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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

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

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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 desirable 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 automatically starts programs for you) are now relevant also for X.400(84) systems.

6. Authors' Addresses

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7. References

- [1] Borenstein, N, and N. Freed, "MIME: Mechanisms for Specifying and Describing the Format of Internet Message Bodies", RFC 1341, Bellcore, Innosoft, June 1992.
- [2] Hardcastle-Kille, S., "Mapping between X.400(1988) / ISO 10021 and RFC-822", RFC 1327, University College London, May 1992.
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- [4] Alvestrand, H., Kille, S., Miles, R., Rose, M., and S. Thompson, "Mapping between X.400 and RFC-822 Message Bodies", RFC 1494, SINTEF DELAB, ISODE Consortium, Soft*Switch, Inc, Dover Beach Consulting, Inc., Soft*Switch, Inc., August 1993.