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The Text/HTML ~~content type~~ Content Type and the Content-Location MIME ~~header~~ Header

or

Sending HTML ~~documents~~ Documents via MIME ~~e-mail~~ E-mail

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Abstract

This memo specifies how to send HTML-formatted documents in Internet mail. The memo particularly ~~adresses~~ addresses the issue of handling of hyperlinks in HTML documents referring to embedded content in other body parts in the same message. In order to do this, the memo introduces one new MIME content-header with the name "Content-Location".

Differences from Version draft-palme-text-html-00.txt

The postscript (.ps) version of this draft shows the differences between version 00 and 02 through underscoring and strikethru markup.

This document has been revised based on the discussions in the ietf-types and MHTML mailing lists and in the BOF at the Dallas IETF meeting in December 1995.

Use of the Content-Base header has been introduced. The "linking" parameter has been removed and replaced with use of the Content-Base parameter.

Use of the Content-Disposition header has been replaced with use of the "Content-Base: FILE" and "Content-Location" ~~and one new attribute to the MIME header "Content-Type: Text/HTML" with the name "linking".~~ headers.

Information on the new mailing list for further discussions of this ietf draft has been added.

Syntax for embedding URI-s in MIME headers has been added, copied from [URLBODY].

Security considerations for implementations using proxy servers has been added.

A "Conformance" chapter has been added.

A temporary annex on implementation has been added. This annex might be removed in the final version of this standard.

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Mailing List Information:

Further discussion on this memo should be done through the mailing list MHTML@SEGATE.SUNET.SE.

To subscribe to this list, send a message to
LISTSERV@SEGATE.SUNET.SE
which contains the text
SUB MHTML <your name (not your e-mail address)>

Archives of this list are available by anonymous ftp from
FTP://SEGATE.SUNET.SE
The archives are also available by e-mail. Send a message to LISTSERV@SEGATE.SUNET.SE with the text "INDEX MHTML" to get a list of the archive files, and then a new message "GET <file name>" to retrieve the archive files.
or
GET MHTML DIGEST

1. Introduction

The HTML format is a very common format for documents in the Internet, and there is an obvious need to be able to send documents in this format in e-mail [SMTP, RFC822]. The "text/html; version=2.0" media type is defined in [HTML2]. This memo gives additional specifications and advice on how to use the text/html media type as a Content-Type in MIME ~~[MIME]~~ [MIME1] e-mail messages. In particular, the document discusses sending of HTML documents with embedded links to images and other data in separate files which are to be displayed inline to the recipient.

2. Terminology

Most of the terms used in this memo are defined in other RFC-s. For example, URL is defined in [URL], URI, absolute URI, and relative URI is defined in [HTML2].

3. The Content-Location MIME ~~content-header~~ Content Header

3.1 Definition of the Content-Location Header

An additional MIME ~~heading field~~ header is defined with the name "Content-Location". This header field can occur in any MIME message heading or content heading. Its value ~~is~~ can be an absolute or relative URI.

A relative URI in the Content-Location header is only allowed if there is also a Content-Base header (as defined in [RELURL]) specifying the base for the relative URI.

~~URI. The data below the current heading, and the data~~ This header is used to indicate that the data sent under this heading is also retrievable, in identical format, through normal use of this URI. Thus, the information sent in the message can be seen as a cached version of the original data. This header is only permitted if the data is actually retrievable through use of this ~~URI, should be identical.~~ URI.

In practice, at present only those URI-s which are URL-s are used, but it is anticipated that other forms of URI-s will in the future be used. This heading is similar to the Location header as defined in [HTTP].

The syntax for the new ~~heading field~~ header is, using the syntax definition tools from [RFC822]:

content-location ::= "Content-Location:" ~~<"> uri <">~~ URI-parameter

where ~~uri~~ URI is at present (November 1995) restricted to the syntax for URL-s as defined in [URL]. This syntax will be widened when the definition of the URI syntax becomes more stable.

~~Question: Is it necessary with the quoutes (<">) around the value? HTTP does not have such quotes around the value of the Location heading field in HTTP.~~

Note: This header is similar to the Location header defined in [HTTP].

3.2 Encoding of URI-s in RFC822 headers

The URI must be encoded in a format which allows for splitting of long URI-s into more than one line. This is done using the following syntax, copied from [URLBODY]:

```
URL-parameter := <"> URL-word *(*LWSP-char URL-word) <">

URL-word := token
                ; Must not exceed 40 characters in length
```

The syntax of an actual URL string is given in [URL]. URL strings can be of any length and can contain arbitrary character content. This presents problems when URLs are embedded in MIME body part headers that are wrapped according to RFC 822 rules. For this reason they are transformed into a URL-parameter for inclusion in a message/external-body

content-type specification as follows:

(1) A check is made to make sure that all occurrences of SPACE, CTLs, double quotes, backslashes, and 8-bit characters in the URL string are already encoded using the URL encoding scheme specified in [URL]. Any unencoded occurrences of these characters must be encoded. Note that the result of this operation is nothing more than a different representation of the original URL.

