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Web Categories  
draft-johnston-http-category-header-02

## Abstract

This document specifies the Category header-field for HyperText Transfer Protocol (HTTP), which enables the sending of taxonomy information in HTTP headers in a similar fashion to that employed by Atom.

## Status of this Memo

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## 1. Introduction

A means of indicating categories for resources on the web has been defined by Atom [[RFC4287](#)]. This document defines a framework for exposing category information in the same format via HTTP headers.

The `atom:category` element conveys information about a category associated with an entry or feed. A given `atom:feed` or `atom:entry` element MAY have zero or more categories which MUST have a "term" attribute (a string that identifies the category to which the entry or feed belongs) and MAY also have a scheme attribute (an IRI that identifies a categorization scheme) and/or a label attribute (a human-readable label for display in end-user applications).

Similarly a web resource may be associated with zero or more categories as indicated in the `Category` header-field(s). These categories may be divided into separate vocabularies or "schemes" and/or accompanied with human-friendly labels.

[[ Feedback is welcome on the `ietf-http-wg@w3.org` mailing list, although this is NOT a work item of the HTTPBIS WG. ]]

### 1.1. Requirements Language

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 [BCP 14](#), [[RFC2119](#)], as scoped to those conformance targets.

This document uses the Augmented Backus-Naur Form (ABNF) notation of [[RFC2616](#)], and explicitly includes the following rules from it: `quoted-string`, `token`. Additionally, the following rules are included from [[RFC3986](#)]: `URI`.

## 2. Categories

In this specification, a category is a grouping of resources by 'term', from a vocabulary ('scheme') identified by an IRI [[RFC3987](#)]. It is comprised of:

- o A "term" which is a string that identifies the category to which the resource belongs.
- o A "scheme" which is an IRI that identifies a categorization scheme (optional).

- o An "label" which is a human-readable label for display in end-user applications (optional).

A category can be viewed as a statement of the form "resource is from the {term} category of {scheme}, to be displayed as {label}", for example "'Loewchen' is from the 'dog' category of 'animals', to be displayed as 'Canine'".

### 3. The Category Header Field

The Category entity-header provides a means for serialising one or more categories in HTTP headers. It is semantically equivalent to the atom:category element in Atom [[RFC4287](#)].

```
Category           = "Category" ":" #category-value
category-value     = term *( ";" category-param )
category-param     = ( ( "scheme" "=" <"> scheme <"> )
                       | ( "label" "=" quoted-string )
                       | ( "label*" "=" enc2231-string )
                       | ( category-extension ) )
category-extension = token [ "=" ( token | quoted-string ) ]
enc2231-string     = <extended-value, see RFC2231, Section 7>
term               = token
scheme             = URI
```

Each category-value conveys exactly one category but there may be multiple category-values for each header-field and/or multiple header-fields per [[RFC2616](#)].

Note that schemes are REQUIRED to be absolute URLs in Category headers, and MUST be quoted if they contain a semicolon (";") or comma (",") as these characters are used to separate category-params and category-values respectively.

The "label" parameter is used to label the category such that it can be used as a human-readable identifier (e.g. a menu entry). Alternately, the "label\*" parameter MAY be used to encode this label in a different character set, and/or contain language information as per [\[RFC2231\]](#). When using the enc2231-string syntax, producers MUST NOT use a charset value other than 'ISO-8859-1' or 'UTF-8'.

### [3.1.](#) Examples

NOTE: Non-ASCII characters used in prose for examples are encoded using the format "Backslash-U with Delimiters", defined in [Section 5.1 of \[RFC5137\]](#).

For example:  
Category: dog

indicates that the resource is in the "dog" category.

Category: dog; label="Canine"; scheme="http://purl.org/net/animals"

indicates that the resource is in the "dog" category, from the "http://purl.org/net/animals" scheme, and should be displayed as "Canine".

The example below shows an instance of the Category header encoding multiple categories, and also the use of [\[RFC2231\]](#) encoding to represent both non-ASCII characters and language information.

```
Category: dog; label="Canine"; scheme="http://purl.org/net/animals",
        lowchen; label*=UTF-8'de'L%c3%b6wchen";
        scheme="http://purl.org/net/animals/dogs"
```

Here, the second category has a label encoded in UTF-8, uses the German language ("de"), and contains the Unicode code point \u'00F6' ("LATIN SMALL LETTER O WITH DIAERESIS").

## [4.](#) IANA Considerations

### [4.1.](#) Category Header Registration

This specification adds an entry for "Category" in HTTP to the Message Header Registry [[RFC3864](#)] referring to this document:

Header Field Name: Category

Protocol: http

Status: standard

Author/change controller:

IETF ([iesg@ietf.org](mailto:iesg@ietf.org))

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Specification document(s):

[ this document ]

## [5.](#) Security Considerations

The content of the Category header-field is not secure, private or integrity-guaranteed, and due caution should be exercised when using it.

