
Subject: Big arrays, reducing data

Posted by [Eric Hudson](#) on Wed, 21 Mar 2007 17:15:51 GMT

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Hi,

I have what I hope is an easy question and then probably a hard one.

1) I need to make some big arrays (ideally 16000^2 elements or more) but find I often get "unable to allocate memory" errors. Is there some way of determining (at run time) the largest array that I can make? In C, for example, I'd try to allocate the memory and check for whether it was allocated, then cut the array size if it wasn't. Is there an equivalent technique in IDL?

2) The reason I want to make these big arrays is that I have sets of on the order of 20,000 data curves (50-200 pts each). I'd like to reduce these to a set of "common curves" -- around 100 averaged/extracted/smoothed curves which are representative of the larger set. The curves are complex -- I don't have anything to fit to them -- and they are noisy. But I get the feeling that if I handed someone a stack of 20,000 of them and said "sort these into groups which are similar" that they'd be able to do it. The question is, is there a good way to do this programmatically?

My original thought was to calculate an rms difference between each pair of curves and then reduce by partnering up the curves which are good matches to each other. Repeat. To do this easily seems to require big arrays and a pretty large amount of computation time. I'd appreciate any thoughts.

Thanks,
Eric

Subject: Re: Big array

Posted by [David Fanning](#) on Mon, 04 Feb 2013 14:11:19 GMT

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xqinshan@gmail.com writes:

> Hi, I download a netcdf file and NCDF_VARGET a big array A into my program. When I calculate it as $A = \text{scale} * A$, a message comes out: Array has too many elements.
> I cannot do anything with the data. How to handle this problem?

You could try $A = \text{scale} * \text{Temporary}(A)$.

> By the way, are there any IDL statements to swap out workspace like

'clear' in Matlab?

You would try using a .reset command.

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>

Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Big array

Posted by [Matthew](#) on Mon, 04 Feb 2013 14:31:36 GMT

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> like 'clear' in Matlab?

"delvar" works but only from the command line or from within main-level programs. If you are executing a main level program, execution will halt when you hit the delvar statement. Use "IDL> help" to see which variables are "in the workspace".

Subject: Re: Big array

Posted by [lecacheux.alain](#) on Mon, 04 Feb 2013 14:34:41 GMT

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Le lundi 4 février 2013 15:11:19 UTC+1, David Fanning a écrit :

>

> You could try `A = scale * Temporary(A)`.

>

An equivalent shorthand since IDL8 is:

`A *= scale`

alain.

Subject: Re: Big array

Posted by [xqinshan](#) on Mon, 04 Feb 2013 23:57:33 GMT

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This is the first time I see the message 'Array has too many elements.' A=scale*Temporary(A) seems to work for 'unable to allocate ...'.

I have to divide the array into several segments to be sav file for later use. What is the maximum elements in a IDL array? Is that related to the system (32bit 64bit)?

Subject: Re: Big array

Posted by [Yngvar Larsen](#) on Tue, 05 Feb 2013 08:45:44 GMT

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On Monday, 4 February 2013 15:34:41 UTC+1, alx wrote:

> Le lundi 4 février 2013 15:11:19 UTC+1, David Fanning a écrit :

>

>>

>

>> You could try A = scale * Temporary(A).

>

> An equivalent shorthand since IDL8 is:

>

> A *= scale

Since IDL 6.0, actually.

--

Yngvar

Subject: Re: Big array

Posted by [d.poreh](#) on Tue, 05 Feb 2013 10:15:28 GMT

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On Tuesday, February 5, 2013 9:45:44 AM UTC+1, Yngvar Larsen wrote:

> On Monday, 4 February 2013 15:34:41 UTC+1, alx wrote:

>

>> Le lundi 4 février 2013 15:11:19 UTC+1, David Fanning a écrit :

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>>> You could try A = scale * Temporary(A).

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>> An equivalent shorthand since IDL8 is:
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>>
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>> A *= scale
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>
> Since IDL 6.0, actually.
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> --
>
> Yngvar

What about CONGRID with a big scale like 100 or more...

Subject: Re: Big array
Posted by [xqinshan](#) on Tue, 05 Feb 2013 12:35:37 GMT
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>> like 'clear' in Matlab?
>
>
>
> "delvar" works but only from the command line or from within main-level programs. If you are executing a main level program, execution will halt when you hit the delvar statement. Use "IDL> help" to see which variables are "in the workspace".

Yes, delvar could stop the program. If you know the array to be swap out such as big array A, it's better set A=0. I'd like to swap out all the memory before a program start to run. I usually use 'clear' at the beginning of my matlab program.