(2) The resulting URL string is broken up into substrings of 40 characters or less.

(3) Each substring is placed in a URL-parameter string as a URL-word, separated by one or more spaces. Note that the enclosing quotes are always required since all URLs

contain one or more colons, and colons are tspecial characters [MIME1].

Extraction of the URL string from the URL-parameter is even simpler: The enclosing quotes and any linear whitespace are removed and the remaining material is the URL string.

4. Parameters for the Content-Type: Text/HTML

The optional "version" parameter for the Content-Type: Text/HTML indicates the version of HTML used, with "2.0" as default value.

~~The new optional parameter "linking" defined in chapter 10 below.~~

5. Use of ~~relative~~ Relative URL-s in Text/HTML ~~contents~~ Contents

The use of relative URL-s ~~in~~ inside contents with the Content-Type: Text/HTML SHOULD never be used except in one of the following three ~~cases:~~ cases (in order of priority, if more than one of them are present, the first-listed applies):

(a) There is a BASE element in the HTML document which resolves the relative URL into a non-relative URL.

~~(b) The relative URL refers to another body part in the same message as defined in chapter 9.2 Filename-method below.~~

~~(c) In special cases, where the sender and recipient have prior agreement on the resolution of relative URL-s.~~

(b) There is a Content-Base header (as defined in [RELURL]), giving the base to be used.

(c) There is a Content-Location of the Text/HTML which can then serve as the base in the same way as the URL of a HTML document itself can serve as a base for relative URL-s within the document.

6. Use of the Content-Type: ~~multipart/related~~ Multipart/related

A message can contain one or more Text/HTML body parts and also contain as separate body parts, data, to which hyperlinks (as defined in [HTML2]) in the Text/HTML body part refers.

~~If this is done, it is recommended to use the multipart/related Content-Type~~ Such embedded linked parts must, together with the Text/HTML body part, be enclosed within a Multipart/Related body part as defined in [REL].

The root (as defined in [REL]) ~~should~~ SHOULD then be of the Content-Type: Text/HTML, or of the Content-Type Multipart/Alternative which resolves to Text/HTML.

Such an embedded linked part can itself be a Multipart/related body parts including its own linked objects.

7. Use of the Content-type: Multipart/alternative

If the message is sent to recipients, all of which may not have mailers capable of handling the Text/HTML content-type, then the Content-Type: Multipart/Alternative ~~[MIME]~~ [MIME1] can be used, for example with Content-Type: Text/plain as the first choice, and Content-Type: Text/HTML as the second choice.

8. Combination of ~~Content-Type:~~ the Content-Types: Multipart/related and Multipart/alternative.

Both the Content-type: Multipart/related, as defined in chapter 6 above and the Content-Type: Multipart/alternative, as defined in chapter 7 above can be combined in the same message. It is then recommended to put the Multipart/alternative inside the Multipart/related.

Example:

```
   Content-Type: Multipart/related; boundary="boundary-example-1";
   ~~Content-Type: Multipart/related; boundary="boundary-example-1"~~
                 ~~type=Text/HTML~~

                 type=MULTIPART/ALTERNATIVE

      --boundary-example 1
      Content-Type: MULTIPART/ALTERNATIVE
      Boundary: boundary-example-2

         --boundary-example-2
         Content-Type: Text/plain

         ... plain text version of the document for recipients
         whose mailers cannot handle Text/HTML ...

         --boundary-example-2
         Content-Type: Text/HTML
         Content-ID: content-id-example@example.host

         ... text of the HTML document ...

         --boundary-example-2--
      --boundary-example-1
```

```
Content-Type: Image/GIF

... a body part, to which the HTML document has a link  ...
--boundary-example-1--
```

~~9.~~ 9. Format of Links to ~~other body parts~~ Other Body Parts

A Text/HTML body part may contain hyperlinks to documents which are included as other body parts in the same ~~message.~~ message and within the same multipart/related content. Often such linked documents are meant to be displayed inline to the reader of the main document. HTML version 2.0 [HTML2] has only one way of specifying hyperlinks to such embedded content, the IMG tag. New tags with this property are however proposed in the ongoing development of HTML.

Three ways to ~~do this~~ send HTML documents with such linked body parts is specified in this memo:

~~9.1 Location-method: Use of the~~ 9.1 General Location-Method: Identical URI-s in Content-Location ~~field~~ headers

With this method, All URI-s in the Text/HTML document SHOULD be ~~non-relative~~ absolute URI-s as defined in ~~[HTML2], and it~~ [HTML2] or relative URI-s relative to a surrounding Content-Base header. It SHOULD be possible to use these URI-s to retrieve the referred document using the protocol defined for retrieval of this particular URL scheme in [URL] (subject to access control). Thus, a recipient SHOULD be able to see the whole document even if the recipient discards all other body parts, within the Multipart/related, except the main HTML part, and instead retrieves these body parts from the net.

