Ruby master - Bug #1792
Fixnum# & Rational を受けつける

07/20/2009 12:04 AM - tadf (tadayoshi funaba)

| Status: | Closed |
| Priority: | Normal |
| Assignee: | mrkn (Kenta Murata) |
| Target version: | 2.0.0 |

ruby -v:

Description

```ruby
就开始
1 & 1.5 がエラーになるので、
1 & Rational(3,2)
[]
1 & BigDecimal('1.5')
もエラーにすべきかもしれません。
=end
```

Related issues:
Related to Ruby master - Feature #5310: Integral objects

Associated revisions

Revision 33108 - 08/29/2011 01:07 AM - mrkn (Kenta Murata)
- numeric.c (bit_coerce): A Fixnum and a Bignum are only permitted for bitwise arithmetic with a Fixnum. #1792
- test/ruby/test_fixnum.rb: add tests for the above change.
- bignum.c (bit_coerce): A Fixnum and a Bignum are only permitted for bitwise arithmetic with a Bignum. #1792
- test/ruby/test_bignum.rb: add tests for the above change.

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09/19/2021
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Revision a756488c - 12/22/2012 03:06 PM - mrkn (Kenta Murata)

• include/ruby/intern.h: add the prototype declaration of
  rb_num_coerce_bit.
• numeric.c (rb_num_coerce_bit): the new coerce function for bitwise
  binary operation.
• bignum.c (rb_big_and): use coerce to convert the argument, which isn't
  a Fixnum nor a Bignum, to the corresponding Integer object so that
  bitwise operations can support Integer-mimic objects.
  [Bug #1792] [ruby-core:39491]
  • bignum.c (rb_big_or): ditto.
  • bignum.c (rb_big_xor): ditto.
• numeric.c (bit_coerce): ditto.
• numeric.c (fix_and): ditto.
• numeric.c (fix_or): ditto.
• numeric.c (fix_xor): ditto.
• test/ruby/test_integer.rb: add tests for the above changes.
• test/ruby/test_bignum.rb: ditto.

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@38560 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 38560 - 12/22/2012 03:06 PM - mrkn (Kenta Murata)

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  rb_num_coerce_bit.
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• bignum.c (rb_big_or): ditto.

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• numeric.c (fix_and): ditto.

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- bignum.c (rb_big_or): ditto.

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- test/ruby/test_integer.rb: add tests for the above changes.

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**History**

#1 - 11/29/2009 05:11 PM - ujihisa (Tatsuhiro Ujihisa)
- Status changed from Open to Assigned
- Assignee set to matz (Yukihiro Matsumoto)

```ruby
begin
end
```

#2 - 06/11/2011 02:54 PM - ko1 (Koichi Sasada)

#3 - 06/12/2011 12:23 AM - matz (Yukihiro Matsumoto)
- ruby -v changed from ruby 1.9.2dev (2009-07-19 trunk 24205) [i686-linux] to -

```ruby
In message "Re: [ruby-core:36972] [Ruby 1.9 - Bug #1792] Fixnum#& 等が、Rational などを受けつける" on Sat, 11 Jun 2011 14:54:43 +0900, Koichi Sasada redmine@ruby-lang.org writes:

|Issue #1792 has been updated by Koichi Sasada.
| |
```ruby
#4 - 08/29/2011 10:09 AM - mrkn (Kenta Murata)

#5 - 08/29/2011 11:53 AM - kosaki (Motohiro KOSAKI)

```ruby
freeze
```

#6 - 08/29/2011 02:09 PM - mrkn (Kenta Murata)
muirataです。
そこまで重要ではないと思うので、バックポートはしないことにします。

#7 - 08/29/2011 04:18 PM - naruse (Yui NARUSE)
- Status changed from Closed to Assigned
- Assignee changed from matz (Yukihiro Matsumoto) to mrkn (Kenta Murata)

これの影響で以下のようなエラーが出ています。
2) Error:
test_num2long(TestNumeric):
TypeError: can't convert Object into Integer for bitwise arithmetic
/home/naruse/ruby/test/ruby/test_numeric.rb:227:in '&'
/home/naruse/ruby/test/ruby/test_numeric.rb:227:intest_num2long'

