
Subject: 24-bit color with writable color maps
Posted by [bowman](#) on Fri, 09 Apr 1999 07:00:00 GMT
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There have been a number of queries about 24-bit color lately, including the use of writable color maps on systems that support it (24-bit DirectColor visual). I attach for the interested reader a sample program that plots a 24-bit color graph and manipulates the color tables.

The SGI O2 device looks like this:

Current graphics device: X
Server: X11.0, Silicon Graphics, Release 6001
Display Depth, Size: 24 bits, (1280,1024)
Visual Class: DirectColor (5)
Bits Per RGB: 8
Physical Color Map Entries (Used / Total): 256 / 256
Colormap: Private, 16777216 colors. Translation table: Enabled
Graphics pixels: Decomposed, Dither Method: Ordered
Write Mask: 16777215 (decimal) ffffff (hex)
Graphics Function: 3 (copy)
Current Font: <default>, Current TrueType Font: <default>
Default Backing Store: Req from Server.

When you hit the carriage return at the first prompt, the intensities of all colors are reduced by a factor of two, making the plot darker. The second <cr> restores the color tables.

On the O2, only the IDL window is affected by the color table changes. Other open windows are unaffected. I don't know whether IDL is responsible for this or the SGI hardware, but it is certainly the way that you would want this feature to work.

Remember, you cannot print 24-bit graphics (other than bitmaps) to PostScript with the current IDL PostScript device driver.

Ken Bowman

PRO TEST24_SGI

```
HELP, /DEVICE                ;Show device
characteristics
```

```
cr = ''
n = 1000L                    ;Number of points
x = RANDOMU(seed, n)         ;X-coordinates
y = RANDOMU(seed, n)         ;Y-coordinates
```

```

point_r = LONG(255*x)           ;Red intensity of
each point
point_g = LONG(255*y)           ;Green intensity of
each point
point_b = REPLICATE(0B, n)      ;Blue intensity of
each point
point_color = point_r + 256L*(point_g + 256L*point_b) ;24-bit color of
each point

r = BINDGEN(256)
g = BINDGEN(256)
b = BINDGEN(256)
TVLCT, r, g, b                  ;Initialize color tables
TVLCT, r, g, b, /GET            ;Get current color tables
PRINT, r, g, b                  ;Print current color
tables

PLOT, [0,0], [1,1], /NODATA
PLOTS, x, y, PSYM=1, COLOR = point_color      ;Plot 24-bit scatterplot

PRINT, 'Enter <cr> to continue...'
READ, cr
TVLCT, r/2, g/2, b/2            ;Load new color tables
TVLCT, r, g, b, /GET            ;Get current color tables
PRINT, r, g, b                  ;Print current color
tables

PRINT, 'Enter <cr> to continue...'
READ, cr
TVLCT, r, g, b                  ;Load new color tables
TVLCT, r, g, b, /GET            ;Get current color tables
PRINT, r, g, b                  ;Print current color
tables

END

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College Station, TX 77843-3150        Replace AT with @

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