

Ruby trunk - Bug #7530

Concurrent loads fail with mutex errors

12/07/2012 08:21 AM - headius (Charles Nutter)

Status: Closed	
Priority: Normal	
Assignee: Glass_saga (Masaki Matsushita)	
Target version:	
ruby -v: ruby 2.0.0dev (2012-12-01 trunk 38126) [x86_64-darwin11.4.2]	Backport:

Description

I have no idea what's going on here.

```
jrubby-1.7.0 ~/projects/vts-jruby $ cat bench_load_path.rb
require 'benchmark'

FAKE_PATHS = ARGV[0].to_i || 100
THREADS = 8
ITERATIONS_PER_THREAD = 1000

FAKE_PATHS.times do |i|
  $:.unshift "foo#{i}"
end

$: << '.'
```

```
system 'touch __load_path_bench_script__.rb'
puts Benchmark.measure {
  @threads = THREADS.times.map do
    Thread.new {
      ITERATIONS_PER_THREAD.times do
        require '__load_path_bench_script__'
        $.pop
      end
    }
  end
  @threads.each { |t| t.join }
}
system 'rm __load_path_bench_script__.rb'
```

```
jrubby-1.7.0 ~/projects/vts-jruby $ ruby-2.0.0 -rubygems bench_load_path.rb 100
/usr/local/lib/ruby/2.0.0/rubygems/custom_require.rb:36:in `require': wrong argument type false (expected mutex) (TypeError)
    from /usr/local/lib/ruby/2.0.0/rubygems/custom_require.rb:36:in `require'
    from bench_load_path.rb:18:in `block (4 levels) in <main>'
    from bench_load_path.rb:17:in `times'
    from bench_load_path.rb:17:in `block (3 levels) in <main>'
```

```
jrubby-1.7.0 ~/projects/vts-jruby $ ruby-2.0.0 --disable-gems bench_load_path.rb 100
bench_load_path.rb:18:in `require': wrong argument type false (expected mutex) (TypeError)
    from bench_load_path.rb:18:in `block (4 levels) in <main>'
    from bench_load_path.rb:17:in `times'
    from bench_load_path.rb:17:in `block (3 levels) in <main>'
```

With verbose on, I get this error and a bunch of circular require warnings, even though I'm not doing any circular requires here.

```
ruby-2.0.0-preview2 ~/projects/vts-jruby $ ruby -v bench_load_path.rb
ruby 2.0.0dev (2012-12-01 trunk 38126) [x86_64-darwin11.4.2]
/Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_require.rb:36: warning: loading in progress, circular require considered harmful - /Users/headius/projects/vts-jruby/__load_path_bench_script__.rb
```



```

/Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_require.rb
:36: warning: loading in progress, circular require considered harmful - /Users/headius/projects/v
ts-jruby/___load_path_bench_script__.rb
  from bench_load_path.rb:17:in `block (3 levels) in <main>'
  from bench_load_path.rb:17:in `times'
  from bench_load_path.rb:18:in `block (4 levels) in <main>'
  from /Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_r
equire.rb:36:in `require'
  from /Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_r
equire.rb:36:in `require'
/Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_require.rb
:36: warning: loading in progress, circular require considered harmful - /Users/headius/projects/v
ts-jruby/___load_path_bench_script__.rb
  from bench_load_path.rb:17:in `block (3 levels) in <main>'
  from bench_load_path.rb:17:in `times'
  from bench_load_path.rb:18:in `block (4 levels) in <main>'
  from /Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_r
equire.rb:36:in `require'
  from /Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_r
equire.rb:36:in `require'
/Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_require.rb
:36: warning: loading in progress, circular require considered harmful - /Users/headius/projects/v
ts-jruby/___load_path_bench_script__.rb
  from bench_load_path.rb:17:in `block (3 levels) in <main>'
  from bench_load_path.rb:17:in `times'
  from bench_load_path.rb:18:in `block (4 levels) in <main>'
  from /Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_r
equire.rb:36:in `require'
  from /Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_r
equire.rb:36:in `require'
/Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_require.rb
:36:in `require': Attempt to unlock a mutex which is locked by another thread (ThreadError)
  from /Users/headius/.rvm/rubies/ruby-2.0.0-preview2/lib/ruby/site_ruby/2.0.0/rubygems/custom_r
equire.rb:36:in `require'
  from bench_load_path.rb:18:in `block (4 levels) in <main>'
  from bench_load_path.rb:17:in `times'
  from bench_load_path.rb:17:in `block (3 levels) in <main>'

