Applications Area   Dan Wing
Internet Draft   Cisco Systems
March 10, 1998   Larry Masinter
Expires August 1998   Xerox Corporation

                    Using Message Disposition Notifications to
                          Indicate Supported Features

                      draft-ietf-fax-mdn-features-01.txt

Status of this memo

   This document is an Internet-Draft. Internet-Drafts are working
   documents of the Internet Engineering Task Force (IETF), its areas,
   and its working groups. Note that other groups may also distribute
   working documents as Internet-Drafts.

   Internet-Drafts are draft documents valid for a maximum of six months
   and may be updated, replaced, or obsoleted by other documents at any
   time. It is inappropriate to use Internet-Drafts as reference
   material or to cite them other than as "work in progress."

   To learn the current status of any Internet-Draft, please check the
   "1id-abstracts.txt" listing contained in the Internet-Drafts Shadow
   Directories on ftp.is.co.za (Africa), ftp.nordu.net (Europe),
   munnari.oz.au (Pacific Rim), ds.internic.net (US East Coast), or
   ftp.isi.edu (US West Coast).

Copyright Notice

Abstract

   This document describes how Message Disposition Notifications [MDN]
   are used to indicate the supported features of a user's Mail User
   Agent (MUA). Knowing the supported features of a recipient or the
   recipient's MUA allows a sender to generate messages which take
   advantage of those features.

   Features indicate the MIME content-types are supported by the
   Mail User Agent, or finer gradations of features such as
   resolution, maximum image size, or software version number.
   The representation of features is still under discussion in
   the CONNEG working group.

   Features are registered using the framework described in [FEATURES].

[1](#). Introduction

In an open email environment, such as the Internet, it is not generally
possible to know, a priori, if a recipient will be able to process
certain enhanced forms of a message. Because of this, only 7-bit
text/plain messages can be assumed to be readable by unknown Internet
mail user agents. Even with MIME-aware user agents, some messages
are still not usable by some recipients (for example, a viewer or
a decryption package may be necessary).

Currently, the only method available to indicate the ability
to receive certain file formats is for a human to indicate
this ability out-of-band ("Yes, I can receive PowerPoint"
in an email message or telephone call). Likewise, the only method
available to indicate inability to process a certain file is via a
similar manual method.

Message Disposition Notifications (MDNs) can be used to automate the
sending of recipient features. As most people communicate often
with co-workers, vendors, and collegues, constant exchange of
messages already occurs.

Message Disposition Notifications (MDNs) can be used to exchange
information between mail user agents. This information can indicate
user and system preferences and features, as described in [[FEATURES](#)].

Because disposition notifications are communicated end-to-end, they
do not require new infrastructure in the email environment that are
required by other methods of communicating recipient features such as
white page directory entries or SMTP extensions.

[1.1](#). Discussion of this Draft

This draft is being discussed by the IETF FAX working group. To
subscribe to the mailing list, send a message to
ietf-fax-request@imc.org with the line "subscribe" in the body of the
message. Archives are available from http://www.imc.org/ietf-fax.

[2](#). Determining Supported Features

Any request for a disposition notification [[MDN](#)] can also cause a
list of features to be sent in that same disposition notification
message.

[2.1](#). Including Features in MDNs

If the receiving user agent decides to send a disposition

notification message per [MDN] it can include the new field described
below in the disposition notification message.

To indicate features, the receiving user agent includes the
following new <disposition-notification-content> extension field
[MDN]. The syntax of this new field, using the Augmented BNF of
[ABNF], is:

```
  extension-field = "Features" ":" ttl-value ";"
                    feature
                    *( "," [ LWSP ] feature )

  ttl-value       = seconds           ; maximum number of seconds from
                                      ; Date: header of this message
                                      ; that receiver should believe
                                      ; the feature information is
                                      ; still accurate

  seconds         = 1*DIGIT

  feature         = <as described in [FEATURE]>
```

Long headers should be folded [RFC822, section 3.1.1].

3. Processing of Feature Information

3.1. TTL value

The TTL value indicates the maximum number of seconds the receiving
system can expect the list of features to be valid. The TTL value is
calculated from the Date: header of the disposition notification
message.

To avoid caching features for excessively long or short periods, the
receiving system may minimize or maximize the TTL value. On a
production system, a lower bound of 5 minutes and an upper bound on
one week would be reasonable.

The receiving system SHOULD update feature information and the
associated TTL whenever new features are obtained.

Originating mail user agents may wish to use expired feature
information, but are encouraged to follow the recommendations
in section 3.3.

