

Ruby master - Bug #12780

BigDecimal#round returns different types depending on argument

09/21/2016 10:47 AM - Gat (Dawid Janczak)

Status: Assigned	
Priority: Normal	
Assignee: mrkn (Kenta Murata)	
Target version:	
ruby -v: ruby 2.4.0dev (2016-09-21 trunk 56199) [x86_64-linux]	Backport: 2.1: UNKNOWN, 2.2: UNKNOWN, 2.3: UNKNOWN
Description	
BigDecimal#round returns Integer when no arguments are given and BigDecimal otherwise. I would have assumed the result to always be BigDecimal.	
BigDecimal.new('12.34').round # => 12 (Integer) BigDecimal.new('12.34').round(0) # => 12 (BigDecimal)	
Attached is a patch with possible fix.	
I found a similar issue to this one (https://bugs.ruby-lang.org/issues/2662), but it's in Japanese. If this should be rejected as well could someone provide an explanation in English please? Also in that case documentation should be changed as it clearly states that the result should be BigDecimal: "Round to the nearest integer (by default), returning the result as a BigDecimal."	
Related issues:	
Related to Ruby master - Feature #13420: Integer#{round,floor,ceil,truncate} ...	Closed

History

#1 - 09/22/2016 04:24 PM - noahgibbs (Noah Gibbs)

The Japanese issue appears to be saying that there's a problem in RubySpec that will need to be fixed, and that fixing it is a problem with (I think?) early 1.9 compatibility.

#2 - 10/11/2016 09:15 AM - shyouhei (Shyouhei Urabe)

- Assignee set to mrkn (Kenta Murata)
- Status changed from Open to Assigned

#3 - 11/04/2016 05:03 AM - mrkn (Kenta Murata)

Float#round returns Fixnum value when the argument is 0 or omitted.

```
irb(main):005:0> 12.34.round.class
=> Fixnum
irb(main):006:0> 12.34.round(0).class
=> Fixnum
```

If we will fix BigDecimal#round, we should change the return value for the case of the argument 0 is supplied.

#4 - 11/04/2016 07:31 AM - Gat (Dawid Janczak)

Good point, I didn't catch that. If it was up to me I'd rather have Float#round always return Float as well for consistency. I could work on a patch for that too if you agree.

#5 - 11/04/2016 11:57 AM - mrkn (Kenta Murata)

We need matz's approval to change Float#round.

#6 - 11/04/2016 11:58 AM - mrkn (Kenta Murata)

- Assignee changed from mrkn (Kenta Murata) to matz (Yukihiro Matsumoto)

#7 - 11/25/2016 01:59 PM - shyouhei (Shyouhei Urabe)

We (mainly mrkn and matz) discussed why Fixnum#round returns Integer today. The answer is because (unlike other languages, namely C's round(3)) in ruby we can safely store all possible return value that round can theoretically generate, in Integer.

BigDecimal#round's returning BigDecimal instance sounds nice. But matz said he need to think a while for this historic Float behaviour.

#8 - 04/12/2017 06:24 AM - mrkn (Kenta Murata)

- Related to Feature #13420: `Integer#{round,floor,ceil,truncate}` should always return an integer, not a float added

#9 - 03/16/2020 08:29 AM - matz (Yukihiro Matsumoto)

#round with the argument less than 1 ($n < 1$) should return Integer value.

Matz.

#10 - 09/11/2020 11:20 PM - jeremyevans0 (Jeremy Evans)

- Assignee changed from matz (Yukihiro Matsumoto) to mrkn (Kenta Murata)

matz (Yukihiro Matsumoto) wrote in [#note-9](#):

#round with the argument less than 1 ($n < 1$) should return Integer value.

I've submitted a pull request that implements this: <https://github.com/ruby/bigdecimal/pull/170>

Files

bigdecimal_round.diff	969 Bytes	09/21/2016	Gat (Dawid Janczak)
-----------------------	-----------	------------	---------------------