float image

Martin
