                    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".

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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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Change controller: IESG

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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