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Subject: Re: where and NAN numbers

Posted by [maarten](#) on Wed, 12 Jan 2005 12:08:32 GMT

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What version are you using, because in 6.1.1. the results are:

```
IDL> u = [!values.f_nan, 1, 2, 3]
```

```
IDL> print, where(u eq 3)
```

```
3
```

```
IDL> print, where(u ge 3)
```

```
3
```

euskalmet07@ej-gv.es wrote:

> Hi dear IDL user,

>

> Maybe my question is too obvious, but I can't guess the response.

>

> Having the vector:

>

```
> IDL> u = [!values.f_nan, 1, 2, 3]
```

>

> why is different the resulting vector in these following two WHERE functions?

>

```
> IDL> print, where(u eq 3)
```

```
>      0      3
```

> % Program caused arithmetic error: Floating illegal operand

>

```
> IDL> print, where(u ge 3)
```

```
>      3
```

> % Program caused arithmetic error: Floating illegal operand

>

>

> Any response would be appreciated.

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Subject: Re: where and NAN numbers

Posted by [Haje Korth](#) on Wed, 12 Jan 2005 14:24:28 GMT

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Use finite function to pre-filter for nans.

<euskalmet07@ej-gv.es> wrote in message

news:36519195.0501120402.5de60fc0@posting.google.com...

> Hi dear IDL user,

>

>

> Having the vector:  
>  
> IDL> u = [!values.f\_nan, 1, 2, 3]  
>  
> why is different the resulting vector in these following two WHERE  
functions?  
>  
> IDL> print, where(u eq 3)  
>       0       3  
> % Program caused arithmetic error: Floating illegal operand  
>  
> IDL> print, where(u ge 3)  
>       3  
> % Program caused arithmetic error: Floating illegal operand  
>  
>  
> Any response would be appreciated.

---

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Subject: Re: where and NAN numbers

Posted by [Mark Hadfield](#) on Wed, 12 Jan 2005 23:16:46 GMT

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maarten wrote:

> What version are you using, because in 6.1.1. the results are:  
> IDL> u = [!values.f\_nan, 1, 2, 3]  
> IDL> print, where(u eq 3)  
>       3  
> IDL> print, where(u ge 3)  
>       3

The result of a comparison operation between a NaN and an "ordinary" number will depend on the platform. (At least I vaguely recall some discussion of this somewhere, perhaps this group or perhaps another one.) It is not wise to rely on getting logically consistent results. For example on IDL 6.1.1 (win32), NaN is not equal to 0 (according to the EQ and NE operators) but it is neither larger or smaller than 0 (according to the LT and GT operators). So, as another poster has suggested, it is good practice to use the FINITE function to establish whether a floating point number is finite; if it's not the results from comparison operations will likely be misleading.

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Mark Hadfield        "Ka puwaha te tai nei, Hoesa tatou"  
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