

## Ruby trunk - Bug #6592

### test\_call\_double(DL::TestDL) fails on ARM HardFP

06/14/2012 05:12 PM - vo.x (Vit Ondruch)

<b>Status:</b> Closed	
<b>Priority:</b> Normal	
<b>Assignee:</b> tenderlovmaking (Aaron Patterson)	
<b>Target version:</b> 2.6	
<b>ruby -v:</b> ruby 2.0.0dev (2012-06-05 trunk 35922) [armv7hl-linux]	<b>Backport:</b>
<b>Description</b>	
Hi,	
I am observing following test suite error on armv7hl Fedora 17 <a href="#">1</a> :	
2) Failure: test_call_double(DL::TestDL) [/builddir/build/BUILD/ruby-2.0.0-r35922/test/dl/test_dl2.rb:90]: Expected  0.1 - 2.1638932342073e-311  (0.1) to be < 0.001.	
I was digging a bit deeper and I identified issue in this part of code <a href="#">[2]</a> . I tried a bit to unfold the macros and found, that the issue is because of variadic arguments. If the function prototype is declared without them (novar.disasm), the test passes, if they are in use (variadic.disasm), the test fails. The attached files shows the code with partially unfolded macros and their disassembly. The atof.disasm contains the disassembly of the atof call if it might be of help.	
I am not sure if it might be compiler bug (GCC 4.7) or if it should be fixed in Ruby. Any help appreciated	
<a href="#">[1] http://arm.koji.fedoraproject.org/koji/getfile?taskID=904523&amp;name=build.log</a>	
<a href="#">[2] https://github.com/ruby/ruby/blob/v1_9_3_195/ext/dl/cfunc.c#L464</a>	
<a href="#">[3] https://buildd.debian.org/status/fetch.php?pkg=ruby1.9.1&amp;arch=armhf&amp;ver=1.9.3.194-1&amp;stamp=1338887114</a>	
<b>Related issues:</b>	
Blocked by Ruby trunk - Feature #5458: DL should be removed	<b>Closed</b> <b>10/18/2011</b>

### History

#### #1 - 06/14/2012 05:24 PM - vo.x (Vit Ondruch)

This might be of reference [\[1\]](#), particularly the 5.4 and 5.5 chapters.

[\[1\] http://infocenter.arm.com/help/topic/com.arm.doc.ihl0042d/IHL0042D\\_aapcs.pdf](#)

#### #2 - 06/14/2012 06:17 PM - kosaki (Motohiro KOSAKI)

Please confirm you are surely using fiddle (instead of plain DL). ext/dl is broken when the abi require proper function prototype for variadic arguments (e.g. x86\_64).

#### #3 - 06/14/2012 09:54 PM - vo.x (Vit Ondruch)

No I am not using Fiddle.

Better to say, it is not up to me what I use. The test is written in such way that it is using DL no matter if libffi is present and if Fiddle might be used.

This is the callstack using GitHub ;)

<https://github.com/ruby/ruby/blob/trunk/ext/dl/cfunc.c#L340>

<https://github.com/ruby/ruby/blob/trunk/ext/dl/lib/dl/func.rb#L55>

[https://github.com/ruby/ruby/blob/trunk/test/dl/test\\_dl2.rb#L89](https://github.com/ruby/ruby/blob/trunk/test/dl/test_dl2.rb#L89)

#### #4 - 06/21/2012 01:53 AM - Anonymous

- File noname added

On Thu, Jun 14, 2012 at 09:54:41PM +0900, vo.x (Vit Ondruch) wrote:

Issue [#6592](#) has been updated by vo.x (Vit Ondruch).

No I am not using Fiddle.

Better to say, it is not up to me what I use. The test is written in such way that it is using DL no matter if libffi is present and if Fiddle might be used.

I think we need to delete the CFunc code. The problem with that class is we cannot tell the return type, so it's impossible to set up a fiddle wrapper without using DL::CFunc in conjunction with DL::Function.

I'll port these tests to Fiddle in preparation for rm'ing the dl implementation.