## [6.](#) Internationalisation Considerations

Category header-fields may be localised depending on the Accept-

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Language header-field, as defined in [section 14.4 of \[RFC2616\]](#).

Scheme IRIs in atom:category elements may need to be converted to URIs in order to express them in serialisations that do not support IRIs, as defined in [section 3.1 of \[RFC3987\]](#). This includes the Category header-field.

## [7.](#) References

### [7.1.](#) Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

- [RFC2231] Freed, N. and K. Moore, "MIME Parameter Value and Encoded Word Extensions: Character Sets, Languages, and Continuations", [RFC 2231](#), November 1997.
- [RFC2616] Fielding, R., Gettys, J., Mogul, J., Frystyk, H., Masinter, L., Leach, P., and T. Berners-Lee, "Hypertext Transfer Protocol -- HTTP/1.1", [RFC 2616](#), June 1999.
- [RFC3864] Klyne, G., Nottingham, M., and J. Mogul, "Registration Procedures for Message Header Fields", [BCP 90](#), [RFC 3864](#), September 2004.
- [RFC3986] Berners-Lee, T., Fielding, R., and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", STD 66, [RFC 3986](#), January 2005.
- [RFC3987] Duerst, M. and M. Suignard, "Internationalized Resource Identifiers (IRIs)", [RFC 3987](#), January 2005.
- [RFC4287] Nottingham, M., Ed. and R. Sayre, Ed., "The Atom Syndication Format", [RFC 4287](#), December 2005.
- [RFC5137] Klensin, J., "ASCII Escaping of Unicode Characters", [BCP 137](#), [RFC 5137](#), February 2008.

## [7.2](#). Informative References

- [RFC2068] Fielding, R., Gettys, J., Mogul, J., Nielsen, H., and T. Berners-Lee, "Hypertext Transfer Protocol -- HTTP/1.1", [RFC 2068](#), January 1997.
- [RFC5988] Nottingham, M., "Web Linking", [RFC 5988](#), October 2010.

- [W3C.REC-html401-19991224]  
Raggett, D., Jacobs, I., and A. Hors, "HTML 4.01 Specification", World Wide Web Consortium Recommendation REC-html401-19991224, December 1999, <<http://www.w3.org/TR/1999/REC-html401-19991224>>.
- [W3C.WD-html5-20110525]  
Hickson, I., "HTML5", World Wide Web Consortium

LastCall WD-html5-20110525, May 2011,  
<<http://www.w3.org/TR/2011/WD-html5-20110525>>.

[rel-tag-microformat]

Celik, T., Marks, K., and D. Powazek, "rel="tag"  
Microformat", <<http://microformats.org/wiki/rel-tag>>.

#### [Appendix A](#). Notes on use with HTML

In the absence of a dedicated category element in HTML 4 [[W3C.REC-html401-19991224](#)] and HTML 5 [[W3C.WD-html5-20110525](#)], category information (including user supplied folksonomy classifications) MAY be exposed using HTML A and/or LINK elements by concatenating the scheme and term:

category-link = scheme term  
scheme = URI  
term = token

These category-links MAY form a resolveable "tag space" in which case they SHOULD use the "tag" relation-type per [[rel-tag-microformat](#)].

Alternatively META elements MAY be used:

- o where the "name" attribute is "keywords" and the "content" attribute is a comma-separated list of term(s)
- o where the "http-equiv" attribute is "Category" and the "content" attribute is a comma-separated list of category-value(s)

#### [Appendix B](#). Notes on use with Atom

Where the cardinality is known to be one (for example, when retrieving an individual resource) it MAY be preferable to render the resource natively over HTTP without Atom structures. In this case the contents of the atom:content element SHOULD be returned as the HTTP entity-body and metadata including the type attribute and atom:category element(s) via HTTP header-field(s).



to be one (for example, search results which MAY return one result).

## [Appendix C](#). Acknowledgements

The author would like to thank Mark Nottingham for his work on Web Linking [[RFC5988](#)] (on which this document was based), the authors of [[RFC2068](#)] for specification of the Link: header-field on which this is based and all those who commented upon, encouraged and gave feedback to this draft.

## [Appendix D](#). Change Log (to be removed by RFC Editor before publication)

### [D.1](#). [draft-johnston-http-category-header-00](#)

Initial draft based on [draft-nottingham-http-link-header-05](#)

### [D.2](#). [draft-johnston-http-category-header-01](#)

Updated references, affiliation and tickled for IETF-78.

### [D.3](#). [draft-johnston-http-category-header-02](#)

Revived draft for further work due to renewed interest, resolved two of the issues, updated affiliation.

## [Appendix E](#). Outstanding Issues

[[ to be removed by the RFC editor should document proceed to publication as an RFC. ]]

The following issues are outstanding and should be addressed:

1. Is supporting multi-lingual representations of the same category(s) necessary? If so, what are the risks of doing so?
2. Is a mechanism for maintaining Category header-fields required? If so, should it use the headers themselves or some other mechanism?

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