
Subject: Re: Input Files - Size Limit?

Posted by [davidf](#) on Sun, 18 May 1997 07:00:00 GMT

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Mark Harvey <mark@vortex.shm.monash.edu.au> writes:

> Hi. I'm pretty much an IDL rookie but have been handed quite
> a big project - developing an IDL-based analysis and
> visualisation package for meteorological data.
>
> My question is this: can IDL handle extremely large files (in
> various data formats) without crashing out? I'm thinking of
> sizes in the region of 100mb+.

Sure, put it into the variable "a". :-)

Seriously, Mark, there is no special limitations on the size of data inside of IDL, but there are some practical limitations. For example, most system administrators limit the amount of process memory any one process can have. You have to pretty much hand over your first born child to get them to give you more.

Large files are usually not a problem with IDL, as long as you don't read all the data into memory at once. Use the associated variable method to read just that portion of the data you need at any one time, and practice good memory management techniques while you are working with data. In practice, this means deleting or undefining variables when you are done with them, etc. (See my web page for ideas about this.) In IDL 5.0 you will want to take advantage of pointers for sure. Just be sure you delete the pointer data when you are done with it.

If you run into trouble, there are lots of good IDL programmers nearby. Justin Baker and Robert Dahni at the Bureau of Meteorology there in Melbourne are two names that come immediately to mind.

Oh, and ask for a machine that has *LOTS* of RAM!

Best of luck!

David

David Fanning, Ph.D.

Subject: Input Files - Size Limit?

Posted by [Mark Harvey](#) on Mon, 19 May 1997 07:00:00 GMT

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Hi. I'm pretty much an IDL rookie but have been handed quite a big project - developing an IDL-based analysis and visualisation package for meteorological data.

My question is this: can IDL handle extremely large files (in various data formats) without crashing out? I'm thinking of sizes in the region of 100mb+.

Thanks for any help.

Regards,

Mark

Mark Harvey

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Subject: Re: Input Files - Size Limit?

Posted by [haimov](#) on Wed, 21 May 1997 07:00:00 GMT

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In article <337FA875.41C6@vortex.shm.monash.edu.au>,
mark@vortex.shm.monash.edu.au says...

>

> My question is this: can IDL handle extremely large files (in
> various data formats) without crashing out? I'm thinking of
> sizes in the region of 100mb+.

>

Mark,

I routinely work in IDL with files greater than 100 MB.
Once in a while I have to process files bigger than 1GB.
I have a dedicated workstation for this processing, but
my total memory is 128 M. The simplest solution for me
was to limit the chunk of data loaded into the memory
and use a loop to go through the whole file.

Sam

Samuel Haimov
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email: haimov@uwyo.edu

Subject: Re: Input Files - Size Limit?
Posted by [sritcey](#) on Wed, 21 May 1997 07:00:00 GMT
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Mark Harvey:
: Can IDL handle extremely large files?

David Fanning:
> Large files are usually not a problem with IDL, as long
> as you don't read all the data into memory at once. Use
> the associated variable method to read just that portion
> of the data you need at any one time

Christian Marquardt:
: But: assoc is called with an [...]
: 'array_structure'. Thus, to assoc() my 120MB array stored
: in 'foo.dat', I'd use something like

```
: openr, unit, 'foo.dat', /get_lun  
: a = assoc(unit, fltarr(very_large_number_of_elements))  
: ...  
: free_lun, unit
```

```
: Now, the IDL interpreter will first create the fltarr(...),  
: and then pass the very large array over to the assoc function.  
: The problem: if the fltarr(...) is larger than the (virtual)  
: memory of my machine, IDL will not assoc anything but stop  
: with a warning saying that there is not enough memory (I know -  
: I tried...).
```

David has already replied, agreeing that it's a problem, but not mentioning the following workaround:

When I first read David's message I assumed that he meant using something like

```
a = assoc (unit, fltarr (a_not_impossibly_large_number), $
    offset = get_me_where_I_want_to_be)
```

And now 'walk' through the file, repeatedly re-assoc-ing with larger and larger offsets. Now I agree that doing this 'manually' is a pain, but it is workable if the format of the data file is such that it make sense to take 'chunks' like this.

[PVWave, not IDL: does it matter?]

Subject: Re: Input Files - Size Limit?

Posted by [marq](#) on Wed, 21 May 1997 07:00:00 GMT

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Hi David,

in your response to Mark you wrote:

> Mark Harvey <mark@vortex.shm.monash.edu.au> writes:

>

>> Hi. I'm pretty much an IDL rookie but have been handed quite

>> a big project - developing an IDL-based analysis and

>> visualisation package for meteorological data.

>>

>> My question is this: can IDL handle extremely large files (in

>> various data formats) without crashing out? I'm thinking of

>> sizes in the region of 100mb+.

>

> Sure, put it into the variable "a". :-)

>

> Large files are usually not a problem with IDL, as long
> as you don't read all the data into memory at once. Use
> the associated variable method to read just that portion
> of the data you need at any one time, and practice good

Hmm. You say one should use assoc? But: assoc is called with an (as the documentation of IDL 5.6 beta 6 calls it) 'array_structure'. Thus, to assoc() my 120MB array stored in 'foo.dat', I'd use something like

```
openr, unit, 'foo.dat', /get_lun
a = assoc(unit, fltarr(very_large_number_of_elements))
...
free_lun, unit
```

Now, the IDL interpreter will first create the fltarr(...), and then pass the very large array over to the assoc function. The problem: if the fltarr(...) is larger than the (virtual) memory of my machine, IDL will not assoc anything but stop with a warning saying that there is not enough memory (I know - I tried...).

Thus: it seems to me that assoc can be used only if the data stored in the file would fit into the memory. Or to make a question out of it: is there a way to use assoc() _without_ letting IDL trying to allocate all the memory at once?

Thanks a lot...

> Oh, and ask for a machine that has *LOTS* of RAM!

Or is that the only solution left?

Regards from Berlin,

Chris.

Christian Marquardt

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Carl-Heinrich-Becker-Weg 6-10 | email: marq@strat01.met.fu-berlin.de
D-12165 Berlin |

Subject: Re: Input Files - Size Limit?
Posted by [pit](#) on Fri, 23 May 1997 07:00:00 GMT
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In article <5lv0b4\$4it\$1@news.dal.ca>,
sritcey@is.dal.ca (Stephen Ritcey) writes:
> When I first read David's message I assumed that he meant using
> something like
>
> a = assoc (unit, fltarr (a_not_impossibly_large_number), \$

```
> offset = get_me_where_I_want_to_be)
>
> And now 'walk' through the file, repeatedly re-associating with larger and
> larger offsets. Now I agree that doing this 'manually' is a pain, but it
> is workable if the format of the data file is such that it makes sense to
> take 'chunks' like this.
```

Not at all that complicated :-)

Just use

```
a = assoc (unit, f1arr (a_not_impossibly_large_number))
```

and use a as an array:

```
first=a(0)
```

```
second=a(1)
```

etc. I use this in my Speckle Code.

Peter

--

~~~~~

~~~~~

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-- * -- * ...-- * -- * ...-- * -- * ...-- * -- * ...-- * -- * ...-- * --

Come and see the stars! <http://www.kis.uni-freiburg.de/~ps/SFB>

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