First bug reported in ruby redmine; I'll do my best to make it easy to diagnose. Please, let me know more information is needed.

- It's possible, with a very small script, to have ruby CPU usage goes to 100% and locking the interpreter;
- Such process can only be terminated forcefully (SIGKILL);
- It cannot be reproduced prior with ruby 2.3.0 and 2.3.1;
- Validated with ruby 2.3.2 and 2.5 (was unable to build ruby-trunk).

Sample use case:

- runtime error raised during rhtml file rendering with older version of Rails (2.1) is transformed into an ActionView::TemplateError, which calls IO.readline
  https://github.com/rails/rails/blob/2-1-stable/actionpack/lib/action_view/template_error.rb#L33
- After a few successful executions, the interpreter eventually enters in busy waiting.

Related bugs:

- https://bugs.ruby-lang.org/issues/12925

Related commits:

- https://github.com/ruby/ruby/commit/61b9d4a288361bd055df346cdde4bb970c7406a3

Callstack when attaching to process:

```
(11db) process attach --pid 4485
Process 4485 stopped
* thread #1, queue = 'com.apple.main-thread', stop reason = signal SIGSTOP
  frame #0: 0x0000000103d66a37 ruby`rb_threadptr_execute_interrupts(th=0x00007fd79250ab50, blocking_timing=0) at thread.c:2062
    2059
    2060 void
    2061 rb_threadptr_execute_interrupts(rb_thread_t *th, int blocking_timing)
> 2062 {
    2063     rb_atomic_t interrupt;
    2064     int postponed_job_interrupt = 0;
    2065
    2059
    2060 void
    2061 rb_threadptr_execute_interrupts(rb_thread_t *th, int blocking_timing)
```
eval.c:310
  frame #41: 0x00000000103c492ca ruby\ruby_run_node(n=<unavailable>) at eval.c:302
frame #42: 0x00000000103bceb2f ruby\main(argc=<unavailable>, argv=<unavailable>) at main.c:42
frame #43: 0x00007fff6d82235 libdyld.dylib\start + 1
frame #44: 0x00007fff6d82235 libdyld.dylib\start + 1
thread #2, name = 'ruby-timer-thr'
  frame #0: 0x00000000fffe6eb219e libsystem_kernel.dylib\poll + 10
  frame #1: 0x000000001036c5c3 ruby\thread_timer [inlined] timer_thread_sleep(gvl=<unavailable>)
at thread_pthread.c:0
  frame #2: 0x000000001036c566 ruby\thread_timer(p=0x00007fd79250a768) at thread_pthread.c:1577
  frame #3: 0x00007fffe6f9b887 libsystem_pthread.dylib\_pthread_body + 180
  frame #4: 0x00007fff6f9b887 libsystem_pthread.dylib\_pthread_start + 286
  frame #5: 0x00007fff6f9b08d libsystem_pthread.dylib\thread_start + 13

Script:

class Crash < RuntimeError
  def backtrace
    IO.readlines($0)
  end
end

puts 'Wait for it. Starting in 0.5 sec. Once the dots stop, kill the process with SIGKILL.'
sleep 0.5

loop do
  begin
    raise Crash.new 'boo!'
    rescue => e
      pc = e
      ensure
        pc
      end
  end
end

Output (it stopped at the last dot, and can only be stopped through kill -9):

~/.rubies/ruby-trunk/bin/ruby ~/backtrace_bug.rb
Wait for it. Starting in 0.5 sec. Once the dots stop, kill the process with SIGKILL.

....................
It seems like it needs to be backported all the way to Ruby 2.2.

Associated revisions

Revision e02e7379 - 03/20/2018 02:09 AM - naruse (Yui NARUSE)
merge revision(s) 62673: [Backport #14577]

Revision 62673 - 03/06/2018 05:15 AM - nobu (Nobuyoshi Nakada)
thread.c: deadlock in backtrace

  • thread.c (unblock_function_set): check interrupts just once during raising exceptions, as they are deferred since r16651. [ruby-core:85939] [Bug #14577]

  git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@62673 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

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Revision e8262b3f - 03/06/2018 05:15 AM - nobu (Nobuyoshi Nakada)
thread.c: deadlock in backtrace

  • thread.c (unblock_function_set): check interrupts just once during raising exceptions, as they are deferred since r16651. [ruby-core:85939] [Bug #14577]

  git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@62673 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

03/14/2020
thread.c: deadlock in backtrace

* thread.c (unblock_function_set): check interrupts just once during raising exceptions, as they are deferred since r16651.
[ruby-core:85939] [Bug #14577]

Revision 62854 - 03/20/2018 02:09 AM - naruse (Yui NARUSE)
merge revision(s) 62673: [Backport #14577]

thread.c: deadlock in backtrace

* thread.c (unblock_function_set): check interrupts just once during raising exceptions, as they are deferred since r16651.
[ruby-core:85939] [Bug #14577]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_5@62854 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision e59be153 - 03/25/2018 05:54 AM - nagachika (Tomoyuki Chikanaga)
merge revision(s) 62673: [Backport #14577]

thread.c: deadlock in backtrace

* thread.c (unblock_function_set): check interrupts just once during raising exceptions, as they are deferred since r16651.
[ruby-core:85939] [Bug #14577]

Revision 62917 - 03/25/2018 05:54 AM - nagachika (Tomoyuki Chikanaga)
merge revision(s) 62673: [Backport #14577]

thread.c: deadlock in backtrace

* thread.c (unblock_function_set): check interrupts just once during raising exceptions, as they are deferred since r16651.
[ruby-core:85939] [Bug #14577]

History

#1 - 03/05/2018 08:48 PM - francois (François Jacques)
Forgot to mention, this is repro on darwin (10.12.6) and linux (CentOS 6.9).

#2 - 03/06/2018 05:16 AM - nobu (Nobuyoshi Nakada)
- Status changed from Open to Closed

Applied in changeset trunk\r62673.

#3 - 03/06/2018 05:24 AM - nobu (Nobuyoshi Nakada)
- Backport changed from 2.3: UNKNOWN, 2.4: UNKNOWN, 2.5: UNKNOWN to 2.3: REQUIRED, 2.4: REQUIRED, 2.5: REQUIRED

#4 - 03/06/2018 01:12 PM - francois (François Jacques)
Thank you nobu! I'll retry to build ruby-trunk today and give it a try!

#5 - 03/06/2018 07:31 PM - francois (François Jacques)
Rebuilt ruby-trunk. Issue is fixed!

#6 - 03/20/2018 02:09 AM - naruse (Yui NARUSE)
- Backport changed from 2.3: REQUIRED, 2.4: REQUIRED, 2.5: REQUIRED to 2.3: REQUIRED, 2.4: REQUIRED, 2.5: DONE

ruby_2_5 r62854 merged revision(s) 62673.
- Backport changed from 2.3: REQUIRED, 2.4: REQUIRED, 2.5: DONE to 2.3: REQUIRED, 2.4: DONE, 2.5: DONE

ruby_2_4 r62917 merged revision(s) 62673.

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<td>backtrace_bug.rb</td>
<td>267 Bytes</td>
<td>03/05/2018</td>
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