             Sieve Email Filtering: Delivering to Special-Use Mailboxes
                       draft-bosch-sieve-special-use-00

Abstract

   The SPECIAL-USE capability of the IMAP protocol (RFC 6154) allows
   clients to identify special-use mailboxes; e.g., where draft or sent
   messages should be put. This simplifies client configuration. In
   contrast, the Sieve mail filtering language (RFC 5228) currently has
   no such capability. This memo defines a Sieve extension that fills
   this gap: it adds a test for checking whether a special-use attribute
   is assigned for a particular mailbox or any mailbox, and it adds the
   ability to file messages into an anonymous mailbox that has a
   particular special-use attribute assigned.

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1. Introduction

Commonly, several mailboxes in an IMAP message store [IMAP] have a
special use; e.g. it is where the user's draft messages are stored,
where a copy of sent messages are kept, or it is where spam messages
are filed automatically at delivery. The SPECIAL-USE capability
[SPECIAL-USE] of the IMAP protocol defines mailbox attributes that
identify these special mailboxes explicitly to the client. This way,
client configuration is simplified significantly. Using the CREATE-
SPECIAL-USE capability [SPECIAL-USE], IMAP clients can also configure
these attributes dynamically based on user preference.

Unlike the IMAP protocol, the Sieve mail filtering language [SIEVE]
currently cannot freely access these special-use mailbox attributes.
Particularly, the Sieve interpreter cannot find an anonymous mailbox
that has a particular special-use attribute assigned. This would be
very useful for example to find the user's Spam mailbox at delivery.

In Sieve, limited access to the special-use attributes is provided
using the "mboxmetadata" extension [MAILBOX], which allows testing
for the presence of a special-use attribute in the "/private/
specialuse" IMAP METADATA [IMAP-METADATA] entry of a mailbox. Still,
not all implementers will be willing to add the complexity of the
IMAP METADATA capability, just to provide access to special-use
attributes to the Sieve interpreter.

This document defines an extension to the Sieve mail filtering
language that adds the ability to freely access mailbox special-use
attributes. It adds a test called "specialuse_exists" that checks
whether a special-use attribute is assigned for a particular mailbox
or - if omitted - any mailbox. It also adds the ability to file
messages into an anonymous mailbox that has a particular special-use
attribute assigned using a ":specialuse" argument for the "fileinto"
command [SIEVE].

2. Conventions Used in This Document

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 [KEYWORDS].

Conventions for notations are as in [SIEVE] Section 1.1, including
use of the "Usage:" label for the definition of action and tagged
arguments syntax.

3. Test "specialuse_exists"

Usage: specialuse_exists [<mailbox: string>]
                          <special-use-flags: string-list>

If the "mailbox" string argument is omitted, the "specialuse_exists"
test yields true if all of the following statements are true for each
of the special-use flags listed in the "special-use-flags" argument:

a. at least one mailbox exists in the mail store that has that
    particular special-use flag assigned, and

b. that mailbox allows the user in whose context the Sieve script
    runs to "deliver" messages into it.

If the "mailbox" argument is specified, the "specialuse_exists" test
yields true if all of the following statements are true:

a. the indicated mailbox exists,

b. that mailbox allows the user in whose context the Sieve script
    runs to "deliver" messages into it, and

c. that mailbox has all of the special-use flags listed in the
    "special-use-flags" argument assigned to it.

Refer to the specification of the "mailboxexists" test in Section 3.1
of RFC 5490 [MAILBOX] for a definition of when "delivery" of messages
into a mailbox is deemed possible.

4. ":specialuse" Argument to "fileinto" Command

   Usage: fileinto [:specialuse <special-use-flag: string>]
                    <mailbox: string>

   Normally, the "fileinto" command delivers the message in the mailbox
   specified using its positional mailbox argument. However, if the
   optional ":specialuse" argument is also specified, the "fileinto"
   command first checks whether a mailbox exists with the specified
   special-use flag assigned to it. If that is the case, that special-
   use mailbox is used for delivery instead. If there is no such
   mailbox or if the specified special-use flag is unknown to the
   implementation in general, the "fileinto" action proceeds as it would
   without the ":specialuse" argument.

   Summarizing, if the ":specialuse" argument is specified, the fileinto
   command deals with two mailboxes that may or may not exist:

   o An anonymous special-use mailbox, which has at least the special-
      use flag specified with the ":specialuse" argument assigned to it.

   o The default mailbox named by the positional string argument of the
      "fileinto" command, which is used when the special-use mailbox is
      not found.

