Subject: Re: question about 'Unable to allocate memory: to make array error' message (and I think there is enough memory)
Posted by JP on Fri, 03 Oct 2014 03:51:10 GMT
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I solved my own problem.

The issue was in the way I was defining my array which I wanted full of NaNs.

Instead of
  y= fltarr(sizeX[1], sizeX[2], sizeX[2]) & y[*]=NaN

I did
  y= fltarr(sizeX[1], sizeX[2], sizeX[2]) * NaN

and saved memory (and time)

same, more elegant:
  y= MAKE_ARRAY(sizeX[1], sizeX[2], sizeX[2], /FLOAT, VALUE=NaN)

I learned a lesson today.

JP

On Friday, 3 October 2014 11:54:24 UTC+10, JP wrote:
> Guys, I'm trying to run a process in which I fall into a 'unable to allocate memory' issue, but I think I have enough memory and for some reason IDL doesnt' know it.
>
>
>
> I run my process and request 60GB of RAM.
>
>
>
> I create first a fltarr(16000000,19,6)
>
> if my numbers are right that's ~6.8 GB of memory
>
>
>
> I then try to create another fltarr of (16000000,19,19)
>
> again, if my numbers are correct, that is ~21.5 GB, total of ~28GB. When I try to do that IDL sends a "% Unable to allocate memory: to make array." error.
>
> Below my code and the output from the process.

>
> Any ideas?
>
> Thanks
>
>
>
> JP
>
>
>
> pro test_memory_raijin
>
> compile_opt idl2
>
> nan= !Values.F_NAN
>
>
>
> ; first make an array like the one is causing trouble
>
> print, 'at the very beggining:' & help, /memory
>
>
>
> x= fltarr(4000l*4000, 19, 6)
>
> print, 'after creating x:' & help, /memory
>
>
>
> ; now create another large array
>
> sizeX = size(X)
>
> y= fltarr(sizeX[1], sizeX[2], sizeX[2]) & y[*]=NaN
>
> print, 'after creating y:' & help, /memory
>
>
>
> ; get rid of y
>
> undefine, y & help, /memory
>
>
>
> ; now call medoid_2d

>
> y= medoid_2d(x)
>
> print, 'at the end:' & help, /memory
>
>
>
> end
>
>
>
> OUTPUT:
>
>
>
>
>
>
> IDL Version 8.2.1 (linux x86_64 m64). (c) 2012, Exelis Visual Information Solutions, Inc.
>
> Installation number: 237570.
>
> Licensed for use by: ANU Supercomputer Facility
>
>
>
> % Compiled module: TEST_MEMORY_RAIJIN.
>
> at the very beggining:
>
> heap memory used: 1181784, max: 9585806, gets: 734, frees: 292
>
> after creating x:
>
> heap memory used: 7297181928, max: 7297181928, gets: 735, frees: 292
>
> % Unable to allocate memory: to make array.
>
> Cannot allocate memory
>
> % Execution halted at: TEST_MEMORY_RAIJIN   13
>
> /home/599/jpg599/IDL_Scripts/raijin/test_memory_raijin.pro
>
> % $MAIN$
>
> ==
==========================
>

> Resource Usage on 2014-10-03 11:40:53.507223:
>
> JobId: 7068191.r-man2
>
> Project: k88
>
> Exit Status: 0 (Linux Signal 0)
>
> Service Units: 0.08
>
> NCPUs Requested: 16 NCPUs Used: 16
>
> CPU Time Used: 00:00:18
>
> Memory Requested: 60gb Memory Used: 16gb
>
> Vmem Used: 30gb
>
> Walltime requested: 00:10:00 Walltime Used: 00:00:19
>
> jobfs request: 100mb jobfs used: 1mb
>
> ==
==========================