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The Multipart/Report Media Type for the Reporting of Mail System Administrative Messages

Abstract

The multipart/report Multipurpose Internet Mail Extensions (MIME) media type is a general "family" or "container" type for electronic mail reports of any kind. Although this memo defines only the use of the multipart/report media type with respect to delivery status reports, mail processing programs will benefit if a single media type is used for all kinds of reports.

This memo obsoletes "The Multipart/Report Content Type for the Reporting of Mail System Administrative Messages", RFC 3462, and marks RFC 3462 and its predecessor as "Historic".

Status of This Memo

This is an Internet Standards Track document.

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). Further information on Internet Standards is available in Section 2 of RFC 5741.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at http://www.rfc-editor.org/info/rfc6522.

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1. Introduction

[OLD-REPORT] and its antecedent declared the multipart/report media type for use within the [MIME] construct to create a container for mail system administrative reports of various kinds.

Practical experience has shown that the general requirement of having that media type constrained to be used only as the outermost MIME type of a message is overly restrictive and limits such things as the transmission of multiple administrative reports within a single overall message container. In particular, it prevents one from forwarding a report as part of another multipart MIME message.

This memo removes that constraint. No other changes apart from some editorial ones are made. Other memos might update other documents to establish or clarify the constraints on use of multipart/report in contexts where such are needed.

This memo obsoletes RFC 3462. RFC 3462 and its predecessor, RFC 1892, have been marked as "Historic".

2. Document 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 [KEYWORDS].

3. The Multipart/Report Media Type

The multipart/report MIME media type is a general "family" or "container" type for electronic mail reports of any kind. Although this memo defines only the use of the multipart/report media type with respect to delivery status reports, mail processing programs will benefit if a single media type is used for all kinds of reports.

Per [MIME-REG], the multipart/report media type is defined as follows:

Type name: multipart

Subtype name: report

Required parameters: boundary, report-type

Optional parameters: none

Encoding considerations: 7bit should always be adequate

Security considerations: see Section 7 of [RFC6522]

Interoperability considerations: see Section 1 of [RFC6522]

Published specification: [RFC6522]

Applications that use this media type: Mail Transfer Agents, Mail User Agents, spam detection and reporting modules, virus detection modules, and message authentication modules.

Additional information:

Magic number(s): N/A

File extension(s): N/A

Macintosh file type code(s): N/A

Person and email address to contact for further information: Murray S. Kucherawy <msk@cloudmark.com>

Intended usage: common

Restrictions on usage: none; however, other applications that register report types may establish such restrictions.

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Change controller: IESG

The syntax of multipart/report is identical to the multipart/mixed content type defined in [MIME]. The report-type parameter identifies the type of report. The parameter is the MIME subtype of the second body part of the multipart/report. (See Section 5.)

The multipart/report media type contains either two or three sub-parts, in the following order:

1. (REQUIRED) The first body part contains a human-readable message. The purpose of this message is to provide an easily understood description of the condition(s) that caused the report to be generated, for a human reader who might not have a user agent capable of interpreting the second section of the multipart/report. The text in the first section can use any IANA-registered MIME media type, charset, or language. Where a description of the error is desired in several languages or

several media, a multipart/alternative construct MAY be used. This body part MAY also be used to send detailed information that cannot be easily formatted into the second body part.

2. (REQUIRED) A machine-parsable body part containing an account of the reported message handling event. The purpose of this body part is to provide a machine-readable description of the condition(s) that caused the report to be generated, along with details not present in the first body part that might be useful to human experts. An initial body part, message/delivery-status, is defined in [DSN-FORMAT].

3. (OPTIONAL) A body part containing the returned message or a portion thereof. This information could be useful to aid human experts in diagnosing problems. (Although it might also be useful to allow the sender to identify the message about which the report was issued, it is hoped that the envelope-id and original-recipient-address returned in the message/report body part will replace the traditional use of the returned content for this purpose.)

Return of content can be wasteful of network bandwidth and a variety of implementation strategies can be used. Generally, the sender needs to choose the appropriate strategy and inform the recipient of the required level of returned content required. In the absence of an explicit request for level of return of content such as that provided in [DSN-SMTP], the agent that generated the delivery service report SHOULD return the full message content.

When 8-bit or binary data not encoded in a 7-bit form is to be returned, and the return path is not guaranteed to be 8-bit or binary capable, two options are available. The original message MAY be re-encoded into a legal 7-bit MIME message or the text/rfc822-headers media type MAY be used to return only the original message headers.

4. The text/rfc822-headers Media Type

The text/rfc822-headers media type provides a mechanism to label and return only the [MAIL] header of a failed message. The header is not the complete message and SHOULD NOT be returned using the message/rfc822 media type defined in [MIME-TYPES]. The returned header is useful for identifying the failed message and for diagnostics based on the Received header fields.

The text/rfc822-headers media type is defined as follows:

Type name: text

Subtype name: rfc822-headers

Required parameters: None

Optional parameters: None

Encoding considerations: 7-bit is sufficient for normal mail headers, however, if the headers are broken or extended and require encoding to make them legal 7-bit content, they MAY be encoded with quoted-printable as defined in [MIME].

Security considerations: See Section 7 of [RFC6522].

Interoperability considerations: none

Published specification: [RFC6522]

Applications that use this media type: Mail Transfer Agents, Mail User Agents, spam detection and reporting modules, virus detection modules, and message authentication modules.

Additional information:

Magic number(s): N/A

File extension(s): N/A

Macintosh file type code(s): N/A

Person and email address to contact for further information: Murray S. Kucherawy <msk@cloudmark.com>

Intended usage: common

Restrictions on usage: none

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The text/rfc822-headers body part SHOULD contain all the mail header fields from the message that caused the report. The header includes all header fields prior to the first blank line in the message. They include the MIME-Version and MIME content description fields.

5. Registering New Report Types

Registration of new media types for the purpose of creating a new report format SHOULD note in the Intended Usage section of the media type registration that the type being registered is suitable for use as a report-type (i.e., the second body part) in the context of this specification.

6. IANA Considerations

IANA has updated the Media Type Registry to indicate that this memo contains the current definition of the multipart/report and text/rfc822-headers media types, obsoleting [OLD-REPORT].

7. Security Considerations

Automated use of report types without authentication presents several security issues. Forging negative reports presents the opportunity for denial-of-service attacks when the reports are used for automated maintenance of directories or mailing lists. Forging positive reports can cause the sender to incorrectly believe a message was delivered when it was not.

A signature covering the entire multipart/report structure could be used to prevent such forgeries; such a signature scheme is, however, beyond the scope of this document.

8. References

8.1. Normative References

[KEYWORDS] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[MAIL] Resnick, P., Ed., "Internet Message Format", RFC 5322, October 2008.

[MIME] Freed, N. and N. Borenstein, "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies", RFC 2045, November 1996.

[MIME-REG] Freed, N. and J. Klensin, "Media Type Specifications and Registration Procedures", BCP 13, RFC 4288, December 2005.

[MIME-TYPES] Freed, N. and N. Borenstein, "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types", RFC 2046, November 1996.

8.2. Informative References

[DSN-FORMAT] Moore, K. and G. Vaudreuil, "An Extensible Message Format for Delivery Status Notifications", RFC 3464, January 2003.

[DSN-SMTP] Moore, K., "Simple Mail Transfer Protocol (SMTP) Service Extension for Delivery Status Notifications (DSNs)", RFC 3461, January 2003.

[OLD-REPORT] Vaudreuil, G., "The Multipart/Report Content Type for the Reporting of Mail System Administrative Messages", RFC 3462, January 2003.

Appendix A. Acknowledgements

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