Trunk fails on linux with clang on test with callcc

Test fails on linux with clang. It doesn't fails with gcc.

OS: Ubuntu 16.04 x64_64
clang version 3.8.0-2ubuntu4 (tags/RELEASE_380/final)
configure: ../configure CC=clang CXX=clang++
test:
$ make test-all TESTS='"-n /callcc/"

-- Control frame information -----------------------------------------------
c:0027 p:---- s:0155 e:000154 CFUNC :callcc
c:0026 p:0016 s:0151 E:001310 BLOCK /home/yura/Project/ruby-falcon/test/ruby/test_array.rb:948 [FINISH]
c:0025 p:---- s:0148 E:000147 CFUNC :combination
c:0024 p:0038 s:0143 E:0021a0 METHOD /home/yura/Project/ruby-falcon/test/ruby/test_array.rb:947
c:0023 p:0036 s:0135 E:000110 METHOD /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:1029

-- Ruby level backtrace information ----------------------------------------
/home/yura/Project/ruby-falcon/test/lib/test/unit.rb:1029:in run_test'
/home/yura/Project/ruby-falcon/test/ruby/test_array.rb:947:in test_combination_with_callcc'
/home/yura/Project/ruby-falcon/test/ruby/test_array.rb:948:in block in test_combination_with_callcc'
/home/yura/Project/ruby-falcon/test/ruby/test_array.rb:948:in callcc'

-- Machine register context -----------------------------------------------
RIP: 0x0000559aac7459b3 RBP: 0x00007ffd612aeb40 RSP: 0x000007fd612eaf0
RAX: 0x00000569ab4745a50 RCX: 0x00007fd612eab3f
RDX: 0x0000559ab47765c0 R8: 0x000007fd612eaf00 R9: 0x0000559ab744b00
R10: 0x000007fd612eaf00 R11: 0x0000559ab4745a50 R12: 0x0000000000000000
R13: 0x0000559ab4745a50 R14: 0x0000559aad43b5c0 R15: 0x000000000010200

-- C level backtrace information -------------------------------------------

03/18/2020
Associated revisions

Revision 68b65f176 - 11/05/2016 02:23 AM - shugo (Shugo Maeda)

- cont.c (cont_new): disable optimization if clang's version is 3.8.0. [ruby-core:77894] [Bug #12893]
git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@56561 b2d03c8-39d4-4d8f-98ff-823fe69b080e

Revision 56561 - 11/05/2016 02:23 AM - shugo (Shugo Maeda)

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Revision 56561 - 11/05/2016 02:23 AM - shugo (Shugo Maeda)

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Revision bb681c49 - 11/11/2016 03:48 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) 56561: [Backport #12893]

* cont.c (cont_new): disable optimization if clang's version is 3.8.0. [ruby-core:77894] [Bug #12893]
git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@56730 b2d03c8-39d4-4d8f-98ff-823fe69b080e

Revision 56717 - 11/11/2016 03:48 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) 56561: [Backport #12893]

* cont.c (cont_new): disable optimization if clang's version is 3.8.0. [ruby-core:77894] [Bug #12893]

Revision 41d0d22 - 11/11/2016 10:47 PM - usa (Usaku NAKAMURA)

merge revision(s) 56561: [Backport #12893]

* cont.c (cont_new): disable optimization if clang's version is 3.8.0. [ruby-core:77894] [Bug #12893]
git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_3@56730 b2d03c8-39d4-4d8f-98ff-823fe69b080e

Revision 56730 - 11/11/2016 10:47 PM - usa (Usaku NAKAMURA)

merge revision(s) 56561: [Backport #12893]

* cont.c (cont_new): disable optimization if clang's version is 3.8.0. [ruby-core:77894] [Bug #12893]
$ make test-all TESTS='-n !/callcc/' # and I edited test/ruby/test_continuation.rb to no-op

CC = clang
LD = ld
LDSHARED = clang -shared
XCFLAGS = -D_FORTIFY_SOURCE=2 -fstack-protector -fno-strict-overflow -fvisibility=hidden -DRUBY_EXPORT
CPPFLAGS = -I. -I.ext/include/x86_64-linux -I..include -I. -I../enc/unicode/9.0.0
DLDFLAGS = -Wl,--compress-debug-sections=zlib -fstack-protector -pie
SOLIBS = -lgmp

clang version 3.8.0-2ubuntu4 (tags/RELEASE_380/final)
Target: x86_64-pc-linux-gnu
Thread model: posix
InstalledDir: /usr/bin

