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**The Use of URIs as Meta-Syntax for Core Mail List Commands and their
Transport through Message Header Fields
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Abstract

The mailing list command specification and identification header fields are a set of structured fields to be added to email messages sent by email distribution lists. Command header fields typically contain URIs (usually including "mailto") locating the relevant information or performing the command directly. The three core command header fields described in this document are List-Help, List-Subscribe, and List-Unsubscribe.

There are three other header fields described here which, although not as widely applicable, will have utility for a sufficient number of mailing lists to justify their formalization here. These are List-Post, List-Owner and List-Archive.

By including these header fields, mailing list managers can make it possible for mail user agents to provide automated tools for users to perform list functions.

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1. Introduction

[RFC 2369](#) [[RFC2369](#)] defined additional header fields to be added to email messages sent by mailing list managers (MLMs). The significant change in this document is the use of Uniform Resource Identifier (URI) [[RFC3986](#)], instead of Uniform Resource Locator (URL), allowing an implementation to parse the common components of a URI reference without knowing the scheme-specific requirements of every possible identifier. The content of each new header field is typically a URI - usually "mailto" [[RFC6068](#)] - which identifies the relevant information or performs the command directly.

These headers fields are optional. Significant functionality and convenience can be gained by including them. The List-Help header field provides an access point to detailed user support information, and accommodates almost all existing mailing list managers command sets. The List-Subscribe and List-Unsubscribe header fields provide access to two functions commonly requested by mailing list subscribers.

The description of command syntax provided by the header fields can be used by mail user agents (MUAs) to provide simplified and consistent user access to mailing list functions. The intent is to simplify the user experience, providing a common interface to the often cryptic and varied mailing list manager commands.

Consideration has been given to avoiding the creation of too many header fields, while at the same time avoiding the overloading of individual header fields and keeping the syntax clear and simple.

The use of these header fields does not remove the requirement to support the -Request command address for mailing lists [[RFC2142](#)].

This document obsoletes [RFC 2369](#) [[RFC2369](#)].

1.1. Terminology

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 [[RFC2119](#)].

1.2. Syntax Notation

This specification uses the Augmented Backus-Naur Form (ABNF) [[RFC5234](#)] notation for the formal definitions of the syntax of list header fields.

1.3. Note

This Internet-Draft can be discussed on the apps-discuss@ietf.org mailing list. [RFC-Editor: please remove this paragraph]

2. The Command Syntax

The list header fields are subject to the encoding and character restrictions for mail headers fields as described in [[RFC5322](#)].

The contents of the list header fields mostly consist of angle-bracket ('<', '>') enclosed URIs [[RFC3986](#)], with internal whitespace being ignored. mailing list managers MUST NOT insert whitespace within the brackets. Client applications SHOULD treat any whitespace, that might be inserted by poorly behaved mailing list managers, as characters to ignore.

A list of multiple, alternate, URIs MAY be specified by a comma-separated list of angle-bracket enclosed URIs. The URIs have order of preference from left to right. The client application should use the left most scheme that it supports, or knows how to access by a separate application. With this mechanism, schemes like http may be specified while still providing the basic "mailto" support for those clients who do not have access to non-mail scheme. The client should only use one of the available URIs for a command, using another only if the first one used failed.

The use of URIs allows for the use of the syntax with existing URI supporting applications. As the standard for URIs is extended, the list header fields will gain the benefit of those extensions. Additionally, the use of URIs provides access to multiple schemes (such as ftp and http) although it is expected that the "mailto" scheme [[RFC6068](#)] will be the focus of most use of the list header fields. Use of the schemes should be considered in light of those users who do not have access to the specified mechanism.

Command syntaxes requiring variable fields to be set by the client (such as including the user's email address within a command) are not supported by this implementation. However, mailing list managers using such syntaxes should still take advantage of the List-Help field to provide the user with detailed instructions as needed or - perhaps more usefully - provide access to some form of structured command interface such as an HTML-based form.

The additional complications of supporting variable fields within the command syntax was determined to be too difficult to support by this protocol and would compromise the likelihood of implementation by

software authors.

To allow for future extension, it is recommended that client applications follow the guidelines below for handling the contents of the header fields described in this document:

1. Except where noted for specific header fields, if the content of the header field (following any leading whitespace, including comments) begins with any character other than the opening angle bracket '<', the header field SHOULD be ignored.
2. Any characters following an angle bracket enclosed URI SHOULD be ignored, unless a comma is the first non-whitespace/comment character after the closing angle bracket.
3. If a sub-item (comma-separated item) within the field is not an angle-bracket enclosed URI, the remainder of the field (the current, and all subsequent, sub-items) SHOULD be ignored.