For each distinct URI in the Text/HTML document, which refers to data which is sent in the same MIME message, there SHOULD be a ~~separata~~ separate body part ~~in~~ within the multipart/related part of the message containing this data. Each such body part SHOULD contain a Content-Location ~~heading field,~~ header, and the ~~value of~~ string in this field SHOULD be identical to the URI as used in the Text/HTML document. These separate body parts are needed for recipient who only have e-mail but not full Internet access.

Note: By identical string is not meant equivalent URI-s but actually identical URI strings, except for added white-space as specified in section 3.2 above.

The receiving mailer can then resolve the hyperlink either by using the URI in the normal way, or by using the data in the body part whose Content-Location contains the same URI.

~~Example:~~

Example with absolute URI-s:

```
~~Content-Type: Multipart/related; boundary="boundary-example-1";~~
Content-Type: Multipart/related; boundary="boundary-example-1";
              type=Text/HTML

   --boundary-example 1
   Content-Type: Text/HTML
```

... text of the HTML document, which might contain a hyperlink to the other body part, for example through a statement such as:
~~<IMG SRC="signeng.gif">~~

~~type=Text/HTML~~

~~--boundary-example 1~~
~~Content-Type: Text/HTML~~

~~... text of the HTML document, which might contain a hyperlink to the other body part, for example through a statement such as:~~
~~<IMG SRC="http://www.dsv.su.se/images/DSV-sign-eng.gif">~~

<IMG SRC="http://www.ietf.cnri.reston.va.us/images/ietflogo.gif">

--boundary-example-1
Content-Type: Image/GIF
Content-Location: ~~"http://www.dsv.su.se/images/DSV-sign-eng.gif"~~
"http://www.ietf.cnri.reston.va.us/images/ietflogo.gif"

--boundary-example-1--

Example with relative URI-s:

Content-Base: "http://www.ietf.cnri.reston.va.us"
Content-Type: Multipart/related; boundary="boundary-example-1";
type=Text/HTML

--boundary-example 1
Content-Type: Text/HTML

... text of the HTML document, which might contain a hyperlink to the other body part, for example through a statement such as:
<IMG SRC="/images/ietflogo.gif">

--boundary-example-1
Content-Type: Image/GIF
Content-Location: "/images/ietflogo.gif"

--boundary-example-1--

9.2 Filename-Method: Use of virtual File Names

This method is a special case of the Location-Method described in section 9.1, but also differs in that it may be used even if the enclosed parts are not retrievable from other places than the body parts included in the message.

With this method, the hyperlink URIs to other body parts in the same message in the Text/HTML document SHOULD have a very simple format. This simple format is relative URL-s of the form

```
relative-url ::= 1ALPHA 0#7ALPHADIGIT [ "." 1#3ALPHADIGIT ]

ALPHADIGIT ::= ALPHA / DIGIT
```

i.e. 1-8 characters plus 0-3 extension characters, only using Ascii letters and digits and beginning with a letter.

The choice of this simple format is to match permitted file name formats in most operating systems in wide use today.

For each distinct URI in the Text/HTML document, which refers to data which is sent in the same MIME message, there ~~should~~ SHOULD be a separate body ~~part~~ part, within the same multi-part/related content in the ~~message~~ message, containing this data. Each such body part SHOULD contain a ~~Content-Disposition header [RFC 1806] with a filename parameter. The value of this filename parameter should~~ Content-Location header. The string in this Content-Location header SHOULD be identical to the relative URI as used in the Text/HTML document.

~~The value of the Content-Disposition header should be "inline" if the URI in the Text/HTML document is used for an inline HTML element, such as an <IMG> element, and should be "attachment" if the URI in the Text/HTML document i used for a hyperlink to a document which is activated at the request of the recipient, such as an <A> element.~~

~~Example:~~

Note: This method does not require that the body parts are actually stored in files in the recipient computer. The receiving mailer may choose to implement this method by storing the individual body parts in files with the virtual file name, or may choose other implementation methods.

