
Subject: Short array memory allocation

Posted by [ray.laymon064](#) on Thu, 10 Jul 2008 20:44:14 GMT

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Hi Everyone,

I searched the posted messages but couldn't find the answer I am looking for. Sorry if I repeat the same question.

I am dealing with some data in "grib" format. I perform a simple operation on each file (open/extract single pixel). The array size of each file is small (450*250), and I don't store any of the variables at each loop (overwrite so no memory allocation is needed). However, there are lots of files (~600,000).

I have a 2.5 Ghz dual-core 4GB memory laptop. When I run my script it, the task manager tells me IDL uses ~ 12% CPU & ~32MB memory (total PC CPU usage is ~ 16% and total PC memory usage is ~ 450MB)...And the whole script takes ~1,5 hours.

I know, there are lots of small files, and naturally it takes time but is there a way I can speed up the processing time?

Thanks,

Ray

Subject: Re: Short array memory allocation

Posted by [Kenneth P. Bowman](#) on Fri, 11 Jul 2008 14:20:18 GMT

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In article

<eb7e674b-929d-4775-a3db-92d2f60d30b2@m44g2000hsc.googlegroups.com>, ray.laymon064@gmail.com wrote:

- > That was the answer I was afraid to get..
- > I tried opening and closing the files only and it took the ~same
- > time...
- >
- > Still, is there any IDL setting that I can change and make my IDL use
- > more sources?
- > In a way IDL to open/read the file faster.
- >
- >
- > Ray,
- >
- > p.s. I have 7200 rpm SATA disk, and unfortunately I can't modify..

What you are seeing is the OS overhead for opening and closing a file. If you need to do this operation repeatedly, then you should consider merging the files into a small number of larger files.

If you know that you are always going to be accessing the data in the same manner (e.g., one value from many records), you would get a significant speed-up by transposing the data order so that "file index" is your first dimension.

This will be slow to do, but you will only have to do it once.

Ken Bowman

Subject: Re: Short array memory allocation
Posted by [Foldy Lajos](#) on Fri, 11 Jul 2008 14:53:49 GMT
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On Fri, 11 Jul 2008, ray.laymon064@gmail.com wrote:

>
> That was the answer I was afraid to get..
> I tried opening and closing the files only and it took the ~same
> time...
>
> Still, is there any IDL setting that I can change and make my IDL use
> more sources?
> In a way IDL to open/read the file faster.

Probably file lookup in directories is the bottleneck here. This can be very slow if the directories contain thousand of files. Try to rearrange your ~600.000 files in a tree where a single directory contains no more than 256 files.

regards,
lajos

Subject: Re: Short array memory allocation
Posted by [ray.laymon064](#) on Mon, 11 Aug 2008 15:16:00 GMT
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On Jul 11, 10:53 am, FÖLDY Lajos <fo...@rmki.kfki.hu> wrote:

> On Fri, 11 Jul 2008, ray.laymon...@gmail.com wrote:
>
>> That was the answer I was afraid to get..

>> I tried opening and closing the files only and it took the ~same
>> time...
>
>> Still, is there any IDL setting that I can change and make my IDL use
>> more sources?
>> In a way IDL to open/read the file faster.
>
> Probably file lookup in directories is the bottleneck here. This can be
> very slow if the directories contain thousand of files. Try to rearrange
> your ~600.000 files in a tree where a single directory contains no more
> than 256 files.
>
> regards,
> lajos

Hi Lajos,

I may need ~2000 folders (in a tree) to distribute my files..
openw, creates a file, but if the folder to be written doesn't exist,
IDL exists with an error..

So my quesiton is: "Is there a commend/way to create folder inside IDL-
script"? Or Should I do it
through a shell-script..

Best Regards,
Ray

Subject: Re: Short array memory allocation
Posted by [Brian Larsen](#) on Mon, 11 Aug 2008 15:22:39 GMT
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> So my quesiton is: "Is there a commend/way to create folder inside IDL-
> script"? Or Should I do it
> through a shell-script..

But of course IDL can create a folder :)

try a help on directory (? directory) there is all sorts of good
things there. What you want is FILE_MKDIR.

Cheers,

Brian

Brian Larsen
Boston University
Center for Space Physics
<http://people.bu.edu/balarsen/Home/IDL>

Subject: Re: Short array memory allocation
Posted by [ray.laymon064](#) on Tue, 12 Aug 2008 02:09:33 GMT
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On Aug 11, 11:22 am, Brian Larsen <balar...@gmail.com> wrote:
>> So my quesiton is: "Is there a commend/way to create folder inside IDL-
>> script"? Or Should I do it
>> through a shell-script..
>
> But of course IDL can create a folder :)
>
> try a help on directory (? directory) there is all sorts of good
> things there. What you want is FILE_MKDIR.
>
> Cheers,
>
> Brian
>
> -----
> Brian Larsen
> Boston University
> Center for Space Physics<http://people.bu.edu/balarsen/Home/IDL>

Well, thanks for the hint.. and of course works like a charm..
I knew it would be very trivial..
All the time I have been searching the help/google with wrong keywords
(create directory, folder)..

Best,
Ray
