

Internet Engineering Task Force (IETF)  
Request for Comments: 8580  
Updates: 5230, 5435  
Category: Standards Track  
ISSN: 2070-1721

K. Murchison  
B. Gondwana  
FastMail  
May 2019

## Sieve Extension: File Carbon Copy (FCC)

### Abstract

The Sieve email filtering language provides a number of action commands, some of which can generate additional messages on behalf of the user. This document defines an extension to such commands to allow a copy of any generated message to be filed into a target mailbox.

This document updates RFCs 5230 and 5435 by adding a new tagged argument to the Vacation and Notify actions, respectively.

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## 1. Introduction

The Sieve email filtering language [RFC5228] provides a number of action commands, some of which can generate additional messages on behalf of the user. It is sometimes desirable for a Sieve user to maintain an archive of the messages generated by these commands.

This extension defines ":fcc", a new optional tagged argument for action commands that generate additional messages. This argument allows a copy of the generated message to be filed into a target mailbox.

The capability string associated with this extension is "fcc".

Each new action that generates additional messages will need to specify how it interacts with the FCC extension. This document specifies the interaction of the FCC extension with the Vacation [RFC5230] and Notify [RFC5435] actions.

## 2. Conventions Used in This Document

Conventions for notations are as described in Section 1.1 of [RFC5228], including use of the "Usage:" label for the definition of the action and the syntax of tagged arguments.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

## 3. Tagged Argument ":fcc"

This document specifies ":fcc", a new optional tagged argument that alters the behavior of action commands that generate additional messages on behalf of the user.

Usage: :fcc <mailbox: string>

The ":fcc" tagged argument instructs the Sieve interpreter to file a copy of the generated message into the mailbox provided in the subsequent argument. The semantics and treatment of the mailbox argument are defined to match those of the mailbox argument to the fileinto action specified in Section 4.1 of [RFC5228]. Specifically, use of an invalid mailbox name MAY be treated as an error or result in delivery to an implementation-defined mailbox, and if the specified mailbox doesn't exist, the implementation MAY treat it as an error, create the mailbox, or file the message into an implementation-defined mailbox.

### 3.1. Interaction with Extensions to the Fileinto Action

Some tagged arguments defined in extensions to the fileinto action can be used together with the ":fcc" tagged argument. The sections below describe these interactions. Tagged arguments in future extensions to the fileinto action need to describe their interaction with the FCC extension, if any.

When any fileinto extension arguments are used with the FCC extension, the corresponding extension MUST be enabled, and the arguments are defined to have the same syntax, semantics, and treatment as they do with the fileinto action.

### 3.1.1. Imap4flags Extension

This document extends the definition of the `:flags` tagged argument (see Section 5 of [RFC5232]) so that it can optionally be used with the `:fcc` tagged argument.

Usage: `:fcc <mailbox: string> [:flags <list-of-flags: string-list>]`

If the optional `:flags` tagged argument is specified with the `:fcc` tagged argument, it instructs the Sieve interpreter to set the IMAP4 flags provided in the subsequent argument when the generated message is filed into the target mailbox.

### 3.1.2. Mailbox Extension

This document extends the definition of the `:create` tagged argument (see Section 3.2 of [RFC5490]) so that it can optionally be used with the `:fcc` tagged argument.

Usage: `:fcc <mailbox: string> [:create]`

If the optional `:create` tagged argument is specified with the `:fcc` tagged argument, it instructs the Sieve interpreter to create the target mailbox, if needed, before attempting to file the generated message into the target mailbox.

### 3.1.3. Special-Use Extension

This document extends the definition of the `:specialuse` tagged argument (see Section 4 of [RFC8579]) so that it can optionally be used with the `:fcc` tagged argument.

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

If the optional `:specialuse` tagged argument is specified with the `:fcc` tagged argument, it instructs the Sieve interpreter to check whether a mailbox exists with the specific special-use flag assigned to it. If such a mailbox exists, the generated message is filed into the special-use mailbox. Otherwise, the generated message is filed into the target mailbox.

If the optional `:specialuse` and `:create` tagged arguments are both specified with the `:fcc` tagged argument, the Sieve interpreter is instructed to create the target mailbox per Section 4.1 of [RFC8579], if needed.

