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## Multimedia E-mail (MIME) User Agent checklist

### Status of this Memo

This memo provides information for the Internet community. This memo does not specify an Internet standard of any kind. Distribution of this memo is unlimited.

### Abstract

This document presents a checklist to facilitate evaluation of MIME capable User Agents. Access to a MIME test-responder, that generates test-messages is described.

### Introduction

This document presents a checklist that facilitates evaluation of MIME capable E-mail User Agents. It is by no means a conformance or interoperability (both strictly defined and measurable quantities) checklist, but rather an interworking (practical perspective) checklist that is aimed at the users and system managers.

### Usage and submission

If you use this checklist against a specific product (regardless of whether you're a vendor, implementor or user) you can submit the result to [mime-check@nic.surfnet.nl](mailto:mime-check@nic.surfnet.nl), make sure that the subject reflects the name and version of the product. This is an automated mailhandler, so PLEASE only submit filled-in checklists (in content-type text/plain or text/html) to this address. This information will be made available (at no cost) for other people to browse through at URL: <http://www.nic.surfnet.nl/surfnet/projects/surf-ace/mime/>

Although SURFnet will attempt to verify the correctness of each submission, all submitted information is made available as is, with no guarantees (SURFnet does not take any responsibility for errors in the data that is made available, or for any damages resulting from usage of that data). Users who want to procure a UA are advised to use the data as an orientation, and to perform their own procurement tests (possibly using the checklist below as a guideline). Also it is noted that vendors and implementors are encouraged to use the results from the checklist to improve their products.

## Getting test messages

For several tests in the checklist a test message is required. Test messages can be requested in the following way: Send mail to <mime-test@relay.surfnet.nl> with a subject field containing ONE of the following:

text/plain  
text/enriched  
image/gif  
image/jpeg  
audio/basic  
video/mpeg  
application/octet-stream  
application/postscript  
message/rfc822  
message/partial  
message/external  
multipart/mixed  
multipart/parallel  
multipart/digest  
multipart/alternative  
multipart/appledouble  
application/wordperfect5.1  
application/msword  
application/rtf

X-local            <to test how your UA deals with undefined content-types>  
nested            <returns a message that contains nested multipart contents>  
iso-8859-1        <returns a message with text/plain; charset=iso-8859-1>

A message containing the requested content-type will be returned to the address contained in the from field.

## References

The reader is encouraged to also check out the following references:

The MIME standards:

- 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.
- Moore K., "MIME (Multipurpose Internet Mail Extensions) Part Two: Message header extensions for non-Ascii text", RFC 1522, University of Tennessee, September 1993.

The registration procedure for content types:

- Postel J., "Media type registration procedure", RFC 1590, USC/Information Sciences Institute, March 1994.

Some related informational documents:

- Borenstein N., "The text/enriched MIME content-type", RFC 1563, Bellcore, October 1994.
- Borenstein N., "A user agent configuration mechanism for multimedia mail format information", RFC 1524, Bellcore, September 1993.

Registered MIME content-types can be found at the following URL:  
<ftp://ftp.isi.edu/in-notes/iana/assignments/media-types/media-types>

The SUNet MIME project: <http://www.nada.kth.se/sunet-mime/> This offers evaluation tests reports of MIME products, as well as tests and test-criteria for MIME implementors.

From Stockholm University a list of user-interface requirements for a mail/news reader is available under: <gopher://mars.dsv.su.se/11/dsv-reports/research-reports/messaging-research>

#### Checklist for Mime UAs

(note that for items with multiple choice options, it is possible that more than one option is applicable)

1. General information:
  - 1.1 The name and version of the product
  - 1.2 The name and addressing information of the manufacturer
  - 1.3 What are the platforms that are supported (Operating system, GUI and hardware requirements, if applicable: what APIs are supported (like MAPI etc.))? [Note: Please use separate checklist forms for different platforms!!]
  - 1.4 What is the platform that was used for this checklist (Operating system, GUI and hardware)? [Note: Only one platform per checklist!!]
  - 1.5 Is the software available in source format or in binary format or both.
  - 1.6 Pricing information. Is the software available:
    - In the Public Domain, free of charge
    - As shareware (what is the price?)
    - PD for non-profit use, but not for commercial use
    - Commercially

2. System installation, configuration and management
  - 2.1 How complex/easy is installation and configuration? Are there any pitfalls that need attention? Can you configure per set of users (i.e systemwide or LAN wide default configuration) and/or per user?
  - 2.2 Are there facilities for logging and/or accounting?
  - 2.3 Does the UA generate correct RFC-822 headers for outgoing messages:  
From:, (and if necessary) Sender:  
Date:  
Message-id:
  - 2.4 Is it possible for a non-privileged user to change the "from" and/or "sender" field?
  - 2.5 Does the UA have any size restrictions (default or applied by system manager) for:
    - Message size
    - Number of messages
    - Number of folders
    - Number of messages per folder
  - 2.6 How secure is the users mailbox when using this UA? Can other non-privileged users access the mailbox?
  - 2.7 What is the performance of the UA on this platform? (As this is difficult to measure, give your subjective impression: slow, reasonable or fast) E.g for:
    - Displaying a text message
    - Displaying a MIME message that contains an image
    - Complex actions like sorting etc.
3. General UA properties
  - 3.1 Does the UA have a graphical or a character based interface or both?
  - 3.2 Does the UA support native RFC-822/MIME or does it require a gateway?
  - 3.3 Which protocols are supported for message delivery:
    - a. SMTP (MX records or static routing to Mailhost)
    - b. ESMTP
    - c. POP (which version)
    - d. IMAP
    - e. Co-location with specific MTA (which MTA)
    - f. Other .....
  - 3.4 Which protocols are supported for message submission:
    - a. SMTP
    - b. ESMTP
    - c. Co-location with specific MTA (which MTA)
    - d. Other .....
  - 3.5 Does the UA support the following basic functionalities:
    - List messages
    - Read messages

