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Reaction: Indicating Summary Reaction to a Message

Abstract

The popularity of social media has led to user comfort with easily signaling basic reactions to an author's posting, such as with a 'thumbs up' or 'smiley' graphic. This specification permits a similar facility for Internet Mail.

Status of This Memo

This document is not an Internet Standards Track specification; it is published for examination, experimental implementation, and evaluation.

This document defines an Experimental Protocol for the Internet community. This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Not all documents approved by the IESG are candidates for any level of Internet Standard; see Section 2 of RFC 7841.

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Table of Contents

[1. Introduction](#)
[2. Terminology](#)
[3. Reaction Content-Disposition](#)
[4. Reaction Message Processing](#)
[5. Usability Considerations](#)
[5.1. Example Message](#)
[5.2. Example Display](#)
[6. Security Considerations](#)
[7. IANA Considerations](#)
[8. Experimental Goals](#)
[9. Normative References](#)
[Acknowledgements](#)
[Authors' Addresses](#)

1. Introduction

The popularity of social media has led to user comfort with easily signaling summary reactions to an author's posting, by using emoji graphics, such as with a 'thumbs up', 'heart', or 'smiley' indication. Sometimes the permitted repertoire is constrained to a small set, and sometimes a more extensive range of indicators is supported.

This specification extends this existing practice in social media and instant messaging into Internet Mail.

While it is already possible to include symbols and graphics as part of an email reply's content, there has not been an established means of signaling the semantic substance that such data are to be taken as a summary 'reaction' to the original message -- that is, a mechanism to identify symbols as specifically providing a summary reaction to the cited message, rather than merely being part of the free text in the body of a response. Such a structured use of the symbol(s) allows recipient Mail User Agents (MUAs) to correlate this reaction to the original message and possibly to display the information distinctively.

This facility defines a new MIME Content-Disposition, to be used in conjunction with the In-Reply-To header field, to specify that a part of a message containing one or more emojis can be treated as a summary reaction to a previous message.

2. Terminology

Unless provided here, terminology, architecture, and specification notation used in this document are incorporated from:

* [\[Mail-Arch\]](#)
* [\[Mail-Fmt\]](#)
* [\[MIME\]](#)

Syntax is specified with

* [\[ABNF\]](#)

The ABNF rule emoji-sequence is inherited from [\[Emoji-Seq\]](#); details are in [Section 3](#).

Normative language, per [\[RFC2119\]](#) and [\[RFC8174\]](#):

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [\[RFC2119\]](#) [\[RFC8174\]](#) when, and only when, they appear in all capitals, as shown here.

3. Reaction Content-Disposition

A message sent as a reply **MAY** include a part containing:

Content-Disposition: reaction

If such a field is specified, the Content-Type of the part **MUST** be:

Content-Type: text/plain; charset=utf-8

The content of this part is restricted to a single line of emoji. The [\[ABNF\]](#) is:

part-content = emoji *(WSP emoji) CRLF

emoji = emoji-sequence

emoji-sequence = { defined in [\[Emoji-Seq\]](#) }

base-emojis = thumbs-up / thumbs-down / grinning-face /

frowning-face / crying-face ; Basic set of emojis, drawn from [\[Emoji-Seq\]](#)

; thumbs-up = {U+1F44D}

; thumbs-down = {U+1F44E}

; grinning-face = {U+1F600}

; frowning-face = {U+2639}

; crying-face = {U+1F622}

The part-content is either the message's single MIME body or the content portion of the first MIME multipart body part.

The ABNF rule emoji-sequence is inherited from [\[Emoji-Seq\]](#). It defines a set of Unicode code point sequences, which must then be encoded as UTF-8. Each sequence forms a single pictograph. The BNF syntax used in [\[Emoji-Seq\]](#) differs from [\[ABNF\]](#) and **MUST** be interpreted as used in Unicode documentation. The referenced document describes these as sequences of code points.

Note: The 'emoji' token looks simple. It isn't. Implementers are well advised not to assume that emoji sequences are trivial to parse or validate. Among other concerns, an implementation of the Unicode Character Database is required. An emoji is more than a stand-in for a simple alternation of characters. Similarly, one emoji sequence is not interchangeable with, or equivalent to, another one, and comparisons require detailed understanding of the relevant Unicode mechanisms. Use of an existing Unicode implementation will typically prove extremely helpful, as will an understanding of the error modes that may arise with a chosen implementation.

4. Reaction Message Processing

The presentation aspects of reaction processing are necessarily MUA specific and beyond the scope of this specification. In terms of the message itself, a recipient MUA that supports this mechanism operates as follows:

1. If a received message R's header contains an In-Reply-To field, check to see if it references a previous message that the MUA has sent or received.

2. If R's In-Reply-To: does reference one, then check R's message content for a part with a "reaction" Content-Disposition header field, at either the outermost level or as part of a multipart at the outermost level.

3. If such a part is found and the content of the part conforms to the restrictions outlined above, remove the part from the message and process the part as a reaction.

Note: A message's content might include other, nested messages. These can be analyzed for reactions, independently of the containing message, applying the above algorithm for each contained message, separately.

Again, the handling of a message that has been successfully processed is MUA specific and beyond the scope of this specification.

5. Usability Considerations

This specification defines a mechanism for the structuring and carriage of information. It does not define any user-level details of use. However, the design of the user-level mechanisms associated with this facility is the design of the user-level mechanisms. This section discusses some issues to consider.

[ABNF] Because an email environment is different from a typical social media platform, there are significant challenges in the design of the user interface, to support indication of a reaction or should it be sent to all recipients? Should the reaction be sent to all recipients? Should the message be able to include other message content? (Note that carriage of this other content in a normal email message is not a concern.)

[ABNF] Reaction proximity might be more useful when displayed merely as visual proximity to the original message, rather than as multiple reactions, from different senders, for example.

[Mail-Arch] Syntax is specified with

* [\[ABNF\]](#)

The ABNF rule emoji-sequence is inherited from [\[Emoji-Seq\]](#); details are in [Section 3](#).

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7. IANA Considerations

This specification adds the Reaction MIME Content-Disposition parameter to the Reaction Content-Disposition parameter, per [\[RFC2183\]](#).

Content-Disposition parameter name: reaction

Allowable values for this parameter: (none)

Description: Permit a recipient to respond by signaling basic reactions to an author's posting, such as with a 'thumbs up' or 'smiley' indication. Sometimes the permitted repertoire is constrained to a small set, and sometimes a more extensive range of indicators is supported.

Established in RFC 5598, DOI 10.1747/RFC5598, <https://www.rfc-editor.org/info/rfc5598>

Content-Disposition: reaction

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8. Experimental Goals

This specification employs message content that is a strict subset of existing possible content and thus introduces no new content-specific security considerations. The fact that this content is structured is demonstrated by the following example:

part-content = emoji *(WSP emoji) CRLF

emoji = emoji-sequence

emoji-sequence = { defined in [\[Emoji-Seq\]](#) }