Network Mail Meeting Summary

Introduction

   The purpose of this RFC is to briefly summarize, from the NIC's
   viewpoint, the principal conclusions reached at the Network Mail
   Meeting held Friday, February 23 1973, at SRI-ARC.

      Please refer to RFC #475 (NIC 14919) for Abhay Bhushan's
      comprehensive summary of the issues discussed at the meeting.

      There is no major disagreement between the present RFC and RFC
      #475.

      RFC #453 (NIC 14317) contains background information on the
      meeting.

      RFC #479 (NIC 14948) describes what the NIC would like to see
      included in the File Transfer Protocol for Network Mail purposes,
      and also describes briefly how the NIC would use the information.

   The present RFC is organized as follows:

      Conclusions
      Discussion
      Attendees

Conclusions

   Additional FTP mail requirements were decided upon. These would be
   implemented as a new mail command, with the following subcommands:

      TO

         This field is explicitly allowed to contain multiple
         addressees, with a standard syntax: user@host.

      FROM

         This field provides a return-address for notification of
         undeliverable mail, as well as a clearcut identification of the
         sender for the recipient's information..

AUTHOR

   This field denotes the author of the mail. There may be
   multiple authors

TITLE
   The "title" (i.e. subject) of the mail is to be terminated by
   period carriage return.

ACKNOWLEDEGMENT success / failure (time out) / normal

   For use by the intermediate host, probably the NIC in most
   cases, to tell the sender what happened to his attempt to send
   mail. (Note: "normal" wasn't defined.)

RECORDED jnumber / null

   Note: "jnumber" is the pre-assigned accession number (NIC
   number), to be used when known.

   The "RECORDED" subcommand provides for the option of having the
   mail recorded. Information given with this subcommand would be
   recognized at the NIC. Options are:

      to be recorded (in NIC journal) only,
      to be recorded and distributed,
      to be distributed only.

   This field would also be used to inform the recipient that the
   mail has been recorded.

      (In retrospect, it may be preferable to have a separate
      command to inform the recipient of this fact, but no
      decision on this was made at the 23-Feb-73 meeting.)

TYPE long / urgent / ordinary

   This allows the recipient site to take whatever action it
   thinks appropriate in storing the mail.

TEXT / FILE / CITATION

   TEXT

      This field is for the text of the mail message.

FILE

The purpose of the field is unclear to me. Does it contain a
machine readable pointer to the file that the sender wishes the
recipient to read?

CITATION

This field is a person-readable pointer to the file that the
sender wishes the recipient to read. When the citation command
is used, no mail is sent other than the citation.

Discussion

Introduction

The key aspects in the solution are:

1) It is based on FTP.

2) It uses the NIC without requiring direct use of NLS.

3) There is a mechanism for uniformity in the use of
user identifications.

4) There is a mechanism for recording the mail for
later reference.

These issues are covered in the discussion that follows.

New FTP Mail Subcommands

TO

Addressee Format

The standard form of the address is: user@host

"User" may be an individual's last name; or it may be whatever
other identification the recipient has chosen AND has made
known to the rest of the network.

If the intended host doesn't recognize the intended
recipient's identification, then it sends back an
"undeliverable" mail message to the sender's host. It is up
to the individual to keep the NIC informed of his wherabouts
[sic]; otherwise, he may not get his mail on time.

NIC Role

   The NIC need have no role at all for mail sent from point A to
   point B, whenever that mail is not to be recorded at the NIC.

   For mail that is to be recorded at the NIC, the RECORDED
   subcommand is to be used.

   Also, when the sender does not know the standard address of the
   recipients, he may use the NIC to obtain this information.

Idents and Addresses

   The NIC will modify its identification files to include the
   "user@host" standard address for each individual.

      Sites may ask the NIC to translate from NIC Ident, or from a
      user's last name, to the standard address. A query facility
      will be made available at the NIC to do the translation on
      request. The translation service will also be available for
      "group idents".

