

HTTP Working Group
Internet-Draft
Intended status: Standards Track
Expires: October 13, 2015

J. Reschke
greenbytes
April 11, 2015

Hypertext Transfer Protocol (HTTP) Client-Initiated Content-Encoding
draft-ietf-httpbis-cice-00

Abstract

In HTTP, "Content Codings" allow for payload encodings such as for compression or integrity checks. In particular, the "gzip" content coding is widely used for payload data sent in response messages.

Content Codings can be used in request messages as well, however discoverability is not on par with response messages. This document extends the HTTP "Accept-Encoding" header field for use in responses.

Editorial Note (To be removed by RFC Editor before publication)

Discussion of this draft takes place on the HTTPBIS working group mailing list (ietf-http-wg@w3.org), which is archived at <https://lists.w3.org/Archives/Public/ietf-http-wg/>.

Working Group information can be found at <https://tools.ietf.org/wg/httpbis/> and <http://httpwg.github.io/>; source code and issues list for this draft can be found at <https://github.com/httpwg/http-extensions>.

The changes in this draft are summarized in [Appendix A.3](#).

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on October 13, 2015.

Internet-Draft

HTTP CICE

April 2015

Copyright Notice

Copyright (c) 2015 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Introduction	3
2.	Notational Conventions	3
3.	Extensions to 'Accept-Encoding' Header Field	3
4.	Example	4
5.	Deployment Considerations	5
6.	Security Considerations	5
7.	IANA Considerations	5
8.	References	6
8.1.	Normative References	6
8.2.	Informative References	6
Appendix A.	Change Log (to be removed by RFC Editor before publication)	6
A.1.	Since draft-reschke-http-cice-00	6
A.2.	Since draft-reschke-http-cice-01	6
A.3.	Since draft-reschke-http-cice-02	6
Appendix B.	Acknowledgements	7

Internet-Draft

HTTP CICE

April 2015

1. Introduction

In HTTP, "Content Codings" allow for payload encodings such as for compression or integrity checks ([\[RFC7231\]](#), [Section 3.1.2](#)). In particular, the "gzip" content coding is widely used for payload data sent in response messages.

Content Codings can be used in request messages as well, however discoverability is not on par with response messages. This document extends the HTTP "Accept-Encoding" header field ([\[RFC7231\]](#), [Section 5.3.4](#)) for use in responses.

2. Notational Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [\[RFC2119\]](#).

This document reuses terminology used in the base HTTP specifications, namely [Section 2 of \[RFC7230\]](#) and [Section 3.1.2 of \[RFC7231\]](#).

3. Extensions to 'Accept-Encoding' Header Field

[Section 5.3.4 of \[RFC7231\]](#) defines "Accept-Encoding" as a request header field only.

This specification extends that definition to allow "Accept-Encoding" as a response header field as well. When present, it indicates what content codings a resource was willing to accept at the time of the response. A field value that only contains "identity" implies that no content codings are supported.

Note that this information is specific to the specific request. The set of supported encodings might be different for other resources on the same server, could also change depending on other aspects of the

request (such as the request method), or might change in the future.

[Section 6.5.13 of \[RFC7231\]](#) defines status code 415 (Unsupported Media Type) to apply to both media type and content coding related problems.

Servers that fail a request due to an unsupported content coding SHOULD respond with a 415 status and SHOULD include an "Accept-Encoding" header field in that response, allowing clients to distinguish between content coding related issues and media type related issues. In order to avoid confusion with media type related problems, servers that fail a request with a 415 status for reasons

unrelated to content codings SHOULD NOT include the "Accept-Encoding" header field.

While sending "Accept-Encoding" in a 415 (Unsupported Media Type) response will be the most common use case, it is not restricted to this particular status code. For instance, a server might include it in a 2xx response when a request payload was big enough to justify use of a compression coding, but the client failed to do so.