### 3.2. Collected Grammar

For convenience, the "FCC" syntax element is defined here using ABNF [RFC5234] so that it can be augmented by other extensions.

Note that the following is the grammar of "FCC" after it has been lexically interpreted. No whitespace or comments appear below.

```
FCC           = ":fcc" string *FCC-OPTS
                ; per Section 2.6.2 of RFC 5228,
                ; the tagged arguments in FCC may appear in any order

FCC-OPTS      = CREATE / IMAP-FLAGS / SPECIAL-USE
                ; each option MUST NOT appear more than once

CREATE        = ":create"
IMAP-FLAGS    = ":flags" string-list
SPECIAL-USE   = ":specialuse" string
```

### 4. Format of FCC Messages

Copies of messages filed into a mailbox via this extension are REQUIRED to be in the Internet Message Format [RFC5322]. Some messages generated by Sieve actions might already conform to this format and MAY be filed without modification. Messages generated in other formats MUST be encapsulated using constructs from the Internet Message Format [RFC5322] and MIME ([RFC2045], [RFC2046], [RFC2047], [RFC2231]).

The general requirements for encapsulating the copies of messages to be filed are as follows:

- o Date: The Date header field is REQUIRED and SHOULD be set to the date and time when the message was generated.
- o From: The From header field is REQUIRED and SHOULD be set to the email address of the owner of the Sieve script, unless explicitly overridden by rules for encapsulating a particular message type.

Per Erratum ID 2035 [Err2035],

"Informative advice: Users often have multiple email addresses, and "the email address of the owner of the Sieve script" may offer a choice among several. If the sieve processor recognizes an address belonging to the owner of the Sieve script in the To or Cc fields of the input message, then it's

better to use that address for the From field of the generated message, rather than any other addresses the script's owner may also have".

- o To: The To header field is OPTIONAL and MAY be set to the email address of the recipient of the generated message, if available.
- o Subject: The Subject header field is OPTIONAL and MAY be generated by setting the subject to the characters "Fcc: " followed by the subject of the message being processed by the Sieve interpreter.
- o In-Reply-To: The In-Reply-To header field is OPTIONAL and MAY be set to the Message-ID of the message being processed by the Sieve interpreter.
- o Message Body: The body of the filed message is REQUIRED and is composed of one or more MIME parts containing the generated message and any related metadata. The Content-Type header field(s) MUST be set to the appropriate MIME types. If any of the MIME parts include 8-bit or binary data, the Content-Transfer-Encoding header field(s) MUST be set accordingly.

## 5. Interaction with the Vacation Action

This document extends the Vacation [RFC5230] action (see also "Seconds" parameter [RFC6131] to optionally store a copy of the auto-reply messages into a target mailbox.

```
Usage:  vacation [FCC]
        [":days" number | ":seconds" number]
        [":subject" string]
        [":from" string]
        [":addresses" string-list]
        [":mime"]
        [":handle" string]
        <reason: string>
```

Example (using fileinto extensions):

```
require ["vacation", "fcc", "mailbox", "special-use", "imap4flags"];

vacation :days 7
        :from "hemingway@example.com" "Gone Fishin'"
        :specialuse "\\Sent" :create
        :fcc "INBOX.Sent" :flags ["\\Seen"];
```

Vacation auto-reply messages are compliant with MIME and can be filed into the target mailbox without modification.

## 6. Interaction with the Notify Action

This document extends the Notify [RFC5435] action to optionally store a copy of the notification messages into a target mailbox.

```
Usage:  notify [FCC]
        [":from" string]
        [":importance" <"1" / "2" / "3">]
        [":options" string-list]
        [":message" string]
        <method: string>
```

Example:

```
require ["enotify", "fcc"];

notify :fcc "INBOX.Sent"
       :message "You got mail!"
       "mailto:ken@example.com";
```

Messages generated using the "mailto" [RFC5436] notification method are compliant with MIME and can be filed into the target mailbox without modification.

Messages generated by other notification methods (e.g., "xmpp" [RFC5437]) MUST be encapsulated per Section 4 before being filed. The body of the filed message MUST include the ":message" tagged argument and MAY include one or more of the ":from", ":importance", or ":options" tagged arguments. The MIME type(s) of the body part(s) used to encapsulate the parameters is an implementation decision.

