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Subject: smooth() bug in (at least) version 8.5.1  
Posted by [Helder Marchetto](#) on Fri, 02 Dec 2016 14:03:23 GMT  
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Hi,  
I came across this bug and it's a "heavy" one, meaning that IDL crashes and you're thrown back out.

The crashing commands are (try at own risk!):  
sm = smooth(indgen(512,511), 9, /edge\_mirror)  
sm = smooth(indgen(512,510), 9, /edge\_mirror)

And just to be pedantic, I've tested a few other cases and these did NOT result in a crash:  
sm = smooth(indgen(512,512), 9, /edge\_mirror)  
sm = smooth(indgen(511,511), 9, /edge\_mirror)

It appears that smooth (stopped?) being able to smooth rectangular arrays.

By running the above from the command line I get the following error (for a couple of seconds on the command line terminal):  
% Array has a corrupted descriptor: <no name>  
% Execution halted at: \$Main\$

And my IDL version.

```
IDL> !version
{
  "ARCH": "x86_64",
  "OS": "Win32",
  "OS_FAMILY": "Windows",
  "OS_NAME": "Microsoft Windows",
  "RELEASE": "8.5.1",
  "BUILD_DATE": "Nov 14 2015",
  "MEMORY_BITS": 64,
  "FILE_OFFSET_BITS": 64
}
```

I others are brave enough, could you let me know if it crashes on other versions of IDL?  
Edge\_mirror and \_wrap have been added only in 8.1.

Cheers,  
Helder

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Subject: Re: smooth() bug in (at least) version 8.5.1  
Posted by [wlandsman](#) on Fri, 02 Dec 2016 15:06:05 GMT  
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On Friday, December 2, 2016 at 9:03:27 AM UTC-5, Helder wrote:

```

> Hi,
> I came across this bug and it's a "heavy" one, meaning that IDL crashes and you're thrown
back out.
>
> The crashing commands are (try at own risk!):
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> sm = smooth(indgen(512,510), 9, /edge_mirror)
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> % Array has a corrupted descriptor: <no name>
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> IDL> !version
> {
>   "ARCH": "x86_64",
>   "OS": "Win32",
>   "OS_FAMILY": "Windows",
>   "OS_NAME": "Microsoft Windows",
>   "RELEASE": "8.5.1",
>   "BUILD_DATE": "Nov 14 2015",
>   "MEMORY_BITS": 64,
>   "FILE_OFFSET_BITS": 64
> }
>
> I others are brave enough, could you let me know if it crashes on other versions of IDL?
Edge_mirror and _wrap have been added only in 8.1.
>
> Cheers,
> Helder

```

It also crashes on my Macbook running 8.5.1 and on my Linux systems running (32 bit) 8.2.2 and (64 bit) 8.5.1. So it looks like a problem in the internal SMOOTH() algorithm. --Wayne

```

"ARCH": "x86_64",
"OS": "darwin",
"OS_FAMILY": "unix",
"OS_NAME": "Mac OS X",
"RELEASE": "8.5.1",
"BUILD_DATE": "Nov 14 2015",
"MEMORY_BITS": 64,

```

"FILE\_OFFSET\_BITS": 64

```
ARCH      STRinG  'x86_64'
OS        STRING  'linux'
OS_FAMILY STRING  'unix'
OS_NAME   STRING  'linux'
RELEASE   STRING  '8.5.1'
BUILD_DATE STRING  'Nov 14 2015'
MEMORY_BITS INT    64
FILE_OFFSET_BITS
          INT      64
```

```
ARCH      STRING  'x86'
OS        STRING  'linux'
OS_FAMILY STRING  'unix'
OS_NAME   STRING  'linux'
RELEASE   STRING  '8.2.2'
BUILD_DATE STRING  'Jan 23 2013'
MEMORY_BITS INT    32
FILE_OFFSET_BITS
          INT      64
```

---

Subject: Re: smooth() bug in (at least) version 8.5.1  
Posted by [Helder Marchetto](#) on Fri, 02 Dec 2016 15:13:33 GMT  
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On Friday, December 2, 2016 at 4:06:08 PM UTC+1, wlandsman wrote:

> On Friday, December 2, 2016 at 9:03:27 AM UTC-5, Helder wrote:

>> Hi,

>> I came across this bug and it's a "heavy" one, meaning that IDL crashes and you're thrown back out.

>>

>> The crashing commands are (try at own risk!):

>> sm = smooth(indgen(512,511), 9, /edge\_mirror)

>> sm = smooth(indgen(512,510), 9, /edge\_mirror)

>>

>> And just to be pedantic, I've tested a few other cases and these did NOT result in a crash:

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>> sm = smooth(indgen(511,511), 9, /edge\_mirror)

>>

>> It appears that smooth (stopped?) being able to smooth rectangular arrays.

