View Forum Message <> Reply to Message On Oct 13, 11:00 am, Vince Hradil <vincehra...@gmail.com> wrote: > On Oct 13, 10:08 am, Vince Hradil <vincehra...@gmail.com> wrote: >> On Oct 13, 9:44 am, arp...@gmail.com wrote: >>> It seems that very large matrix, e.g.1.0e6*1.0e5*100 operations, such >>> as multiplication and matrix multiplication, in IDL is very slow. >>> Anyone know how to speed up large matrix operations? > >> Multiplication should be pretty fast. Matrix multiplication can be >> slow if you have to transpose the matrices. This can be sped up by >> using MatrixMultiply() instead of # or ##. Perhaps Temporary() can be >> used to avoid allocation of extra memory. I think David has the best >> ideas, though. > oops, that should be MATRIX_MULTIPY() So much for that theory... Hardware: IDL> print, !version { x86 Win32 Windows Microsoft Windows 7.0 Oct 25 2007 32 64} Results: % TEST: Allocating A array % TEST: took 0.14000010 sec % TEST: Allocating B array % TEST: took 0.21899986 sec % TEST: A#B % TEST: took 40.878000 sec % TEST: matrix_multipy(A,B) % TEST: took 42.284000 sec % TEST: transpose(A)#B % TEST: took 42.645000 sec % TEST: matrix_multipy(A,B,/atranspose) % TEST: took 43.449000 sec % TEST: transpose(temporary(A))#B % TEST: took 43.387000 sec % TEST: matrix_multipy(temporary(A),B,/atranspose) % TEST: took 50.029000 sec Code: pro test

Posted by Vince Hradil on Mon, 13 Oct 2008 17:07:47 GMT

Subject: Re: large matrix operations

```
t0 = systime(1)
message, 'Allocating A array', /info
a = randomu(seed,[nel,nel])
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
t0 = systime(1)
message, 'Allocating B array', /info
b = randomu(seed,[nel,nel])
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
t0 = systime(1)
message, 'A#B', /info
c = a \# b
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
t0 = systime(1)
message, 'matrix_multipy(A,B)', /info
c = matrix multiply(a,b)
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
t0 = systime(1)
message, 'transpose(A)#B', /info
c = transpose(a)#b
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
t0 = systime(1)
message, 'matrix_multipy(A,B,/atranspose)', /info
c = matrix multiply(a,b,/atranspose)
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
ahold = a
t0 = systime(1)
message, 'transpose(temporary(A))#B', /info
c = transpose(temporary(a))#b
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
a = ahold
t0 = systime(1)
message, 'matrix_multipy(temporary(A),B,/atranspose)', /info
c = matrix_multiply(temporary(a),b,/atranspose)
message, 'took '+strtrim(systime(1)-t0,2)+' sec', /info
return
```

nel = 2000L

Page 3 of 3 ---- Generated from comp.lang.idl-pvwave archive