```

Related issues:

- Related to Ruby trunk - Bug #10892: Deadlock in autoloader Open
- Related to Ruby trunk - Bug #12999: there still exist race conditions in require Closed

Associated revisions

Revision bc0577c6 - 01/09/2013 12:59 AM - glass

- load.c (load_lock): fix not to delete thread shield twice. it may break the shield locked by another thread. [Bug #7530] [ruby-core:50645]
- test/ruby/test_require.rb: a test for above.

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@38744 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 38744 - 01/09/2013 12:59 AM - glass

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Revision 38744 - 01/09/2013 12:59 AM - Glass_saga (Masaki Matsushita)

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Revision 62efc6f3 - 01/09/2013 01:14 PM - glass

- load.c (load_lock): if thread shield is destroyed and there is no waiting thread, insert new thread shield into load_table. [Bug #7530] [ruby-core:50645]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@38750 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 38750 - 01/09/2013 01:14 PM - glass

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History

#1 - 12/21/2012 11:09 PM - usa (Usaku NAKAMURA)

- Category set to core
- Status changed from Open to Assigned
- Assignee set to kosaki (Motohiro KOSAKI)
- Target version set to 2.0.0

#2 - 12/23/2012 02:05 AM - kosaki (Motohiro KOSAKI)

- Assignee changed from kosaki (Motohiro KOSAKI) to nobu (Nobuyoshi Nakada)

When removing \$.pop likes following, this issue never happen.
So, I suspect this is require and threadshield issue.

```
require 'benchmark'

FAKE_PATHS = ARGV[0].to_i || 100
THREADS = 2
ITERATIONS_PER_THREAD = 1000

FAKE_PATHS.times do |i|
  $.unshift "foo#{i}"
end

$: << '.'

ITERATIONS_PER_THREAD.times {|i|
  system "touch __load_path_bench_script__#{i}.rb"
}

puts Benchmark.measure {
  @threads = THREADS.times.map do
    Thread.new {
      ITERATIONS_PER_THREAD.times do |i|
        require "__load_path_bench_script__#{i}"
      end
    }
  end
}
```

```
@threads.each { |t| t.join }
}

ITERATIONS_PER_THREAD.times { |i|
  system "rm __load_path_bench_script__#{i}.rb"
}
```

#3 - 12/26/2012 05:49 AM - nobu (Nobuyoshi Nakada)

- Priority changed from Normal to 5

#4 - 01/08/2013 11:39 AM - Glass_saga (Masaki Matsushita)

Here is the minimal code:

```
THREADS = 2
ITERATIONS_PER_THREAD = 1000

system 'touch __load_path_bench_script__.rb'
THREADS.times.map {
  Thread.new do
    ITERATIONS_PER_THREAD.times do
      require_relative '__load_path_bench_script__'
      $.pop
    end
  end
}.each(&:join)
system 'rm __load_path_bench_script__.rb'
```

#5 - 01/08/2013 04:09 PM - Glass_saga (Masaki Matsushita)

- Assignee changed from nobu (Nobuyoshi Nakada) to Glass_saga (Masaki Matsushita)

#6 - 01/09/2013 09:59 AM - Anonymous

- Status changed from Assigned to Closed

- % Done changed from 0 to 100

This issue was solved with changeset [r38744](#).

Charles, thank you for reporting this issue.

Your contribution to Ruby is greatly appreciated.

May Ruby be with you.

-
- load.c (load_lock): fix not to delete thread shield twice.
it may break the shield locked by another thread.
[Bug [#7530](#)] [ruby-core:50645]
 - test/ruby/test_require.rb: a test for above.

#7 - 07/31/2015 05:59 AM - nobu (Nobuyoshi Nakada)

- Related to Bug #10892: Deadlock in autoload added

#8 - 07/31/2015 06:02 AM - nobu (Nobuyoshi Nakada)

- Description updated

#9 - 12/02/2016 11:17 AM - shugo (Shugo Maeda)

- Related to Bug #12999: there still exist race conditions in require added