[4.](#) Example

Client submits a POST request using Content-Encoding "compress" ([\[RFC7231\]](#), [Section 3.1.2.1](#)):

```
POST /edit/ HTTP/1.1
Host: example.org
Content-Type: application/atom+xml;type=entry
Content-Encoding: compress
```

...compressed payload...

Server rejects request because it only allows the "gzip" content coding:

```
HTTP/1.1 415 Unsupported Media Type
Date: Fri, 09 May 2014 11:43:53 GMT
Accept-Encoding: gzip
Content-Length: 68
Content-Type: text/plain
```

This resource only supports the "gzip" content coding in requests.

...at which point the client can retry the request with the supported "gzip" content coding.

Alternatively, a server that does not support any content codings in requests could answer with:

```
HTTP/1.1 415 Unsupported Media Type
Date: Fri, 09 May 2014 11:43:53 GMT
Accept-Encoding: identity
Content-Length: 61
Content-Type: text/plain
```

This resource does not support content codings in requests.

[5.](#) Deployment Considerations

Servers that do not support content codings in requests already are required to fail a request that does use a content coding. [Section 6.5.13 of \[RFC7231\]](#) recommends to use the status code 415 (Unsupported Media Type), so the only change needed is to include the "Accept-Encoding" header field with value "identity" in that response.

Servers that do support some content codings are required to fail requests with unsupported content codings as well. To be compliant with this specification, servers will need to use the status code 415 (Unsupported Media Type) to signal the problem, and will have to include an "Accept-Encoding" header field that enumerates the content codings that are supported. As the set of supported content codings usually is static and small, adding the header field ought to be trivial.

[6.](#) Security Considerations

This specification does not introduce any new security considerations beyond those discussed in [Section 9 of \[RFC7231\]](#).

7. IANA Considerations

HTTP header fields are registered within the "Message Headers" registry located at <http://www.iana.org/assignments/message-headers>, as defined by [BCP90].

This document updates the definition of the "Accept-Encoding" header field, so the "Permanent Message Header Field Names" registry shall be updated accordingly:

Header Field Name	Protocol	Status	Reference
Accept-Encoding	http	standard	[RFC7231], Section 5.3.4 , extended by Section 3 of this document

8. References

8.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997, <<http://www.rfc-editor.org/info/rfc2119>>.
- [RFC7230] Fielding, R., Ed. and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", [RFC 7230](#), June 2014, <<http://www.rfc-editor.org/info/rfc7230>>.
- [RFC7231] Fielding, R., Ed. and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content", [RFC 7231](#), June 2014, <<http://www.rfc-editor.org/info/rfc7231>>.

8.2. Informative References

- [BCP90] Klyne, G., Nottingham, M., and J. Mogul, "Registration Procedures for Message Header Fields", [BCP 90](#), [RFC 3864](#), September 2004, <<http://www.rfc-editor.org/info/rfc3864>>.

Appendix A. Change Log (to be removed by RFC Editor before publication)

A.1. Since [draft-reschke-http-cice-00](#)

Clarified that the information returned in Accept-Encoding is per resource, not per server.

Added some deployment considerations.

Updated HTTP/1.1 references.

A.2. Since [draft-reschke-http-cice-01](#)

Restrict the scope of A-E from "future requests" to "at the time of this request".

Mention use of A-E in responses other than 415.

Recommend not to include A-E in a 415 response unless there was actually a problem related to content coding.

A.3. Since [draft-reschke-http-cice-02](#)

First Working Group draft; updated boilerplate accordingly.

Reschke

Expires October 13, 2015

[Page 6]

Internet-Draft

HTTP CICE

April 2015

Appendix B. Acknowledgements

Thanks go to the members of the and HTTPbis Working Group, namely Amos Jeffries, Mark Nottingham, and Ted Hardie.

Author's Address

Julian F. Reschke

greenbytes GmbH
Hafenweg 16
Muenster, NW 48155
Germany

E-Mail: julian.reschke@greenbytes.de
URI: <http://greenbytes.de/tech/webdav/>