This is the callstack using GitHub ;)

<https://github.com/ruby/ruby/blob/trunk/ext/dl/cfunc.c#L340>  
<https://github.com/ruby/ruby/blob/trunk/ext/dl/lib/dl/func.rb#L55>  
[https://github.com/ruby/ruby/blob/trunk/test/dl/test\\_dl2.rb#L89](https://github.com/ruby/ruby/blob/trunk/test/dl/test_dl2.rb#L89)

Thank you! :-)

--

Aaron Patterson

<http://tenderlovmaking.com/>

#### #5 - 06/21/2012 02:41 PM - vo.x (Vit Ondruch)

I think we need to delete the CFunc code. The problem with that class is we cannot tell the return type, so it's impossible to set up a fiddle wrapper without using DL::CFunc in conjunction with DL::Function.

I'll port these tests to Fiddle in preparation for rm'ing the dl implementation.

In other words, DL will be removed in 2.0, but this leaves 1.9.3 on ARM with broken functionality? It would be nice to document it somewhere at least, if this is the case. Thank you.

#### #6 - 06/22/2012 02:23 AM - Anonymous

- File noname added

On Thu, Jun 21, 2012 at 02:41:10PM +0900, vo.x (Vit Ondruch) wrote:

Issue [#6592](#) has been updated by vo.x (Vit Ondruch).

I think we need to delete the CFunc code. The problem with that class is we cannot tell the return type, so it's impossible to set up a fiddle wrapper without using DL::CFunc in conjunction with DL::Function.

I'll port these tests to Fiddle in preparation for rm'ing the dl implementation.

In other words, DL will be removed in 2.0, but this leaves 1.9.3 on ARM with broken functionality? It would be nice to document it somewhere at least, if this is the case. Thank you.

Not so much broken, as replaced with Fiddle. I don't think the CFunc object is intended to be used directly (I couldn't find any usage in the wild). But yes, if you're using CFunc directly, it will break. :(

--

Aaron Patterson

<http://tenderlovmaking.com/>

#### #7 - 06/22/2012 09:34 AM - drbrain (Eric Hodel)

- Category set to ext

- Assignee set to tenderlovmaking (Aaron Patterson)

- Target version set to 2.0.0

**#8 - 07/14/2012 06:36 PM - mame (Yusuke Endoh)**

- Status changed from Open to Assigned

**#9 - 02/18/2013 09:52 PM - mame (Yusuke Endoh)**

- Target version changed from 2.0.0 to 2.6

**#10 - 08/15/2013 05:05 AM - zzak (Zachary Scott)**

Aaron did you ever port these tests when you were merging bits of DL into Fiddle?

**#11 - 09/01/2014 01:24 PM - vo.x (Vit Ondruch)**

ping ... any update? Still an issue with ruby 2.2.0dev (2014-08-26 trunk 47288) [armv7hl-linux]

**#12 - 09/01/2014 05:46 PM - vjoel (Joel VanderWerf)**

Fails with gcc-4.8.2 also.

```
$ make check
CC = gcc
LD = ld
LDSSHARED = gcc -shared
CFLAGS = -O3 -fno-fast-math -ggdb3 -Wall -Wextra -Wno-unused-parameter -Wno-parentheses -Wno-long-long -Wno-missing-field-initializers -Wunused-variable -Werror=pointer-arith -Werror=write-strings -Werror=declaration-after-statement -Werror=implicit-function-declaration -Werror=deprecated-declarations -Wno-packed-bitfield-compat -std=iso9899:1999
XCFLAGS = -D_FORTIFY_SOURCE=2 -fstack-protector -fno-strict-overflow -fvisibility=hidden -DRUBY_EXPORT -fPIE
CPPFLAGS = -I. -I.ext/include/armv7l-linux-eabi -I./include -I.
DLDFLAGS = -fstack-protector -pie
SOLIBS =
```

Using built-in specs.

