

Ruby - Bug #2662

BigDecimal#ceil, etc. should not return Integer

01/27/2010 02:42 AM - mame (Yusuke Endoh)

|                 |                                                     |           |
|-----------------|-----------------------------------------------------|-----------|
| Status:         | Rejected                                            | Backport: |
| Priority:       | Normal                                              |           |
| Assignee:       | yugui (Yuki Sonoda)                                 |           |
| Target version: | 2.0.0                                               |           |
| ruby -v:        | ruby 1.9.2dev (2010-01-27 trunk 26434) [i686-linux] |           |

Description

```
=begin
#####
#####

r20584  r20616  BigDecimal#ceil truncate floor round div 
Integer 
BigDecimal 
#####

  BigDecimal ceil 

```

```
$ ./ruby -rbigdecimal -e 'p BigDecimal("1E100000").ceil'
( Bignum 
...)
```

Infinity

```
$ ./ruby -rbigdecimal -e 'p BigDecimal("Infinity").ceil'
-e:1:in ceil: Computation results to 'Infinity' (FloatDomainError) from -e:1:in '
```

```
Float#ceil Integer 
BigDecimal 
revert 
```

```
diff --git a/ext/bigdecimal/bigdecimal.c b/ext/bigdecimal/bigdecimal.c
index c6ffe98..1f51f61 100644
--- a/ext/bigdecimal/bigdecimal.c
+++ b/ext/bigdecimal/bigdecimal.c
@@ -1108,7 +1108,7 @@ BigDecimal_div2(int argc, VALUE *argv, VALUE self)
Real *div=NULL;
Real *mod;
if(BigDecimal_DoDivmod(self,b,&div,&mod)) {

    • return BigDecimal_to_i(ToValue(div));

    • return ToValue(div);
    }
    return DoSomeOne(self,b,rb_intern("div"));
  } else { /* div in BigDecimal sense */
    @@ -1308,9 +1308,6 @@ BigDecimal_round(int argc, VALUE *argv, VALUE self)
    GUARD_OBJ(c,VpCreateRbObject(mx, "0"));
    VpSetPrecLimit(pl);
    VpActiveRound(c,a,sw,iLoc);

    • if (argc == 0) {
    • return BigDecimal_to_i(ToValue(c));
    • }
    return ToValue(c);
  }

@@ -1355,9 +1352,6 @@ BigDecimal_truncate(int argc, VALUE argv, VALUE self)
GUARD_OBJ(c,VpCreateRbObject(mx, "0"));
```

```
VpSetPrecLimit(pl);
VpActiveRound(c,a,VP_ROUND_DOWN,iLoc); / 0: truncate */
```

- if (argc == 0) {
- return BigDecimal\_to\_i(ToValue(c));
- }
- return ToValue(c);
- }

```
@@ -1418,9 +1412,6 @@ BigDecimal_floor(int argc, VALUE *argv, VALUE self)
GUARD_OBJ(c,VpCreateRbObject(mx, "0"));
VpSetPrecLimit(pl);
VpActiveRound(c,a,VP_ROUND_FLOOR,iLoc);
```

- if (argc == 0) {
- return BigDecimal\_to\_i(ToValue(c));
- }
- return ToValue(c);
- }

```
@@ -1465,9 +1456,6 @@ BigDecimal_ceil(int argc, VALUE *argv, VALUE self)
GUARD_OBJ(c,VpCreateRbObject(mx, "0"));
VpSetPrecLimit(pl);
VpActiveRound(c,a,VP_ROUND_CEIL,iLoc);
```

- if (argc == 0) {
- return BigDecimal\_to\_i(ToValue(c));
- }
- return ToValue(c);
- }

```
##### rubyspec #####
```

BigDecimal#ceil returns the smallest integer greater or equal to self, if n is unspecified ERROR

FloatDomainError: Computation results to 'Infinity'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/ceil\_spec.rb:34:in ceil'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/ceil\_spec.rb:34:in block (2 levels) in <top (required)>'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/ceil\_spec.rb:4:in `<top (required)>'

BigDecimal#div with precision set to 0 returns NaN if NaN is involved ERROR

FloatDomainError: Computation results to 'NaN'(Not a Number)

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/shared/quo.rb:34:in div'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/shared/quo.rb:34:in block (2 levels) in <top (required)>'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:5:in `<top (required)>'

BigDecimal#div returns NaN if NaN is involved ERROR

FloatDomainError: Computation results to 'NaN'(Not a Number)

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:46:in div'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:46:in block (2 levels) in <top (required)>'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:12:in `<top (required)>'

BigDecimal#div returns NaN if divided by Infinity and no precision given ERROR

FloatDomainError: Computation results to 'NaN'(Not a Number)

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:51:in div'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:51:in block (2 levels) in <top (required)>'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:12:in `<top (required)>'

BigDecimal#div returns NaN if (+|-) Infinity divided by 1 and no precision given ERROR

FloatDomainError: Computation results to 'NaN'(Not a Number)