3.2. Unlisted features

If a sender's mail user agent has cached the features of a certain
recipient, and wishes to send a message which exceeds the
previously-cached list of features for the recipient, originating
mail user agent SHOULD send the message only after informing the
user.

For example, if the following features are cached:

  web=mozilla4; tiff=f

and the sender wishes to send application/pdf (which is not
supported by either of the above features), the originating mail user
agent would inform the user that the recipient may not be able to
process the message. A sophisticated mail user agent may
follow the recommendations in section 3.3.

3.3. Unknown Features

If no feature information for a recipient is available, the sender
should send a message that has a reasonable chance of being processed
by a recipient, or send a multipart/alternative message containing
"dumbed-down" versions of the same content.

A message that has a "reasonable chance" should be user configurable,
as what is "reasonable" is dependant on the user's experience,
knowledge of the recipient's software or recipient user's expertise,
and other factors.

4. Security Considerations

In addition to the security considerations discussed in [MDN],
this memo creates other security risks, listed below.

4.1. Disclosure of Preferences

In many cases it is undesirable to disclose certain preferences
for things such as language or accessibility.   XXX - more verbage

4.2. Spoofed Feature Information

During the design of mail user agents, it should be remembered
that the cached feature information could be incorrect
due to a malicious MDN. Because of this, the user should be provided
with a mechanism to send a message which exceeds the recipient's
cached features.

4.3. Macro Viruses

Macro Viruses [reference?] are a widespread problem among
applications such as word processors and spreadsheets. Knowing which
featuers a user's Mail User Agent supports can assist in a malicious
attack. However, such viruses can be spread easily without such
knowledge by sending multiple messages, and each message infects a
specific application version.

5. Acknowledgments

Thanks to the members of the IETF FAX and CONNEG Working Groups, and
especially to Graham Klyne (Integralis) for their assistance with
the developement of this document.

6. References

[ABNF] Crocker, D., and P. Overell, "Augmented BNF for Syntax
      Specifications: ABNF", RFC 2234, November 1997.

[FEATURES] IETF Conneg WG, Work in Progress.

[MEDIA-FEATURES] Masinter, L., Holtman, K., and D. Wing, "Media
      Features for Display, Print, and Fax", Work in Progress,
      Internet Draft, draft-masinter-media-features-02.txt.

[MDN] Fajman, R., "An Extensible Message Format for Message
      Disposition Notifications", Work in Progress, Internet Draft,
      draft-ietf-receipt-mdn-XX.txt (soon to be Proposed Standard).

[RFC822] Crocker, D., "Standard for the Format of ARPA Internet
      Text Messages", RFC 822, STD 11, August 1982.

[RFC2045] Freed, N., and N. Borenstein, "Multipurpose Internet Mail
      Extensions (MIME) Part One: Format of Internet Message Bodies",
      RFC 2045, November 1996.

7. Copyright

8. Authors' Addresses

Dan Wing
Cisco Systems, Inc.
101 Cooper Street
Santa Cruz, CA 95060 USA

Phone: +1 408 457 5200
Fax: +1 408 457 5208
EMail: dwing@cisco.com

Larry Masinter
Xerox Palo Alto Research Center
3333 Coyote Hill Road
Palo Alto, CA 94304 USA

Fax: +1 415 812 4333
EMail: masinter@parc.xerox.com

A. Examples

A.1. MDN with Features Included

This example shows an MDN with the new "Features" field
included.

   Date: Fri, 5 Dec 1997 14:03:06 (PST) -0800

```
From: Joe Recipient <Joe_Recipient@hq.cisco.com>>
Message-Id: <19971205.14030618@hq.cisco.com>
Subject: Disposition notification
To: Jane Sender <Jane_Sender@yoyodyne.com>
MIME-Version: 1.0
Content-Type: multipart/report; boundary="NextPart";
              report-type=disposition-notification;

--NextPart

Your message sent on Friday, 5 Dec 1997 at 14:00 to
Joe Recipient <Joe_Recipient@hq.cisco.com> with the subject
"Hello there" has been displayed.  This is no guarantee
that the message has been read or understood.

--NextPart
Content-Type: message/disposition-notification

Reporting-UA: hq.cisco.com; MultiNet
Original-Recipient: rfc822;Joe_Recipient@cisco.com
Final-Recipient: rfc822;Joe_Recipient@hq.cisco.com
Original-Message-ID: <19971205.140123@yoyodyne.com>
Disposition: manual-action/MDN-sent-manually; displayed
Original-Content-ID: <19971205.140000.813@yoyodyne.com>
Features: web=mozilla4; tiff=faxbw; microsoft=word5,word95,excel

--NextPart
Content-Type: message/rfc822

[original message goes here]

--NextPart--
```