Whitepaper

Using LISTSERV®
to Feed Custom
Written Mail
Messages to SMTP

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Introduction

This document provides a brief overview and examples detailing the necessary steps to take a custom prepared message and feed it to an SMTP server by placing it in LISTSERV's outgoing spool directory, bypassing sending the data by email. This is useful if there is a third party application writing mail messages, or if an email client is making unwanted formatting changes to messages. In order to accomplish this, it is necessary to have command line access to the server where the LISTSERV installation is located and "write permission" to LISTSERV's spool directory.

Process Overview

The process is relatively uncomplicated:

- First create a file containing the custom written email message. This file will contain all the necessary [RFC822] message headers and the message contents.

- Add the [RFC821] SMTP "wrapper" language to the top and bottom of the file.

- Save the file as a text file in LISTSERV's outgoing spool directory (usually `x:\LISTSERV\SPOOL` but it may be different on individual servers). Do **not** name the temporary file with `.MAIL`, `.JOB`, or `.JOBH` file types because these have special meanings for LISTSERV.

- When the file is complete, rename it to use a `.MAIL` file type.

When LISTSERV's "SMTP Worker" checks the outgoing spool directory, it takes care of sending all `.MAIL` files located there to SMTP for delivery.

File Format

The format of the `.MAIL` file is uncomplicated and stable because it is just a recorded SMTP transaction of the Internet standard "Simple Mail Transfer Protocol" documented in RFC 821. When LISTSERV finds the `*.MAIL` file in its spool directory, it then automatically uses its SMTP workers to transfer the messages to the SMTP server. Below is a table showing the parts of the `.MAIL` file:

`HELO`
`MAIL FROM:<(originator)>`
`RCPT TO:<(recipient)>`
	RFC821 SMTP "wrapper" language

`DATA`
`(headers)`
`(blank line)`
`(body)`
	Message content that includes RFC822 mail headers and actual message contents.

`.` `QUIT`	RFC821 "wrapper" language

Example 1: Sending a simple text message

An example with actual data in the form of a simple text message:

```
HELO
MAIL FROM:john@anycompany.com
RCPT TO:sales@anycompany.com
DATA
Date: Tue, 03 Feb 1998 08:35:02 -0500
From: John C. Jones john@anycompany.com
Subject: .Mail File format
To: Sales team <sales@anycompany.com>

Sales Team,

Here is the simple format of *.MAIL files.

John
.
QUIT
```

RFC821
SMTP wrapper

RFC822
mail headers

Blank line

Message body

RFC821
SMTP wrapper

With a few restrictions, it is possible to include any syntactically valid SMTP command stream and LISTSERV will process it. For multiple recipients in one message, just include additional `RCPT TO: <address>` lines in the SMTP wrapper as necessary, but only one address per line. Syntax is extremely important for this type of file and there are exact specifications as to when spaces are allowed, when the address and other parameters must be enclosed in `< >`, and the placement of the single '.' line before the `QUIT` is required. Please refer to RFC821 for details on the syntax.

If a line in the message begins with a period ('.'), the period must be doubled.

The format of the message itself is defined by [RFC822], the Standard for Internet Text Messages. Specifically, the "mail headers" must be separated from the message text by at least one empty line. Certain mail headers are required: `Date:`, `From:`, `To:`. A Subject: header is strongly recommended. Other headers, such as `Reply-To:`, are optional. Please refer to [RFC822] for complete details.

Example 2: Submitting a LISTSERV DISTRIBUTE job

Here is another example, using this "file drop in" method to submit a DISTRIBUTE job to LISTSERV.

A DISTRIBUTE job is a series of commands that essentially tells LISTSERV: "Take this message and send it to these recipients". DISTRIBUTE jobs are documented in detail in the [LISTSERV Developer's Guide]. A DISTRIBUTE job must be sent as plain text, and its format is very precise. One problem that may occur when attempting to send a DISTRIBUTE job is that the user's e-mail client, in an attempt to be "helpful", actually changes and corrupts the DISTRIBUTE job. A workaround for this problem is to use the "file drop in" method to send the DISTRIBUTE job to LISTSERV.

