Sieve -- IMAP flag Extension

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The protocol discussed in this document is experimental and subject to change. Persons planning on either implementing or using this protocol are STRONGLY URGED to get in touch with the author before embarking on such a project.

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Abstract

Recent discussions have shown that it is desirable to set different [IMAP] flags on message delivery. This can be done, for example, by a SIEVE interpreter that works as a part of a Mail Delivery Agent.

This document describes an extension to the Sieve mail filtering language for setting [IMAP] flags. The extension allows to set both [IMAP] system flags and [IMAP] keywords.

0. Meta-information on this draft

This information is intended to facilitate discussion. It will be removed when this document leaves the Internet-Draft stage.

0.1. Discussion

This draft is intended to be compared with the Sieve mail filtering language, an Internet-Draft being discussed on the MTA Filters mailing list at <ietf-mtafilters@imc.org>. Subscription requests can be sent to <ietf-mta-filters-request@imc.org> (send an email message with the word "subscribe" in the body). More information on the mailing list along with a WWW archive of back messages is available at <http://www.imc.org/ietf-mta-filters/>.

0.2. Changes from the version submitted to the SIEVE mailing list

1. Added addflag and removeflag actions
2. Changed the semantics of setflag (setflag is not additive any more)
3. Corrected section "Interaction with Other Sieve Actions". Removed incorrect reference to the forward action as to an action that prohibits setflag.
4. Added paragraph about the mutual order of fileinto/keep and setflag/addflag/removeflag actions.

0.3. Changes from the revision 00
1. Corrected Capability Identifier section (Section 2)
2. Corrected "Interaction with Other Sieve Actions" section (Section 4)
3. Examples were updated to be compatible with Sieve-07 draft
4. Added "mark" and "unmark" actions

0.4. Changes from the revision 01
1. Some language fixes based on Tony Hansen comments
2. Clarified that the extension allows to set both IMAP System Flags and Keywords

0.5. Changes from the revision 02
1. BugFix: all backslashes must be escaped
2. Added extended example and more detailed description of addflag/removeflag additivity.
3. Minor example bugfixes

1. Introduction

This is an extension to the Sieve language defined by [SIEVE] for setting [IMAP] flags. It defines several new actions "setflag", "addflag", "removeflag", "mark" and "unmark".

This document doesn't dictate how the SIEVE interpreter will set the [IMAP] flags. In particular, the SIEVE interpreter may work as an IMAP client, or may have direct access to the mailstore.

SIEVE interpreters that don't support integration with IMAP SHOULD ignore this extension.

Conventions for notations are as in [SIEVE] section 1.1, including use of [KEYWORDS].

2. Capability Identifier

The capability string associated with extension defined in this document is "imapflags".

3. Actions

All actions described in this specification (setflag, addflag, removeflag, mark, unmark) operate on an internal variable that contains the set of [IMAP] flags associated with the message being delivered. When the interpreter starts executing a script this variable contains an empty set. The 'addflag' action adds flags to the existing set. The 'removeflag' action removes flags from the existing set. The 'setflag' action replaces the existing set of flags with a new set. Whenever the interpreter encounters a 'fileinto' or 'keep' action it files the message with the current set of flags.

3.1. Setflag Action

Syntax: setflag <list-of-flags>

Setflag is used for setting [IMAP] system flags or keywords. Setflag replaces any previously set flags. It should be used together with keep or fileinto. It MUST be ignored if mailstore or target mailbox doesn't support the storing of any flags.
Flags can be set only for the message that is currently being processed by SIEVE. When called with keep, setflag sets flags in the user’s main mailbox. When called with fileinto, setflag sets flags in the mailbox indicated by the parameter.

The order of setflag/fileinto or setflag/keep is important in the script. Any setflag action applies only to subsequent fileinto/keep actions in a script till next occurrence of setflag/addflag/removeflag/mark/unmark.

Server MUST ignore all flags that it can’t store permanently. This means, in particular, that if the user’s main mailbox can’t store any flags, then the following SIEVE script produces no actions

Example: if size :over 500K {
    setflag "\Deleted";
}

A more substantial example is:

Example:
if header :contains "from" "boss@frobnitzm.edu" {
    setflag "\Flagged";
    fileinto "INBOX.From Boss";
}

3.2. Addflag action

Syntax: addflag <list-of-flags>

Addflag is used for setting [IMAP] flags. However unlike setflag it doesn’t replace any previously set flags. This means that multiple occurrences of addflag are treated additively.

For example, the following two actions

    addflag "\Deleted";
    addflag "\Answered";

produce the same result as the single action

    addflag ["\Deleted", "\Answered"];

In all other respects addflag behaves the same way as setflag.