Found candidate GCC installation: /usr/bin/../lib/gcc/i686-linux-gnu/6.0.0
Found candidate GCC installation: /usr/bin/../lib/gcc/x86_64-linux-gnu/5.4.0
Found candidate GCC installation: /usr/bin/../lib/gcc/x86_64-linux-gnu/6.0.0
Selected GCC installation: /usr/bin/../lib/gcc/x86_64-linux-gnu/5.4.0
Candidate multilib: .;@m64
Selected multilib: .;@m64

[ 9354/16782] TestMarshal#test_gc/home/yura/Project/ruby-falcon/test/ruby/test_marshal.rb:181: [BUG] Segmentation fault at 0x0000000000000c

ruby 2.4.0dev (2016-11-03 trunk 56550) [x86_64-linux]
-- Control frame information ---------------------------------------------------------------
c:0029 p:---- s:0167 e:000166 CFUNC :start
  c:0028 p:0019 s:0163 e:000162 METHOD /home/yura/Project/ruby-falcon/test/ruby/test_marshall.rb:181 [FINISH]
c:0027 p:---- s:0158 e:000157 CFUNC :dump
  c:0026 p:0020 s:0153 e:000152 BLOCK /home/yura/Project/ruby-falcon/test/ruby/test_marshall.rb:188
  c:0025 p:0062 s:0150 e:000149 METHOD /home/yura/Project/ruby-falcon/test/ruby/test_marshall.rb:187
  c:0023 p:0036 s:0135 e:000134 METHOD /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:1029
  c:0022 p:0078 s:0129 e:000128 METHOD /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:1269
  c:0021 p:0022 s:0120 e:000119 METHOD /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:1083
  c:0020 p:0073 s:0115 e:000114 BLOCK /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:941 [FINISH]
c:0019 p:---- s:0108 e:000107 CFUNC :map
  c:0018 p:0129 s:0104 E:001d80 METHOD /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:934
  c:0017 p:0054 s:0092 E:0021b8 METHOD /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:914
c:0015 p:---- s:0079 e:000078 CFUNC :each
  c:0014 p:0073 s:0075 E:002218 METHOD /home/yura/Project/ruby-falcon/test/lib/test/unit.rb:492
  c:0013 p:0014 s:0066 E:0013f8 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:580
  c:0012 p:0061 s:0059 E:001d88 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:991
  c:0011 p:0010 s:0050 E:000eb0 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:1096
  c:0010 p:0010 s:0046 E:000e48 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:1083 [FINISH]
c:0009 p:---- s:0042 e:000041 CFUNC :each
  c:0008 p:0057 s:0038 E:000ec8 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:1082
  c:0007 p:0020 s:0033 E:000608 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:1070
  c:0006 p:0012 s:0028 E:000000 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:682
  c:0005 p:0022 s:0022 E:002598 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:33
  c:0004 p:0045 s:0012 E:001650 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:991
  c:0003 p:0015 s:0013 E:001f08 METHOD /home/yura/Project/ruby-falcon/test/lib/minitest/unit.rb:995
  c:0002 p:0304 s:0008 E:000ec8 EVAL ../test/runner.rb:40 [FINISH]
c:0001 p:0000 s:0003 E:0026e0 (none) [FINISH]

-- Ruby level backtrace information ----------------------------------------------------------
  ../test/runner.rb:40 in ''
/home/yura/Project/ruby-falcon/test/lib/test/unit.rb:995 in 'run'
-- Other runtime information -----------------------------------------------

* Loaded script: ../test/runner.rb: TestMarshal#test_gc

.....

#2 - 11/04/2016 02:22 AM - nobu (Nobuyoshi Nakada)

Seems related to segfaults on FreeBSD 11.
I tried with MacPorts clang 3.8.1, but it didn't reproduce.
Maybe clang 3.8.0's issue?

#3 - 11/04/2016 12:52 PM - hsbt (Hiroshi SHIBATA)

FreeBSD failure log is here:


#4 - 11/04/2016 10:59 PM - shugo (Shugo Maeda)

Reproduced on my FreeBSD box:

./ruby -r continuation -e 'cont = nil; ary = [1,2,3]; ary.combination(2) { callcc [|k| cont = k] unless cont } ; cont.call'
ruby 2.4.0dev (2016-11-04 trunk 56558) [x86_64-freebsd11.0]

-- Control frame information -----------------------------------------------
c:0005 p:---- s:0020 e:000019 CFUNC :callcc

c:0004 p:0016 s:0016 E:002420 BLOCK -e:1 [FINISH]
c:0003 p:---- s:0013 E:001850 EVAL -e:1 [FINISH]
c:0002 p:0017 s:0008 E:001850 EVAL -e:1 [FINISH]
c:0001 p:0000 s:0003 E:002700 (none) [FINISH]
...