>>

>> By running the above from the command line I get the following error (for a couple of seconds on the command line terminal):

>> % Array has a corrupted descriptor: <no name>

```

>> % Execution halted at: $Main$
>>
>> And my IDL version.
>> IDL> !version
>> {
>>   "ARCH": "x86_64",
>>   "OS": "Win32",
>>   "OS_FAMILY": "Windows",
>>   "OS_NAME": "Microsoft Windows",
>>   "RELEASE": "8.5.1",
>>   "BUILD_DATE": "Nov 14 2015",
>>   "MEMORY_BITS": 64,
>>   "FILE_OFFSET_BITS": 64
>> }
>>
>> I others are brave enough, could you let me know if it crashes on other versions of IDL?
Edge_mirror and _wrap have been added only in 8.1.
>>
>> Cheers,
>> Helder
>
> It also crashes on my Macbook running 8.5.1 and on my Linux systems running (32 bit) 8.2.2
and (64 bit) 8.5.1. So it looks like a problem in the internal SMOOTH() algorithm. --Wayne
>
>   "ARCH": "x86_64",
>   "OS": "darwin",
>   "OS_FAMILY": "unix",
>   "OS_NAME": "Mac OS X",
>   "RELEASE": "8.5.1",
>   "BUILD_DATE": "Nov 14 2015",
>   "MEMORY_BITS": 64,
>   "FILE_OFFSET_BITS": 64
>
> ARCH      STRinG  'x86_64'
> OS        STRING  'linux'
> OS_FAMILY  STRING  'unix'
> OS_NAME    STRING  'linux'
> RELEASE    STRING  '8.5.1'
> BUILD_DATE  STRING  'Nov 14 2015'
> MEMORY_BITS  INT      64
> FILE_OFFSET_BITS
>           INT      64
>
>
>
> ARCH      STRING  'x86'
> OS        STRING  'linux'
> OS_FAMILY  STRING  'unix'

```

```
> OS_NAME      STRING  'linux'
> RELEASE      STRING  '8.2.2'
> BUILD_DATE    STRING  'Jan 23 2013'
> MEMORY_BITS   INT     32
> FILE_OFFSET_BITS
>               INT     64
```

Hi Wayne,

thanks. I just the info from Harris, that this bug will most likely not make it into 8.6 (January?). It has been logged with ID:IDL-69705.

Thanks for testing.

Cheers,

Helder

---

Subject: Re: smooth() bug in (at least) version 8.5.1

Posted by [Burch](#) on Fri, 02 Dec 2016 18:38:00 GMT

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On Friday, December 2, 2016 at 8:03:27 AM UTC-6, Helder wrote:

```
> Hi,
> I came across this bug and it's a "heavy" one, meaning that IDL crashes and you're thrown
back out.
>
> The crashing commands are (try at own risk!):
> sm = smooth(indgen(512,511), 9, /edge_mirror)
> sm = smooth(indgen(512,510), 9, /edge_mirror)
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> And just to be pedantic, I've tested a few other cases and these did NOT result in a crash:
> sm = smooth(indgen(512,512), 9, /edge_mirror)
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> It appears that smooth (stopped?) being able to smooth rectangular arrays.
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> By running the above from the command line I get the following error (for a couple of seconds
on the command line terminal):
> % Array has a corrupted descriptor: <no name>
> % Execution halted at: $Main$
>
> And my IDL version.
> IDL> !version
> {
>   "ARCH": "x86_64",
>   "OS": "Win32",
>   "OS_FAMILY": "Windows",
>   "OS_NAME": "Microsoft Windows",
>   "RELEASE": "8.5.1",
```

```
> "BUILD_DATE": "Nov 14 2015",
> "MEMORY_BITS": 64,
> "FILE_OFFSET_BITS": 64
> }
>
> I others are brave enough, could you let me know if it crashes on other versions of IDL?
Edge_mirror and _wrap have been added only in 8.1.
>
> Cheers,
> Helder
```

It failed for me too. However, I was able to work around it by doing the following:

```
IDL> arr = indgen(512,511)
IDL> sm1 = smooth(arr, [9,1], /edge_mirror)
IDL> sm2 = smooth(sm1, [1,9], /edge_mirror)
```

Interestingly, this only failed for me when using integer types. For example, when using floats it worked fine:

```
IDL> arrFloat = float(arr)
IDL> smFloat = smooth(arrFloat, 9, /edge_mirror)
```

and to show that I get the same answer as above (at least in this case) by smoothing along each dimension in separate commands:

```
IDL> smFloat1 = smooth(arrFloat, [9,1], /edge_mirror)
IDL> smFloat2 = smooth(smFloat1, [1,9], /edge_mirror)
IDL> print, moment(smFloat2 - smFloat)
      0.00000      0.00000      NaN      NaN
```

```
IDL> !version
{
  "ARCH": "x86_64",
  "OS": "darwin",
  "OS_FAMILY": "unix",
  "OS_NAME": "Mac OS X",
  "RELEASE": "8.5",
  "BUILD_DATE": "Jul 7 2015",
  "MEMORY_BITS": 64,
  "FILE_OFFSET_BITS": 64
}
```

