                 Message/External-Body Content-ID Access Type

Status of this Memo

   This memo defines an Experimental Protocol for the Internet
   community. This memo does not specify an Internet standard of any
   kind. Discussion and suggestions for improvement are requested.
   Distribution of this memo is unlimited.

Abstract

   When using MIME [MIME] to encapsulate a structured object that
   consist of many elements, for example an SGML [SGML] document, a
   single element may occur several times. An encapsulation normally
   maps each of the structured objects elements to a MIME entity. It is
   useful to include elements that occur multiple time exactly once. To
   accomplish that and to preserve the object structure it is desirable
   to unambiguously refer to another body part of the same message.

   The existing MIME Content-Type Message/External-Body access-types
   allow a MIME entity (body-part) to refer to an object that is not in
   the message by specifying how to access that object. The Content-ID
   access method described in this document provides the capability to
   refer to an object within the message.

1. Introduction

   Consider a MIME multipart entity several of whose body parts contain
   the same data (body) but different parameters or Content-* headers.
   Representing those body parts without duplicating the data in each
   one promotes efficient use of resources (bandwidth and storage
   space). To achieve these benefits an access-type is defined that
   permits one message part to refer to another one in the same message.

2. The Content-ID Access Type

2.1 Registration Information

>   MIME access-type name: content-id
>
>   Required parameters: none
>
>   Optional parameters: none
>
>   Published specification: this document
>
>   Person & email address
>   to contact for further
>   information: Ed Levinson <ELevinson@accurate.com>
>
>   Additional requirements:
>
>   The content-id header of the access-type=content-id MIME
>   entity must match (be identical to) exactly one content-id
>   in the same message, excluding other access-type=content-id
>   entities. Thus, the content-id access type can only occur
>   within a multipart message and can refer to another body
>   part anywhere in the same message.
>
>   A MIME User Agent (MUA) constructs the resultant MIME body
>   part as described below. We call the access-type=content-id
>   MIME entity the referring body part and the MIME body part
>   to which it refers, the one with the matching content-id,
>   the referenced body part. The MIME entity that results from
>   content-id access type consists of:

  (a) the referenced body part's content-type header,

  (b) the referring body part's headers except its content-type
      header,

  (c) any headers in the referenced body part not in the referring
      one,

  (d) the line separating the headers from the body, and

  (e) the referenced body part's body.

2.2 Example Usage

   The following example shows a message that consists of two identical
   images.

```
            MIME-Version: 1.0
            Content-Type: Multipart/Mixed;
               boundary=tiger-lily

            --tiger-lily
            Content-Type: image/jpeg
            Content-ID: <950323.1552@XIson.com>

            AAAcdb...
            --tiger-lily
            Content-type: Message/External-Body;
               access-type=content-id
            Content-ID: <950323.1552@XIson.com>
            Content-Description:
               This body part is duplicated by reference

            --tiger-lily--
```

      The equivalent MIME entity for the second body part is:

```
            --tiger-lily
            Content-Type: image/jpeg
            Content-ID: <950323.1552@XIson.com>
            Content-Description:
               This body part is duplicated by reference

            AAAcdb...
            --tiger-lily
```

3. Security Considerations

   The content-id access-type does not impact the security of messages
   or systems. The referenced MIME entity may have security
   implications.

4. References

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

    [SGML]   ISO 8879:1988, Information processing -- Text and office
               systems -- Standard Generalized Markup Language (SGML).

    [MIME]   Borenstein, N., and N. Freed, "MIME (Multipurpose
               Internet Mail Extensions) Part One: Mechanisms for
               Specifying and Describing the Format of Internet
               Message Bodies", RFC 1521, Bellcore, Innosoft,
               September 1993.

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