
Subject: Re: How to make large array
Posted by [Alex Schuster](#) on Wed, 28 Mar 2001 16:31:25 GMT
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renjie wrote:

- > I tried to make large array, however, in Windows,
- > the largest I can made is 256MB, and in Unix is 1 GB,
- > it's supposed that the limitation is 2GB, do you have any
- > idea about the largest array in IDL?

We habe encountered a problem with IDL and NT, where IDL is only able to allocate 800 MB of memory in one step, even if it can allocate more memory afterwards. But 256 MB is much too low, presuming there is enough physical+virtual memory.

In Unix, I can allocate more than 1 GB:

--> idl

IDL Version 5.2.1 (sunos sparc). (c) 1999, Research Systems, Inc.
Installation number: 80864-0.
Licensed for use by: MPI Forschung

IDL> b=bytarr(1024,1024,1200)

IDL> help, /mem

heap memory used: 1258497902, max: 1258497930, gets: 227,
frees: 89

The limit command tells you about the datasize you are allowed to allocate, maybe this is set too low for you. And maybe there's a similar setting for Windows?

Alex

--

Alex Schuster Wonko@weird.cologne.de PGP Key available
alex@pet.mpin-koeln.mpg.de

Subject: Re: How to make large array
Posted by [renjie](#) on Wed, 28 Mar 2001 18:03:02 GMT
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<!doctype html public "-//w3c//dtd html 4.0 transitional//en">
<html>

<blockquote TYPE=CITE>
<pre></pre>
</blockquote>

Great.

If you can explain the manner I made 1GB in win2000, the method does not work in win98 for producing 500MB.

Mark Hadfield wrote:

> "renjie" <renjie.he@uth.tmc.edu> wrote in message
> news:3AC228EE.6A26844C@uth.tmc.edu...
>> The results below are obtained in WIN98 [i.e. 256MB limit on array size],
> in WIN2000
>> I can make single array of 512MB [and 1 GB], can someone explain it.
>
> Windows 9x is a 32-bit shell on a 16-bit operating system originally written
> for an 8-bit processor by a 4-bit company without 2 bits of sense.
> (Apologies to the unknown originator of this saying for any misquoting.)
> Windows 2000 & NT aren't (except for the 4-bit company thing).
>
> I.e. I don't know exactly why Win98 has a limit on array size that Win 2000
> and NT don't, but I'm not at all surprised.
>
> ---
> Mark Hadfield
> m.hadfield@niwa.cri.nz <http://katipo.niwa.cri.nz/~hadfield>
> National Institute for Water and Atmospheric Research

Subject: Re: How to make large array

Posted by [Craig Markwardt](#) on Wed, 28 Mar 2001 22:53:18 GMT

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renjie <renjie.he@uth.tmc.edu> writes:

> I tried to make large array, however, in Windows,
> the largest I can made is 256MB, and in Unix is 1 GB,
> it's supposed that the limitation is 2GB, do you have any
> idea about the largest array in IDL?

I have no idea about Windows. Sometimes you encounter artificial limits under Unix because of your process limits are set to low. Use "limit datasize unlimited" before running IDL under tcsh. Use the "ulimit" command under sh.

Craig

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Subject: Re: How to make large array
Posted by [Martin Schultz](#) on Thu, 29 Mar 2001 08:36:21 GMT
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renjie wrote:

- >
- > I tried to make large array, however, in Windows,
- > the largest I can made is 256MB, and in Unix is 1 GB,
- > it's supposed that the limitation is 2GB, do you have any
- > idea about the largest array in IDL?

Hmmmm. First of all, I don't think it is necessary to create arrays larger than a couple of MBs in memory. And they get really clumsy and slow: you must be extremely careful about when do you pass something by reference or by value and when IDL will make a temporary copy of the array. Think hard whether you can come up with a solution where most of the data resides in a file and is only accessed piecewise.

Second, I recall that Erik Korpela (<http://albert.ssl.berkeley.edu/~korpela/mmap/>) wrote some stuff to allow memory mapping of IDL arrays. From his web page it seems like this would solve your problems in a very nice way.

Good luck,

Martin

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