### Ruby master - Bug #13043

**Exception#cause can become recursive/infinite**

12/16/2016 09:37 PM - ccutrer (Cody Cutrer)

<table>
<thead>
<tr>
<th>Status:</th>
<th>Closed</th>
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</thead>
<tbody>
<tr>
<td>Priority:</td>
<td>Normal</td>
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<tr>
<td>Assignee:</td>
<td></td>
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<tr>
<td>Target version:</td>
<td></td>
</tr>
<tr>
<td>ruby -v:</td>
<td>ruby 2.3.3p222 (2016-11-21 revision 56859) [x86_64-darwin16]</td>
</tr>
</tbody>
</table>

**Description**

In a certain situation, Exception#cause can become an infinite list:

```ruby
def raise_errors
  begin
    raise "error 1"
  ensure
    orig_error = $!
    begin
      raise "error 2"
      rescue => err
        raise orig_error || err
      end
    end
  end
end

x = nil
begin
  raise_errors
  rescue
    x = $!
  end

x.cause.cause.object_id == x.object_id
```

Note that this pattern happened during an HTTP request with net/http: see [https://github.com/ruby/ruby/blob/v2_3_1/lib/net/http/response.rb#L261](https://github.com/ruby/ruby/blob/v2_3_1/lib/net/http/response.rb#L261). I would expect that `x` would be "error 2", `x.cause` would be "error 1", and `x.cause.cause` would be nil. Instead an infinite loop forms, breaking error reporting code that loops over an exception's cause.

**Associated revisions**

**Revision 1729243b - 12/21/2016 11:12 AM - nobu (Nobuyoshi Nakada)**

eval.c: fix circular cause

- eval.c (exc_setup_cause): always set cause of cause to get rid of circular references. [ruby-core:78688] [Bug #13043]

  git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@57137 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

**Revision 57137 - 12/21/2016 11:12 AM - nobu (Nobuyoshi Nakada)**

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Revision 9d693b18 - 12/27/2016 11:39 AM - usa (Usaku NAKAMURA)
merge revision(s) 57137: [Backport #13043]

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git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@57222 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 57222 - 12/27/2016 11:39 AM - usa (Usaku NAKAMURA)
merge revision(s) 57137: [Backport #13043]

eval.c: fix circular cause

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Revision d785c36b - 12/28/2016 09:00 PM - usa (Usaku NAKAMURA)
merge revision(s) 57137: [Backport #13043]

eval.c: fix circular cause

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git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@57229 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 57229 - 12/28/2016 09:00 PM - usa (Usaku NAKAMURA)
merge revision(s) 57137: [Backport #13043]

eval.c: fix circular cause

* eval.c (exc_setup_cause): always set cause of cause to get rid of circular references. [ruby-core:78688] [Bug #13043]

Revision ffb1a5d8 - 01/04/2017 02:02 AM - usa (Usaku NAKAMURA)
Revert r57229 and finally giving up backporting [Bug #13043]
git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@57263 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 57263 - 01/04/2017 02:02 AM - usa (Usaku NAKAMURA)
Revert r57229 and finally giving up backporting [Bug #13043]

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History

#1 - 12/21/2016 11:04 AM - nobu (Nobuyoshi Nakada)
- Backport changed from 2.1: UNKNOWN, 2.2: UNKNOWN, 2.3: UNKNOWN to 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED
- Description updated

#2 - 12/21/2016 11:12 AM - nobu (Nobuyoshi Nakada)
- Status changed from Open to Closed

Applied in changeset r57137.
eval.c: fix circular cause

- eval.c (exc_setup_cause): always set cause of cause to get rid of circular references. [ruby-core:78688] [Bug #13043]

#3 - 12/27/2016 11:39 AM - usa (Usaku NAKAMURA)
- Backport changed from 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED to 2.1: REQUIRED, 2.2: DONE, 2.3: REQUIRED

ruby_2_2 r57222 merged revision(s) 57137.

#4 - 12/27/2016 03:01 PM - usa (Usaku NAKAMURA)
- Backport changed from 2.1: REQUIRED, 2.2: DONE, 2.3: REQUIRED to 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED

... but reverted in ruby_2_2 because it causes SEGV.

#5 - 12/28/2016 09:00 PM - usa (Usaku NAKAMURA)
- Backport changed from 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED to 2.1: REQUIRED, 2.2: DONE, 2.3: REQUIRED

ruby_2_2 r57229 merged revision(s) 57137.

#6 - 01/04/2017 02:05 AM - usa (Usaku NAKAMURA)
- Backport changed from 2.1: REQUIRED, 2.2: DONE, 2.3: REQUIRED to 2.1: WONTFIX, 2.2: WONTFIX, 2.3: REQUIRED

I've finally gave up to backport this into ruby_2_2, because of a test of rake failed.
I doubt that the test is nonsense, but a maintenance branch should be conservative about changing its behavior.