Subject: Re: array operations and memory consumption
Posted by dktr.ted on Fri, 04 Jan 2008 23:55:33 GMT
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Type conversion! That was what was missing from my understanding. This makes much more sense now. Thanks for the pointers. I also had forgotten the increment operator, although I was looking for something more general.

-Ted

On Jan 4, 3:16 pm, "mgal...@gmail.com" <mgal...@gmail.com> wrote:
> On Jan 4, 3:19 pm, dktr....@gmail.com wrote:
>
>
>
>> Hi all,
>
>> Apologies in advance if this is old hat ... I've got a question
>> regarding IDL's memory usage that can be boiled down in the following
>> example:
>
>> IDL> a = BINDGEN(100,100,100)
>> IDL> baseMem = (MEMORY())[0]
>> IDL> a = a + 1
>> IDL> PRINT, (MEMORY())[3] - baseMem
>> 2000049
>
>> I've tried modifying "a = a + 1" with various combinations of pointers
>> and the TEMPORARY function, but can't reduce this temporary elevated
>> memory consumption. Compare the above with a call to CONGRID:
>
>> IDL> a = BINDGEN(100,100,100)
>> IDL> baseMem = (MEMORY())[0]
>> IDL> a = CONGRID(a, 100, 100, 100)
>> IDL> PRINT, (MEMORY())[3] - baseMem
>> 1003941
>
>> I'm working with some very large image arrays and trying to do some
>> "in place" manipulations. While I can slink by with the temporary
>> memory usage of the latter CONGRID-type operations, addition (or
>> multiplication) of an array by a scalar breaks the bank.
>

>> Any tips or directions to a helpful tutorial on IDL's memory policies
>> would be greatly appreciated. Thanks!
>
> Be careful with type conversion here! In particular, 1 is a short
> integer (or long integer depending on if compile_opt defint32 is
> used), so a = a + 1 here converts a to type int. Consider the
> following:
>
> IDL> a = bindgen(100, 100, 100)
> IDL> orig_mem = memory(/current)
> IDL> a = a + 1
> IDL> print, memory(/highwater) - orig_mem
> 2000082
>
> IDL> a = bindgen(100, 100, 100)
> IDL> orig_mem = memory(/current)
> IDL> a = a + 1B
> IDL> print, memory(/highwater) - orig_mem
> 1000096
>
> IDL> a = bindgen(100, 100, 100)
> IDL> orig_mem = memory(/current)
> IDL> a = temporary(a) + 1B
> IDL> print, memory(/highwater) - orig_mem
> 91
> IDL>
> IDL> a = bindgen(100, 100, 100)
> IDL> orig_mem = memory(/current)
> IDL> a += 1B
> IDL> print, memory(/highwater) - orig_mem
> 91
>
> IDL>
> IDL> a = bindgen(100, 100, 100)
> IDL> orig_mem = memory(/current)
> IDL> a++
> IDL> print, memory(/highwater) - orig_mem
> 91
>
> Mike
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