-Jeff

---

Subject: Re: smooth() bug in (at least) version 8.5.1

On Friday, December 2, 2016 at 12:38:03 PM UTC-6, Jeff B wrote:

> On Friday, December 2, 2016 at 8:03:27 AM UTC-6, Helder wrote:

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>>

>> The crashing commands are (try at own risk!):

>> sm = smooth(indgen(512,511), 9, /edge\_mirror)

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>>

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>> IDL> !version

>> {

>> "ARCH": "x86\_64",

>> "OS": "Win32",

>> "OS\_FAMILY": "Windows",

>> "OS\_NAME": "Microsoft Windows",

>> "RELEASE": "8.5.1",

>> "BUILD\_DATE": "Nov 14 2015",

>> "MEMORY\_BITS": 64,

>> "FILE\_OFFSET\_BITS": 64

>> }

>>

>> I others are brave enough, could you let me know if it crashes on other versions of IDL?

Edge\_mirror and \_wrap have been added only in 8.1.

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> It failed for me too. However, I was able to work around it by doing the following:

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> IDL> arr = indgen(512,511)

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> Interestingly, this only failed for me when using integer types. For example, when using floats it worked fine:

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each dimension in separate commands:
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> IDL> smFloat1 = smooth(arrFloat, [9,1], /edge_mirror)
> IDL> smFloat2 = smooth(smFloat1, [1,9], /edge_mirror)
> IDL> print, moment(smFloat2 - smFloat)
>    0.00000    0.00000    NaN    NaN
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> IDL> !version
> {
>   "ARCH": "x86_64",
>   "OS": "darwin",
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>   "OS_NAME": "Mac OS X",
>   "RELEASE": "8.5",
>   "BUILD_DATE": "Jul 7 2015",
>   "MEMORY_BITS": 64,
>   "FILE_OFFSET_BITS": 64
> }
>
> -Jeff
```

I'm sure you know this, but I should make clear that the results for floats will NOT be the same as the results for integers. If you input an integer type then smooth will do integer math:

```
IDL> arr = indgen(5)
IDL> print, smooth(arr, 3, /edge_mirror)
    0    1    2    3    3
IDL> print, smooth(float(arr), 3, /edge_mirror)
    0.333333    1.00000    2.00000    3.00000    3.66667
```

-Jeff

---

Subject: Re: smooth() bug in (at least) version 8.5.1  
Posted by [Helder Marchetto](#) on Fri, 02 Dec 2016 20:36:44 GMT  
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On Friday, December 2, 2016 at 7:38:03 PM UTC+1, Jeff B wrote:

> On Friday, December 2, 2016 at 8:03:27 AM UTC-6, Helder wrote:

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> }
>
> -Jeff
```

Thanks! This saves the day... or something like that.

:-)

Cheers,  
Helder

---

Subject: Re: smooth() bug in (at least) version 8.5.1

Posted by [chris\\_torrence@NOSPAM](mailto:chris_torrence@NOSPAM) on Wed, 07 Dec 2016 20:25:55 GMT

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On Friday, December 2, 2016 at 1:36:47 PM UTC-7, Helder wrote:

> On Friday, December 2, 2016 at 7:38:03 PM UTC+1, Jeff B wrote:

>> On Friday, December 2, 2016 at 8:03:27 AM UTC-6, Helder wrote:

>>> Hi,

>>> I came across this bug and it's a "heavy" one, meaning that IDL crashes and you're thrown back out.

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>> IDL> print, moment(smFloat2 - smFloat)
>>    0.00000    0.00000    NaN    NaN
>>
>> IDL> !version
>> {
>>   "ARCH": "x86_64",

```

```
>> "OS": "darwin",
>> "OS_FAMILY": "unix",
>> "OS_NAME": "Mac OS X",
>> "RELEASE": "8.5",
>> "BUILD_DATE": "Jul 7 2015",
>> "MEMORY_BITS": 64,
>> "FILE_OFFSET_BITS": 64
>> }
>>
>> -Jeff
>
> Thanks! This saves the day... or something like that.
> :-)
> Cheers,
> Helder
```

Hi all,

Yes, this bug has been in the SMOOTH function since IDL 8.1 when the EDGE\_MIRROR and EDGE\_WRAP keywords were added. It works fine for square arrays, but walks off the end of the array for non-square arrays.

It's now been fixed, and will be in IDL Next (not 8.6).

Cheers,  
Chris  
Harris Geospatial Solutions

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