3. The List Header Fields

This document presents header fields which will provide the command syntax description for the 'core' and key secondary functions of most mailing list managers. The header fields implemented on a given mailing list SHOULD be included on all messages distributed by the list (including command responses to individual users), and on other messages where the message clearly applies to one distinct mailing list. There MUST be no more than one of each header field present in any given message.

These header fields MUST only be generated by mailing list managers, not by MUAs.

3.1. List-Help

The List-Help header field can direct the user to complete instructions for all other commands. Typically, the URI specified would request the help file, perhaps incorporating an HTML form for list commands, for the list, and alternatively provide access to an instructive website.

Syntax:

```
uri-list = "<" URI ">" *(", " [ FWS ] "<" URI ">")
```

```
; whereas <URI> is defined in RFC 3986 and <FWS> and
```


; <CFWS> in [RFC 5322](#)

; CRLF is the carriage return/line feed pair

list-help = "List-Help:" [CFWS] uri-list [CFWS] CRLF

Examples:

List-Help: <mailto:list-request@example.com?subject=help> (List Instructions)

List-Help: <mailto:list-request@example.com?body=info>

List-Help: <mailto:list-info@example.com> (Info about the list)

List-Help: <http://www.example.com/list/>,
<mailto:list-info@example.com>

List-Help: <ftp://ftp.example.com/list.txt> (FTP),
<mailto:list-request@example.com?subject=help>

[3.2.](#) List-Unsubscribe

The List-Unsubscribe header field describes the command to directly unsubscribe the user (removing them from the list).

Syntax:

list-unsubscribe = "List-Unsubscribe:" uri-list [CFWS] CRLF

Examples:

List-Unsubscribe:
<mailto:list-request@example.com?subject=unsubscribe>

List-Unsubscribe: (Use this command to get off the list)
<mailto:list-request@example.com?body=unsubscribe%20list>

List-Unsubscribe: <mailto:list-remove@example.com>

List-Unsubscribe:
<http://www.example.com/list.cgi?cmd=unsub&lst=list>,
<mailto:list-request@example.com?subject=unsubscribe>

3.3. List-Subscribe

The List-Subscribe header field describes the command to directly subscribe the user (request addition to the list).

Syntax:

list-subscribe = "List-Subscribe:" uri-list [CFWS] CRLF

Examples:

List-Subscribe:
<mailto:list-request@example.com?subject=subscribe>

List-Subscribe: (Use this command to join the list)
<mailto:list-request@example.com?body=subscribe%20list>

List-Subscribe: <mailto:list-add@example.com>

List-Subscribe:
<http://www.example.com/list.cgi?cmd=sub&lst=list>,
<mailto:list-request@example.com?body=subscribe%20list>

3.4. List-Post

The List-Post header field describes the method for posting to the mailing list. This is typically the email address of the mailing list. It can also be the email address of a moderator, or potentially some other form of submission. For the special case of a mailing list that does not allow posting (e.g., an announcements list), the List-Post field may contain the special value "NO".

Syntax:

```
list-post = "List-Post:" uri-list/"NO" [ CFWS ] CRLF
```

Examples:

```
List-Post: <mailto:list@example.com>
```

```
List-Post: <mailto:list-moderator@example.com> (Postings are  
Moderated)
```

```
List-Post:  
<mailto:list-moderator@example.com?subject=list%20posting>
```

```
List-Post: NO (posting not allowed on this list)
```

3.5. List-Owner

The List-Owner header field identifies the path to contact a human administrator for the mailing list. The URI may contain the email address of an administrator for the mailing list, the mail system administrator, or any other person who can handle user contact for the mailing list.

Syntax:

```
list-owner = "List-Owner:" uri-list [ CFWS ] CRLF
```

Examples:

List-Owner: <mailto:list-admin@example.com> (Contact Person for Help)

List-Owner: <mailto:grant@example.com> (Grant Neufeld)

List-Owner: <mailto:josh@example.com?Subject=list>

[3.6.](#) List-Archive

The List-Archive header field describes how to access archives for the mailing list.

Syntax:

list-archive = "List-Archive:" uri-list [CFWS] CRLF

Examples:

List-Archive:
<mailto:list-request@example.com?subject=index%20list>

List-Archive: <ftp://ftp.example.com/pub/list/archive/>

List-Archive: <http://www.example.com/list/archive/> (Web Archive)

List-Archive: <imap://archive.example.com/list>

The Archive-At header field [[RFC5064](#)] provides a pointer to an archived form of a single message.

4. Supporting Nested Lists

A mailing list that is a sublist for another mailing list in a nested mailing list hierarchy will need to modify some of the List- header fields, while leaving others as the parent list set them.