      This service would be FTP-like, in term of the prootocol
      [sic] it accepts, but would not be within FTP itself. A
      different server process would handle Ident translation
      requests.

      Translation will also be done at the NIC when the NIC is
      used as an intermediate point on the delivery route.

         The NIC could be an intermediate point for recording the
         mail as a NIC journal item, and for forwarding the mail
         to its ultimate destinations. During this process, the
         NIC would translate from NIC idents to standard
         addresses.

   In the NIC ident files, provision already exists to specify
   hardcopy or on-line delivery of recorded (NIC Journal) mail.

      This provision will be extended to include a "network"
      attribute, which means "deliver the mail to the host of this
      person".

      The network attribute may be qualified by restricting all
      mail to be kept at the sender, with only a notification
      message actually mailed.

Notification would be in the form of a citation giving "to",
"from", "title", "date of submission", and "location of
mail".

TIP Users

To enable TIP users to have access to the mail system, both for
sending and receiving mail, it was suggested that some hosts
will have to be the "home" site for these users (but no more
than one "home" site per user).

That is, an account that allows a TIP user to send and receive
mail will have to be established at such a host.

For the present, any TIP user can use the SRI-ARC system for
his mail requirements.

An alternate solution, that TIP's be equipped with a hardcopy
device that is continuously available for printing mail, was
discarded in favor of the above approach.

FROM

The "FROM" command in FTP, identifies the sender in "standard
address" form.

This will allow "undeliverable" mail notices to be sent back to
the originator.

The default condition is that the sender's host must retain
the mail until it is "delivered" to the recipient's host.

"Delivered" means that the recipient's host has accepted
the mail. It does NOT mean that the recipient has READ
the mail.

Alternatively, the sender may designate that an intermediate
host store the mail. Then the intermediate host has the
responsibility of storing the mail until it is "delivered"
to all intended recipients.

The "ACKNOWLEDGEMENT" command will allow an optional, positive
acknowledgement to be given to the originator of the mail (the
"FROM" addressee), stating that the mail was delivered.

AUTHOR

   The AUTHOR may be several persons. For recorded documents the
   authors appear separately in the index of authors, to facilitate
   searching for mail when an author is known, but the title and
   location of the mail are unknown.

TITLE

   The TITLE field is especially useful for recorded mail, since
   indexes on key words in the title can be produced relatively
   easily, and facilitate searching for mail.

   For this reason, the title should be a succinct indicator of the
   contents.

ACKNOWLEDGEMENT

   Acknowledgement of failure to deliver should be given to the
   sender.

      An optional, positive acknowledgement of successful delivery to
      the recipient's sitename will be given on request of sender
      (like U.S. CERTIFIED mail).

      No acknowledgement that the recipient actually saw the mail
      will be given (comparable to not having U.S. REGISTERED mail).

RECORDED

   The concept of "recorded" mail is that a permanent record of the
   mail is kept centrally, to allow future references and re-readings
   of the mail to be made.

      For example, in the NIC Journal system, a record is kept of all
      the items entered into the Journal. From this record, author,
      title-word, and NIC number indexes are produced to allow for
      references and re-readings.

      The key to retrieval of recorded Journal items is the use of an
      accession number (the NIC number). This essentially removes
      the possibility of duplicate filenames being used.

   The basic aspect of recorded mail which was discussed at the mail
   meeting is the assignment of an "accession" number.

It was decided to get the accession numbers from the NIC on an
as-needed basis, without pre-assignment and without local
assignment of numbers.

This subject may be reviewed in the future. Local assignment
may be desirable to prevent the NIC from becoming a bottleneck
in the mail process.

It was pointed out that local assignment of numbers would be
un-ambiguous if the numbers included some information such as
sitename, date, and time.

One other problem exits [sic], namely "where is the recorded
document?".