COLLECT\_GCC=gcc

COLLECT\_LTO\_WRAPPER=/usr/lib/gcc/arm-linux-gnueabi/4.8/lto-wrapper

Target: arm-linux-gnueabi

```
Configured with: ../src/configure -v --with-pkgversion='Ubuntu/Linaro 4.8.2-19ubuntu1' --with-bugurl=file:///usr/share/doc/gcc-4.8/README.Bugs --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --prefix=/usr --program-suffix=-4.8 --enable-shared --enable-linker-build-id --libexecdir=/usr/lib --without-included-gettext --enable-threads=posix --with-gxx-include-dir=/usr/include/c++/4.8 --libdir=/usr/lib --enable-nls --with-sysroot=/ --enable-clocale=gnu --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-gnu-unique-object --disable-libmudflap --disable-libitm --disable-libquadmath --enable-plugin --with-system-zlib --disable-browser-plugin --enable-java-awt=gtk --enable-gtk-cairo --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-armhf/jre --enable-java-home --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-armhf --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-armhf --with-arch-directory=arm --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --enable-objc-gc --enable-multiarch --enable-multilib --disable-sjlj-exceptions --with-arch=armv7-a --with-fpu=vfpv3-d16 --with-float=hard --with-mode=thumb --disable-werror --enable-checking=release --build=arm-linux-gnueabi --host=arm-linux-gnueabi --target=arm-linux-gnueabi
Thread model: posix
gcc version 4.8.2 (Ubuntu/Linaro 4.8.2-19ubuntu1)
```

...

test succeeded

PASS all 1008 tests

```
./miniruby -I./lib -I. -I.ext/common ./tool/runruby.rb --extout=.ext -- --disable-gems ./bootstrap/test/runner.rb --ruby=ruby --disable-gems ./KNOWNBUGS.rb
```

2014-09-01 10:34:38 -0700

Driver is ruby 2.2.0dev (2014-08-31 trunk 47341) [armv7l-linux-eabi]

Target is ruby 2.2.0dev (2014-08-31 trunk 47341) [armv7l-linux-eabi]

KNOWNBUGS.rb PASS 0

No tests, no problem

```
./miniruby -I./lib -I. -I.ext/common ./tool/runruby.rb --extout=.ext -- --disable-gems ./test/runner.rb --ruby=./miniruby -I./lib -I. -I.ext/common ./tool/runruby.rb --extout=.ext -- --disable-gems
```

```
Run options: "--ruby=./miniruby -I./lib -I. -I.ext/common ./tool/runruby.rb --extout=.ext -- --disable-gems"
```

# Running tests:

```
[ 181/15519] DL::TestDL#test_call_double = 0.15 s
```

1) Failure:

```
DL::TestDL#test_call_double [/home/tmp/snapshot/test/dl/test_dl2.rb:63]:
```

```
Expected |0.1 - 2.1638938557735e-311| (0.1) to be <= 0.001.
```

```
[ 834/15519] OpenSSL::TestPKeyRSA#test_sign_verify_memory_leak = 10.04 s
2) Error:
OpenSSL::TestPKeyRSA#test_sign_verify_memory_leak:
Timeout::Error: execution of assert_no_memory_leak expired
/home/tmp/snapshot/test/openssl/test_pkey_rsa.rb:80:in `test_sign_verify_memory_leak'
```

**#13 - 11/10/2014 04:19 PM - vo.x (Vit Ondruch)**

- Blocked by Feature #5458: DL should be removed added

**#14 - 11/10/2014 04:21 PM - vo.x (Vit Ondruch)**

- Status changed from Assigned to Closed

DL was removed in rev48217 ([#5458](#)) so this is not issue anymore. Thanks Aaron!

**Files**

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novar.disasm	659 Bytes	06/14/2012	vo.x (Vit Ondruch)
variadic.disasm	699 Bytes	06/14/2012	vo.x (Vit Ondruch)
atof.disasm	695 Bytes	06/14/2012	vo.x (Vit Ondruch)
noname	500 Bytes	06/21/2012	Anonymous
noname	500 Bytes	06/22/2012	Anonymous