Subject: Re: Using "the IDL way" and it's still not fast enough
Posted by lecacheux.alain on Wed, 27 Mar 2013 14:15:42 GMT
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Le mercredi 27 mars 2013 14:52:26 UTC+1, Brian J. Daniel a écrit :
> Shooting from the hip here, but I expect performance would improve if you reorganized your array to [A,B,C,D,M*N]. The min operation should be much faster when it looks at the last dimension in the array.
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> On Tuesday, March 26, 2013 6:21:00 PM UTC-4, Edward Hyer wrote:
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>> Hello IDL wizards,
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>> I am trying to speed up a routine whose PROFILER looks like this (sorted by total time):
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>> Module Type Count Only(s) Avg.(s) Time(s) Avg.(s)
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>
>> REBIN (S) 2158 285.788439 0.132432 285.788439 0.132432
>
>>
>
>> MIN (S) 272 39.719054 0.146026 39.719054 0.146026
>
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>
>> FILE_SEARCH (S) 4 21.07632 5.26908 21.07632 5.26908
>
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>
>> REFORM (S) 2591 12.59025 0.004859 12.59025 0.004859
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>> The heart of the calculation is a
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>> MINARRAY = MIN(BIGARRAY,DIM=1), where
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>> BIGARRAY is [M*N,A,B,C,D] and so
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>> MINARRAY is [A,B,C,D].
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>> M=~10,000
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>
>> N=~200
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>
>> A,B,C,D are all <5
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>> In order to get to BIGARRAY, several steps of REBIN are required. And the result is a calculation that is too slow; it takes 6-20 seconds, depending on the particular machine we run it on. My instinct says that this is not a calculation that should be this slow, though I guess I could be wrong.
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>> Note that 1) I don't think memory is an obstacle, we have 16GB of RAM and the routine has peak usage <3 GB (I would know exactly if there was a working MEMTEST for 64bit IDL); 2) Threading is not really an option, as we intend to multiplex this process with 1 job per processor once we get it tuned.
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>> Does the collective wisdom of the newsgroup have any suggestions as to why this routine might be spending so much time REBINning, and how we might speed it up?
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>> In supplication,
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>
>> --Edward H.

Reorganizing the array when first building it would be the best. But you can do that afterwards by :

transposedBIG = Transpose(BIGARR, [4,0,1,2,3])

alx.
