
Subject: Re: Writing arrays to text file - format code trickery?

Posted by [rjp23](#) on Mon, 28 Nov 2011 13:13:35 GMT

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On Nov 28, 12:36 pm, Rob <rj...@le.ac.uk> wrote:

> I've inherited some code which does something along the lines of the
> following:
>
> FOR i = 0L, 359 DO printf,unit,A[0,0,i],
> A[0,1,i],A[0,2,i],A[0,3,i],A[0,4,i],A[0,5,i],format='(6(2X, E15.8))'
>
> where A is [2, 6, 360]
>
> Now this is done quite a lot and becomes horribly slow. Is there a
> clever way I can use the format code to do it with fewer (one?) print
> statements? (Maybe by juggling the array around first?)
>

Ah it's simply this isn't it?

```
printf,unit,A[0,*,*],format='(6(2X, E15.8))'
```

Subject: Re: Writing arrays to text file - format code trickery?

Posted by [Yngvar Larsen](#) on Mon, 28 Nov 2011 13:29:30 GMT

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On Nov 28, 1:36 pm, Rob <rj...@le.ac.uk> wrote:

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> Now this is done quite a lot and becomes horribly slow. Is there a
> clever way I can use the format code to do it with fewer (one?) print
> statements? (Maybe by juggling the array around first?)

In this case:

```
printf, unit, reform(a[0,*,*]), format='(6(2X, E15.8))'
```

Not sure what you mean by "along the lines of ...", though. If you also need to write, e.g., a[1,*,*], you may have to rearrange your array with TRANSPOSE and/or modify the format description, depending on which order the rows are to be written and what each row in your

file should contain.

Also, you don't save much processing time with only 360 rows, see below. If the loop was much longer, you would save a lot.

```
IDL> .r test_ascii
% Compiled module: $MAIN$.
Average processing time, method #0:  0.0038861408
Average processing time, method #1:  0.0029639530
```

I used the following test script:

```
8<-----
A = randomu(seed,2,6,360)
nTests = 1000L

t0 = systime(/seconds)
for j=0, nTests-1 do begin
    openw, unit, '/tmp/test0.txt', /get_lun
    for i = 0L, 359 do $

        printf,unit,A[0,0,i],A[0,1,i],A[0,2,i],A[0,3,i],A[0,4,i],A[0,5,i],$
            format='(6(2X, E15.8))'
        free_lun, unit
    endfor
t1 = systime(/seconds)
print, 'Average processing time, method #0:', (t1-t0)/nTests

t0 = systime(/seconds)
for j=0, nTests-1 do begin
    openw, unit, '/tmp/test1.txt', /get_lun
    printf, unit, reform(a[0,*,*]), format='(6(2X, E15.8))'
    free_lun, unit
endfor
t1 = systime(/seconds)
print, 'Average processing time, method #1:', (t1-t0)/nTests
8<-----
```

--
Yngvar

Subject: Re: Writing arrays to text file - format code trickery?
Posted by [rjp23](#) on Mon, 28 Nov 2011 13:39:28 GMT
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On Nov 28, 1:29 pm, Yngvar Larsen <larsen.yng...@gmail.com> wrote:
> On Nov 28, 1:36 pm, Rob <rj...@le.ac.uk> wrote:

```

>
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> t0 = systime(/seconds)
> for j=0, nTests-1 do begin
>   openw, unit, '/tmp/test0.txt', /get_lun
>   for i = 0L, 359 do $
>
>     printf,unit,A[0,0,i],A[0,1,i],A[0,2,i],A[0,3,i],A[0,4,i],A[0,5,i],$
>       format='(6(2X, E15.8))'
>   free_lun, unit
> endfor
> t1 = systime(/seconds)
> print, 'Average processing time, method #0:', (t1-t0)/nTests
>

```

```
> t0 = systime(/seconds)
> for j=0, nTests-1 do begin
>   openw, unit, '/tmp/test1.txt', /get_lun
>   printf, unit, reform(a[0,*,*]), format='(6(2X, E15.8))'
>   free_lun, unit
> endfor
> t1 = systime(/seconds)
> print, 'Average processing time, method #1:', (t1-t0)/nTests
> 8<-----
>
> --
> Yngvar
```

Thanks, that's very helpful.

By "along the lines of", I just meant that I simplified it down a bit.

I seem to see a speed increase of about 3x by removing the loop.
