## Description

Our servers are hosted with Rackspace and following patching of BIND, their DNS servers started returning different casing for the ANSWER. For example, here is me resolving sendgrid.com. You'll see the first command returns "sendgrid.com" in the answer section, while another returns "SENDGRID.COM".

```bash
$ dig sendgrid.com
; <<>> DiG 9.8.1-P1 <<>> sendgrid.com  
;; global options: +cmd  
;; Got answer:  
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 7895  
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 0  
  
;; QUESTION SECTION:  
;sendgrid.com. IN A  

;; ANSWER SECTION:  
sendgrid.com. 5 IN A 104.20.21.26  
sendgrid.com. 5 IN A 104.20.20.26  

;; Query time: 2 msec  
;; SERVER: 69.20.0.164#53(69.20.0.164)  
;; MSG SIZE  rcvd: 62  

$ dig sendgrid.com
; <<>> DiG 9.8.1-P1 <<>> sendgrid.com  
;; global options: +cmd  
;; Got answer:  
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 21767  
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 0  
  
;; QUESTION SECTION:  
;sendgrid.com. IN A  

;; ANSWER SECTION:  
SENDGRID.com. 5 IN A 104.20.21.26  
SENDGRID.com. 5 IN A 104.20.20.26  

;; Query time: 2 msec  
;; SERVER: 69.20.0.164#53(69.20.0.164)  
;; MSG SIZE  rcvd: 62  
```

The problem here is that due to [https://github.com/ruby/ruby/blob/570c028c7ebb18c6d276e5fac3a1b20f76f28db7/lib/resolv.rb#L579](https://github.com/ruby/ruby/blob/570c028c7ebb18c6d276e5fac3a1b20f76f28db7/lib/resolv.rb#L579), the addresses won't get returned because of the case difference. As a result, Resolv::DNS sporadically returns no IP addresses. In my example, let's say that I'm calling Resolv::DNS.new.getaddresses("sendgrid.com") and it returns uppercase. The message returned will be something like this:

```ruby
-> #<Resolv::DNS::Message:0x007f3eff488a88 @id=26224, @qr=1, @opcode=0, @aa=0, @tc=0, @rd=1, @ra=1, @rcode=0, @question=([#<Resolv::DNS::Name: sendgrid.com.>, Resolv::DNS::Resource::IN::A]), @answer=[[#<Resolv::DNS::Name: SENDGRID.com.>, 1, #<Resolv::DNS::Resource::IN::A:0x007f3eff47f618 @address=#<Resolv::IPv4 104.20.21.26>, @ttl=1>], [#<Resolv::DNS::Name: SENDGRID.com.>, 1, #<Resolv::DNS::Resource::IN::A:0x007f3eff47e678 @address=#<Resolv::IPv4 104.20.20.26>, @ttl=1>]), @authority=[]], @additional=[]>
```
whereas "n0" will be

=> #<Resolv::DNS::Name: sendgrid.com.>

so the comparison in line 579 returns false.

Here's another example of this in an irb console on my Rackspace server

require 'resolv'
r = Resolv::DNS.new
10.times { puts r.getaddresses("sendgrid.com").inspect }

[<Resolv::IPv4 104.20.20.26>, <Resolv::IPv4 104.20.21.26>]
[<Resolv::IPv4 104.20.20.26>, <Resolv::IPv4 104.20.21.26>]
[<Resolv::IPv4 104.20.21.26>, <Resolv::IPv4 104.20.20.26>]
[<Resolv::IPv4 104.20.20.26>, <Resolv::IPv4 104.20.21.26>]
[<Resolv::IPv4 104.20.20.26>, <Resolv::IPv4 104.20.21.26>]
[<Resolv::IPv4 104.20.21.26>, <Resolv::IPv4 104.20.20.26>]
[<Resolv::IPv4 104.20.20.26>, <Resolv::IPv4 104.20.21.26>]
[<Resolv::IPv4 104.20.21.26>, <Resolv::IPv4 104.20.20.26>]
[<Resolv::IPv4 104.20.20.26>, <Resolv::IPv4 104.20.21.26>]
[<Resolv::IPv4 104.20.21.26>, <Resolv::IPv4 104.20.20.26>]

DNS is case-insensitive, so the comparison should be case-insensitive as well.

