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**The Multipart/Report Media Type for the Reporting of Mail System  
Administrative Messages  
draft-kucherawy-rfc3462bis-02**

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 [RFC3462](#).

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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, while well-intentioned, has provided little operational benefit and actually 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 constraint where it is more appropriate.



## **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 [BCP 14](#), [[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:

MIME type name: multipart

MIME subtype name: report

Required parameters: boundary, report-type

Optional parameters: none

Encoding considerations: 7bit should always be adequate

Security considerations: see [Section 6](#) of this memo

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 sub-type of the second body part of the multipart/report.

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 may not have a user agent capable of interpreting the second section of the multipart/report. The text in the first section may be in any MIME standards-track 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 may 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 may be wasteful of network bandwidth and a variety of implementation strategies can be used. Generally the sender should 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:

MIME type name: text

MIME 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 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 6](#) of this memo.

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. IANA Considerations**

IANA is directed to update 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](#)].

## **6. 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 may 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.



## [7.](#) References

### [7.1.](#) Normative References

[KEYWORDS]

Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997.

[MAIL]

Resnick, P., "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", [RFC 4288](#), December 2005.

[MIME-TYPES]

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

[OLD-REPORT]

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

### [7.2.](#) 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.





## [Appendix A](#). Acknowledgements

The author would like to thank Ned Freed and Keith Moore for their input to this update.

## **Appendix B. Document History**

Changes from [draft-kucherawy-rfc3462bis-01](#) to [draft-kucherawy-rfc3462bis-02](#):

- o Revert to removing the restriction altogether, noting that the DSN and MDN RFCs re-state it. Thus, removing it here solves MARF's problem but doesn't impact DSN and MDN. The restriction can be clarified on those documents in separate efforts.

Changes from [draft-kucherawy-rfc3462bis-00](#) to [draft-kucherawy-rfc3462bis-01](#):

- o Clarify requirement that multipart/report must be the outermost media type; require it only when generating a report.
- o Highlight the forwarding-of-reports problem.
- o Limit the constraint to time of report generation.
- o Remove "Examples" section.

Changes from [RFC3462](#) to [draft-kucherawy-rfc3462bis-00](#):

- o Remove requirement that multipart/report not be contained in anything.
- o Some minor adjustment to use current terminology, such as distinguishing between a header and a header field.
- o More obvious use of the standard normative words.



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