

Mapping HTTP semantics

Introduction

The Restlet API offers a higher level view of the HTTP protocol. It tries to abstract and present in a clean object model, the application-level semantics of HTTP. As a side feature, it is possible to map other protocols to the same semantics, such as FILE, FTP, SMTP, etc.

However, developers often know lower-level details of HTTP or need to understand them for debugging purpose. This is the reason for this document, explain the mapping between the HTTP semantics and the Restlet API.

Note that the headers that are not supported yet can still be overridden via the "org.restlet.http.headers" attribute of the request or the response. A warning message is logged : "Addition of the standard header "XXX" is discouraged. Future versions of the Restlet API will directly support it".

See details in the Javadocs of the [Message.getAttributes\(\)](#)¹ method.

Mapping headers

HTTP header	Restlet property	Description
Accept ²	request.clientInfo.acceptedMediaTypes	The list of media-types accepted by the client.
Accept-Charset ³	request.clientInfo.acceptedCharacterSets	The list of character sets accepted by the client.
Accept-Encoding ⁴	request.clientInfo.acceptedEncodings	The list of encodings accepted by the client.
Accept-Language ⁵	request.clientInfo.acceptedLanguages	The list of languages accepted by the client.
Accept-Ranges ⁶	[connector level]	Allows the server to indicate its support for range requests
Age ⁷	-	Support for caching planned for Restlet 1.2 ⁸
Allow ⁹	response.allowedMethods	For "Handler" subclasses (such as Resource), a dynamic search is made that looks for the "allow*" methods declared on the class and that return "True".
Authentication-Info ¹⁰	-	Non standard HTTP header.
Authorization ¹¹	request.challengeResponse	Credentials that contain the authentication information of the user agent for the realm of the resource being requested.
Cache-Control ¹²	-	Support for caching planned for Restlet 1.2 ¹³

1. [http://www.restlet.org/documentation/1.1/api/org/restlet/data/Message.html#getAttributes\(\)](http://www.restlet.org/documentation/1.1/api/org/restlet/data/Message.html#getAttributes())

Connection ¹⁴	[connector level]	Set to "close" according to the server or client connector property (serverKeepAlive or clientKeepAlive).
Content-Disposition ¹⁵	message.entity.downloadName	If the download name is not null, the header value is "attachment; filename=<entity.downloadName>".
Content-Encoding ¹⁶	entity.encodings	Indicates what additional content codings have been applied to the entity-body.
Content-Language ¹⁷	entity.languages	Describes the natural language(s) of the intended audience for the enclosed entity.
Content-Length ¹⁸	entity.size	The size of the entity-body, in decimal number of OCTETs.
Content-Location ¹⁹	entity.identifier	Indicates the resource location for the entity enclosed in the message.
Content-MD5 ²⁰	representation.digest	Value and algorithm name of the digest associated to a representation.
Content-Range ²¹	entity.range	Indicates where in the full entity-body the partial body should be applied
Content-Type ²²	entity.mediaType and entity.characterSet	Indicates the media type of the entity-body.
Cookie ²³	request.cookies	List of one or more cookies sent by the client to the server.
Date ²⁴	current date	The date and time at which the message was originated.
ETag ²⁵	entity.tag	The current value of the entity tag for the requested variant.
Expect ²⁶	-	Support for expect header planned for Restlet 1.2 ²⁷
Expires ²⁸	entity.expirationDate	The date/time after which the response is considered stale.
From ²⁹	-	Support for misc headers planned for later ³⁰
Host ³¹	request.resourceRef (domain and port)	Specifies the Internet host and port number of the resource being requested.
If-Match ³²	request.conditions.match	Used with a method to make it conditional.
If-Modified-Since ³³	request.conditions.modifiedSince	Used with a method to make it conditional.

If-None-Match ³⁴	request.conditions.noneMatch	Used with a method to make it conditional.
If-Range ³⁵	-	Support planned for Restlet 1.2 ³⁶
If-Unmodified-Since ³⁷	request.conditions.unmodifiedSince	Used with a method to make it conditional.
Last-Modified ³⁸	entity.modificationDate	Indicates the date and time at which the origin server believes the variant was last modified.
Location ³⁹	response.locationRef	Used to redirect the recipient to a location other than the Request-URI for completion of the request or identification of a new resource.
Max-Forwards ⁴⁰	-	Support for proxies planned for later ⁴¹
Pragma ⁴²	-	Support for caching planned for Restlet 1.2 ⁴³
Proxy-Authenticate ⁴⁴	response.proxyChallengeRequests	Indicates the authentication scheme(s) and parameters applicable to the proxy.
Proxy-Authorization ⁴⁵	request.proxyChallengeResponse	Credentials that contain the authentication information of the user agent for the proxy.
Range ⁴⁶	request.ranges	List one or more ranges to return from the entity
Referer ⁴⁷	request.refererRef	The address (URI) of the resource from which the Request-URI was obtained.
Retry-After ⁴⁸	-	Support for misc headers planned for later ⁴⁹
Server ⁵⁰	response.serverInfo.agent	Information about the software used by the origin server to handle the request.
Set-Cookie ⁵¹	response.cookieSettings	List of one or more cookies sent by the server to the client.
Set-Cookie2 ⁵²	response.cookieSettings	List of one or more cookies sent by the server to the client.
TE ⁵³	-	Not supported yet
Trailer ⁵⁴	-	Support for misc headers planned for later ⁵⁵
Transfer-Encoding ⁵⁶	entity.size	Valuated to "chunked" if the entity is not null and its size is unknown (Representation.UNKNOWN_SIZE)
Upgrade ⁵⁷	-	Support for misc headers planned for later ⁵⁸

User-Agent ⁵⁹	request.clientInfo.agent	Information about the user agent originating the request.
Vary ⁶⁰	response.dimensions	Indicates the set of request-header fields that fully determines, while the response is fresh, whether a cache is permitted to use the response to reply to a subsequent request without revalidation.
Via ⁶¹	-	Support for proxies planned for later ⁶²
Warning ⁶³	-	Support for caching planned for Restlet 1.2 ⁶⁴
WWW-Authenticate ⁶⁵	response.challengeRequests	Indicates the authentication scheme(s) and parameters applicable to the Request-URI.
X-Forwarded-For	request.clientInfo.addresses	The list of client IP addresses, including intermediary proxies.
X-HTTP-Method-Override	[tunnel service]	Allows to override the HTTP method specified in the request (typically by a limited client such as a browser) by one specified in this special extension header.

Appendix

[Registry](#)⁶⁶ of headers⁶⁷ maintained by IANA.

[Registry of HTTP status codes](#)⁶⁸ maintained by IANA.

66. <http://www.iana.org/assignments/message-headers/perm-headers.html>

67. <http://www.iana.org/assignments/message-headers/perm-headers.html>

68. <http://www.iana.org/assignments/http-status-codes>