Subject: An IDL cron job, true color plots, Xvfb, Z-buffer, and all sorts of troubles
Posted by kathryn.ksm on Thu, 07 Feb 2008 10:06:25 GMT
View Forum Message <> Reply to Message

Hi folks,

This newsgroup has been a huge help to me with these sorts of problems in the past, and I am hoping once again to draw on your expertise.

My problem is a little complicated. I have a particular plotting routine that uses a color scale to represent signal response over a grid of detectors. I use this a lot and it's really handy. It also took me a really long time to get it to work and to be able to write_png files from it without getting goofy colors. What I would like to do is automate this routine and run it with a cron job, outputting png files to include in a daily web page.

I have noticed that quite a few people have tried to do similar things and run into problems. I have problems with all of the suggested solutions. Any one of them would be fine but I can't get them to work. So here goes:

option 1) use the Z buffer: Here I think I am running into problems with my understanding of true-color display issues in IDL. My plot routine includes a line 'Device, decomposed = 0' and the Z-buffer doesn't work the same way as the X buffer. That's problem number one. Problem number two is that I can't figure out how to take the Z-buffer plot and make a png file out of it with correct colors.

option 2) write to a ps file and convert it to png after the fact. I have similar problems here with my Device, decomposed = 0, and I don't understand how to translate my plotting routine so that it will do the same thing with the ps device that it does with standard X output.

option 3) use the /pixmap option with an X window, and then use Xvfb to run a virtual X session so that I can run this from cron. I have Xvfb installed and with some fiddling, I can get the authentication to work out so that I don't get an immediate Xlib: connection to ":1.0" refused by server, but even then I still get WINDOW: Unable to connect to X Windows display: :1.0 errors, even though the DISPLAY variable looks to be set correctly to me. I really hoped I could get this to work, because doing window, 1, /pixmap, running the plotter, and then calling write_png, 'file.png', tvrd(/true) works wonderfully and gives exactly what I want... just not through cron.

I think the main reason I'm having so much trouble here is I'm trying to get something to work with color tables and true-color display without really understanding them. A stripped-down version of the

plotting routine is below. I would invoke it with something like
> plot_test, [0,2,3],[0.2,0.7,1.0]. Before I run this, I have quite a
few graphics setup calls in my idl_startup file. Between running it,
I typically do
loadct, 0
!p.color = !black
!p.background = !white
to make the display look right each time.

Sorry for the long-winded question. Sample plotting routine follows:

```
pro plot_test, indices, color_scale,$
               title=title

if n_elements(title) eq 0 then title=''

; example simple grid of 4 points:
x_pos=[1., 2., 1., 2.]
y_pos=[1.,1.,2.,2]

;plot, the center points for each detector:
plot, x_pos, y_pos,  xrange=[0,3],yrange=[0,3],/xstyle,/ystyle,/iso,$
  psym = 3, title = title
Device, decomposed = 0
LoadCT, 33
; determine the color scale to use
color_scale=float(color_scale)

color_values = ((color_scale - min(color_scale))/(max(color_scale)-
min(color_scale)))* 255

;plot circles filled with the colors in the scale
for i=0,n_elements(indices)-1 do begin
    polyfill, circle(x_pos[indices[i]],y_pos[indices[i]],0.25),
color=color_values[i]
endfor

colorbar, /vertical, format='(F6.2)',$
         range=[min(color_scale),max(color_scale)]

end
```

- Kathryn