Internet Unified Messaging Requirements

Status of this Memo

1. Abstract

   Internet Unified Messaging brings together the body of work done in
   VPIM, FPIM, IMAPEXT, and other IETF work groups. The goal is to
   provide a single infrastructure, mailbox, and set of interfaces for
   a user to get, respond to, and manipulate all of their messages, no
   matter what the media or source. This document describes the
   requirements for providing such a service.

   Discussion of this and related drafts are on the UM list. To
   subscribe, send the message "subscribe um" to
   majordomo@snowshore.com. The public archive is at
   http://flyingfox.snowshore.com/um_archive/maillist.html.

2. Conventions used in this document

   This document refers generically to the sender of a message in the
   masculine (he/him/his) and the recipient of the message in the
   feminine (she/her/hers). This convention is purely for convenience

and makes no assumption about the gender of a message sender or

recipient.

FORMATTING NOTE: Notes, such at this one, provide additional
nonessential information that the reader may skip without missing
anything essential. The primary purpose of these non-essential
notes is to convey information about the rationale of this document,
or to place this document in the proper historical or evolutionary
context. Readers whose sole purpose is to construct a conformant
implementation may skip such information. However, it may be of use
to those who wish to understand why we made certain design choices.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
"SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in
this document are to be interpreted as described in RFC-2119 [2].

3. Introduction

Humans have had to contend with having multiple messaging systems
for different messaging modes. For example, I have a voice mail
account for voice messages, a fax store-and-forward service for fax
messages, and an e-mail account for Internet messages.

The IETF has successfully completed a considerable body of work
extending the highly successful non-real-time text messaging
service, SMTP. Extending the mail system for multimedia payloads
with MIME enabled the transport of voice and fax. The VPIM and IFAX
work groups, respectively, have produced a number of RFCs that focus
on voice mail and fax messaging and transport. This draft examines
the requirements for unified messaging systems.

There has been an evolution of using Internet Mail standards [3] for
the carriage of media-rich messages. MIME [4] introduces the basic
capability for transporting media-rich messages using Internet Mail.
Then there were a number of successful efforts to use Internet Mail
for supporting the transport of various media-specific message types
within closed environments. Leveraging this success, people started
to see how to integrate the closed environments into the Internet
Mail structure. The ultimate goal is Unified Messaging: a single
infrastructure, mailbox, and set of interfaces for a user to get all
of their messages.

The Voice Profile for Internet Mail defines a method for
transporting voice messages between voice messaging systems using

Internet Mail [5]. Likewise, the Extended Mode Fax [6] defines a
method for transporting fax messages between fax messaging terminals
using Internet Mail.

Simple Mode Fax [7] describes how one can deliver facsimile
documents using the Internet Mail infrastructure, including standard
Internet Mail clients. Said differently, the document brought
facsimile into the Internet Mail domain.

Likewise, Internet Voice Mail [8] describes how one can generate and
deliver voice messages using the Internet Mail infrastructure,
including standard Internet Mail clients.

With this set of developments, we are now in a position to gather
these standards and develop new protocols where needed to deliver
true unified messaging.

4. General Requirements

4.1. Reuse Existing Protocols

To the extent feasible, the unified messaging framework SHOULD use
existing protocols whenever possible.

4.2. Maintain Existing Protocol Integrity

In meeting requirement 4.1, the unified messaging framework MUST NOT
redefine the semantics of an existing protocol.

Said differently, we will not break existing protocols.

4.3. Reception Context

When the user receives a message, that message SHOULD receive the
treatment expected by the sender. For example, if the sender
believes he is sending a voice message, voice message semantics
should prevail.

4.4. Sending Context

When the user sends a message, she SHOULD be able to specify the
message context. That is, whether the network should treat the
message as an Internet Mail message, voice message, video message,
etc.

5. Infrastructure Preservation

A major goal for the unified messaging framework is to not change
any existing Internet infrastructure. For example, the behavior of
mail transfer agents (MTAs) should not change. Likewise, the
behavior of existing mail clients should not change.

Messages created in a unified messaging context MUST NOT require
changes to existing mail clients. However, there may be a loss in
service in certain circumstances.

The unified messaging framework MUST be able to handle messages
created in a non-unified messaging context, for example, a simple,
RFC 822 [9] text message.

6. Voice Requirements

The expectation of voice mail users are described in [8] and [10].
To summarize, voice mail users have heightened expectations of
privacy, delivery confirmation, and addressing than Internet Mail
users.

On the retrieval side, there are significant real-time requirements
for retrieving a message for voice playback. More than any other
media type, including video, voice is extremely sensitive to
variations in playback latency. The unified messaging framework
MUST address the real-time needs of voice.

7. Fax Requirements

Fax users have a particular expectation that is a challenge for
unified messaging. When a person sends a fax, their expectation is
the user has received the message upon successful transmission.
This clearly is not the case for Internet Mail.

OPEN ISSUE: How will we address this?

8. Video Requirements

Video mail has one outstanding feature: Video messages are large!
The unified messaging framework MUST scale for very large messages.

9. Security Considerations

Security will be a very important part of unified messaging. In
addition to the security issues present in Internet Mail, people
have higher expectations for Voice and Fax messaging. The goal,
wherever possible, is to preserve the semantics of existing
messaging systems and meet the expectations of users with respect to
security and reliability.

10. References

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[11]. Acknowledgments

I would like to thank Greg Vaudreuil and Glen Parsons for convincing
me this is a worthwhile effort.

[12]. Author's Addresses

Eric Burger
SnowShore Networks, Inc.
Chelmsford, MA
USA

Phone: +1 978/367-8403
Email: eburger@snowshore.com

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