

Ruby - Bug #6944

BigDecimal#to_f breaks for numbers too small to be representable in Float

08/28/2012 05:52 PM - adrianomitre (Adriano Mitre)

Status:	Closed	Backport:
Priority:	Normal	
Assignee:		
Target version:	1.9.2	
ruby -v:	ruby 1.9.2p290 (2011-07-09 revision 32553) [x86_64-linux]	
Description		
BigDecimal numbers too small to be representable in Float are incorrectly converted to +/-Infinity instead of 0.0 (or -0.0). Things seem to broke down when exponent is about -308.		
with 307, ok		
BigDecimal('1e-307').to_f		
=> 1.0e-307		
BigDecimal('-1e-307').to_f		
=> -1.0e-307		
with 308, broken but signedness is correct		
BigDecimal('1e-308').to_f		
=> Infinity		
BigDecimal('-1e-308').to_f		
=> -Infinity		
with 350 not even signedness is correct		
BigDecimal('1e-350').to_f		
=> -Infinity		
BigDecimal('-1e-350').to_f		
=> -Infinity		
Workaround: resort to BigDecimal#to_s and Float(.)		
x=BigDecimal('1e-350')		
Float(x.to_s)		

Associated revisions

Revision d7ca01a73ad5287f9d063bbdf5b35f472affda9d - 08/30/2012 07:17 AM - nobu (Nobuyoshi Nakada)

bigdecimal.c: check underflow

- ext/bigdecimal/bigdecimal.c (BigDecimal_to_f): check underflow since strtod() sets errno to ERANGE at underflow too. [ruby-core:47342]

[Bug #6944]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@36854 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision d7ca01a7 - 08/30/2012 07:17 AM - nobu (Nobuyoshi Nakada)

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History

#1 - 08/30/2012 04:17 PM - nobu (Nobuyoshi Nakada)

- Status changed from Open to Closed

- % Done changed from 0 to 100

This issue was solved with changeset r36854.
Adriano, thank you for reporting this issue.
Your contribution to Ruby is greatly appreciated.
May Ruby be with you.

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