

Ruby - Bug #12642

Net::HTTP populates host header incorrectly when using an IPv6 Address

08/01/2016 11:52 AM - dcorbin (David Corbin)

Status:	Closed	
Priority:	Normal	
Assignee:	naruse (Yui NARUSE)	
Target version:		
ruby -v:		
		Backport: 2.1: UNKNOWN, 2.2: UNKNOWN, 2.3: UNKNOWN
Description		
When sending a request, the client code adds a "Host" header. It does the by taking the given address, appending a colon, and then appending the port. This creates a fragment of a URL such as "google.com:80". However, when instead of "google.com", the address is an IPv6 address is given (such as 8383:3223::1333:DE12), simply appending a colon is not adequate. It yields 8383:3223::1333:DE12:80, which is hard to parse mess. RFC3986 stipulates that the host should be surrounded by square brackets, which would have the Host header as: [8383:3223::1333:DE12]:80.		

Associated revisions

Revision 3acc0ba1d8a58c515050258f97dcc223b6ec8ae0 - 10/26/2017 03:29 PM - naruse (Yui NARUSE)

Host header should add brackets to IPv6 address [Bug #12642]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60455 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 3acc0ba1 - 10/26/2017 03:29 PM - naruse (Yui NARUSE)

Host header should add brackets to IPv6 address [Bug #12642]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60455 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

History

#1 - 03/14/2017 10:57 PM - andy (Andy Brody)

- File `ipv6_test.rb` added

#2 - 03/14/2017 11:04 PM - andy (Andy Brody)

- File `ipv6_test.rb` added

Missing brackets from Host header for IPv6 addresses

This is a regression from Ruby 2.1. The bug appears to have been introduced in ruby 2.2.0 by this commit:

<https://github.com/ruby/ruby/commit/70a2eb63999265ff7e8d46d1f5b410c8ee3d30d7>

The change was added in response to this bug: <https://bugs.ruby-lang.org/issues/10054>

Attached is a test script demonstrating the bug "ipv6_test.rb".

Correct behavior (present in 2.0 from 2.0.0-p643 onward and in 2.1 from 2.1.6 onward) for sending a request to `http://[::1]:8080`

```
Host: [::1]:8080
```

Incorrect behavior (present in 2.2.0 through trunk)

```
Host: ::1:8080
```

See also <https://github.com/rest-client/rest-client/issues/583>

I've added tests for rest-client that show the affected Ruby versions. Net::HTTP support for IPv6 URIs was broken in 2.0 before 2.0.0-p643 and 2.1 before 2.1.6, so there is a narrow window of versions that work.

Full test output is here: <https://travis-ci.org/rest-client/rest-client/builds/211090377>

Broken handling of explicit IPv6 Host header

There is a separate bug that makes it impossible to explicitly set an IPv6 host header in affected ruby versions. Because Net::HTTP slices the end of the provided Host header after the first :, an IPv6 Host header will be rendered invalid.

If you attempt to set req['Host'] = '::1:8080', it will be rendered as [due to https://github.com/ruby/ruby/blob/v2.4.0/lib/net/http/generic_request.rb#L144

```
$ ruby ipv6_test.rb --set-host
/versions/2.3.1/lib/ruby/2.3.0/uri/generic.rb:595:in `check_host': bad component (expected host component): [ (
URI::InvalidComponentError)
  from /versions/2.3.1/lib/ruby/2.3.0/uri/generic.rb:636:in `host='
  from /versions/2.3.1/lib/ruby/2.3.0/net/http/generic_request.rb:151:in `update_uri'
  from /versions/2.3.1/lib/ruby/2.3.0/net/http.rb:1493:in `begin_transport'
  from /versions/2.3.1/lib/ruby/2.3.0/net/http.rb:1433:in `transport_request'
  from /versions/2.3.1/lib/ruby/2.3.0/net/http.rb:1407:in `request'
  from ipv6_test.rb:42:in `block in <main>'
  from /versions/2.3.1/lib/ruby/2.3.0/net/http.rb:853:in `start'
```

#3 - 03/14/2017 11:05 PM - andy (Andy Brody)

- File deleted (ipv6_test.rb)

#4 - 04/17/2017 07:36 AM - naruse (Yui NARUSE)

- Assignee set to naruse (Yui NARUSE)

#5 - 04/28/2017 01:45 PM - shyouhei (Shyouhei Urabe)

- Status changed from Open to Assigned

#6 - 06/03/2017 01:07 AM - anuraguniyal (anurag uniyal)

Is there a workaround for this? How should we connect to ipv6 servers?

#7 - 06/05/2017 09:32 PM - anuraguniyal (anurag uniyal)

Below monkey patching code works for me. Is there a better way?

```
module MonkeyPatch
  module Net
    module HTTP
      end
    end
  end
end

module MonkeyPatch::Net::HTTP
  # workaround for https://bugs.ruby-lang.org/issues/12642
  # Ruby does not pass Host header with brackets if host is ipv6 address
  def addr_port
    addr = address()
    # if it is ipv6 add brackets around it
    if addr =~ Resolv::IPv6::Regex
      addr = "[#{addr}]"
    end
    if use_ssl?
      addr + (port == Net::HTTP.https_default_port ? '' : ":{port}")
    else
      addr + (port == Net::HTTP.http_default_port ? '' : ":{port}")
    end
  end
end

Net::HTTP.prepend(MonkeyPatch::Net::HTTP)
```

#8 - 10/26/2017 03:29 PM - naruse (Yui NARUSE)

- Status changed from Assigned to Closed

Applied in changeset trunk|r60455.

Host header should add brackets to IPv6 address [Bug [#12642](#)]

Files

ipv6_test.rb	1.17 KB	03/14/2017	andy (Andy Brody)
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