- Delete messages
  - Compose new messages
  - Reply to messages (Inclusion of original message-text in reply, reply to originator or to any or all recipients etc.)
  - Forward message
    - o using MIME
    - o using RFC-934 encapsulation; i.e. message is encapsulated in between:
      - Forwarded Message and
      - End of Forwarded Message
    - o Other .....
  - Distribute message (the from field does not change)
- 3.6 Does the UA support the following header fields and can they be supplied by the user:
- | Generated correctly | Can be supplied by user |
|---------------------|-------------------------|
| - To:               |                         |
| - Cc:               |                         |
| - Bcc:              |                         |
| - From:             |                         |
| - Reply-to:         |                         |
| - Subject:          |                         |
| - Comments:         |                         |
- 3.7 Does the UA support filing mail into folders? Are there any restrictions?
- 3.8 Does the UA support a filtering mechanism that allows the user to configure automatic processing of incoming mail (e.g. automatic filing into specific folders)? If so, how simple is the configuration of these filters?
- 3.9 Does the UA support a sorting mechanism that allows the user to sort mail on date and/or subject and/or from field etc? If so describe the possibilities and restrictions.
- 3.10 Does the UA support address lists and/or directory services?
- Local (local address list, local aliases, local distribution lists etc.)
  - Whois++
  - Ph (to CCSO server)
  - LDAP or SOLO or other access protocols to a directory service
  - Other .....
- 3.11 What other non-multimedia facilities does the UA support?
- 3.12 What secure mail protocols does the UA support (in-line):
- PEM (Privacy Enhanced Mail)
  - PGP (Pretty Good Privacy)
  - Other.....

#### 4. MIME support

##### 4.1 Does the UA support:

- viewing a MIME content (either in-line or through launching an external viewer)?
- saving a MIME content in a file?
- saving one part of a multipart message in a file?
- printing a MIME content?

##### 4.2 Does the UA support receipt of the following basic MIME content types? Does it display them in-line and does it support printing of such a content type? If an external viewer is needed, is a viewer pre-configured? Is the viewer included in the software distribution?

In-line   Printing   External   Preconfig   Included

- text/plain
- text/enriched
- image/gif
- image/jpeg
- audio/basic
- video/mpeg
- application/octet-stream
- application/postscript
- message/rfc822
- message/partial

Does the UA support ftp and/or mail access for:

- message/external

Describe how the UA supports the basic multipart types:

- multipart/mixed
- multipart/parallel
- multipart/digest
- multipart/alternative

How does the UA handle:

- X-<bilaterally defined>
- unknown/unconfigured content-types

##### 4.3 Does the UA allow configuration for receipt of additional content-types? If so describe the configuration procedure and possibilities. (Is it complex/easy, give example configuration, can you add external viewers etc.). E.g.

- application/wordperfect5.1
- application/msword
- multipart/appldouble (Macintosh systems only)

##### 4.4 Does the UA support composition of the following basic MIME content types? Describe how easy/complex composition of a message with a MIME content-type is.

- text/plain
- text/enriched
- image/gif
- image/jpeg
- audio/basic

- video/mpeg
  - application/octet-stream
  - application/postscript
  - message/rfc822
  - message/partial
  - message/external
  - multipart/mixed
  - multipart/parallel
  - multipart/digest
  - multipart/alternative
- Does the UA generate X-<bilaterally defined> content-types (when and why)
- 4.5 Does the UA support composition of additional content-types? If so describe how to do this (configuration and/or composition), e.g.:
- application/wordperfect5.1
  - application/msword
  - multipart/appledouble (Macintosh systems only)
- 4.6 What content-encodings does the UA support:
- 7bit
  - quoted printable
  - base64
  - binary
  - 8bit
  - X-<bilaterally defined> (when and why)
- 4.7 What encoding is used for the following content-types:  
7bit QP B64 Binary 8-bit Other
- text/plain
  - text/enriched
  - image/gif
  - image/jpeg
  - audio/basic
  - video/mpeg
  - application/octet-stream
  - application/postscript
  - message/rfc822
  - message/partial
  - message/external
  - multipart/mixed
  - multipart/parallel
  - multipart/digest
  - multipart/alternative
- 4.8 Does the UA generate the correct Mime version header:  
Mime-Version: 1.0
- 4.9 In multipart messages, give an example of the sort of boundary string generated.
- 4.10 Does the UA support the use of non-ascii characters in the headers (in subject, free form part of address etc.)?

- 4.11 With the content type text/plain it is possible to have a charset parameter, indicating that a specific character set is used in the content type text plain. What character sets (like iso-8859-1) does the UA support (standard or configurable)?

#### Security Considerations

Testing a MIME UA against this checklist involves the security risks that are described in the MIME specification (RFC 1521). Most notably the automatic execution of general-purpose PostScript interpreters entails serious security risks. The reader is encouraged to read RFC 1521 for more detail on these security risks.

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