Example:

```
Content-Base: "FILE:"
Content-Type: Multipart/related; boundary="boundary-example-1";
              type=Text/HTML

   --boundary-example 1
   Content-Type: Text/HTML

   ... text of the HTML document, which might contain a hyperlink
   to the other body part, for example through a statement such as:
   <IMG SRC="ietflogo.gif">
```

```
~~Content-Type: Multipart/related; boundary="boundary-example-1";~~
              ~~type=Text/HTML~~

   ~~--boundary-example 1~~
   ~~Content-Type: Text/HTML~~

   ~~... text of the HTML document, which might contain a hyperlink~~
   ~~to the other body part, for example through a statement such as:~~
   ~~--boundary-example-1~~
   ~~Content-Type: Image/GIF~~
   --boundary-example-1
   Content-Type: Image/GIF
   ~~Content-Disposition: inline/filename=signeng.gif~~

   Content-Location: "ietflogo.gif"

   --boundary-example-1--
```

9.3 CID-method: Use of CID URL-s

With this method, the hyperlink URIs to other body parts in the same message in the Text/HTML document SHOULD be CID (Content-ID) URL-s as defined in [URL] and [MIDCID].

For each distinct URI in the Text/HTML document, which refers to data which is sent in the same MIME message, there ~~should~~ SHOULD be a separate body part in the message containing this data. Each such body part ~~SHOULD~~ MUST have a Content-ID header ~~[MIME].~~ [MIME1]. The value of this Content-ID header ~~should~~ SHOULD be identical to the CID as used in the Text/HTML document.

Example:

```
   Content-Type: Multipart/related; boundary="boundary-example-1";
                 type=Text/HTML

      --boundary-example 1
      Content-Type: Text/HTML

      ... text of the HTML document, which might contain a hyperlink
      to the other body part, for example through a statement such as:
      <IMG SRC="cid:sign-eng*jpalme@dsv.su.se">

      <IMG SRC="cid:ietflogo*jpalme@dsv.su.se">

      --boundary-example-1
      Content-Type: Image/GIF
      Content-ID: ietflogo*jpalme@dsv.su.se

      --boundary-example-1--
```

Note: Content-ID-s SHOULD be globally unique. It is not permitted to make them unique only within this message or within this multipart/related.

```
      --boundary-example-1
      Content-Type: Image/GIF
      Content-ID: sign-eng*jpalme@dsv.su.se

      --boundary-example-1--
```

9.4 Recommended Choice of Method:

A Text/HTML content may always, in addition to the use the methods described in this chapter of this memo, contain URI-s only resolvable using the method defined for this particular URI scheme, and not referring to any data in separate body parts of the same message.

Method	Body part identification method	Recommendation
~~Location-method~~ Virtual file name method	~~Content-Location~~ File name in Content-Location header	Recommended as the primary choice, to be used whenever possible.

General Content-Location method	Content-Location header	~~When the referred document is~~ Recommended if existing HTML documents are to be sent unchanged, but only if the referred-to document(s) are publicly available and retrievable using the scheme used in the URI.
~~Filename-method~~ CID method	~~filename in Content-Dispositon~~ Content-ID header	~~For private documents or documents not retrievable.~~
~~CID-method~~	~~Content-ID~~	For experimental use between consenting partners.

10. Indication of method used

~~There should be an additional optional parameter to the Content-Type: Text/HTML header, with the name "linking" and the syntax:~~

~~linking ::= "linking=" linkmethod~~

~~where linkmethod can have the following values:~~

~~external~~	~~Only use of absolute URI-s and retrieval using the scheme defined for this URI, and not containing any URI referring to other body parts in the same essage.~~
~~location~~	~~Location-method as defined in chapter 9.1.~~
~~filename~~	~~Filename-method as defined in chapter 9.2.~~
~~cid~~	~~CID-method as defined in chapter 9.3.~~

~~Default value if this parameter is omitted is "external".~~

Which of the methods above is used is indicated by the value of the surrounding Content-Base header:

Method	Indicated by:
------	------------

Virtual file name method	Content-Base: FILE: as defined in [URL]
CID method	Content-Base: CID as defined in [CID]
General Content-Location method	Any other Content-Base or no Content-Base specified

11. Content-Disposition header

Information in the Content-Disposition header (as defined in [CONDISP]) on individual body parts within a multipart/related is ignored, since that information is defined by tags in the HTML text itself. Receiving mailers which are not capable of handling the multipart/related header, and which thus by default handles the multipart/related header as if it was multipart/mixed, can however make use of information in the Content-Disposition header.

12. Sending forms in e-mail

When an e-mail message contains an HTML form, then the default for ACTION (as defined in [HTML2] section 8.1.1) SHOULD be replying by e-mail to the From: or Reply-To: address of the message containing the form, and not, as specified in [HTML2], the base URI of the document.

~~11. Encoding considerations~~

Each Multipart/related in the message SHOULD only use one of the three methods described above, but if a message contains more than one Multipart/related, then they may use different methods.

13. Encoding Considerations

There are two recommended ways to encode 8-bit characters in Text/HTML contents:

(1) Let the charset of the content part be iso-8859-1 or some other ~~iso-8859-1,~~ 8-bit character set, and encode the content with the QUOTED-~~quoted printable~~ PRINTABLE encoding method.

(2) Let the charset of the content part be us-ascii, and encode non-us-ascii characters in the text using the ~~Data~~ data character encoding defined in [HTML2].

