Subject: Re: writing large 3D data file fails
Posted by David Fanning on Wed, 07 Oct 2009 16:05:58 GMT

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Dorthe Wildenschild writes:

> I have a fltarr of 4008x4008x865 voxels that I'm trying to write to a
> file using
>
> GET_LUN, lun
> OPENW, lun, '/nfs/blahblah.dat'
> WRITEU, lun, volume
> CLOSE, lun
> FREE_LUN, lun
>
> this normally works like a charm for writing a simple binary data
> file, but for this large dataset, I can't get it to work? The file
> that get's written is way too small (about 3.5 GB - if I write it as a
> netDCF it is =A821 GB, which is more like the right size)
>
> Any ideas what goes wrong here?

My guess would be a 32-bit operating system. :-)

Cheers,

David

--
David Fanning, Ph.D.
Coyote's Guide to IDL Programming (www.dfanning.com)
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: writing large 3D data file fails
Posted by JohnSmith on Wed, 07 Oct 2009 18:01:23 GMT

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"Dorthe Wildenschild" <dorthe@engr.orst.edu> wrote in message
 news:adc5396b-772f-47cc-9208-cb932e18b0fa@33g2000vbe.googleg roups.com...
One more question:

I have a fltarr of 4008x4008x865 voxels that I'm trying to write to a
file using

GET_LUN, lun
OPENW, lun, '/nfs/blahblah.dat'
WRITEU, lun, volume

CLOSE, lun
FREE_LUN, lun

this normally works like a charm for writing a simple binary data
file, but for this large dataset, I can't get it to work? The file
that get's written is way too small (about 3.5 GB - if I write it as a
netDCF it is ï¿½21 GB, which is more like the right size)

Any ideas what goes wrong here?
Thanks,
Dorthe

****

Isn't your close,lun messing up your free_lun?

Subject: Re: writing large 3D data file fails
Posted by dorthe on Thu, 08 Oct 2009 08:10:09 GMT
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On Oct 7, 9:05 am, David Fanning <n...@dfanning.com> wrote:
> Dorthe Wildenschild writes:
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> David Fanning, Ph.D.

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> Sepore ma de ni thui. ("Perhaps thou speakest truth.")- Hide quoted text -
>
> - Show quoted text -

can't be, the system is 64 bit, Linux - with 64 GB of memory, so
should be OK (and it is, I don't get any errors)

Subject: Re: writing large 3D data file fails
Posted by Nigel Wade on Thu, 08 Oct 2009 08:32:31 GMT
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On Thu, 08 Oct 2009 01:10:09 -0700, Dorthe Wildenschild wrote:

> On Oct 7, 9:05 am, David Fanning <n...@dfanning.com> wrote:
>> Dorthe Wildenschild writes:
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>
>

> can't be, the system is 64 bit, Linux - with 64 GB of memory, so should
> be OK (and it is, I don't get any errors)

What is the NFS server filesystem/OS and NFS version? (the /nfs sort of
implies it's NFS mounted). I've never tried read/write multi-GB files
over NFS, but there could be issues there.

--
Nigel Wade

Subject: Re: writing large 3D data file fails
Posted by dorthe on Thu, 08 Oct 2009 09:13:34 GMT

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On Oct 8, 1:32 am, Nigel Wade <n...@ion.le.ac.uk> wrote:
> On Thu, 08 Oct 2009 01:10:09 -0700, Dorthe Wildenschild wrote:
>> On Oct 7, 9:05 am, David Fanning <n...@dfanning.com> wrote:
>>> Dorthe Wildenschild writes:
>>>> I have a fltarr of 4008x4008x865 voxels that I'm trying to write to a
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> What is the NFS server filesystem/OS and NFS version? (the /nfs sort of
> implies it's NFS mounted). I've never tried read/write multi-GB files
> over NFS, but there could be issues there.
>
> --
> Nigel Wade- Hide quoted text -
>
> - Show quoted text -

it's just the naming structure for our various unix-based raid
storage, - they write fine normally, I wrote the 21 GB netCDF file
just fine

Subject: Re: writing large 3D data file fails
Posted by Nigel Wade on Thu, 08 Oct 2009 11:32:00 GMT
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I can't test your exact array because I don't have sufficient RAM, that
array is over 50GB and I only have 32GB.

However, attempting to write a smaller array (fltarr(4008,4008,200),
which by my reckoning is about 12GB) causes a segmentation violation. The
resulting file in my case is actually empty.

IDL> volume=fltarr(4008,4008,200)
IDL> help,/memory
heap memory used: 12852030500, max: 12916286829, gets: 459,
frees: 142
IDL> GET_LUN, lun
IDL> OPENW, lun,'bigfile'
IDL> WRITEU, lun, volume
Segmentation fault

ls -l bigfile
-rw-r--r-- 1 root root 0 Oct 8 12:25 bigfile

I don't think WRITEU likes very big files. Maybe it's not built with
largefile support, and internally uses a 32bit file pointer. I can't see
why it would be being a 64bit application, but what else might cause the
error?

--
Nigel Wade

Subject: Re: writing large 3D data file fails
Posted by penteado on Thu, 08 Oct 2009 14:26:07 GMT

On Oct 8, 8:32 am, Nigel Wade <n...@ion.le.ac.uk> wrote:
> I can't test your exact array because I don't have sufficient RAM, that
> array is over 50GB and I only have 32GB.
>
> However, attempting to write a smaller array (fltarr(4008,4008,200),
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> largefile support, and internally uses a 32bit file pointer. I can't see
> why it would be being a 64bit application, but what else might cause the
> error?
>
> --
> Nigel Wade

I do not know if it will be relevant to this case, but there is a page
in the IDL help that specifically talks about some issues that may
occur with large files. It is at

IDL Programmers' Guides > Application Programming > Part II:
Components of the IDL Language > Files and Input/Output > Reading and
Writing Very Large Files

Subject: Re: writing large 3D data file fails
Posted by dorthe on Tue, 13 Oct 2009 09:58:53 GMT

On 8 Oct, 13:32, Nigel Wade <n...@ion.le.ac.uk> wrote:
> I can't test your exact array because I don't have sufficient RAM, that
> array is over 50GB and I only have 32GB.

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> However, attempting to write a smaller array (fltarr(4008,4008,200),
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> I don't think WRITEU likes very big files. Maybe it's not built with
> largefile support, and internally uses a 32bit file pointer. I can't see
> why it would be being a 64bit application, but what else might cause the
> error?
>
> --
> Nigel Wade

Thanks for trying to help, - I really don't know what's wrong, but
instead of working out the kinks of IDL, I may just write the volume
as 3 or 4 smaller sections... - a bit sad though.
Cheers,
Dorthe