Initially the document should be in the NIC, but ultimately it
could be anywhere on the Network, provided only that there is a
central mechanism for indexing and cataloging all the recorded
documents.

The pathname to the recorded document would then include
filename and sitename.

TYPE

The TYPE subcommand was a result of a discussion on the
problems of large mail files, and the associated
question of who would pay for the processing and storing
of these files.

The main decisions made were:

a) The processing, transmittal, and storage costs of
sending mail should be borne at the sender's host.

b) The processing and storage costs of receiving
mail should be borne at the recipient's host
initially, as a default.

Information to enable the recipient host to make an
intelligent decision about where to store the incoming
mail are passed along via the TYPE command.

The recipient host will have the local option of
providing either of the following services:

a) free use of system to send mail;
b) free use of system to receive mail, i.e. login
not required for delivery over the Network. (A
possible alternative is use of a "mail" account,
or use of the recipient's account, for processing
and storage of the incoming mail.

TEXT / FILE / CITATION

TEXT

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FILE

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machine readable pointer to the file that the sender wishes the
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CITATION

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sender wishes the recipient to read.

An alternative to sending entire messages or files over the
Network is to use the "CITATION" mechanism. With this, the
sender sends a short message (the citation) saying, in effect,
"please read file X at site Y".

This alternative would be especially useful for

a) mail that is distributed with group idents (to all
liaisons, for example), and

b) "long" files (size not defined) that the recipient may
not be immediately interested in.

However no method of enforcing use of this alternative was
discussed. It will be up to the recipients to devise a
scheme satisfactory to them.

Other General Discussion

Bob Kahn placed on the floor the following question (I paraphrase):

Can't the design of a mail system be made to include alternative
sources of data and alternative modes of operation, unless
exclusion of these alternatives can be quantitatively defended?

Particular aspects of this question are:

1) What is the desirability and difficulty of admitting different
data sources into the mail system?

   What are the "boundaries" that divide permitted from prohibited
   data sources?

   What is the quantitative distinction between deferred and
   realtime mail?

   Will the design we come up with allow such things as

      a) handling a calendar that reflects the known and
      anticipated whereabouts of people so that meetings can be
      scheduled sensibly?

      b) formatting the mail contents for later query and other
      information handling?

2) Whatever primitives we implement, can't they be designed so as
not to preclude things like Tenex "linking"?

   This requires two-way data communication paths.

   How do we specify and get the attention of a "sink" for the
   data stream?

      e.g., for interprocess communication, and for Tenex-type
      "linking".

The general reaction to this discussion was one of perspective:

   In the scheme of things that could be considered "point-to-point
   communication", mailbox-type of communication is not the most
   general kind.

   AKB listed several types of communication problems:

      program-program communication
      people-people real-time communication, e.g.
      Tenex-type "links"
      computer teleconferencing
      mailbox communication: cataloging, storage
      protocols: host-host, telnet, file transfer

A design for a mailbox-type system won't be required to encompass
the problems of, say, a computer teleconferencing system, which
has attributes (real-time, video, very large volume of data to be
transferred, to name some) that are not attributes of a mail box
system.

Attendees at the Network Mail Meeting 2/23/73 at SRI-ARC

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        Nancy Mimno            BBN
ACB     Alan Bomberger  AMES-67
AKB     Abhay Bhushan   MIT-DMOG
AWH     Wayne Hathaway  AMES-67
CHI     Charles Irby           SRI-ARC
DHC     Dave Crocker           UCLA-NMC
JBP     Jon Postel             UCLA-NMC
JDH     Dave Hopper            SRI-ARC
JEW     Jim White              SRI-ARC
LPD     Peter Deutsch          PARC-MAXC
MCK     Mark Krilanovich       UCSB-MOD75
MDK     Mike Kudlick           SRI-ARC
REK2    Bob Kahn               ARPA
RKK     Rajendra Kanodia       MIT-MULTICS
RST     Ray Tomlinson   BBN-TENEX
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