Sublists SHOULD remove the parent list's List-Help, List-Subscribe, List-Unsubscribe and List-Owner header fields, and SHOULD insert their own versions of those header fields.

If the sublist provides its own archive, it SHOULD replace the List-Archive header field with its own. Otherwise, it MUST leave the List-Archive header field untouched.

Dependant on how postings to the mailing list are handled, the sublist MAY replace the List-Post field. The appropriateness of whether to replace List-Post is left to the determination of the individual list administrators. If the intention is that postings should be distributed to all members of the primary mailing list, List-Post should not be changed by a sublist in such a way that postings will be distributed only to members of the sublist.

5. Security Considerations

There are very few new security concerns generated with this proposal. Message headers fields are an existing standard, designed to easily accommodate new types. There may be concern with multiple header fields being inserted or headers fields being forged, but these are problems inherent in Internet mail, not specific to this specification.

Mailing list managers should not allow any user-originated list header fields to pass through to the mailing lists, lest they confuse the user and have the potential to create security problems.

On the client side, there may be some concern with posts or commands being sent in error. It is required that the user have a chance to confirm any action before it is executed. In the case of "mailto", it may be appropriate to create the correctly formatted message without sending it, allowing the user to see exactly what is happening and giving the user the opportunity to approve or discard the message before it is sent.

All security considerations for the use of URIs [[RFC3986](#)] apply equally to this specification. Mail User Agents should not process list header field URIs which could compromise the security of the user's system. This includes the "file://" URI type which could

potentially be used to trigger the execution of a local application on some user systems.

6. IANA Considerations

The List-Archive, List-Help, List-Owner, List-Post, List-Subscribe, and List-Unsubscribe references in the Permanent Message Header Field Names registry should be updated to point to this document.

7. Acknowledgements

The numerous participants of the List-Header, ListMom-Talk, List-Managers and MIDA-Mail mailing lists contributed much to the formation and structure of [RFC 2369](#) with Keith Moore and Christopher Allen providing guidance on the standards process.

We would like to thank the the following people for their contributions: Mykyta Yevstifeye, Murray S. Kucherawy and John Levine.

8. References

8.1. Normative References

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- [RFC5234] Crocker, D. and P. Overell, "Augmented BNF for Syntax Specifications: ABNF", STD 68, [RFC 5234](#), January 2008.
- [RFC5322] Resnick, P., Ed., "Internet Message Format", [RFC 5322](#), October 2008.
- [RFC6068] Duerst, M., Masinter, L., and J. Zawinski, "The 'mailto' URI Scheme", [RFC 6068](#), October 2010.

8.2. Informative References

- [RFC2142] Crocker, D., "MAILBOX NAMES FOR COMMON SERVICES, ROLES AND FUNCTIONS", [RFC 2142](#), May 1997.

- [RFC2369] Neufeld, G. and J. Baer, "The Use of URLs as Meta-Syntax for Core Mail List Commands and their Transport through Message Header Fields", [RFC 2369](#), July 1998.
- [RFC5064] Duerst, M., "The Archived-At Message Header Field", [RFC 5064](#), December 2007.

[Appendix A.](#) Implementation

[RFC 2369](#) contains a discussion about the design decisions for List-header fields.

[Appendix B.](#) Changes from [RFC 2369](#)

This appendix contains a list of changes between this document and [RFC 2369](#).

- o URL changed to URI
- o Replaced MTAs with mailing list managers in the sentence: "MTAs generating the header fields SHOULD".
- o Replaced MTAs with mailing list managers in the sentence: "MTAs MUST NOT insert whitespace within the brackets" in [Section 2](#)
- o In [Section 2](#), client application SHOULD ignore whitespace within brackets
- o Updated references
- o Added informative reference to [RFC 5064](#)
- o Editorial changes
- o Removed Background Discussion

[Appendix C.](#) Change Log

[RFC-Editor: please remove this section]

[C.1.](#) Changes between between version -03 and version -04

- o Removed sections about List-ID and List-Sequence as they are not URIs

C.2. Changes between between version -02 and version -03

- o Added Grant Neufeld as co-author
- o Added Joshua Baer as co-author
- o Move List-Sequence header field definition to I-D.moonesamy-rfc2919bis

C.3. Changes between between version -01 and version -02

- o Added ABNF and reference to [RFC 5234](#)
- o Removed text about postmaster in List-Owner Section
- o Removed User Interface guidelines from [Appendix B](#)
- o Removed SHOULD include a "mailto" based command in [Section 3](#)
- o Modified the text to first paragraph of [Section 3.1](#)

C.4. Changes between between version -00 and version -01

- o Added List-Sequence header field
- o Added informative reference to I-D.moonesamy-rfc2919bis

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