

## Ruby master - Bug #13545

### Ruby built by clang 4.0.0 parses Float literal wrongly

05/05/2017 12:35 AM - mame (Yusuke Endoh)

<b>Status:</b> Closed	
<b>Priority:</b> Normal	
<b>Assignee:</b>	
<b>Target version:</b>	
<b>ruby -v:</b>	<b>Backport:</b> 2.2: REQUIRED, 2.3: DONE, 2.4: DONE
<b>Description</b>	
<pre>\$ ./configure --prefix=/home/mame/work/local CC=clang \$ make -j 4 miniruby \$ ./miniruby -e 'p 1.1851510441583988e+30' 1.1851510441583981e+30</pre>	
<p>See the last digit. While the original literal ends with "8e+30", the result ends with "1e+30". The version of clang is 4.0.0-1ubuntu1.</p>	
<p>There seems to be a bug in ruby_strtod. It manipulates a double variable as an integer variable by using cast. I think that this is undefined behavior, and clang seems to optimize some operations out.</p>	
<p>We can fix this issue by adding volatile to its variable declaration, but I'm unsure if this is a good solution.</p>	
<pre>diff --git a/util.c b/util.c index 4ae7c4fc96..ecd55bb0c5 100644 --- a/util.c +++ b/util.c @@ -1832,7 +1832,7 @@ d2b(double d_, int *e, int *bits)  static double  ratio(Bigint *a, Bigint *b)  { - double_u da, db; + volatile double_u da, db;  int k, ka, kb;   dval(da) = b2d(a, &amp;ka);</pre>	

#### Associated revisions

##### Revision 7be47caa - 05/19/2017 02:14 PM - naruse (Yui NARUSE)

Merge latest dtoa.c [Bug #13545]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@58796 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

##### Revision 58796 - 05/19/2017 02:14 PM - naruse (Yui NARUSE)

Merge latest dtoa.c [Bug #13545]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

##### Revision 58796 - 05/19/2017 02:14 PM - naruse (Yui NARUSE)

Merge latest dtoa.c [Bug #13545]

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##### Revision 58796 - 05/19/2017 02:14 PM - naruse (Yui NARUSE)

Merge latest dtoa.c [Bug #13545]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

##### Revision d058c8a2 - 06/30/2017 11:08 AM - usa (Usaku NAKAMURA)

merge revision(s) 58796: [Backport #13545]

Merge latest dtoa.c [Bug #13545]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby\_2\_3@59224 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

**Revision 59224 - 06/30/2017 11:08 AM - usa (Usaku NAKAMURA)**

merge revision(s) 58796: [Backport #13545]

Merge latest dtoa.c [Bug #13545]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

**Revision c54593ed - 07/09/2017 07:51 PM - nagachika (Tomoyuki Chikanaga)**

merge revision(s) 58796: [Backport #13545]

Merge latest dtoa.c [Bug #13545]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby\_2\_4@59298 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

**Revision 59298 - 07/09/2017 07:51 PM - nagachika (Tomoyuki Chikanaga)**

merge revision(s) 58796: [Backport #13545]

Merge latest dtoa.c [Bug #13545]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

## History

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**#1 - 05/19/2017 02:15 PM - naruse (Yui NARUSE)**

- Status changed from Open to Closed

Applied in changeset [trunk|r58796](#).

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Merge latest dtoa.c [Bug [#13545](#)]

Apply some part of <http://www.netlib.org/fp/dtoa.c> with my eyes...

**#2 - 05/19/2017 02:15 PM - naruse (Yui NARUSE)**

- Backport changed from 2.2: UNKNOWN, 2.3: UNKNOWN, 2.4: UNKNOWN to 2.2: REQUIRED, 2.3: REQUIRED, 2.4: REQUIRED

**#3 - 06/30/2017 11:08 AM - usa (Usaku NAKAMURA)**

- Backport changed from 2.2: REQUIRED, 2.3: REQUIRED, 2.4: REQUIRED to 2.2: REQUIRED, 2.3: DONE, 2.4: REQUIRED

ruby\_2\_3 r59224 merged revision(s) 58796.

**#4 - 07/09/2017 07:51 PM - nagachika (Tomoyuki Chikanaga)**

- Backport changed from 2.2: REQUIRED, 2.3: DONE, 2.4: REQUIRED to 2.2: REQUIRED, 2.3: DONE, 2.4: DONE

ruby\_2\_4 r59298 merged revision(s) 58796.