Subject: Re: Plot into an array
Posted by david[2] on Fri, 29 Jun 2001 13:16:09 GMT

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Dominik Paul writes:

> does somebody know, how I can plot a function into an array, not into a
> window? Or can I get the array of the image of a window for saving as a jpeg
> or gif?

Write into a pixmap window (a window in memory):

```
Window, /Pixmap, /Free
Plot, myfunction
array = TVRD() ; or TVRD(True=1) on 24-bit display
```

Or, write into the Z-graphic buffer, if you want
to be assured of having a 2D array:

```
thisDevice = !D.Name
Set_Plot, 'Z'
Plot, myfunction
array = TVRD()
Set_Plot, thisDevice
```

> Or can I get the array of the image of a window for saving as a jpeg
> or gif?

If you don't want to worry about what kind
of device you are on and what keyword to use
with TVRD, and you want to write JPEG, TIFF,
PNG, GIF, etc files directly (you write JPEG
and GIF files in two completely different ways,
depending upon the type of device you are using),
get ahold of my TVRead program. It takes
care of all these details for you:

  http://www.dfanning.com/programs/tvread.pro

Then you can use either a pixmap or the Z-buffer and
just do something like this:

```
array = TVRead(/JPEG)
```

To read the image from the display and create the
output file directly.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438 E-Mail: davidf@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Plot into an array
Posted by Dennis Boccippio on Tue, 03 Jul 2001 15:42:15 GMT
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In article <MPG.15a62d86f1dbe18d989e18@news.frii.com>,
 david@dfanning.com (David Fanning) wrote:

> Dominik Paul writes:
>
>> does somebody know, how I can plot a function into an array, not into a
>> window? Or can I get the array of the image of a window for saving as a jpeg
>> or gif?
>
> Write into a pixmap window (a window in memory):
>
>   Window, /Pixmap, /Free
>   Plot, myfunction
>   array = TVRD() ; or TVRD(True=1) on 24-bit display
>

Warning: if you plan to do this repeatedly, and/or with very large
windows, TVRD() from graphics or pixmap windows is surprisingly slow,
even for pixmaps. (this from the IDL profiler; I once tried this on a
large looped calculation involving geolocation of satellite instrument
pixels, polyfilling the vertices, tvrd()'ing to an array, then summing
the arrays to estimate the spatial field of view - in all of that, the
tvrd() was by and large the bottleneck, not the math)

IIRC, David's suggestion below of using the Z buffer is more efficient
(don't know why) and greatly reduced the bottleneck, though I could be
wrong...

> Or, write into the Z-graphic buffer, if you want
> to be assured of having a 2D array:
>
>   thisDevice = !D.Name
>   Set_Plot, 'Z'

```
>    Plot, myfunction
>    array = TVRD()
>    Set_Plot, thisDevice
>
```

Subject: Re: Plot into an array
Posted by Dennis Boccippio on Tue, 03 Jul 2001 15:45:27 GMT
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In article <MPG.15a62d86f1dbe18d989e18@news.frii.com>,
 david@dfanning.com (David Fanning) wrote:

Correction, after seeing Mark Hadfield's post in a later thread, I
recall that the workaround to slow TVRD()'s in my case was to use
polyfillv (instead of polyfill), rather than using the Z-buffer. For an
arbitrary function/image, I'm not sure what the best way to things up
would be for repeated TVRD()'s. Keeping the windows small helps, at the
expense of resolution....

- DJB

Subject: Re: Plot into an array
Posted by Richard French on Wed, 04 Jul 2001 00:13:43 GMT
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Dennis Boccippio wrote:
>
>>
>>> does somebody know, how I can plot a function into an array, not into a
>>> window? Or can I get the array of the image of a window for saving as a jpeg
>>> or gif?
>>
>> Write into a pixmap window (a window in memory):
>>
>>   Window, /Pixmap, /Free
>>   Plot, myfunction
>>   array = TVRD() ; or TVRD(True=1) on 24-bit display
>>
>
**** I have tried doing this over my cable modem, and it takes bloody
forever
to do TVRD() for a large pixmap over the internet to my remote
workstation.
Another problem is that the maximum memory size for a pixmap is limited
by

```

the video monitor, NOT by the RAM on the computer itself, as I understand. Both
of these have really hobbled me for my particular application.

> IIRC, David's suggestion below of using the Z buffer is more efficient
> (don't know why) and greatly reduced the bottleneck, though I could be
> wrong...
>
>>  Or, write into the Z-graphic buffer, if you want
>>  to be assured of having a 2D array:
>>
>>     thisDevice = !D.Name
>>     Set_Plot, 'Z'
>>     Plot, myfunction
>>     array = TVRD()
>>     Set_Plot, thisDevice
>>

**** I have not tried this yet, but am I correct in thinking that a Z
buffer is part
of RAM, and not part of the memory of the display? If so, then I could
avoid all
the network traffic involved in TVRD() from a pixmap, and that would be
ideal.
I'll give it a try next time I have a chance, but I thought someone
might know the
answer to this - is Z buffer memory attached to the computer (I hope
so!), or to
the monitor?

Dick French

---

## Subject: Re: Plot into an array
Posted by david[2] on Wed, 04 Jul 2001 01:33:07 GMT
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Dick French writes:

> I'll give it a try next time I have a chance, but I thought someone
> might know the
> answer to this - is Z buffer memory attached to the computer (I hope
> so!), or to the monitor?

To the computer.

Cheers,

David
--
David Fanning, Ph.D.
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