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           Rules for Downgrading Messages from X.400/88 to X.400/84 When
               MIME Content-Types are Present in the Messages

Status of this Memo

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1. Introduction

   Interworking between X.400(88) and MIME is achieved by [4], which
   complements RFC-1327 [2], which in turn specifies the interworking
   between X.400(88) and RFC-822 based mail.

   Interworking between X.400(88) and X.400 (84) is achieved by RFC-1328
   [3]. That document does not describe what to do in the case where
   body parts arrive at the gateway that cannot be adequately
   represented in the X.400(84) system.

   This document describes how RFC-1328 must be modified in order to
   provide adequate support for the scenarios:

      SMTP(MIME) -> X.400(84)

      X.400(84) -> SMTP(MIME)

It replaces chapter 6 of RFC-1328. The rest of RFC-1328 is NOT
obsoleted.

NOTE: A desireable side-effect of HARPOON is that a standardized
method for the identification and transmission of multimedia and
binary data (like spreadsheets) between X.400/84 UAs is achieved.

While this method is not compatible with current proprietary
approaches, we believe that it requires less invasive changes to
current UAs than other possible methods.

This memo updates RFC 1328. HARPOON is a pure name, and has no
meaning. Please send comments to the MIME-MHS mailing list
<mime-mhs@surnet.nl>.

2. Basic approach

The approach is to imagine that the connection X.400(84) <->
SMTP(MIME) never happens. This, of course, is an illusion, but can be
a very useful illusion.

All mail will therefore go on one of the paths

    X.400(84) -> X.400(88) -> SMTP(MIME)

    SMTP(MIME) -> X.400(88) -> X.400(84)

when it goes between a MIME user and an X.400(84) user.

The approach at the interface between X.400(88) and X.400(84) is:

    o Convert what you can

    o Encapsulate what you have to

    o Never drop a message

Of course, for X.400/88 body parts that are already defined in
X.400/84, no downgrading should be done. In particular, multi-body
messages should remain multi-body messages, IA5 messages including
IA5 messages encoded as Extended Body Parts) should remain IA5
messages, and G3Fax messages should remain G3Fax messages.

3. Conversion rules

3.1. EBP conversions to Basic

   Some body parts are defined by X.400(88) as having both a Basic form
   and an Extended form. These are listed in Annex B of X.420.

   For all of these, the transformation from the Extended Body Part to
   the Basic Body Part takes the form of putting the PARAMETERS and the
   DATA members together in a SEQUENCE.

   This transformation should be applied by the gateway in order to
   allow (for example) X.400(88) systems that use the Extended form of
   the IA5 body part to communicate with X.400(84) systems.

3.2. Encapsulation format

   For any body part that cannot be used directly in X.400(84), the
   following IA5Text body part is made:

   - Content = IA5String

   - First bytes of content: (the description is in USASCII, with C
      escape sequences used to represent control characters):

        MIME-version: <version>\r\n
           Content-type: <the proper MIME content type>\r\n
         Content-transfer-encoding: <quoted-printable or base64>\r\n
         <Possibly other Content headings here, terminated by\r\n>
         \r\n

      <Here follows the bytes of the content, as per [4], encoded in the
      proper encoding>

   All implementations MUST place the MIME-version: header first in the
   body part. Headers that are placed by [2] and [4] into other parts of
   the message MUST NOT be placed in the MIME body part.

   This includes RFC-822 headings carried as heading-extensions, which
   must be placed in a new IA5 body part starting with the string "RFC-
   822-HEADERS", as specified in [2], Appendix G.

   Other heading-extensions are still handled as described in chapter 5
   of RFC 1328: They are dropped.

   Since all X.400(88) body parts can be represented in MIME by using
   the x400-bp MIME content-type, this conversion will never fail.

In the reverse direction, any IA5 body part that starts with the
token "MIME-Version:" will be subjected to conversion according to
[4] before including the body part into an X.400(88) message.

4. Implications

The implications are several:

- People with X.400(84) readers who have the ability to save messages
  to file will now be able to save MIME multimedia messages

- People who can use features like the "Mailcaps" file to identify
  what to do about a bodypart can now grab implementations of MIME
  that can run as subprograms and achieve at least some multimedia
  functionality

5. Security Considerations

The security considerations in [1] and [4] (beware of trojans that
can hit you if your UA automagically starts programs for you) are now
relevant also for X.400(84) systems.

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7. References

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