Both these encoding methods are permitted, and they can also be mixed in the same document. Recipients must be capable of handling both encoding alternatives. However, it is recommended that encoding method (2) above is used when sending Text/HTML messages.

If only method (2) is used, the charset parameter ~~should~~ SHOULD be "us-ascii".

If method (1), or a mixture of method (1) and method (2) is used, the charset parameter ~~should be "iso-8859-1".~~ SHOULD be "iso-8859-1" or the character set used in the HTML text.

~~12. Security considerations~~

14. Security Considerations

There is a potential security risk if the Content-Location: heads a body part whose data is not identical to that retrievable using the URI in the Content-Location. To reduce this risk, it might be unsuitable to cache the data in such a way that the cached data can be used for retrieval of this URL from other documents than those included in the same message as the Content-Location header.

One way of implementing messages with linked body parts is to handle the linked body parts in a combined mail and WWW proxy server. The mail client is only given the start body part, which it turns over to a web browser. This web browser requests the linked parts in the normal way, but these requests are intercepted by the proxy server. If this method is used, and if the combined server is used by more than one user, then methods must be employed to ensure that body parts of a message to one person is not retrievable by another person. Use of passwords (also known as tickets or magic cookies) is one way of achieving this.

17. Conformance

An e-mail system which claims conformance to this standard must support sending and retrieval of HTML using both the Filename-Method and the General Location-Method as defined in chapter 9. If the e-mail system is only to be used on computers with full Internet connectivity, then the e-mail system may support the General Location-Method through ordinary HTTP retrieval of the embedded parts from the net.

~~13.~~ 16. Acknowledgments

Harald Tveit Alvestrand, ~~Keith Moore, Ed Levinson,~~ Richard Baker, Roy Fielding, Al Gilman, Mark K. Joseph, Valdis Kletnieks, Daniel LaLiberte, Ed Levinson, Larry ~~Masinter~~ Masinter, Keith Moore, Pete Resnick and several other people have helped me with preparing this memo. I alone take responsibility for any errors which may still be in the memo.

~~14.~~ 17. References

Temporary note: This list contains some references to Internet drafts. It is anticipated that these Internet drafts will become RFC-s before this memo. The references will then in this memo be changed to refer to the corresponding RFC instead.

Ref.	Author, title
~~[CIDMID]~~	~~E. Levinson: "Content-ID and Message-ID Uniform Resource Locators", <draft-levinson-cid-01.txt>, October 1995.~~
[CID]	E. Levinson: "Message/External-Body Content-ID Access Type", RFC 1873, December 1995.
[CONDISP]	**R. Troost, S. Dorner: "Communicating Presentation Information in Internet Messages: The Content-Disposition Header", RFC 1806, June 1995.**
[HOSTS]	R. Braden (editor): "Requirements for Internet Hosts -- Application and Support", STD-3, RFC 1123, October 1989.
[HTTP]	T. Berners-Lee, R. Fielding, H. Frystyk: "Hypertext Transfer Protocol - - HTTP/1.0", <draft-ietf-http-v10-spec-04.txt>, April 1996.
~~[MIME]~~ [MIME1]	N. Borenstein & N. Freed: "MIME (Multipurpose Internet Mail Extensions) Part One: Mechanisms for Specifying and Describing the Format of Internet Message Bodies", RFC 1521, Sept 1993.
[MIME2]	N. Borenstein & N. Freed: "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types". draft-ietf-822ext-mime-imt-02.txt, December 1995.
[NEWS]	M.R. Horton, R. Adams: "Standard for interchange of USENET messages", RFC 1036, December 1987.
[REL]	Harald Tveit Alvestrand, Edward Levinson: "The MIME Multipart/Related Content-type", <draft-levinson-multipart-related-00.txt>, January 1995.
~~[RFC1806]~~ [RELURL]	R. Fielding: "Relative Uniform Resource Locators", RFC 1808, June 1995.

~~R. Troost, S. Dorner: "Communicating Presentation Information in Internet Messages: The Content-Disposition Header", RFC 1806, June 1995.~~

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

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[HTML2] T. Berners-Lee, D. Connolly: "Hypertext Markup Language - 2.0", RFC 1866, November 1995.

