
Subject: Shape to raster

Posted by [Fabzou](#) on Wed, 26 Oct 2011 16:52:02 GMT

[View Forum Message](#) <> [Reply to Message](#)

Dear IDLers,

My apologies if this question has been posted before.

I have a polygon vector file from which I know the coordinates within a grid (subpixel precision) and I would like to make a mask from this information (within the polygon = 1, outside = 0).

The only idea I have to make this would be to use the polyfill command and use the produced image as a mask. This would be easy to do, but I am worried about the precision I would reach by doing so (I am concerned about the line thickness, for example, and all the things that make of POLYFILL and DRAW_ROI a plot routine and not a "shape to raster" routine).

Maybe there is an IDL equivalent to the ENVI "Build mask from a ROI" tool?

Thanks for your help!

Fabz

Subject: Re: Shape to raster

Posted by [David Fanning](#) on Mon, 31 Oct 2011 14:54:01 GMT

[View Forum Message](#) <> [Reply to Message](#)

Fabzou writes:

> I have an other question though. How will the IDLanROI object
> "understand" the XY coordinates [0.5,0.5]? In my conception, these
> coordinates correspond to the center of the first down left pixel, but
> my first tests tend to show that this may not be the case...

Oh, my gosh! I just spent a week worrying about this in conjunction with an update of my Active Contouring software! I don't use an IDLanROI object there, because I want to do this myself and completely understand what I am doing. In *my* ROI, the [0.5,0.5] location would indeed be the center of the first pixel. I don't know off-hand what the IDLanROI object will do. And I have no compelling interest in looking into it this morning, either. It makes my head hurt. :-)

Cheers,

David

P.S. If you are going to test this, however, I would test with the values 0.45 and 0.55, not the value 0.5. At some point, you are going to have to do some rounding if you want image or device coordinates. The question you want to answer is how the rounding is done.

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Shape to raster
Posted by [Fabzou](#) on Mon, 31 Oct 2011 16:07:28 GMT
[View Forum Message](#) <> [Reply to Message](#)

Ok, it seems that [0,0] is the center point of the pixel (quite in contradiction with polyfill, actually).

The following tests help to understand its behavior:

```
IDL> xs = [-0.05,-0.05,0.05,0.05,-0.05]
IDL> ys = [-0.05,0.05,0.05,-0.05,-0.05]
IDL> roi = OBJ_NEW('IDLanROI', xs, ys)
IDL> mask = roi->ComputeMask(DIMENSIONS=[3,3])
IDL> print, mask
255 0 0
 0 0 0
 0 0 0
IDL> OBJ_DESTROY, roi
IDL> xs = [-0.05,-0.05,0.05,0.05,-0.05]
IDL> ys = [-0.05,0.05,0.05,-0.05,-0.05]
IDL> roi = OBJ_NEW('IDLanROI', xs, ys)
IDL> mask = roi->ComputeMask(DIMENSIONS=[3,3], MASK_RULE=1)
IDL> print, mask
 0 0 0
 0 0 0
 0 0 0
IDL> OBJ_DESTROY, roi
IDL> xs = [0.45,0.45,1.55,1.55,0.45]
IDL> ys = [0.45,1.55,1.55,0.45,0.45]
IDL> roi = OBJ_NEW('IDLanROI', xs, ys)
IDL> mask = roi->ComputeMask(DIMENSIONS=[3,3], MASK_RULE=1)
IDL> print, mask
```

```

0 0 0
0 255 0
0 0 0
IDL> OBJ_DESTROY, roi
IDL> xs = [0.45,0.45,1.55,1.55,0.45]
IDL> ys = [0.45,1.55,1.55,0.45,0.45]
IDL> roi = OBJ_NEW('IDLanROI', xs, ys)
IDL> mask = roi->ComputeMask(DIMENSIONS=[3,3])
IDL> print, mask
255 255 255
255 255 255
255 255 255
IDL> OBJ_DESTROY, roi

```

There is no possibility to generate a mask based on how many percent of the pixel surface is covered by the polygon, but some trick can allow this (generate a mask on an image 10 times larger and aggregate it afterwards, for example)

Fab

On 10/31/2011 03:54 PM, David Fanning wrote:

```

> Fabzou writes:
>
>> I have an other question though. How will the IDLanROI object
>> "understand" the XY coordinates [0.5,0.5]? In my conception, these
>> coordinates correspond to the center of the first down left pixel, but
>> my first tests tend to show that this may not be the case...
>
> Oh, my gosh! I just spent a week worrying about this
> in conjunction with an update of my Active Contouring
> software! I don't use an IDLanROI object there, because
> I want to do this myself and completely understand what
> I am doing. In *my* ROI, the [0.5,0.5] location would
> indeed be the center of the first pixel. I don't know
> off-hand what the IDLanROI object will do. And I have
> no compelling interest in looking into it this morning,
> either. It makes my head hurt. :-)
>
> Cheers,
>
> David
>
> P.S. If you are going to test this, however, I would
> test with the values 0.45 and 0.55, not the value 0.5.

```

> At some point, you are going to have to do some rounding
> if you want image or device coordinates. The question
> you want to answer is how the rounding is done.
>
>

Subject: Re: Shape to raster

Posted by [ben.bighair](#) on Mon, 31 Oct 2011 16:09:39 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hi,

On Oct 31, 10:54 am, David Fanning <n...@dfanning.com> wrote:

> Fabzou writes:

>> I have an other question though. How will the IDLanROI object
>> "understand" the XY coordinates [0.5,0.5]? In my conception, these
>> coordinates correspond to the center of the first down left pixel, but
>> my first tests tend to show that this may not be the case...

>

> Oh, my gosh! I just spent a week worrying about this
> in conjunction with an update of my Active Contouring
> software! I don't use an IDLanROI object there, because
> I want to do this myself and completely understand what
> I am doing. In *my* ROI, the [0.5,0.5] location would
> indeed be the center of the first pixel. I don't know
> off-hand what the IDLanROI object will do.

I think the PIXEL_CENTER keyword is going to provide you with control
over this issue.

http://idlastro.gsfc.nasa.gov/idl_html_help/IDLanROIComputeMask.html#wp1003888

Cheers,
Ben

Subject: Re: Shape to raster

Posted by [Fabzou](#) on Mon, 31 Oct 2011 16:17:03 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hi,

On 10/31/2011 05:09 PM, ben.bighair wrote:

> I think the PIXEL_CENTER keyword is going to provide you with control
> over this issue.

>
> http://idlastro.gsfc.nasa.gov/idl_html_help/IDLanROIComputeMask.html#wp1003888
>
> Cheers,
> Ben

Funny enough, the PIXEL_CENTER is not mentioned in the IDLanROIGroup documentation!

http://idlastro.gsfc.nasa.gov/idl_html_help/IDLanROIGroupComputeMask.html

Thanks for the hint,

Fab
