Subject: Re: Plotting a long vector on PV-WAVE
Posted by davidf on Mon, 01 Dec 1997 08:00:00 GMT
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Christos Siopis (siopis@astro.ufl.edu) writes:

> I have a long real-number vector (of more than 10,000 elements) that
> I would like to plot (e.g., versus time). However, if I plot the
> whole thing the display gets crammed... The best way I can think of
> to view the data is to see it as a time series: plot only a few data
> points at a time and "pan" (scroll) the viewing window to the right.
>
> I tried to do something like that, using the Z buffer to avoid the
> flickering, but the program runs very slow (it takes about 1/3 or 1/2
> of a second between consecutive frames on a Pentium/Linux machine).
> Is this normal? Here is the procedure I used (PV-WAVE):
>
> PRO pan, x, n, win, stp
>
>   ; x   = fltarr(n)
>   ; n   = number of datapoints (e.g., 10000)
>   ; win = viewing window size (e.g., 100 data points at a time)
>   ; stp = how much to shift to the right between successive
>   ;   snapshots (e.g., 10)
>
>   thisdev = !D.Name
>   for i = 0, n-win-1 do begin
>   set_plot, 'z'
>   plot, x(i:i+win), psym=-2
>   snap = tvrd(0,0,640,512)
>   set_plot, thisdev
>   tv, snap
>   if (get_kbrd(0) ne "") then return
>   endfor
> END
>
> What's also funny is that the "TV, snap" command worked
> instantaneously on a low-end Sun workstation but it would need half a
> second or more to "unroll" on a much faster DEC Alpha machine. Could
> it be that the Alpha's display holds more information?

Try using the "Device Copy" technique with a pixmap instead
of the Z-graphics buffer. Device Copy should be orders of
magnitude faster, probably, than the TVRD command. Here is
a revised Pan program. Surprisingly, the two programs ran
about the same on my WindowsNT machine.

PRO pan, x, n, win, stp

```
; x   = fltarr(n)
; n   = number of datapoints (e.g., 10000)
; win = viewing window size (e.g., 100 data points at a time)
; stp = how much to shift to the right between successive
;       snapshots (e.g., 10)

 thisdev = !D.Name
 window, 0, xsize=400, ysize=400
 window, 1, xsize=400, ysize=400, /Pixmap
 for I = 0, n-win-1 do begin
   WSet, 1
   plot, x(I:I+win), psym=-2
   WSet, 0
   Device, Copy=[0,0,400,400,0,0,1]
   if (get_kbrd(0) ne "") then return
 endfor
END
```

Cheers,

David

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