

## Ruby - Bug #3861

### Endian bugs in fiddle/dl on sparc64

09/23/2010 04:43 AM - jeremyevans0 (Jeremy Evans)

<b>Status:</b>	Closed	<b>Backport:</b>
<b>Priority:</b>	Normal	
<b>Assignee:</b>	tenderlovmaking (Aaron Patterson)	
<b>Target version:</b>	1.9.3	
<b>ruby -v:</b>	-	
<b>Description</b>		
<pre>=begin Running the test suite for 1.9.2 on sparc64 on OpenBSD, the following errors on received:  1. Failure: test_callback(DL::TestDL) [/usr/ports/pobj/ruby-1.9.2-p0/ruby-1.9.2-p0/test/dl/test_dl2.rb:144]: &lt;"aabbfoorz"&gt; expected but was &lt;"zabrfbooa"&gt;.  2. Failure: test_isdigit(DL::TestFunc) [/usr/ports/pobj/ruby-1.9.2-p0/ruby-1.9.2-p0/test/dl/test_func.rb:67]: Expected 0 to be &gt; 0.  3. Failure: test_qsort1(DL::TestFunc) [/usr/ports/pobj/ruby-1.9.2-p0/ruby-1.9.2-p0/test/dl/test_func.rb:95]: &lt;"1349"&gt; expected but was &lt;"9341"&gt;.  4. Failure: test_qsort2(DL::TestFunc) [/usr/ports/pobj/ruby-1.9.2-p0/ruby-1.9.2-p0/test/dl/test_func.rb:105]: &lt;"1349"&gt; expected but was &lt;"9341"&gt;.  5. Failure: test_isdigit(DL::TestImport) [/usr/ports/pobj/ruby-1.9.2-p0/ruby-1.9.2-p0/test/dl/test_import.rb:126]: Expected 0 to be &gt; 0.  It's possible this is an upstream issue with libffi. If so, please let me know and I'll report it to the libffi developers. =end</pre>		

#### Associated revisions

##### Revision 4d71d348 - 08/09/2011 05:31 AM - ngoto (Naohisa Goto)

- ext/fiddle/conversions.c (generic\_to\_value): ffi\_arg and ffi\_sarg should be used to handle shorter return value. fix [Bug #3861] [ruby-core:32504]
- ext/fiddle/closure.c (callback): ditto
- ext/fiddle/conversions.h (fiddle\_generic): ditto
- ext/fiddle/conversions.c (value\_to\_generic): char, short and int are strictly distinguished on big-endian CPU, e.g. sparc64.

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@32895 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

##### Revision 01db73f6 - 08/21/2011 02:35 AM - ngoto (Naohisa Goto)

Merge commit r32895 from trunk:

\* ext/fiddle/conversions.c (generic\_to\_value): ffi\_arg and ffi\_sarg should be used to handle shorter return value. fix [Bug #3861]

[ruby-core:32504]

\* ext/fiddle/closure.c (callback): ditto

\* ext/fiddle/conversions.h (fiddle\_generic): ditto

\* ext/fiddle/conversions.c (value\_to\_generic): char, short and int  
are strictly distinguished on big-endian CPU, e.g. sparc64.

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby\_1\_9\_3@33015 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

## History

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### #1 - 09/23/2010 09:35 PM - naruse (Yui NARUSE)

- Status changed from Open to Assigned

- Assignee set to tenderlovemaking (Aaron Patterson)

=begin

=end

### #2 - 10/19/2010 04:57 AM - tenderlovemaking (Aaron Patterson)

=begin

I can't reproduce this on my PPC machine.

Can you provide the output of 'make test-all TESTS=fiddle' and 'make test-all TESTS=dl' on the sparc64 machine?

DL is known to have problems on 64bit machines without Fiddle. I suspect that fiddle was not built on this machine.

Thanks!

=end

### #3 - 12/26/2010 02:53 PM - naruse (Yui NARUSE)

- Status changed from Assigned to Feedback

- Priority changed from Normal to 3

=begin

=end

### #4 - 08/08/2011 09:16 PM - kosaki (Motohiro KOSAKI)

- Status changed from Feedback to Rejected

I close this as Rejected since no feedback provided.

Please reopen this if it still happens on the latest version of ruby.

