Request for Comments
Category: Informational

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Synonym Transfer Protocol -- SYNTP/1.0

Abstract

The Synonym Transfer Protocol (SYNTP) is an application-level protocol designed to enable the transfer of synonyms. It is a stateless, persistent protocol designed for a limited set of specific tasks.

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Request = Request-Line CR LF Request-Body

3.1 Request-Line

The Request-Line begins with a method token, followed by the protocol version. No CR or LF are allowed except in the final CRLF sequence ending the Request-Line. See:

Request-Line = Method SP SYNTP-Version

3.2 Request-Body

Request-Body = *OCTET

4. Response

After receiving and interpreting a request message, a server responses in the form of a SYNTP response message. See:

Response = Status-Line CR LF [Response-Body]

4.1 Status-Line

The Status-Line begins with the protocol version, followed by the status code. See:

Status-Line = SYNTP-Version SP 3DIGIT

4.2 Response-Body

Response-Body = *OCTET

5. Synonym

Although participants of the SYNTP are not required to verify, the definition of a synonym used can be found on Wikipedia (https://en.wikipedia.org/wiki/Synonym).

The relation to be synonyms is reflective, symmetric and transitive (i.e. equivalence relation). Which means that if (A & B are synonyms) and (B & C are synonyms) then A & C synonyms as well.

Synonym = *OCTET (excluding CR LF)

6. Method Definitions

Note: response bodies described assume the request was successful (2xx). See the Status Code sections for how this is determined.

6.1 GET

The GET method is used to retrieve synonyms for a specified word.

6.1.1 GET Request-Body

A GET method request body should be a sequence of characters used to spell the word being requested, followed by CR LF.

GET Request-Body = Synonym CR LF

6.1.2 GET Response-Body

A GET response body contains the synonyms of the requested word known to the server. It is a sequence of Synonyms which are separated by CR LF. If there are no known synonyms the Response-Body will not be included. If there is at least one known synonym, the sequence of synonyms will end with CR LF CR LF.

6.2 SET

The SET method is used to add a synonym for a specified word.

6.2.1 SET Request-Body

A SET method request body is composed of two Synonyms, separated by and ending with a CR LF.

SET Request-Body = Synonym CR LF Synonym CR LF

6.2.2 SET Response-Body

No response body is provided for a SET request.

6.3 REMOVE

The REMOVE method is used to remove a word from synonyms lists.

6.3.1 REMOVE Request-Body

Is equivalent to the GET Request-Body.

6.3.2 REMOVE Response-Body

No response body is provided for a REMOVE request.

7. Status Code Definitions

7.1 Status-Code

The Status-Code is a 3 digit integer result code. The first digit defines the class of a response.

There are 3 values for the first digit:
- 2xx: Success
- 4xx: Client Error
- 5xx: Server Error

7.2 2xx Success

This class of status code indicates the client's request was successfully received, understood, and accepted.

7.2.1 200

The request has succeeded. The meaning of success depends on the method used in the request:

GET: the server was able to find synonyms for the requested word, which are in the response

SET: the server was able to add the requested pair of words to synonym lists

REMOVE: the server was able to remove the requested word from the synonym list

7.3 4xx Client Error

This class of status code is intended for cases where it seems the client has erred. Only the Status-Line and CR LF will be present in the response.

400: The request could not be understood by the server due to malformed syntax. This includes unknown methods. The client should not resend the response without first modifying it.

404: The server could not find a synonym matching the request. Only applicable to GET and DELETE methods.

408: The server has not received a request from the client for a certain amount of time.

429: The user has sent too many requests in a given amount of time.

7.4 5xx Server Error

This class of status code is intended for cases where the server has erred. Only the Status-Line and CR LF will be present in the response.

500: The server encountered an unexpected condition which prevented it from fulfilling the request.

503: The server is unable to handle the request, typically due to overloading or maintenance. In this case the client should wait a reasonable amount of time before making new requests.

505: The SYTMP protocol version used in the request is not supported.

8. Border Cases

Servers reserve the right to close the connection at their discretion. This is intended for the case where the client has not made a request for a particular amount of time and the server wishes to free resources. It should send a 408 status code before closing the connection.

The client has the option to close the connection and try again if no response is received from the server for an arbitrary amount of time.

Content-Length (as determined by number of lines - considered as split by CR LF) is implicit in requests made. For example, a GET request has an implicit content length of two lines (one for the Request-Line and one for the Request-Body). As such, if a client sends “GET SP SYNTP/0.0.1 CRLF broken CRLF demo CRLF” the server would interpret “GET SP SYNTP/0.0.1 CRLF broken CRLF” as one request and “demo CRLF” as another (malformed) request.

9. Acknowledgments

This specification was deeply influenced by the HTTP/1.0 specification [1]. It is with due regard that Berners-Lee et al receive our acknowledgment and thanks for providing a memo that proved to be the template for this RFC.

10. References

[1] Berners-Lee, T., Fielding, R., and Frystyk, H., "Hypertext Transfer Protocol -- HTTP/1.0", RFC 1945, MIT/LCS, UC Irvine, May 1996

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