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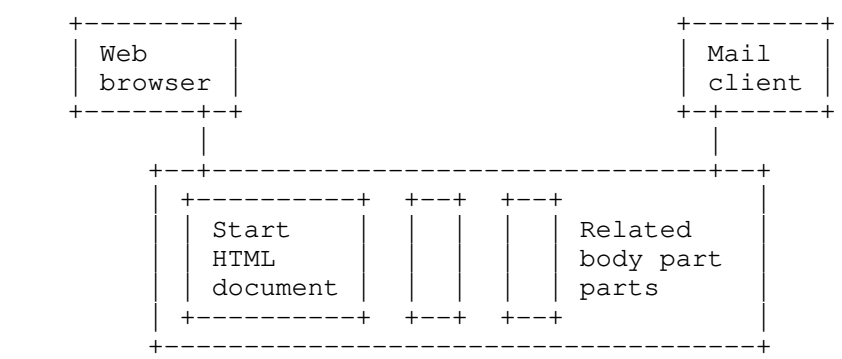
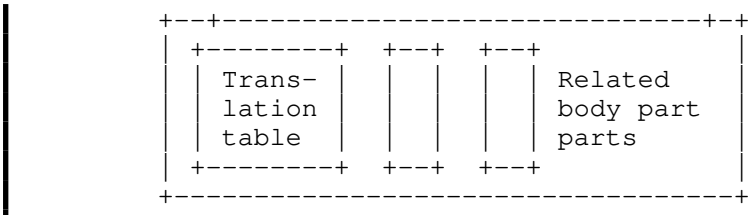
Annex A: Implementation methods

This annex is not part of the standards and is only included for informational purposes. This annex might be removed before making this memo into an IETF standard.

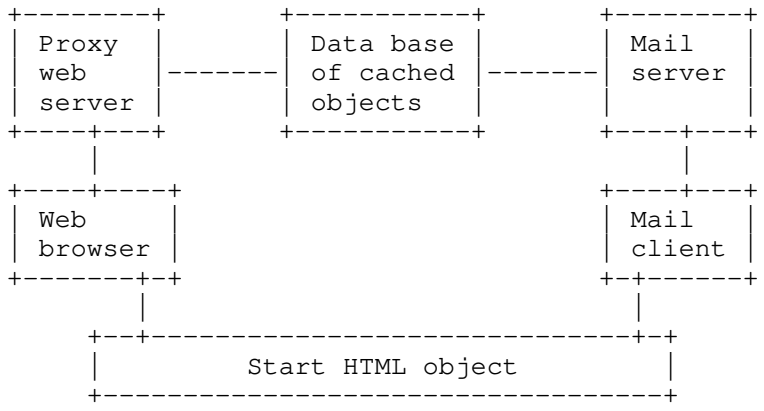
This standard has been intentionally written to be implementable both in cases where the web browser and e-mail program is combined, and when they are separate programs. Implementation is of course no problem if the web browser is combined with the e-mail client.



If the web browser is separate from the e-mail client, the e-mail client might turn over the HTML body part to the web browser and ask it to display it. One way of doing this is to store the HTML body part in a file, and ask the web browser to display this file. If multipart/related is used, this can be implemented by storing all the body parts within the multipart/related in an otherwise empty folder/directory. With the virtual file name method described in section 9.2 above, this does not require any rewriting of the HTML text and is thus easy to implement, that is why the virtual file name is recommended as the primary method above.



With the general Content-Location methods, the web browser must in some way be instructed to retrieve the body parts from the received message. This can be done by a translation table, if the web browser has an API which allows for such a table.



Other methods are to rewrite the HTML text in the receiving mailer before turning it over to the web browser, or to use a proxy web server, to which the web browser requests are sent, and which will then use the cached body parts instead of normal web retrieval from the network.

The mail client and the web browser can of course communicate in other ways, such as using inter-process communication or combining mailer and web browser in one program.

With the CID-method, the web browser must either understand CID URL-s and know that they refer to objects supplied by the mailer, or the HTML document must be rewritten, before turning it over to the web browser, replacing the CID-s with other kinds of URL-s. Such rewriting can convert the URL-s to local file names which the web browser will use by default, in the same way as for the virtual file name method as described above.

Annex B: Issues to be resolved

Issue 1: Which methods should be recommended

The draft above defines three different methods of linking body parts to HTML bodies, the General-Location Method, the Filename-Method and the CID-method. Which of these three methods should (a) be described in the document (chapter 9), (b) be recommended (section 9.4) and (c) be required for conformance (chapter 15).

Issue 2: Indication of Method Used

An alternative to the proposal in chapter 10 above of how to indicate which method is used, might be to use the start-info parameter in the Multipart/related header, e.g.

```
Content-Type: Multipart/related; type=text/html;
 start-info="linking=virtual"
```

Issue 3: FILE or LOCAL-FILE

Should LOCAL-FILE, as defined in [MIME2] be used instead of FILE as defined in chapter 10 above? Or should something new, such as "LOCAL" or "VIRTUAL FILE" be used to clarify that no real file storage is necessary?

Issue 4: Use of Multipart/related

Is it OK to require that linked body parts must all of them be inside the Multipart/related (as specified in chapter 9), or is it permitted to have links to other body parts outside of the Multipart/related within the same message, or even within other messages?

Issue 5: Multipart/alternative

Is the recommendation for combination of Multipart/related and Multipart/alternative in chapter 8 OK?

