
Subject: Re: Large array memory problem.
Posted by [Paolo Grigis](#) on Tue, 22 Nov 2005 13:34:20 GMT
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Is this on windows? There was a thread here dealing about memory fragmentation etc. some time ago, if I remember correctly the conclusion was that there is not so much one can do in windows, but a few tricks could help a bit, and that linux manages the memory better. But anyway with idl 6.0 or less there is no chance to allocate a very large array because of the "array has too many elements" limit anyway.

Can you allocate two double (real) array instead of a complex one?

Ciao,
Paolo

Carolina wrote:

> Hi,
>
> I am running IDL 5.5 in a computer that has 2GB of RAM and a paging
> file size of 4GB. However it seems that IDL will not give more than
> about 1.2GB for array storage per IDL session. Unfortunately, I need to
> do an array multiplication where the arrays are double precision
> complex 11000 by 11000 square arrays, and IDL will not even give me
> enough memory for a single dcomplexarr(6500,6500) array!
>
> Am I being too ambitious? Could anyone please tell me if it is possible
> to store such a large array?
>
> I though IDL was the best language for large array manipulations, is it
> true? or are there other languages that are better suited for this?
>
> Many thanks for your time,
>
> Carolina.
>

Subject: Re: Large array memory problem.
Posted by [Pitufa](#) on Tue, 22 Nov 2005 18:49:05 GMT
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Yes, I was using Windows. I remember seeing some articles in this

websites that mentioned how to get a couple of mb more of memory, but that is definitely not good enough for what I want to do. I didn't think it was related to memory fragmentation, since this problem is present even with a new IDL session, without any other arrays defined previously. I am currently working in a unix machine and I can now access around 4gb of memory, and I can allocate 3 complex square arrays with dimensions 11000 by 11000, as long as they aren't double precision (these occupied 2.9gb all together). It wouldn't let me allocate 2 double precision ones (these would take about 4gb).

Thanks alot for your quick reply!

Carolina.

Subject: Re: Large array memory problem.

Posted by [Mark Hadfield](#) on Tue, 22 Nov 2005 19:14:39 GMT

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Carolina wrote:

> Yes, I was using Windows. I remember seeing some articles in this
> websites that mentioned how to get a couple of mb more of memory, but
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> with dimensions 11000 by 11000, as long as they aren't double precision
> (these occupied 2.9gb all together). It wouldn't let me allocate 2
> double precision ones (these would take about 4gb).

There is an IDL procedure called memtest (or mem_test) that will report on the areas of *contiguous* memory available to IDL. You can get it here:

<http://www.rsinc.com/services/techtip.asp?ttid=3441>

You might might want to look here as well:

<http://www.rsinc.com/services/techtip.asp?ttid=3512>

On my system (Windows 2000 Service Pack 4, 1 GiB RAM, a few GiB of swap space), when IDL is freshly started, memtest reports the following

Memory block # 1: 1033 Mb (total: 1033 Mb)
Memory block # 2: 388 Mb (total: 1421 Mb)
Memory block # 3: 203 Mb (total: 1624 Mb)
Memory block # 4: 61 Mb (total: 1685 Mb)
Memory block # 5: 58 Mb (total: 1743 Mb)

Memory block # 6: 48 Mb (total: 1791 Mb)
Memory block # 7: 33 Mb (total: 1824 Mb)
Memory block # 8: 21 Mb (total: 1845 Mb)
Memory block # 9: 20 Mb (total: 1865 Mb)
Memory block #10: 17 Mb (total: 1882 Mb)

(where the "Mb"s are supposed to be "MB"s, ie megabytes rather than megabits).

I doubt that you're goin gto do much better than this in Windows.

--

Mark Hadfield "Kei puwaha te tai nei, Hoesa tahi tatou"
m.hadfield@niwa.co.nz
National Institute for Water and Atmospheric Research (NIWA)

Subject: Re: Large array memory problem.
Posted by [Rick Towler](#) on Tue, 22 Nov 2005 19:23:40 GMT
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On a related note, is anyone using IDL x86-64 for linux?

-Rick

Carolina wrote:

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Subject: Re: Large array memory problem.