3.3. Removeflag Action

Syntax: removeflag <list-of-flags>

Removeflag is used for setting [IMAP] flags. Removeflag clears flags previously set by setflag/addflag. Calling removeflag with a flag that wasn’t set before is not an error and is ignored. Multiple occurrences of removeflag are treated additively.

In all other respects removeflag behaves the same way as setflag.

Example:
if header :contains "Disposition-Notification-To" "mel@example.com" {
    addflag "$MDNRequired";
}  
if header :contains "from" "imap@cac.washington.edu" {
    removeflag "$MDNRequired";
    fileinto "INBOX.imap-list";
}

3.4. Mark and Unmark Actions

Syntax: mark

Syntax: unmark

The mark action allows a message to be marked as urgent. Implementers are free
to choose any flag or any combination of [IMAP] flags, however it is RECOMMENDED that the [IMAP] \Flagged flag be used. The mark action is semantically equivalent to ‘addflag "\Flagged"’.

The unmark action allows the flag previously set by the Mark action to be unset. Unmark SHOULD at least clear the [IMAP] \Flagged flag and MUST clear all flags that could be added with mark. Unmark MAY clear other flags as well. The unmark action is semantically equivalent to ‘removeflag "\Flagged"’.

3.5 Extended example

# Example Sieve Filter
# Declare any optional features or extension used by the script
require ["fileinto", "reject", "imapflags"];

# Reject any large messages
if size :over 1M
  
  if header :is "From" "boss@company.com"
    addflag "\Flagged $Big";
    The message will be marked as "\Flagged $Big" when filed into mailbox "Big messages"
  
  fileinto "Big messages";

if header :is "From" "grandma@example.net"
  
  addflag ["\Answered", "$MDNSent"];  # If the message is bigger than 1Mb it will be marked as "\Flagged $Big \Answered $MDNSent" when filed into mailbox "grandma". If the message is shorter than 1Mb it will be marked as "\Answered $MDNSent"
  fileinto "GrandMa";  # move to "GrandMa" folder

# Handle messages from known mailing lists
# Move messages from IETF filter discussion list to filter folder
if header :is "Sender" "owner-ietf-mta-filters@imc.org"
  setflag "\Flagged";
  Message will always have just "\Flagged" flag
  keep;

# Keep all messages to or from people in my company
# elif anyof address :domain :is ["From", "To"] "company.com"
#  keep;  # keep in "In" folder

# Try and catch unsolicited email. If a message is not to me,
# or it contains a subject known to be spam, file it away.
# elif anyof (not address :all :contains ["To", "Cc", "Bcc"] "me@company.com",
#       header :matches "subject"
#       ["*make*money*fast*", "*university*dipl*mas*"])
#  removeflag "\Flagged";
#  If message header does not contain my address,
#  it’s from a list.
#  fileinto "spam";  # move to "spam" folder

else
  # Move all other (non-company) mail to "personal"
4. Interaction with Other Sieve Actions

Sieve actions sometimes prohibit each other in order to make filtering scripts less likely to cause serious problems.

It is strongly discouraged to use setflag/addflag/removeflag/mark/unmark actions together with reject, because that action doesn’t allow keeping a received message.

The SIEVE interpreter MUST ignore any setflag/addflag/removeflag/mark/unmark commands when they are used with reject. The SIEVE interpreter MUST ignore these commands when no keep (implicit or explicit) or fileinto actions will be taken.

A SIEVE verifier SHOULD reject a script that contains a setflag/addflag/removeflag/mark/unmark action together with reject.

5. Other Considerations

This extension intentionally doesn’t allow setting [IMAP] flags on an arbitrary message in the [IMAP] message store.

6. Security Considerations

Security considerations are discussed in the [IMAP] and [SIEVE]. It is believed that this extension doesn’t introduce any additional security concerns.

7. Formal Grammar

The grammar used in this section is the same as the ABNF described in [ABNF].

```
action =/ setflag / addflag / removeflag / mark / unmark
setflag = "setflag" WSP string-list
;; a list of [IMAP] flags
addflag = "addflag" WSP string-list
;; a list of [IMAP] flags
removeflag = "removeflag" WSP string-list
;; a list of [IMAP] flags
mark = "mark"
unmark = "unmark"
```

8. Acknowledgments

This document has been revised in part based on comments and discussions which took place on and off the SIEVE mailing list. The help of those who took the time to review the draft and make suggestions is appreciated, especially that of Tim Showalter, Barry Leiba, and Randall Gellens. Special thanks to Tony Hansen, David Lamb and Roman Migal for helping me explain better the concept.

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Appendices

Appendix A. References


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