#8 - 08/29/2011 11:25 PM - mrkn (Kenta Murata)
- Status changed from Assigned to Closed

ごめんなさいごめんなさい。
r33113 で修正しました。

#9 - 08/30/2011 12:12 PM - naruse (Yui NARUSE)
- Status changed from Assigned to Closed

散発的になってすいませんが、RubySpecも追従よろしくお願いします

#10 - 09/13/2011 08:23 AM - ko1 (Koichi Sasada)
Is it intentional?

```ruby
###
class IntegerMimic
  def initialize n
    @n = n
  end

  def to_int
    @n
  end
end

obj = IntegerMimic.new(10)

%-w(& | \each\{sym\}
p sym
begin
  p(3.send(sym, obj))
rescue => e
  p e
end
)

#=>
ruby 1.9.4dev (2011-09-11 trunk 33248) [i386-mswin32_100]
"&"
#
"|

(2011/08/29 7:25), Kenta Murata wrote:

Issue #1792 has been updated by Kenta Murata.
Status changed from Assigned to Closed

r33113 で修正しました
Bug #1792: Fixnum#& Rational などを受けつける
http://redmine.ruby-lang.org/issues/1792

Author: tadayoshi funaba
Status: Closed
Priority: Normal
Assignee: Kenta Murata
Category: -
Target version: 1.9.x
ruby -v: -

=end

1 & 1.5 がエラーになるので、
1 & Rational(3,2)
1 & BigDecimal('1.5')
がエラーにすべきかもしれません。
=end

--
// SASADA Koichi at atdot dot net

#11 - 09/13/2011 08:29 AM - ko1 (Koichi Sasada)
I find out that bitwise operation doesn't call coerce.
How to make mimic Integer class?

###

class IntegerMimic
def initialize n
  @n = n
end
def to_int
  @n
end
def coerce obj
  p :coerce
  [obj, @n]
end
end

obj = IntegerMimic.new(10)

%w(+ - * / % & |).each{|sym|
  p sym
  begin
    p(3.send(sym, obj))
  rescue => e
    p e
  end
}

END

ruby 1.9.4dev (2011-09-11 trunk 33248) [i386-mswin32_100]
"+"
:coerce
13
"-"
:coerce
-7
"*"
:coerce
30
"/"
:coerce
0
"%"
:coerce
I find out that bitwise operation doesn't call coerce. How to make mimic Integer class?

The short answer: You can't.

The long answer:

You can imitate some of the behaviour of Integers, but when you get into hashing and numeric operations, the different Ruby interpreters all have different shortcuts that prevent your custom code from being called.

See this post for more information:
http://blog.rubybestpractices.com/posts/rklemme/019-Complete_Numeric_Class.html

And a discussion thread that I started:
http://blade.nagaokaut.ac.jp/cgi-bin/scat.rb/ruby/ruby-talk/381087

Clifford Heath.

I reopen this ticket because I rethink [ruby-core:39491] is bug. But, unfortunately, I don't know how to fix this. Using to_int cannot fix the original problem. May Numeric#coerce is used for bitwise operation?
In message "Re: [ruby-core:39540] [Ruby 1.9 - Bug #1792] [Open] Fixnum#& 等が、Rational などを受けつける"
on Wed, 14 Sep 2011 13:28:57 +0900, Kenta Murata muraken@gmail.com writes:

I reopen this ticket because I rethink [ruby-core:39491] is bug.
But, unfortunately, I don't know how to fix this.
Using to_int cannot fix the original problem.
May Numeric#coerce is used for bitwise operation?

Using coerce is OK for me. But it should cause NoMethodError when
implemented naively. That might cause confusion.

matz.

#15 - 03/18/2012 06:46 PM - shyouhei (Shyouhei Urabe)
- Status changed from Open to Assigned

#16 - 12/23/2012 12:06 AM - mrkn (Kenta Murata)
- Status changed from Assigned to Closed
- % Done changed from 0 to 100

This issue was solved with changeset r38560.
tadayoshi, thank you for reporting this issue.
Your contribution to Ruby is greatly appreciated.
May Ruby be with you.

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