   The special-use flag specified with the ":specialuse" argument MUST
   conform to the "use-attr" syntax described in Section 6 of RFC6154
   [MAILBOX]. Implementations SHOULD handle an invalid special-use flag
   in the same way as an invalid mailbox name is handled. The string
   parameter of the ":specialuse" argument is not a constant string,
   which means that variable substitutions are allowed when the
   "variables" extension [VARIABLES] is active. In that case, the
   syntax of the special-use flag is only verified at runtime.

   If neither the special-use mailbox nor the default mailbox exists,
   the "fileinto" action MUST proceed exactly as it does in case the
   ":specialuse" is argument is absent and the mailbox named by its
   positional argument does not exist. The various options for handling
   this situation are described in Section 4.1 of RFC5228 [SIEVE].

   More than one mailbox can have a particular special-use flag
   assigned. In that case, the mailbox that is chosen for delivery is
   implementation-defined. However, implementations MUST ensure that
   this choice is made consistently, so that the same mailbox is used
   every time.

   If delivery to the special-use mailbox fails for reasons not relating
   to its existence, the Sieve interpreter MUST NOT subsequently attempt

delivery in the indicated default mailbox as a fall-back. Instead,
it MUST proceed exactly as it does in case the ":specialuse" argument
is absent and delivery to the mailbox named by its positional
argument fails. This prevents the situation where messages are
unexpectedly spread over two mailboxes in case transient or
intermittent delivery failures occur.

4.1. Interaction with ":create" Argument to "fileinto" Command

The "mailbox" extension [MAILBOX] adds the optional ":create"
argument to the "fileinto" command. If the optional ":create"
argument is specified with "fileinto", it instructs the Sieve
interpreter to create the specified mailbox if needed, before
attempting to deliver the message into the specified mailbox.

When combined with the ":specialuse" argument, the ":create" argument
instructs the Sieve interpreter to create the specified default
mailbox if needed. This need arises when both the special-use and
the default mailbox are not found.

If the server implementation supports the CREATE-SPECIAL-USE
capability [SPECIAL-USE] for IMAP, i.e. it allows assigning special-
use flags to new mailboxes, it SHOULD assign the special-use flag
specified with the ":specialuse" argument to the newly created
mailbox.

5. Sieve Capability Strings

A Sieve implementation that defines the "specialuse_exists" test and
the ":specialuse" argument for the "fileinto" command will advertise
the capability string "special-use".

6. Examples

The following example saves the message in the mailbox where messages
deemed to be junk mail are held. This mailbox is identified using
the "\Junk" special-use attribute. If no mailbox has this attribute
assigned, the message is filed into the mailbox named "Spam".

```
require "fileinto";
require "special-use";

fileinto :specialuse "\\Junk" "Spam";
```

The following very similar example handles the case in which neither
a "\Junk" special-use mailbox nor the "Spam" mailbox exist. In that
case, a mailbox called "Spam" is created, and the message is stored

there. Additionally, the "\Junk" special-use attribute may be
assigned to it.

```
require "fileinto";
require "special-use";
require "mailbox";

fileinto :specialuse "\\Junk" :create "Spam";
```

The following example is used in a Sieve script that is triggered
from an IMAP event, rather than at message delivery [IMAPSIEVE].
This Sieve script redirects messages to an automated recipient that
processes junk mail, if those messages are copied or moved into a
mailbox that has the "\Junk" special-use attribute assigned.

```
require "imapsieve";
require "special-use";
require "environment";
require "variables";

if environment :contains "imap.mailbox" "*" {
    set "mailbox" "${1}";
}

if allof(
    environment "imap.cause" "COPY",
    specialuse_exists "${mailbox}" "\\Junk") {
    redirect "spam-report@example.org";
}
```

7. Security Considerations

[FIXME]

Additional security considerations are discussed in [SIEVE].

8. IANA Considerations

The following template specifies the IANA registration of the Sieve
extension specified in this document:

```
      To: iana@iana.org
      Subject: Registration of new Sieve extension

      Capability name: special-use
      Description:      adds a test for checking whether an IMAP
                        special-use attribute is assigned for a
                        particular mailbox or any mailbox, and it adds
                        the ability to file messages into an anonymous
                        mailbox that has a particular IMAP special-use
                        attribute assigned.
      RFC number:       this RFC
      Contact address: Sieve mailing list <sieve@ietf.org>
```

   This information should be added to the list of sieve extensions
   given on http://www.iana.org/assignments/sieve-extensions.

9. References

9.1. Normative References

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9.2. Informative References

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