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:109:in div'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:109:in block (2 levels) in <top (required)>'

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div\_spec.rb:12:in `<top (required)>'

```

BigDecimal#floor returns the greatest integer smaller or equal to self ERROR
FloatDomainError: Computation results to 'Infinity'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/floor_spec.rb:29:in floor'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/floor_spec.rb:29:in block (2 levels) in <top (required)>'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/floor_spec.rb:4:in `<top (required)>'

BigDecimal#truncate returns value of type BigDecimal. FAILED
Expected false
to equal true

/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:16:in block (3 levels) in <top (required)>'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:15:in each'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:15:in block (2 levels) in <top (required)>'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:4:in <top (required)>'

BigDecimal#truncate returns NaN if self is NaN ERROR
FloatDomainError: Computation results to 'NaN'(Not a Number)
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:64:in truncate'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:64:in block (2 levels) in <top (required)>'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:4:in `<top (required)>'

BigDecimal#truncate returns Infinity if self is infinite ERROR
FloatDomainError: Computation results to 'Infinity'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:71:in truncate'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:71:in block (2 levels) in <top (required)>'
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:4:in `<top (required)>'

--
Yusuke Endoh mame@tsg.ne.jp
=end

```

## History

#1 - 01/27/2010 07:12 PM - tadf (tadayoshi funaba)

```

=begin
#####

r20584  r20616  BigDecimal#ceil  truncate  floor  round  div
##### Integer ##### BigDecimal
#####

```

**BigDecimal** **ceil**

```

$ ./ruby -rbigdecimal -e 'p BigDecimal("1E100000").ceil'
(大整数 Bignum ...)

```

```

#####Rational #####
#####

```

```

b = BigDecimal("1E100000").ceil
r = Rational("1E100000").ceil
b == r #=> true

```

```

##### to_r  Rational ##### to_i #####
##### (ceil(0).to_r.to_i #####ceil #####)
##### BigDecimal#to_i #####

```

**Infinity**

```

$ ./ruby -rbigdecimal -e 'p BigDecimal("Infinity").ceil'
-e:1:in ceil': Computation results to 'Infinity' (FloatDomainError) from -e:1:in '

```



=begin

[illegible]Rational  $\mathbb{Q}$  is a subring of  $\mathbb{R}$ 

```
BigDecimal#** BigDecimal
```

```
BigDecimal('3') ** BigDecimal('3')
```

## TypeError: wrong argument type BigDecimal (expected Fixnum)

```
BigDecimal('3') ** 3.3
```

## TypeError: wrong argument type Float (expected Fixnum)

```
00000000Fixnum 00000000000000000000000000000000
000000000000
```

[illegible][illegible]

```
=end
```

=begin

```
=begin
0000 00000000
```

In message "Re: [\[ruby-dev:40168\]](#) [Bug #2662] BigDecimal#ceil, etc. should not return Integer" on Wed, 27 Jan 2010 02:42:38 +0900, Yusuke Endoh [redmine@ruby-lang.org](mailto:redmine@ruby-lang.org) writes:

```
|r20584 | r20616 | BigDecimal#ceil |truncate |floor |round |div |
|Integer |BigDecimal |
|
|
|
|
|# | BigDecimal | ceil |
|$ ./ruby -rbigdecimal -e 'p BigDecimal("1E10000").ceil'
|(BigNum |...)
|
|
|# Infinity |
|$ ./ruby -rbigdecimal -e 'p BigDecimal("Infinity").ceil'
|-e:1:in `ceil': Computation results to 'Infinity' (FloatDomainError) | from -e:1:in `'
```

```

#####
##### (Inf NaN)#####
#####

```

```
000000000000Ruby00ceii0000000000000000
00000000BigDecimal00000000000000000000
000000000000000000000000000000000000
00BigDecimal00000000Float00InfNaN00000000
00000000
```

[illegible]

```

000000000000000000000000000000000000
BigDecimal#to_i Inf NaN 0000nil000000000000

```



On 1/28/10 8:24 PM, Yusuke ENDOH wrote:

Yugui □□□□□□□□□□□□□□

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

--  
Yusuke ENDOH [mame@tsg.ne.jp](mailto:mame@tsg.ne.jp)

```
=end
```

**#9 - 01/30/2010 09:13 PM - yugui (Yuki Sonoda)**

=begin  
2010/1/30 Yusuke ENDOH [mame@tsg.ne.jp](mailto:mame@tsg.ne.jp):

```

#####
##### 1.9.1 #####
##### 1.9 ##### rubyspec #####

```

[illegible]

|  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|

--  
Yuki Sonoda (Yugui)  
[yugui@yugui.jp](mailto:yugui@yugui.jp)  
<http://yugui.jp>

```
=end
```

**#10 - 04/22/2010 11:19 PM - mame (Yusuke Endoh)**

- Status changed from Open to Rejected

```
=begin
#####

rubyspec ##### reject #####
```

Yusuke Endoh [mame@tsg.ne.jp](mailto:mame@tsg.ne.jp)  
=end