Related issues:
Related to Ruby master - Feature #10085: Add non-ASCII case conversion to Str... Closed

Associated revisions
Revision 69a7bb31 - 12/30/2014 07:16 AM - nobu (Nobuyoshi Nakada)
resolv.rb: case-insensitive comparison

- lib/resolv.rb (Resolv::DNS::Name#==): DNS is case-insensitive, so the comparison should be case-insensitive as well.
  [ruby-core:66498] [Bug #10550]
git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@49073 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 49073 - 12/30/2014 07:16 AM - nobu (Nobuyoshi Nakada)
resolv.rb: case-insensitive comparison

- lib/resolv.rb (Resolv::DNS::Name#==): DNS is case-insensitive, so the comparison should be case-insensitive as well.
  [ruby-core:66498] [Bug #10550]

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Revision 568a5d52 - 01/14/2015 07:49 AM - usa (Usaku NAKAMURA)
merge revision(s) 49071-49073,49078: [Backport #10550]

  * lib/resolv.rb (Resolv::DNS::Name#===): DNS is case-insensitive, so the comparison should be case-insensitive as well.
  [ruby-core:66498] [Bug #10550]

  * lib/resolv.rb (Resolv::DNS::Name): names with different dots should be different.

  * lib/resolv.rb (Resolv::DNS::Name#===): Compare an array of Label:Str objects. Label#Str#=== is case-insensitive.

git-svn-id: ssh://ci.ruby-lang.org/ruby/branches/ruby_2_0_0@49252 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 49252 - 01/14/2015 07:49 AM - usa (Usaku NAKAMURA)
merge revision(s) 49071-49073,49078: [Backport #10550]

  * lib/resolv.rb (Resolv::DNS::Name#===): DNS is case-insensitive, so the comparison should be case-insensitive as well.
  [ruby-core:66498] [Bug #10550]

  * lib/resolv.rb (Resolv::DNS::Name): names with different dots should be different.

  * lib/resolv.rb (Resolv::DNS::Name#===): Compare an array of Label:Str objects. Label#Str#=== is case-insensitive.

Revision 94c6f3d3 - 01/16/2015 09:28 AM - naruse (Yui NARUSE)
merge revision(s) 49071,49072,49073,49078: [Backport #10550]

  * lib/resolv.rb (Resolv::DNS::Name): names with different dots should be different.

  * lib/resolv.rb (Resolv::DNS::Name#===): DNS is case-insensitive, so the comparison should be case-insensitive as well.
  [ruby-core:66498] [Bug #10550]

  * lib/resolv.rb (Resolv::DNS::Name#===): Compare an array of Label:Str objects. Label#Str#=== is case-insensitive.

git-svn-id: ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@49281 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 49281 - 01/16/2015 09:28 AM - naruse (Yui NARUSE)
merge revision(s) 49071,49072,49073,49078: [Backport #10550]

  * lib/resolv.rb (Resolv::DNS::Name): names with different dots should be different.

  * lib/resolv.rb (Resolv::DNS::Name#===): DNS is case-insensitive, so the comparison should be case-insensitive as well.
  [ruby-core:66498] [Bug #10550]

  * lib/resolv.rb (Resolv::DNS::Name#===): Compare an array of Label:Str objects. Label#Str#=== is case-insensitive.

Revision 02dcfb78 - 02/27/2015 05:21 PM - nagachika (Tomoyuki Chikanaga)
merge revision(s) r49071,r49072,r49073,r49078: [Backport #10550]

  * lib/resolv.rb (Resolv::DNS::Name): names with different dots should be different.

  * lib/resolv.rb (Resolv::DNS::Name#===): DNS is case-insensitive, so the
comparison should be case-insensitive as well.
[ruby-core:66498] [Bug #10550]

* lib/resolv.rb (Resolv::DNS::Name#==): Compare an array of Label:Str objects. Label#Str#== is case-insensitive.

Revision 49775 - 02/27/2015 05:21 PM - nagachika (Tomoyuki Chikanaga)
merge revision(s) r49071,r49072,r49073,r49078: [Backport #10550]

* lib/resolv.rb (Resolv::DNS::Name): names with different dots should be different.

* lib/resolv.rb (Resolv::DNS::Name#==): DNS is case-insensitive, so the comparison should be case-insensitive as well.
[ruby-core:66498] [Bug #10550]

* lib/resolv.rb (Resolv::DNS::Name#==): Compare an array of Label:Str objects. Label#Str#== is case-insensitive.

