                SMTP Service Extension for 8bit-MIMEtransport

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.

Abstract

   This memo defines an extension to the SMTP service whereby an SMTP
   content body consisting of text containing octets outside of the US-
   ASCII octet range (hex 00-7F) may be relayed using SMTP.

1. Introduction

   Although SMTP is widely and robustly deployed, various extensions
   have been requested by parts of the Internet community. In
   particular, a significant portion of the Internet community wishes to
   exchange messages in which the content body consists of a MIME
   message [3] containing arbitrary octet-aligned material. This memo
   uses the mechanism described in [5] to define an extension to the
   SMTP service whereby such contents may be exchanged. Note that this
   extension does NOT eliminate the possibility of an SMTP server
   limiting line length; servers are free to implement this extension
   but nevertheless set a line length limit no lower than 1000 octets.
   Given that this restriction still applies, this extension does NOT
   provide a means for transferring unencoded binary via SMTP.

2. Framework for the 8bit MIME Transport Extension

    The 8bit MIME transport extension is laid out as follows:

        (1)   the name of the SMTP service extension defined here is
              8bit-MIMEtransport;

        (2)   the EHLO keyword value associated with the extension is
              8BITMIME;

        (3)   no parameter is used with the 8BITMIME EHLO keyword;

        (4)   one optional parameter using the keyword BODY is added to
              the MAIL FROM command. The value associated with this
              parameter is a keyword indicating whether a 7bit message
              (in strict compliance with [1]) or a MIME message (in
              strict compliance with [3]) with arbitrary octet content
              is being sent. The syntax of the value is as follows,
              using the ABNF notation of [2]:

                  body-value ::= "7BIT" / "8BITMIME"

        (5)   no additional SMTP verbs are defined by this extension;
              and,

        (6)   the next section specifies how support for the extension
              affects the behavior of a server and client SMTP.

3. The 8bit-MIMEtransport service extension

    When a client SMTP wishes to submit (using the MAIL command) a
    content body consisting of a MIME message containing arbitrary lines
    of octet-aligned material, it first issues the EHLO command to the
    server SMTP. If the server SMTP responds with code 250 to the EHLO
    command, and the response includes the EHLO keyword value 8BITMIME,
    then the server SMTP is indicating that it supports the extended MAIL
    command and will accept MIME messages containing arbitrary octet-
    aligned material.

    The extended MAIL command is issued by a client SMTP when it wishes
    to transmit a content body consisting of a MIME message containing
    arbitrary lines of octet-aligned material. The syntax for this
    command is identical to the MAIL command in [1], except that a BODY
    parameter must appear after the address. Only one BODY parameter may
    be used in a single MAIL command.

The complete syntax of this extended command is defined in [5]. The
esmtp-keyword is BODY and the syntax for esmtp-value is given by the
syntax for body-value shown above.

The value associated with the BODY parameter indicates whether the
content body which will be passed using the DATA command consists of
a MIME message containing some arbitrary octet-aligned material
("8BITMIME") or is encoded entirely in accordance with [1] ("7BIT").

A server which supports the 8-bit MIME transport service extension
shall preserve all bits in each octet passed using the DATA command.

Naturally, the usual SMTP data-stuffing algorithm applies so that a
content which contains the five-character sequence of

   <CR> <LF> <DOT> <CR> <LF>

or a content that begins with the three-character sequence of

   <DOT> <CR> <LF>

does not prematurely terminate the transfer of the content. Further,
it should be noted that the CR-LF pair immediately preceeding the
final dot is considered part of the content. Finally, although the
content body contains arbitrary lines of octet-aligned material, the
length of each line (number of octets between two CR-LF pairs), is
still subject to SMTP server line length restrictions (which may
allow as few as 1000 octets on a single line). This restriction means
that this extension MAY provide the necessary facilities for
transferring a MIME object with the 8BIT content-transfer-encoding,
it DOES NOT provide a means of transferring an object with the BINARY
content-transfer-encoding.

Once a server SMTP supporting the 8bit-MIMEtransport service
extension accepts a content body containing octets with the high-
order (8th) bit set, the server SMTP must deliver or relay the
content in such a way as to preserve all bits in each octet.

If a server SMTP does not support the 8-bit MIME transport extension
(either by not responding with code 250 to the EHLO command, or by
not including the EHLO keyword value 8BITMIME in its response), then
the client SMTP must not, under any circumstances, attempt to
transfer a content which contains characters outside the US-ASCII
octet range (hex 00-7F).

A client SMTP has two options in this case: first, it may implement a
gateway transformation to convert the message into valid 7bit MIME,
or second, or may treat this as a permanent error and handle it in

the usual manner for delivery failures. The specifics of the
transformation from 8bit MIME to 7bit MIME are not described by this
RFC; the conversion is nevertheless constrained in the following
ways:

    (1) it must cause no loss of information; MIME transport
         encodings must be employed as needed to insure this is
         the case, and

    (2) the resulting message must be valid 7bit MIME.

4. Usage Example

    The following dialogue illustrates the use of the 8bit-MIMEtransport
    service extension:

    S: <wait for connection on TCP port 25>
    C: <open connection to server>
    S: 220 dbc.mtview.ca.us SMTP service ready
    C: EHLO ymir.claremont.edu
    S: 250-dbc.mtview.ca.us says hello
    S: 250 8BITMIME
    C: MAIL FROM:<ned@ymir.claremont.edu> BODY=8BITMIME
    S: 250 <ned@ymir.claremont.edu>... Sender and 8BITMIME ok
    C: RCPT TO:<mrose@dbc.mtview.ca.us>
    S: 250 <mrose@dbc.mtview.ca.us>... Recipient ok
    C: DATA
    S: 354 Send 8BITMIME message, ending in CRLF.CRLF.
     ...
    C: .
    S: 250 OK
    C: QUIT
    S: 250 Goodbye

5. Security Considerations

    This RFC does not discuss security issues and is not believed to
    raise any security issues not already endemic in electronic mail and
    present in fully conforming implementations of [1].

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necessarily responsible for the combination of ideas represented
here. Indeed, in some cases, the response to a particular criticism
was to accept the problem identification but to include an entirely
different solution from the one originally proposed.

7. References

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