## Subject: Changing values of one image from ENVI Posted by txominhermos on Fri, 29 Aug 2008 15:20:01 GMT

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Hello.

I would like to change some pixel values of one image loaded with ENVI\_OPEN\_FILE, but I cannot load the entire image in memory (this is a very big image).

What I do is to access and process some specific regions of the image using ENVI\_GET\_DATA, by defining subsets in DIMS.

I really wonder if there is any keyword in the procedure ENVI\_WRITE\_ENVI\_FILE, or other procedure (something inverse to ENVI\_GET\_DATA) to perform this, because the only choice that I know is to load the whole image in memory in IDL and write it again.

Thanks

**Txomin** 

Subject: Re: Changing values of one image from ENVI Posted by Chris Jengo on Sun, 31 Aug 2008 14:07:17 GMT View Forum Message <> Reply to Message

- > I really wonder if there is any keyword in the procedure
- > ENVI\_WRITE\_ENVI\_FILE, or other procedure (something inverse to
- > ENVI\_GET\_DATA) to perform this, because the only choice that I know is
- > to load the whole image in memory in IDL and write it again.

There's no canned routine in ENVI to do this, but you could ceate your own using IDL's OPENW, POINT\_LUN, WRITEU, and FREE\_LUN. Just be sure to make a backup of your data until you get it working right!

Chris

Subject: Re: Changing values of one image from ENVI Posted by Chris Jengo on Sun, 31 Aug 2008 14:25:10 GMT View Forum Message <> Reply to Message

Oops, that should be OPENU, not OPENW.

Subject: Re: Changing values of one image from ENVI Posted by Jonathan Greenberg on Sun, 31 Aug 2008 18:37:49 GMT

Again, the question is do you need to use a full image to do spatial analysis? There are \*some\* analyses that really require in the entire image, but local neighborhood spatial analyses are not one of the ones that need ENVI\_GET\_DATA -- its much more scalable to simply pull a set of lines using ENVI\_GET\_SLICE the size of your window into an array rather than running on the entire dataset. If you have the memory and small enough images, ENVI\_GET\_DATA can work fine, but with increasing image sizes (I routinely work with images that range from 1gb to 100gb), I come across a lot of code that does not scale because of that one command, when it only takes a few more lines of code to perform tiled analyses.

Is the overhead incurred by repeated use of ENVI\_GET\_SLICE vs. ENVI\_GET\_DATA significant as compared to the total time of processing an image (assuming memory issues are not an issue)? Has anyone done any tests on this?

```
--j
On Aug 31, 8:30 am, "devin.wh...@gmail.com" <devin.wh...@gmail.com>
wrote:
> On Aug 29, 8:15 pm, Jonathan Greenberg < jgrn...@gmail.com> wrote:
>
>
>
>> Txomin:
>> I need to write a thread at some point extolling how much I hate
>> "ENVI_GET_DATA" -- its one of the most useless commands in the ENVI
>> language. I am a HUGE fan of ENVI_GET_SLICE and, if you want to get
>> more complicated, use the built-in envi tiling routines (which are
>> really just envi_get_slice x a number of lines dependent on memory).
>> The idea is, you read one line at a time, process it, write the output
>> one line at a time... No memory issues, fast read/write, all good.
>> --j
>> On Aug 29, 8:20 am, txominher...@gmail.com wrote:
>>> Hello.
>>> I would like to change some pixel values of one image loaded with
>>> ENVI_OPEN_FILE, but I cannot load the entire image in memory (this is
>>> a very big image).
>>> What I do is to access and process some specific regions of the image
>>> using ENVI_GET_DATA, by defining subsets in DIMS.
>>> I really wonder if there is any keyword in the procedure
>>> ENVI_WRITE_ENVI_FILE, or other procedure (something inverse to
```

```
>>> ENVI_GET_DATA) to perform this, because the only choice that I know is
>>> to load the whole image in memory in IDL and write it again.
>>> Thanks
>>> Txomin- Hide quoted text -
>> - Show quoted text -
> ENVI GET DATA, ENVI GET SLICE, and the ENVI tiling mechanism represent
> three different ways to access image data. I sometimes will use all
> three in the same program--depending on what kind of processing I need
> to do. They each have their strengths and weaknesses. For example,
> if I was interested in multi-scale spatial processing (not spectral),
> ENVI_GET_SLICE would be pretty useless since I can only retrieve one
> line at a time at full spatal resolution and the data is ordered in
> BIL or BIP. ENVI GET DATA is perfect for that task. The tiling
> mechanism is very flexible and can go either way, but requires more
> programming overhead and is often overkill for the task at hand.
> However, there are times when it is the best option. I wouldn't
> recommend it for this task, though.
```

## Subject: Re: Changing values of one image from ENVI Posted by jeffnettles4870 on Mon, 01 Sep 2008 00:07:49 GMT

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```
On Aug 31, 2:37 pm, Jonathan Greenberg < jgrn...@gmail.com> wrote:
> Again, the question is do you need to use a full image to do spatial
> analysis? There are *some* analyses that really require in the entire
> image, but local neighborhood spatial analyses are not one of the ones
> that need ENVI_GET_DATA -- its much more scalable to simply pull a set
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> rather than running on the entire dataset. If you have the memory and
> small enough images, ENVI GET DATA can work fine, but with increasing
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> 100gb), I come across a lot of code that does not scale because of
> that one command, when it only takes a few more lines of code to
> perform tiled analyses.
> Is the overhead incurred by repeated use of ENVI_GET_SLICE vs.
> ENVI GET DATA significant as compared to the total time of processing
> an image (assuming memory issues are not an issue)? Has anyone done
 any tests on this?
>
> --i
```

I think the point is that ENVI routines give you many different ways

to access your data, and the best choice of which to use depends on what you want to do with the data. I often think of ENVI\_GET\_SLICE and ENVI\_GET\_DATA routines as tiling routines that just return a single tile:) If you simply want to read in a few pixels, do it - you have that ability using either ENVI\_GET\_SLICE or ASSOC(). Or, as Chris pointed out, you can POINT\_LUN to whatever you need to get to. I use these routines in different situations all the time. The real issues here are the format of your data and what you're trying to do with those data. If you were, for example, trying to just operate on band 1 of an image cube, why would you bother with ENVI\_GET\_SLICE? ENVI\_GET\_DATA seems much simpler to me in that case.

Jeff

Subject: Re: Changing values of one image from ENVI Posted by Chris Jengo on Mon, 01 Sep 2008 04:56:34 GMT View Forum Message <> Reply to Message

I don't think the original poster's question is about READING data, though, it's about EDITING data. That is, modifying an existing file without having to read in the entire dataset (using whatever method), modify the desired values, then write to a new file. Lots of wasted I/O for some small edits (but preserves integrity of original data...).

Chris

Subject: Re: Changing values of one image from ENVI Posted by txominhermos on Mon, 15 Sep 2008 09:23:58 GMT View Forum Message <> Reply to Message

On 1 sep, 06:56, Chris Jengo <cje...@gmail.com> wrote:

- > I don't think the original poster's question is about READING data,
- > though, it's about EDITING data. That is, modifying an existing file
- > without having to read in the entire dataset (using whatever method),
- > modify the desired values, then write to a new file. Lots of wasted I/
- > O for some small edits (but preserves integrity of original data...).

>

> Chris

Hi, sorry for the delay, i have been on vacances until today

Chris is rigth, the original question is about EDITING data.