Posted by [Greg Hennessy](#) on Tue, 22 Nov 2005 23:45:51 GMT

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On 2005-11-22, Rick Towler <rick.towler@nomail.noaa.gov> wrote:

> On a related note, is anyone using IDL x86-64 for linux?

Yes. I can hold the entire 2MASS catalog in memory. :)

Subject: Re: Large array memory problem.

Posted by [news.qwest.net](#) on Wed, 23 Nov 2005 16:26:37 GMT

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"Rick Towler" <rick.towler@nomail.noaa.gov> wrote in message
news:dlvsmm\$ise\$1@news.nems.noaa.gov...

> On a related note, is anyone using IDL x86-64 for linux?

>

> -Rick

Ours has just come online. I have not actually used it, but I
have snooped around.

Anything in particular you want to see?

Here are the results of memtest:

IDL> memtest

% Compiled module: MEMTEST.

Memory block # 1: 2047 Mb (total: 2047 Mb)

Memory block # 2: 2047 Mb (total: 4094 Mb)

Memory block # 3: 2047 Mb (total: 2045 Mb)

Memory block # 4: 2047 Mb (total: 4092 Mb)

Memory block # 5: 2047 Mb (total: 2043 Mb)

Memory block # 6: 2047 Mb (total: 4090 Mb)

Memory block # 7: 2047 Mb (total: 2041 Mb)

Memory block # 8: 2047 Mb (total: 4088 Mb)

Memory block # 9: 2047 Mb (total: 2039 Mb)

Memory block #10: 2047 Mb (total: 4086 Mb)

IDL> help,/memory

heap memory used: 1056207, max: 21465408521, gets: 743, frees:
381

Cheers,
bob

Subject: Re: Large array memory problem.
Posted by [Nigel Wade](#) on Thu, 24 Nov 2005 09:40:48 GMT
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Rick Towler wrote:

> On a related note, is anyone using IDL x86-64 for linux?
>
> -Rick

We have it here. I've only just got the 6.2 license manager up and running, so no-one has tested it except me as yet (I need to impose ulimits first).

```
IDL> bigarr=bindgen(1024,1024,1024,14)
IDL> help,bigarr,/memory
heap memory used: 15033176469, max: 15033176469, gets:    414, frees:    110
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
14482	nmw	20	0	14.1g	11g	4776	R	43.2	73.7	0:24.93	idl

It takes a bit of CPU time to initialise 14Gigs of memory...

--

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 2523548, Fax : +44 (0)116 2523555

Subject: Re: Large array memory problem.
Posted by [R.Bauer](#) on Sun, 27 Nov 2005 09:22:47 GMT
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Rick Towler wrote:

> On a related note, is anyone using IDL x86-64 for linux?
>
> -Rick

Yes,
we have several dual opterons using it in 64 bit.

By one of the last security updates of the kernel I believe we can't start idl with the -32 option on these machines.
But this doesn't matter. 64 bit is great.

cheers

Reimar

>
>
>
> Carolina wrote:
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Subject: Re: Large array memory problem.
Posted by [Rick Towler](#) on Tue, 29 Nov 2005 00:34:07 GMT
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R.G. Stockwell wrote:
> "Rick Towler" wrote...
>
>> On a related note, is anyone using IDL x86-64 for linux?
>>
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> have snooped around.
> Anything in particular you want to see?

A WinXP-64 port ;)

Actually I rarely have the need to address huge amounts of memory. I'm just interested in seeing IDL move forward in this area as I know it is a concern of colleagues and some in this newsgroup. With the death of the Itanium near, Intel's dream of pushing IA-64 into the low end HPC

market is dead. Itanium has already killed PA-RISC and the beloved Alpha. uSparc? That's comedy... Even if Fujitsu delivers it isn't an especially compelling platform. Apple+PPC? We know where that love-fest is headed. IBM can deliver some excitement with Power but it will cost you (and that isn't counting the dozens of doughnuts you'll need to bribe your IT department with to run AIX in their server room).

So those of us with modest budgets and large problems are left with x86-64, warts and all, for the foreseeable future.

So I guess what I wanted to see was just what I am seeing. Interest in the linux x86-64 version which will hopefully fuel a WinXP-64 port.

-Rick