### #5 - 08/08/2011 10:30 PM - ngoto (Naohisa Goto)

- File fiddle-sparcv9.patch added

- Status changed from Rejected to Open

- Priority changed from 3 to Normal

- ruby -v changed from ruby 1.9.2p0 (2010-08-18 revision 29036) [sparc64-openbsd4.8] to ruby 1.9.4dev (2011-08-05 trunk 32863) [sparc64-solaris2.10]

This is also reproduced on sparc64 Solaris10 with latest Ruby.

This is not because of endian, nor libffi bug, but a bug of Fiddle.

Patch is attached.

The manpage of ffi\_call(3) ([http://linux.die.net/man/3/ffi\\_call](http://linux.die.net/man/3/ffi_call)) says:

"rvalue must point to storage that is sizeof(long) or larger. For smaller return value sizes, the ffi\_arg or ffi\_sarg integral type must be used to hold the return value."

but Fiddle did not use ffi\_arg nor ffi\_sarg for getting the "rvalue" after ffi\_call and closure callback.

Note that value\_to\_generic and generic\_to\_value are asymmetric after the patch.

In addition, to avoid potential bug in big-endian architecture, the patch also modifies value\_to\_generic() to strictly distinguish char, short and int.

### #6 - 08/08/2011 10:37 PM - ngoto (Naohisa Goto)

- File fiddle-sparcv9.patch added

Patch attached again.  
The previous patch contains mistakes and garbage.

**#7 - 08/08/2011 11:03 PM - ngoto (Naohisa Goto)**

- File deleted (fiddle-sparcv9.patch)

**#8 - 08/09/2011 06:23 AM - tenderlovmaking (Aaron Patterson)**

- ruby -v changed from ruby 1.9.4dev (2011-08-05 trunk 32863) [sparc64-solaris2.10] to -

On Mon, Aug 08, 2011 at 10:37:53PM +0900, Naohisa Goto wrote:

Issue [#3861](#) has been updated by Naohisa Goto.

File fiddle-sparcv9.patch added

Patch attached again.  
The previous patch contains mistakes and garbage.

Please apply these to trunk. I think it should also be applied to the 1.9.3 branch.

Thanks.

--

Aaron Patterson  
<http://tenderlovmaking.com/>

**#9 - 08/09/2011 02:31 PM - ngoto (Naohisa Goto)**

- Status changed from Open to Closed

- % Done changed from 0 to 100

This issue was solved with changeset r32895.  
Jeremy, thank you for reporting this issue.  
Your contribution to Ruby is greatly appreciated.  
May Ruby be with you.

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- ext/fiddle/conversions.c (generic\_to\_value): ffi\_arg and ffi\_sarg should be used to handle shorter return value. fix [Bug [#3861](#)] [[ruby-core:32504](#)]
  - ext/fiddle/closure.c (callback): ditto
  - ext/fiddle/conversions.h (fiddle\_generic): ditto
  - ext/fiddle/conversions.c (value\_to\_generic): char, short and int are strictly distinguished on big-endian CPU, e.g. sparc64.

**#10 - 08/09/2011 02:38 PM - ngoto (Naohisa Goto)**

- Status changed from Closed to Open

- Target version set to 1.9.3

re-open this issue for the reminder whether it is backported to 1.9.3 or not.

**#11 - 08/20/2011 07:11 PM - kosaki (Motohiro KOSAKI)**

- Status changed from Open to Assigned

Aaron, I think it's ok to backport. But I'd respect your opinion. Please decide it.

Thanks.

**#12 - 08/21/2011 04:23 AM - tenderlovmaking (Aaron Patterson)**

On Sat, Aug 20, 2011 at 07:11:23PM +0900, Motohiro KOSAKI wrote:

Issue [#3861](#) has been updated by Motohiro KOSAKI.

Status changed from Open to Assigned

Aaron, I think it's ok to backport. But I'd respect your opinion. Please decide it.

Yes, I think it's fine. Please commit to the 1.9.3 branch! :-)

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Aaron Patterson

<http://tenderlovemaking.com/>

**#13 - 08/21/2011 11:43 AM - ngoto (Naohisa Goto)**

- Status changed from Assigned to Closed

I've just committed with r33015. close the issue now

#### Files

fiddle-sparcv9.patch	2.13 KB	08/08/2011	ngoto (Naohisa Goto)
noname	500 Bytes	08/09/2011	tenderlovemaking (Aaron Patterson)
noname	500 Bytes	08/21/2011	tenderlovemaking (Aaron Patterson)