
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 l = 0, n-win-1 do begin
  WSet, 1
  plot, x(l:l+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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Subject: Re: Plotting a long vector on PV-WAVE
Posted by [mgs](#) on Tue, 02 Dec 1997 08:00:00 GMT
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In article <3482A196.500F@astro.ufl.edu>, Christos Siopis
<siopis@astro.ufl.edu> wrote:

```
...
> snap = tvrd(0,0,640,512)
...
```

David Fanning already replied with the Device, Copy command.

```
> 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?
```

This could be due to the video to system bus attributes, which are beyond IDL's control. If the low-end Sun workstation is using the S24 video, you should be getting excellent video throughput. I can't recall the specifics of the white paper I read about five years ago (I wonder what I used to kill those brain cells), but the basics were that the video and memory bus were shared, allowing much better performance.

--

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Interactive Visuals
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