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Subject: Re: ncdf + x-connection + many files = crazy.  
Posted by [Michael Galloy](#) on Tue, 08 Feb 2011 21:44:42 GMT  
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On 2/8/11 2:36 PM, Michael Galloy wrote:

> On 2/8/11 1:37 PM, Matt wrote:

>> Hey all,

>>

>> I've got a great riddle for you today. (Long story short, can you run  
>> the test code included below to completion on your machine?) I've  
>> already filed a bug report, but I want to see if other people can  
>> reproduce these errors.

>>

>> I'm experiencing machine/version-dependent, non-deterministic behavior  
>> that seems to present itself orthogonal to the triggering mechanism.  
>> In other words, I've got a crazy-making problem.

>>

>> I experienced this in working code, but through patient debugging,  
>> I've pared this down my until I've got a relatively small program that  
>> demonstrates the problem behavior.

>>

>> The undesirable behavior is a NCDF\_OPEN error (NC\_ERROR=-31) after  
>> some \*random\* number of open/close iterations on a netcdf file that  
>> was created with IDL (or possibly a segfault core dump on other  
>> machines.). The second feature is that I don't see this behavior  
>> until I make an x-connection of some sort (window, /free, or even a  
>> "device, depth=depth" will cause errors)

>>

>> Machine 1: (only has idl 7.0.1 64bit installed)

>> savoie@snow:~/tmp> uname -a

>> Linux snow 2.6.27.54-0.2-default #1 SMP 2010-10-19 18:40:07 +0200

>> x86\_64 x86\_64 x86\_64 GNU/Linux

>>

>> Machine 2 (fails with 32 bit idl7.0.1& idl6.4):

>> savoie@snowblower:~/tmp> uname -a

>> Linux snowblower 2.6.34.7-0.5-default #1 SMP 2010-10-25 08:40:12 +0200

>> i686 i686 i386 GNux

>>

>>

>> All the code does is open and close a netcdf file, many, many times.  
>> But after an x-connection (via "window, /free"), the code errors out  
>> at a different spot in the iteration.

>>

>>

>> Below is the output I get on the problem machines and below that, the  
>> source code for you to try at home. For extra credit, modify the code  
>> to open a netcdf file created with a different program than IDL, NCO  
>> for example.

```

>>
>>
>> --OUTPUT-----
>> savoie@snow:~/tmp> idl70
>> IDL Version 7.0.1 (linux x86_64 m64). (c) 2008, ITT Visual Information
>> Solutions
>> Installation number: 100-431.
>> Licensed for use by: University of Colorado
>>
>> IDL> .run ./crash_ncdf.pro
>> % Compiled module: CREATE_HAND_SAMPLE.
>> % Compiled module: CRASH_NCDF.
>> IDL> crash_ncdf
>> % Loaded DLM: NCDF.
>> Successfully completed first iterations
>> i = 143017
>> ncdf_fid = 5
>> % CRASH_NCDF: NCDF_OPEN: Unable to open the file "/projects/NRTSI-G/
>> tmp_crashing_ncdf/sample_h
>> and.nc".
>> (NC_ERROR=-31)
>> % Execution halted at: CRASH_NCDF 44 /homes/snowblower/savoie/
>> tmp/crash_ncdf.pro
>> % $MAIN$
>
> I made it through OK with IDL 8.0.1 (and netCDF 4.1 instead of the 3.6.2
> in IDL 7.0):
>
> IDL> crash_ncdf
> % Loaded DLM: NCDF.
> Successfully completed first iterations
> Successfully completed second iterations
> IDL> print, !version
> { x86_64 darwin unix Mac OS X 8.0.1 Oct 5 2010 64 64}
>
> Mike
> --
> www.michaelgalloy.com
> Research Mathematician
> Tech-X Corporation
>

```

Actually, I'm OK on 7.0 also.

```

IDL> crash_ncdf
% Compiled module: CRASH_NCDF.
% Loaded DLM: NCDF.
Successfully completed first iterations

```

Successfully completed second iterations

```
IDL> print, !version
```

```
{ i386 darwin unix Mac OS X 7.0 Oct 25 2007    32    64}
```

```
IDL> help, 'ncdf', /dln
```

```
** NCDF - IDL NetCDF support (loaded)
```

```
    Version: 3.6.2, Build Date: OCT 25 2007, Source: ITT Visual  
Information Solutions
```

```
    Path: /Applications/itt/idl70/bin/bin.darwin.i386/idl_ncdf.so
```

Mike

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[www.michaelgalloy.com](http://www.michaelgalloy.com)

Research Mathematician

Tech-X Corporation

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