

Ruby - Bug #12890

Net::HTTP should treat unexpected 1XX responses as non-final.

11/02/2016 08:58 PM - lukasa (Cory Benfield)

Status:	Closed	
Priority:	Normal	
Assignee:		
Target version:		
ruby -v:	ruby 2.3.0p0 (2015-12-25 revision 53290) [x86_64-darwin16]	Backport: 2.1: REQUIRED, 2.2: DONE, 2.3: DONE

Description

Long story short

Net::HTTP's client does not tolerate non-100 status codes from the 1XX block in a sensible manner: it treats them as final responses, rather than as provisional ones.

Expected behaviour

When Net::HTTP receives a 1XX status code that it does not recognise, it should either surface these to a user in such a way that allows the user to access the subsequent final response, or it should ignore them and only show the user the eventual final status code. This is required by RFC 7231 Section 6.2 (Informational 1xx), which reads:

A client MUST be able to parse one or more 1xx responses received prior to a final response, even if the client does not expect one. A user agent MAY ignore unexpected 1xx responses.

Actual behaviour

Net::HTTP treats the 1XX status code as final. It parses the header block as though it were a response in the 2XX or higher range. Net::HTTP rightly assumes that 1XX responses have no body, which means that it leaves the following 2XX response unconsumed in the socket buffer, which will hide critical data from the user.

Steps to reproduce

The following Python "server" can demonstrate the issue:

```
import socket
import time

document = b'''<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>title</title>
    <link rel="stylesheet" href="/other/styles.css">
    <script src="/other/action.js"></script>
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
'''

s = socket.socket()
s.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
s.bind(('localhost', 8080))
s.listen(5)

while True:
    new_socket, _ = s.accept()
    data = b''
```

```

while not data.endswith(b'\r\n\r\n'):
    data += new_socket.recv(8192)

new_socket.sendall(
    b'HTTP/1.1 103 Early Hints\r\n'
    b'Server: socketserver/1.0.0\r\n'
    b'Link: </other/styles.css>; rel=preload; as=style\r\n'
    b'Link: </other/action.js>; rel=preload; as=script\r\n'
    b'\r\n'
)
time.sleep(1)
new_socket.sendall(
    b'HTTP/1.1 200 OK\r\n'
    b'Server: socketserver/1.0.0\r\n'
    b'Content-Type: text/html\r\n'
    b'Content-Length: %s\r\n'
    b'Link: </other/styles.css>; rel=preload; as=style\r\n'
    b'Link: </other/action.js>; rel=preload; as=script\r\n'
    b'Connection: close\r\n'
    b'\r\n' % len(document)
)
new_socket.sendall(document)
new_socket.close()

```

If this server is run directly, the following client can be used to test it:

```

require 'net/http'

uri = URI('http://localhost:8080/')
res = Net::HTTP.get_response(uri)
puts "Status: #{res.code}"
puts "Body: #{res.body}"

```

This client will print

```

Status: 103
Body:

```

Note that the client has treated the 1XX response as final, and has left the 200 response unconsumed in the socket.

Associated revisions

Revision 8ec6fcb2f6cd9bc453173477eb237298a5e5bab5 - 11/05/2016 02:08 PM - naruse (Yui NARUSE)

- lib/net/http.rb (transport_request): other than HTTPContinue in 1xx (HTTPInformation) also needs to continue. [Bug #12890]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@56596 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 8ec6fcb2 - 11/05/2016 02:08 PM - naruse (Yui NARUSE)

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Revision edf505a7e8d52970a2a1ae29ab450abf3819a63b - 11/14/2016 05:48 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) 56596: [Backport #12890]

```

* lib/net/http.rb (transport_request): other than HTTPContinue
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```

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_3@56782 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision edf505a7 - 11/14/2016 05:48 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) 56596: [Backport #12890]

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git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_3@56782 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision bb5114bc7e59c494af03f973ba89d7747325f371 - 11/14/2016 06:40 PM - U.Nakamura

merge revision(s) 56596: [Backport #12890]

```
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  in lxx (HTTPInformation) also needs to continue. [Bug #12890]
```

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@56787 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision bb5114bc - 11/14/2016 06:40 PM - U.Nakamura

merge revision(s) 56596: [Backport #12890]

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git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@56787 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

History

#1 - 11/02/2016 09:39 PM - duerst (Martin Dürst)

- Subject changed from *Net::HTTP treats unexpected 1XX responses as final.* to *Net::HTTP should treat unexpected 1XX responses as non-final.*

#2 - 11/02/2016 10:03 PM - phluid61 (Matthew Kerwin)

- File patch1.diff added

I believe the fix is relatively simple; the main change is to lib/net/http.rb:

```
--- a/lib/net/http.rb
+++ b/lib/net/http.rb
@@ -1439,7 +1439,7 @@ def transport_request(req)
     begin
       res = HTTPResponse.read_new(@socket)
       res.decode_content = req.decode_content
-     end while res.kind_of?(HTTPContinue)
+     end while res.continue?

     res.uri = req.uri
```

#3 - 11/03/2016 08:26 AM - lukasa (Cory Benfield)

Apologies, it was noted that it would be more helpful to provide the example server in Ruby instead:

```
require 'socket'

server = TCPServer.new 8080

loop do
  client = server.accept
  client.puts "HTTP/1.1 103 Early Hints\r\n" +
    "Server: socketserver/1.0.0\r\n" +
    "Link: </other/styles.css>; rel=preload; as=style\r\n" +
    "Link: </other/action.js>; rel=preload; as=script\r\n" +
    "\r\n"

  sleep 1
  client.puts "HTTP/1.1 200 OK\r\n" +
    "Server: socketserver/1.0.0\r\n" +
    "Content-Length: 0\r\n" +
    "Link: </other/styles.css>; rel=preload; as=style\r\n" +
    "Link: </other/action.js>; rel=preload; as=script\r\n" +
    "Connection: close\r\n" +
    "\r\n"

  client.close
end
```

#4 - 11/04/2016 09:23 PM - duerst (Martin Dürst)

A testing endpoint is available at <https://nghttp2.org/?103-eh> (see <https://lists.w3.org/Archives/Public/ietf-http-wg/2016OctDec/0408.html>).

#5 - 11/05/2016 02:08 PM - naruse (Yui NARUSE)

- Status changed from Open to Closed

Applied in changeset r56596.

- lib/net/http.rb (transport_request): other than HTTPContinue in 1xx (HTTPInformation) also needs to continue. [Bug #12890]

#6 - 11/07/2016 01:55 AM - duerst (Martin Dürst)

- Backport changed from 2.1: UNKNOWN, 2.2: UNKNOWN, 2.3: UNKNOWN to 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED

#7 - 11/14/2016 05:48 PM - nagachika (Tomoyuki Chikanaga)

- Backport changed from 2.1: REQUIRED, 2.2: REQUIRED, 2.3: REQUIRED to 2.1: REQUIRED, 2.2: REQUIRED, 2.3: DONE

ruby_2_3 r56782 merged revision(s) 56596.

#8 - 11/14/2016 06:40 PM - usa (Usaku NAKAMURA)

- Backport changed from 2.1: REQUIRED, 2.2: REQUIRED, 2.3: DONE to 2.1: REQUIRED, 2.2: DONE, 2.3: DONE

ruby_2_2 r56787 merged revision(s) 56596.

Files

patch1.diff	2.17 KB	11/02/2016	phluid61 (Matthew Kerwin)
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