

Ruby trunk - Bug #2662

BigDecimal#ceil, etc. should not return Integer

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

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

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 #####
```

2)
 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:inblock (2 levels) in '
 /home/mame/work/ruby/spec/rubyspec/library/bigdecimal/ceil_spec.rb:4:in ``

3)
 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:inblock (2 levels) in '
 /home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div_spec.rb:5:in ``

4)
 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:inblock (2 levels) in '
 /home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div_spec.rb:12:in ``

5)
 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:inblock (2 levels) in '
 /home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div_spec.rb:12:in ``

6)
 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:inblock (2 levels) in '
 /home/mame/work/ruby/spec/rubyspec/library/bigdecimal/div_spec.rb:12:in ``

8)
 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:inblock (2 levels) in '
 /home/mame/work/ruby/spec/rubyspec/library/bigdecimal/floor_spec.rb:4:in ``

13)
 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:ineach'
 /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 '

```

14)
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:inblock (2 levels) in '
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:4:in ``

15)
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:inblock (2 levels) in '
/home/mame/work/ruby/spec/rubyspec/library/bigdecimal/truncate_spec.rb:4:in ``

--
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'
(##### 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

Infinity | ceil | Float |
##### BigDecimal |

Float#ceil | Integer |
| BigDecimal |
#####revert |

ceil | BigDecimal | (ceil(0))|
##### revert |rubyspec |
#####

=end

```

#2 - 01/27/2010 10:03 PM - mame (Yusuke Endoh)

```

=begin
2010 1 27 19:12 Tadayoshi Funaba tadf@dotrb.org:

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

```

```
0 Rational 8 1E100000
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
```

```
0 1E100000 8 1E100000
Rational
```

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

```
Infinity ceil Float
BigDecimal
```

```
BigDecimal 1.9.1 1.9.2
```

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

```
ceil BigDecimal (ceil(0))
revert rubyspec
```

```
revert 1.9
```

```
--
Yusuke ENDOH mame@tsq.ne.jp
```

```
=end
```

#3 - 01/27/2010 11:14 PM - tadf (tadayoshi funaba)

```
=begin
```

```
0 1E100000 8 1E100000
Rational
```

```
Rational 0
```

```
BigDecimal#**
```

```
BigDecimal('3') ** BigDecimal('3')
# TypeError: wrong argument type BigDecimal (expected Fixnum)
```

```
BigDecimal('3') ** 3.3
# TypeError: wrong argument type Float (expected Fixnum)
```

```
Fixnum
```

```
revert 1.9
```

```

|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'

```

=end

#4 - 01/28/2010 11:35 AM - matz (Yukihiko Matsumoto)

```
=begin
|
```

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 writes:

```

|
|
| # 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'

```

```

|
| (Inf|NaN)|
|

```

```

|Ruby|ceil|
|BigDecimal|
|
|BigDecimal|Float|Inf|NaN|
|

```

```

|BigDecimal#to_i|
|
|

```

```

|BigDecimal#to_i|Inf|NaN|nil|
|

```

```

| | | | /: |)

```

=end

#5 - 01/28/2010 08:24 PM - mame (Yusuke Endoh)

```
=begin
|
```

2010 1 28 11:34 Yukihiko Matsumoto matz@ruby-lang.org:

```

| # 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'

```

```

|

```

```

|

```

```

|
|BigDecimal#to_i|Inf|NaN|nil|

```

000000000000000000000000

Yugui 0000000000000000

--

Yusuke ENDOH mame@tsg.ne.jp

=end

#6 - 01/29/2010 07:19 PM - mame (Yusuke Endoh)

- Assignee changed from matz (Yukihiro Matsumoto) to yugui (Yuki Sonoda)

=begin

=end

#7 - 01/30/2010 02:02 PM - yugui (Yuki Sonoda)

=begin

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

000000000000000000000000

(snip)

0000000000000000

BigDecimal#to_i Inf NaN nil 0000000000000000

000000000000000000000000

Yugui 0000000000000000

000000000000000000000000

--

Yugui yugui@yugui.jp

<http://yugui.jp>

0000Dump00

=end

#8 - 01/30/2010 08:12 PM - mame (Yusuke Endoh)

=begin

000000

2010 1 30 14:02 Yugui (Yuki Sonoda) yugui@yugui.jp:

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

000000000000000000000000

(snip)

0000000000000000

BigDecimal#to_i Inf NaN nil 0000000000000000

000000000000000000000000

Yugui 0000000000000000

000000000000000000000000

000000000000000000000000

00000000 1.9.1 000000000000000000000000

0000 1.9 0000000000000000 rubyspec 0000000000000000

--

Yusuke ENDOH 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:

□□□□□□□□□□□□
□□□□□□□ 1.9.1 □□□□□□□□□□□□□□□□□□
□□□□ 1.9 □□□□□□□□□□□□□□ rubyspec □□□□□□□□□□□□

□□□□□□□□□□□□1.9.1□□□□□□□□□□□□□□□□□□□□□□
□□□□□□□ 1.9.1□□□□□□□□□□□□□□□□□□□□□□1.9.2□□□□□□□□□□□□□□□□□□

□□□□□□□□□□

--
Yuki Sonoda (Yugui)
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
=end