Since the purpose of a DISTRIBUTE job is to define a message for LISTSERV to distribute, the "DATA" section of the DISTRIBUTE job itself contains some mail headers. It is important not to confuse these with the mail headers of the "drop in" message. The mail headers inside the DISTRIBUTE job are the mail headers that will be used in the mail that is distributed **by**

LISTSERV as a result of the job. The mail headers above the DISTRIBUTE job are used in the mail that is sent **to** LISTSERV, containing the job.

The address of the person sending the job must be in the mail headers of the message **to** LISTSERV. Remember, as with any distribute job, this address (in the example below, `john@company.com`), must either be listed as `POSTMASTER=` in LISTSERV's site configuration file <u>or</u> be listed as a `DIST_ALLOWED_USERS=` in the same file. The DISTRIBUTE command parameter '`PW=abcdef`' must indicate that user's (`john@anycompany.com`) personal LISTSERV password.

DISTRIBUTE JOB example:

```
HELO
MAIL FROM:john@anycompany.com                          RFC821
RCPT TO:LISTSERV@listserv.company.com                  SMTP wrapper
DATA
From:  john@anycompany.com                             RFC822
To:  LISTSERV@listserv.company.com                     mail headers
Date: Tue, 03 Feb 2002 08:35:02 -0500
Subject: AA-1116-D Dist Job                            Blank line

//AA-1116-D JOB
// DISTRIBUTE MAIL-MERGE ,                             DISTRIBUTE
FROM=owner-nolist-AA-1116-D@listserv.company.com ,     command
PW=abcdef
//TO DD *
*XDFN fname="John" lname="Doe" month="April" idno="10021"
john@example.com PROBE                                 "TO" (recipients)
*XDFN fname="Jane" lname="Smith" month="March" idno="10    section of job
jane@example.com PROBE
*XDFN fname="Matilda" lname="Singer" month="May" idno="21034"
matilda@xyz.com PROBE                                  Start of DATA
/*                                                     (message) section
//DATA DD *,EOF                                        of job
Date:  &*date;
From:   "Company.com" internaut@company.com            RFC821 mail
Subject:  Coming in December                           headers of message
To:  &*TO;                                             to be distributed

Dear &fname; &lname;,                                  Blank Line

We are writing to share some exciting news:...

This message was sent to: &*TO;                        Text of message to
Your Customer ID: &idno;                               be distributed
Member since &month; 1999

.                                                      RFC821
QUIT                                                   SMTP wrapper
```

Special Application Note:

Some DISTRIBUTE mail-merge jobs may include conditional blocks (IF statements). The normally required syntax for this is a `.bb/.eb` pair (`.else` is also supported), for example:

```
.bb &test_flag = Y
This is message content based on a conditional test.
.eb
```

However, in this situation transparency requirements in RFC821 (Sect 4.5.2) require that the leading '.' (period character) must be doubled, because one will disappear in the SMTP mail process. Therefore, the job must be coded in this way for the file drop-in method only.

```
..bb &test_flag = Y
This is message content based on a conditional test.
..eb
```

Configuring LISTSERV for multiple SMTP delivery 'Workers'

If there is an automated process creating high volumes of email messages in LISTSERV's outgoing spool, it may be necessary to configure LISTSERV so that there are several SMTP Workers feeding the email in parallel to SMTP.

In LISTSERV's site configuration file, `site.cfg`, a single SMTP Worker is defined as follows:

```
SMTP_FORWARD=LSMTP_hostname
SMTP_FORWARD_1=LSMTP_hostname
```

To define two SMTP workers feeding the same SMTP server, modify this as shown below and then stop/restart LISTSERV:

```
SMTP_FORWARD=LSMTP_hostname
SMTP_FORWARD_1=2*LSMTP_hostname
```

If many thousands of files need to be mailed quickly in this manner, it may be necessary to set up more than one SMTP server. To define four SMTP workers feeding two SMTP servers, modify the site configuration file as shown below and stop and restart LISTSERV:

```
SMTP_FORWARD=LSMTP_hostname1
SMTP_FORWARD_1=2*LSMTP_hostname1
SMTP_FORWARD_2=2*LSMTP_hostname2
```

References

RFC 821, "*Simple Mail Transfer Protocol*" http://www.ietf.org/rfc/rfc0821.txt

RFC 822. "Standard For The Format Of ARPA Internet Text Messages" http://www.ietf.org/rfc/rfc0822.txt

LISTSERV Advanced Topics Manual http://www.lsoft.com/resources/manuals.asp