Issue 6: Type parameter to Multipart/related

To follow the letter of RFC 1872, the type parameter of Multipart/related in section 8 should be:

```
   Content-Type: Multipart/related; boundary="boundary-example-1";
                 type=MULTIPART/ALTERNATIVE
```

It might however be more natural to specify this parameter as:

```
   Content-Type: Multipart/related; boundary="boundary-example-1";
                 type=Text/html
```

But this seems to require that we do not fully adhere to the letter of RFC 1872.

Issue 7: Replies to forms sent in e-mail

Is there any need to specify more about the format of replies to forms sent in e-mail, or is the text in chapter 12 above enough? I.e. could some expert on HTML forms say if HTML itself specifies this so that we do not need to add anything more to what is specified in the HTML specs?

Issue 8: What is the best title for this document?

Choice 1: The Text/HTML Content Type and the Content-Location MIME Header or Sending HTML Documents via MIME E-mail

Choice 2: The Text/HTML Content Type and the Content-Location MIME Header

Choice 3: Sending HTML Documents via MIME E-mail

Choice 4: MIME Encapsulation of Aggregate HTML Documents (MHTML)

[HEADERS]

[FOOTERS]

Palme [Page 18]

DocuComp II Comparison Summary

1. File Information

	Newer File	Older File
Name:	Text/HTML-02.word.origi	Text/HTML-00.word.origina
Format:	Microsoft Word	Microsoft Word
Folder:	Text/HTML*ƒ*	Text/HTML*ƒ*
Volume:	Intern HD	Intern HD
Mod Date:	sn 18 feb 1996	sn 19 nov 1995
Mod Time:	10.07	11.20
Size:	50980 bytes	22308 bytes
Lines:	883	598

2. Summary of Changes

Replacements:	89	~~Old Text~~ New Text
Insertions:	29	Inserted Text
Deletions:	5	~~Deleted Text~~
Moves:	5	**New Location** **~~Old Location~~**

3. Reading Options

Ignore Hidden Text

4. Comparison Options

Granularity	High
Move Sensitivity	High

Revision List

Page	Line	Change	Text
1	3	Replace	“draft-palme-text-ht” by “draft-palme-te”
1	7	Replace	“Expires May” by “Expires August”
1	12	Replace	“content type” by “Content Type”
1	13	Replace	“header” by “Header”
1	17	Replace	“documents” by “Documents”
1	17	Replace	“e-mail” by “E-mail”
1	44	Replace	“RFC-s..” by “RFC-s.”
1	50	Replace	“adresses” by “addresses”
1	51	Insert	“embedded content in”
1	53	Insert	“"Content-Location".”
2	1	Insert	“Differences from Version....”
2	14	Insert	“Use of the Content-Disposition....”
2	15	Replace	“and one new....” by “headers.”
2	19	Replace	“Table of contents” by “Information....”
2	40	Replace	“content-header” by “Content Header”
2	41	Insert	“3.1 Definition of the....”
2	44	Replace	“relative” by “Relative”
2	44	Replace	“contents” by “Contents”
2	45	Replace	“multipart/related” by “Multipart/related”
2	46	Insert	“the”
2	47	Replace	“Content-Type:” by “the Content-Types:”
2	49	Replace	“9. Links to other....” by “9. Format of....”
2	51	Replace	“9.1....” by “9.1 General....”
2	52	Replace	“field” by “headers”
2	53	Replace	“9.2....” by “9.2 Filename-Method: Use....”
2	56	Replace	“choice of method:” by “Choice of Method:”
2	57	Replace	“10. Indication....” by “10. Indication....”
3	52	Replace	“[MIME]” by “[MIME1]”
3	52	Insert	“In particular, the document....”
4	5	Replace	“content-header” by “Content Header”
4	7	Insert	“3.1 Definition of the....”
4	9	Replace	“heading field” by “header”
4	11	Replace	“is” by “can be”
4	11	Insert	“or relative URI.”
4	14	Insert	“A relative URI in the....”
4	18	Replace	“URI. The data....” by “This header is....”
4	23	Insert	“use of”
4	23	Replace	“URI, should be....” by “URI.”
Page	**Line**	**Change**	**Text**
4	30	Replace	“heading field” by “header”

