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

Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

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Abstract

The Multipart/Report Multipurpose Internet Mail Extensions (MIME) content-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 content-type with respect to delivery status reports, mail processing programs will benefit if a single content-type is used to for all kinds of reports.

This document is part of a four document set describing the delivery status report service. This collection includes the Simple Mail Transfer Protocol (SMTP) extensions to request delivery status reports, a MIME content for the reporting of delivery reports, an enumeration of extended status codes, and a multipart container for the delivery report, the original message, and a human-friendly summary of the failure.

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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, RFC 2119 [RFC2119].

1. The Multipart/Report Content Type

The Multipart/Report MIME content-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 content-type with respect to delivery status reports, mail processing programs will benefit if a single content-type is used to for all kinds of reports.

The Multipart/Report content-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 3 of this memo
```

The syntax of Multipart/Report is identical to the Multipart/Mixed content type defined in [MIME]. When used to send a report, the Multipart/Report content-type must be the top-level MIME content type for any report message. The report-type parameter identifies the type of report. The parameter is the MIME content sub-type of the second body part of the Multipart/Report.

User agents and gateways must be able to automatically determine that a message is a mail system report and should be processed as such. Placing the Multipart/Report as the outermost content provides a mechanism whereby an auto-processor may detect through parsing the RFC 822 headers that the message is a report.

The Multipart/Report content-type contains either two or three sub-parts, in the following order:

1) [Required] The first body part contains 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 content-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 a Message/Report 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].

(3) [Optional] A body part containing the returned message or a portion thereof. This information may be useful to aid human experts in diagnosing problems. (Although it may also be useful to allow the sender to identify the message 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 [DRPT], 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 content-type MAY be used to return only the original message headers.

2. The Text/RFC822-Headers content-type

The Text/RFC822-Headers MIME content-type provides a mechanism to label and return only the RFC 822 headers of a failed message. These headers are not the complete message and should not be returned as a Message/RFC822. The returned headers are useful for identifying the failed message and for diagnostics based on the received lines.

The Text/RFC822-Headers content-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 RFC822
          headers, however, if the headers are broken and require
          encoding to make them legal 7 bit content, they may be
          encoded in quoted-printable.
Security considerations: See section 3 of this memo.
```

The Text/RFC822-Headers body part should contain all the RFC822 header lines from the message which caused the report. The RFC822 headers include all lines prior to the blank line in the message. They include the MIME-Version and MIME Content-Headers.

3. 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.

4. Normative References

[SMTP] Postel, J., "Simple Mail Transfer Protocol", STD 10, RFC 821, August 1982.

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

[RFC822] Crocker, D., "Standard for the format of ARPA Internet Text Messages", STD 11, RFC 822, August 1982.

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

[DRPT] Moore, K., "SMTP Service Extension for Delivery Status Notifications", RFC 3461, January 2003.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

Appendix A - Changes from RFC 1892

Changed Authors contact information

Updated required standards boilerplate

Edited the text to make it spell-checker and grammar checker compliant

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