An implementation MAY only support the FCC extension in conjunction with a subset of the notification methods it supports. An error occurs if the FCC extension is used with a notification method that doesn't support it. Notification methods that support the FCC extension can be discovered at runtime using the mechanism described in Section 6.1.

### 6.1. Notification-Capability "fcc"

This document defines "fcc", a new notification-capability value for use with the `notify_method_capability` test (see Section 5 of [RFC5435]). For the "fcc" notification-capability, the `notify_method_capability` test can match one of the following key-list values:

yes

A copy of the notification message sent using the method identified by the notification-uri can be filed into a target mailbox.

no

A copy of the notification message sent using the method identified by the notification-uri cannot be filed into a target mailbox.

Note that the "fcc" notify\_method\_capability test does not require the notification-uri argument to specify anything other than a scheme.

Example:

```
require ["enotify", "fcc"];

if notify_method_capability "xmpp:" "fcc" "yes" {
    notify :fcc "INBOX.Sent"
        :message "You got mail"
        "xmpp:ken@example.com?message;subject=SIEVE";
} else {
    notify :fcc "INBOX.Sent"
        :message "You got mail!"
        "mailto:ken@example.com";
}
```

## 7. Compatibility with the Reject and Extended Reject Actions

Implementations MUST NOT allow use of the FCC extension with the reject and ereject [RFC5429] actions. Allowing use of the FCC extension with these actions would violate the SMTP [RFC5321] principle that a message is either delivered or bounced back to the sender. Namely, the saved copy of the rejection message will contain the original message.

It is an error for a script to use the ":fcc" tagged argument with either of the reject or ereject actions.

## 8. Compatibility with Other Actions

The FCC extension is not compatible with any Sieve action that does not generate an additional message on behalf of the user. It is an error for a script to use the ":fcc" tagged argument with any such action.

Future extensions that define actions that generate additional messages on behalf of the user need to describe their compatibility with the FCC extension and describe how to MIME-encapsulate the message, if required.

## 9. Security Considerations

In addition to the security considerations in [RFC5228], [RFC5230], [RFC5435], and [RFC6131], it should be noted that filing copies of generated messages may cause the Sieve script owner to exceed the allocated storage (quota) on the mail system, thereby preventing delivery of future messages destined for the owner.

## 10. Privacy Considerations

In addition to the privacy considerations in [RFC5228], [RFC5230], [RFC5435], and [RFC6131], it should be noted that a copy of a generated message filed into a shared or public mailbox (as opposed to a private mailbox) could expose private information about the Sieve script owner to third parties. For instance, users that have access to the shared/public mailbox might discover that the Sieve script owner is on holiday or might discover the owner's physical location.

## 11. IANA Considerations

### 11.1. Registration of New Sieve Extension

IANA has registered the following Sieve extension in the "Sieve Extensions" registry at  
<<https://www.iana.org/assignments/sieve-extensions>>:

Capability name: fcc

Description: Adds the ":fcc" parameter to Sieve action commands that generate additional messages.

RFC number: RFC 8580

Contact address: The Sieve discussion list <[sieve@ietf.org](mailto:sieve@ietf.org)>

## 11.2. Registration of New Notification-Capability Parameter

IANA has registered the following notification-capability parameter in the "Notification-Capability Parameters" registry at <https://www.iana.org/assignments/notification-capability-parameters>:

Capability Name: fcc

Description: Returns whether a copy of the notification message sent using the method identified by the notification-uri parameter to the notify\_method\_capability test can be filed into a target mailbox.

Syntax: Can contain one of two values: "yes" or "no". Values MUST be in lowercase.

Reference: RFC 8580

Contact: The Sieve discussion list <sieve@ietf.org>

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## Acknowledgments

The authors would like to thank the following individuals for contributing their ideas and supporting this specification: Ned Freed, Stan Kalisch, and Alexey Melnikov.

## Authors' Addresses

Kenneth Murchison  
FastMail US LLC  
1429 Walnut Street, Suite 1201  
Philadelphia, PA 19102  
United States of America

Email: [murch@fastmailteam.com](mailto:murch@fastmailteam.com)

Bron Gondwana  
FastMail Pty Ltd  
Level 2, 114 William Street  
Melbourne, VIC 3000  
Australia

Email: [brong@fastmailteam.com](mailto:brong@fastmailteam.com)