History

#1 - 11/26/2014 10:43 PM - jonhyman (Jon Hyman)
My pasting got stripped:

Here is the message returned

#<Resolv::DNS::Message:0x007f3eff488a88 @id=26224, @qr=1, @opcode=0, @aa=0, @tc=0, @rd=1, @ra=1, @rcode=0, @question=[[#<Resolv::DNS::Name: sendgrid.com.>, Resolv::DNS::Resource::IN::A]], @answer=[[#<Resolv::DNS::Name: SENDGRID.com.>, 1, #<Resolv::DNS::Resource::IN::A:0x007f3eff47f618 @address=#<Resolv::IPv4 104.20.21.26>, @ttl=1>], [#<Resolv::DNS::Name: SENDGRID.com.>, 1, #<Resolv::DNS::Resource::IN::A:0x007f3eff47e678 @address=#<Resolv::IPv4 104.20.20.26>, @ttl=1>]], @authority=[], @additional=[]>

Here is "n0"

=> #<Resolv::DNS::Name: sendgrid.com.>

Here is the output from the 10.times loop.

[#<Resolv::IPv4 104.20.20.26>, #<Resolv::IPv4 104.21.26>]
[#<Resolv::IPv4 104.20.20.26>, #<Resolv::IPv4 104.21.26>]
[#<Resolv::IPv4 104.20.21.26>, #<Resolv::IPv4 104.20.26>]
[]
[#<Resolv::IPv4 104.20.20.26>, #<Resolv::IPv4 104.20.21.26>]
[#<Resolv::IPv4 104.20.20.26>, #<Resolv::IPv4 104.20.21.26>]
[]
[]
[#<Resolv::IPv4 104.20.20.26>, #<Resolv::IPv4 104.20.21.26>]
[#<Resolv::IPv4 104.20.20.26>, #<Resolv::IPv4 104.20.21.26>]

#2 - 12/29/2014 08:59 PM - bjmllr (Ben Miller)
I ran into some case-sensitivity issues while using Resolv as well. A patch to Resolv::DNS::Name#== seemed to solve it for me.

https://github.com/ruby/ruby/pull/801

#3 - 12/30/2014 07:13 AM - nobu (Nobuyoshi Nakada)
- Description updated

#4 - 12/30/2014 07:16 AM - nobu (Nobuyoshi Nakada)
- Status changed from Open to Closed
- % Done changed from 0 to 100

Applied in changeset r49073.

resolv.rb: case-insensitive comparison

- lib/resolv.rb (Resolv::DNS::Name#==): DNS is case-insensitive, so the comparison should be case-insensitive as well.
#5 - 12/30/2014 02:09 PM - nagachika (Tomoyuki Chikanaga)
- Backport changed from 2.0.0: UNKNOWN, 2.1: UNKNOWN to 2.0.0: REQUIRED, 2.1: REQUIRED, 2.2: REQUIRED

#6 - 12/30/2014 02:10 PM - nagachika (Tomoyuki Chikanaga)
memo: r49071 and r49072 are similar fixes for resolv.rb

#7 - 12/31/2014 06:26 AM - duerst (Martin Dürst)
- Related to Feature #10085: Add non-ASCII case conversion to String#upcase/downcase/swapcase/capitalize added

#8 - 01/14/2015 07:50 AM - usa (Usaku NAKAMURA)
- Backport changed from 2.0.0: REQUIRED, 2.1: REQUIRED, 2.2: REQUIRED to 2.0.0: DONE, 2.1: REQUIRED, 2.2: REQUIRED
Backported r49701, r49702, r49703 and r49708 into ruby_2_0_0 at r49252.

#9 - 01/16/2015 09:28 AM - naruse (Yui NARUSE)
- Backport changed from 2.0.0: DONE, 2.1: REQUIRED, 2.2: REQUIRED to 2.0.0: DONE, 2.1: REQUIRED, 2.2: DONE
ruby_2_2 r49281 merged revision(s) 49071,49072,49073,49078.

#10 - 02/27/2015 05:22 PM - nagachika (Tomoyuki Chikanaga)
- Backport changed from 2.0.0: DONE, 2.1: REQUIRED, 2.2: DONE to 2.0.0: DONE, 2.1: DONE, 2.2: DONE
Backported into ruby_2_1 branch at r49775.