4	33	Replace	“<"> uri <">” by “URI-parameter”
4	35	Replace	“uri” by “URI”
4	37	Insert	“the”
4	39	Replace	“Question: Is it....” by “Note: This....”
5	36	Delete	“The new optional parameter "linking"....”
5	39	Replace	“relative” by “Relative”
5	39	Replace	“contents” by “Contents”
5	41	Replace	“in” by “inside contents with the”
5	43	Replace	“cases:” by “cases (in order of....”
5	49	Replace	“(b) The relative....” by “(b) There is a....”
6	3	Replace	“multipart/related” by “Multipart/related”
6	9	Replace	“If this is done, it....” by “Such....”
6	14	Replace	“should” by “SHOULD”
6	15	Insert	“Text/HTML, or of the Content-Type....”
6	18	Insert	“Such an embedded linked part can....”
6	22	Insert	“the”
6	26	Replace	“[MIME]” by “[MIME1]”
6	31	Replace	“Content-Type:” by “the Content-Types:”
6	41	Move	“Content-Type: Multipart/related;....” from page 7 line 60
6	43	Replace	“Content-Type:....” by “type=MULTIPART/AL”
6	60	Insert	“Content-ID:....”
7	12	Replace	“9.” by “9. Format of”
7	12	Replace	“other body parts” by “Other Body Parts”
7	15	Replace	“message.” by “message and within....”
7	22	Replace	“do this” by “send HTML documents....”
7	26	Replace	“9.1....” by “9.1 General....”
7	27	Replace	“field” by “headers”
7	29	Replace	“non-relative” by “absolute”
7	30	Replace	“[HTML2], and it” by “[HTML2] or....”
7	34	Insert	“Thus, a recipient SHOULD be able to....”
7	40	Replace	“separata” by “separate”
7	41	Replace	“in” by “within the multipart/related....”
7	43	Replace	“heading field,” by “header,”
7	43	Replace	“value of” by “string in”
7	44	Insert	“These separate body parts are needed....”
7	48	Insert	“Note: By identical string is not....”
7	56	Replace	“Example:” by “Example with absolute....”
8	2	Move	“Content-Type: Multipart/related;....”
Page	**Line**	**Change**	**Text**
			from page 9 line 52
8	13	Delete	“<IMG SRC="signeng.gif">”
8	15	Replace	“type=Text/HTML....” by “<IMG....”

8	28	Delete	“"http://www.dsv.su.se/images/DSV-sign-”
8	29	Insert	“"http://www.ietf.cnri.reston.va.us/image”
8	33	Replace	“9.2....” by “Example with relative....”
8	48	Move	“--boundary-example-1....” from page 10 line 3
8	50	Insert	“Content-Location:....”
9	17	Replace	“should” by “SHOULD”
9	18	Replace	“part” by “part, within the same....”
9	19	Replace	“message” by “message,”
9	20	Replace	“Content-Disposition ” by “Content-Locati”
9	25	Replace	“The value of the....” by “Note: This....”
10	5	Move	“--boundary-example-1....” from page 10 line 54
10	7	Replace	“Content-Disposition:” by “Content-Locati”
10	21	Replace	“should” by “SHOULD”
10	23	Replace	“SHOULD” by “MUST”
10	23	Replace	“[MIME].” by “[MIME1].”
10	24	Replace	“should” by “SHOULD”
10	37	Replace	“<IMG....” by “<IMG....”
10	56	Delete	“Content-ID:....”
11	17	Replace	“Location-method Con” by “Virtual....”
11	25	Replace	“When the....” by “Recommended if....”
11	29	Replace	“Filename-method” by “CID method”
11	31	Replace	“filename in....” by “Content-ID”
11	32	Delete	“For private documents or documents....”
11	38	Replace	“10. Indication....” by “Each....”
12	60	Insert	“iso-8859-1 or some other”
13	1	Replace	“iso-8859-1,” by “8-bit character set,”
13	2	Insert	“QUOTED-”
13	3	Replace	“quoted-printable” by “PRINTABLE”
13	6	Replace	“Data” by “data”
13	14	Replace	“should” by “SHOULD”
13	18	Replace	“should be....” by “SHOULD be....”
13	22	Replace	“12. Security....” by “14. Security....”
13	33	Insert	“One way of implementing messages....”
13	54	Replace	“13.” by “16.”
13	56	Replace	“Keith Moore, Ed....” by “Richard....”
Page	**Line**	**Change**	**Text**
13	57	Insert	“Mark K. Joseph,”
13	57	Insert	“Daniel LaLiberte, Ed Levinson,”
13	58	Replace	“Masinter” by “Masinter, Keith Moore,....”
14	4	Replace	“14.” by “17.”
14	18	Replace	“[CIDMID] E.....” by “[CID] E. Levinson:....”

14	27	Move	“R. Troost, S. Dorner: "Communicating....” from page 15 line 2
14	39	Replace	“[MIME]” by “[MIME1]”
14	45	Insert	“[MIME2] N. Borenstein & N. Freed:....”
14	58	Replace	“[RFC1806]” by “[RELURL] R. Fielding:....”
15	18	Insert	“[URLBODY] N. Freed and Keith Moore:....”
15	28	Replace	“15.” by “18.”
15	28	Replace	“address” by “Address”
15	36	Insert	“Annex A: Implementation methods....”
19	3	Replace	“Palme [Page 1]” by “draft-palme-text-htm”