Subject: Re: VALUE_LOCATE and NaNs
Posted by lecacheux.alain on Thu, 25 Oct 2012 14:59:48 GMT
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Le jeudi 25 octobre 2012 16:30:22 UTC+2, Craig Markwardt a écrit :
> On Thursday, October 25, 2012 5:14:47 AM UTC-4, Fab wrote:
>
>> Dear IDLers,
>
>>
>
>> I am quite an adept of using NaNs as missing values for my data, because
>
>> many IDL routines go along with them. However, some of the routines are
>
>> not really documented about how they handle NaNs.
>
>>
>
>> See the following example:
>
>> IDL> data = FINDGEN(10) & data[0] = !VALUES.F_NAN
>
>> IDL> p = VALUE_LOCATE(FINDGEN(10), data) & print, p[0]
>
>> -1
>
>> IDL> p = VALUE_LOCATE(INDGEN(10), data) & print, p[0]
>
>> 0
>
>> % Program caused arithmetic error: Floating illegal operand
>
>>
>
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>
>> Which is quite dangerous! If I didn't debug my code to find the origin
>
>> of the Floating illegal operand warning, value_locate's output would be
>
>> wrong.
>
>>
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>>

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>
>> Someone else than me thinking of this as a bug?
>
>
>
> NAN is neither greater than or less than any other finite number. For the purposes of VALUE_LOCATE(), there is no way to indicate "complete failure" other than the message you saw. I think the results of VALUE_LOCATE() are undefined, but this should be documented more explicitly in the reference documentation.
>
>
>
> The lesson is: you can't use NAN's with VALUE_LOCATE().
>
>
>
> Craig

In addition, there is one more inconsistency: 'value_locate' is considering NAN as the smallest value, while 'sort' is doing the opposite. Both being wrong as Craig said.
In IDL 8.2.1 and Win7, no warning/error messages are provided.

```
IDL> data=findgen(10) & data[1] = !Values.F_NAN
IDL> print,value_locate(findgen(10),data)
       0      -1       2       3       4       5       6       7       8       9
IDL> print,sort(data)
       0       2       3       4       5       6       7       8       9       1
```

alx.