In cont_capture(), cont is set to 0x1 after the context is restored.

if (ruby_setjmp(cont->jmpbuf)) {
    /* cont is set to 0x1 here */

The following patch fixes the problem:

diff --git a/cont.c b/cont.c
index 8119b5c..79b685f 100644
--- a/cont.c
+++ b/cont.c
@@ -471,6 +471,9 @@

static VALUE
cont_capture(volatile int *stat)
+ifdef __clang__
+attribute ((optnone))
+endif
{
  rb_context_t *cont;
  rb_thread_t *th = GET_THREAD();

#5 - 11/04/2016 11:20 PM - shugo (Shugo Maeda)

Shugo Maeda wrote:

static VALUE
cont_capture(volatile int *stat)
+ifdef clang
+attribute ((optnone))
+endif
I'm not sure whether the version of clang should be checked as follows:

diff --git a/cont.c b/cont.c
index 8119b5c..85d3766 100644
--- a/cont.c
+++ b/cont.c
@@ -471,6 +471,10 @@ cont_new(VALUE klass)
     \cont_capture(volatile int *stat)
+  #if defined(__clang__) && __clang_major__ == 3 && __clang_minor__ == 8 && __clang_patch__ == 0
+  __attribute__((optnone))
+  {
 static VALUE
     rb_context_t *cont;
     rb_thread_t *th = GET_THREAD();

#6 - 11/05/2016 02:23 AM - shugo (Shugo Maeda)
- Status changed from Open to Closed

Applied in changeset r56561.

- cont.c (cont_new): disable optimization if clang's version is 3.8.0. [ruby-core:77894] [Bug #12893]

#7 - 11/05/2016 02:53 AM - naruse (Yui NARUSE)
NetBSD pkgsrc and FreeBSD ports were fixed by adding volatile.
https://bugs.freebsd.org/bugzilla/show_bug.cgi?id=206111

#8 - 11/05/2016 03:22 AM - shugo (Shugo Maeda)
Yui NARUSE wrote:

    NetBSD pkgsrc and FreeBSD ports were fixed by adding volatile.
    https://bugs.freebsd.org/bugzilla/show_bug.cgi?id=206111

It seems to be a different issue.
I tried adding volatile to cont in cont_new(), but it didn't work.

#9 - 11/06/2016 01:20 PM - shugo (Shugo Maeda)
- Backport changed from 2.1: UNKNOWN, 2.2: UNKNOWN, 2.3: UNKNOWN to 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED

#10 - 11/11/2016 03:48 PM - nagachika (Tomoyuki Chikanaga)
- Backport changed from 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED to 2.1: REQUIRED, 2.2: REQUIRED, 2.3: DONE

ruby_2_2 r56730 merged revision(s) 56561.

#11 - 11/11/2016 10:47 PM - usa (Usaku NAKAMURA)
- Backport changed from 2.1: REQUIRED, 2.2: REQUIRED, 2.3: DONE to 2.1: REQUIRED, 2.2: DONE, 2.3: DONE

ruby_2_3 r56717 merged revision(s) 56561.

#12 - 12/07/2016 08:54 PM - _dim (Dimitry Andric)
Shugo Maeda wrote:

    Yui NARUSE wrote:

        NetBSD pkgsrc and FreeBSD ports were fixed by adding volatile.
        https://bugs.freebsd.org/bugzilla/show_bug.cgi?id=206111

    It seems to be a different issue.
    I tried adding volatile to cont in cont_new(), but it didn't work.
Did you add it as volatile rb_context_t *cont, or as rb_context_t *volatile cont? Only the latter is correct.

Please refer to #13014 for the full patch set, including fix for cont_new().

**#13 - 12/07/2016 11:20 PM - shugo (Shugo Maeda)**

Dimitry Andric wrote:

NetBSD pkgsrc and FreeBSD ports were fixed by adding volatile.
https://bugs.freebsd.org/bugzilla/show_bug.cgi?id=206111

It seems to be a different issue.

I tried adding volatile to cont in cont_new(), but it didn't work.

Did you add it as volatile rb_context_t *cont, or as rb_context_t *volatile cont? Only the latter is correct.

Please refer to #13014 for the full patch set, including fix for cont_new().

Adding the latter version to cont_capture() didn't work, but your full patch set did work.
Thank you!