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Sieve Email Filtering: Editheader Extension
draft-ietf-sieve-editheader-11.txt

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Abstract

This document defines two new actions for the "Sieve" email filtering language that add and delete email header fields.

1. Introduction

Email header fields are a flexible and easy to understand means of communication between email processors.

This extension enables sieve scripts to interact with other components that consume or produce header fields by allowing the script to delete and add header fields.

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.

The term "header field" is used here as in [[IMAIL](#)] to mean a logical line of an email message header.

3. Capability Identifier

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

4. Action addheader

Usage: "addheader" [":last"] <field-name: string> <value: string>

The addheader action adds a header field to the existing message header. If the field-name is not a valid 7-bit US-ASCII header field name as described by the [[IMAIL](#)] "field-name" nonterminal syntax element, the implementation MUST flag an error. The addheader action does not affect Sieve's implicit keep.

If the specified field value does not match the [RFC 2822](#) "unstructured" nonterminal syntax element or exceeds a length limit set by the implementation, the implementation MUST either flag an error or encode the field using folding white space and the encodings described in [[RFC2047](#)] or [[RFC2231](#)] to be compliant with [RFC 2822](#).

An implementation MAY impose a length limit onto the size of the encoded header field; such a limit MUST NOT be less than 998 characters, not including the terminating CRLF supplied by the implementation.

By default, the header field is inserted at the beginning of the existing message header. If the optional flag ":last" is specified, it is appended at the end.

Example:

```
/* Don't redirect if we already redirected */
if not header :contains "X-Sieve-Filtered"
    ["<kim@job.example.com>", "<kim@home.example.com>"]
{
    addheader "X-Sieve-Filtered" "<kim@job.example.com>";
    redirect "kim@home.example.com";
}
```

5. Action deleteheader

```
Usage: "deleteheader" [":index" <fieldno: number> [":last"]]
      [COMPARATOR] [MATCH-TYPE]
      <field-name: string>
      [<value-patterns: string-list>]
```

By default, the deleteheader action deletes all occurrences of the named header field. The deleteheader action does not affect Sieve's implicit keep.

The field-name is mandatory and always matched as a case-insensitive US-ASCII string. If the field-name is not a valid 7-bit header field name as described by the [\[IMAIL\]](#) "field-name" nonterminal syntax element, the implementation MUST flag an error.

The value-patterns, if specified, restrict which occurrences of the header field are deleted to those whose values match any of the specified value-patterns, the matching being according to the match-type and comparator and performed as if by the "header" test. In particular, leading and trailing whitespace in the field values is ignored. If no value-patterns are specified then the comparator and match-type options are silently ignored.

If :index <fieldno> is specified, the attempts to match a value are limited to the <fieldno> occurrence of the named header field, beginning at 1, the first named header field. If :last is specified, the count is backwards; 1 denotes the last named header field, 2 the second to last, and so on. The counting happens before the <value-patterns> match, if any. For example:

```
deleteheader :index 1 :contains "Delivered-To"
           "bob@example.com";
```

deletes the first "Delivered-To" header field if it contains the string "bob@example.com" (not the first "Delivered-To" field that contains "bob@example.com").

It is not an error if no header fields match the conditions in the deleteheader action or if the :index argument is greater than the number of named header fields.

The implementation MUST flag an error if :last is specified without also specifying :index.

6. Implementation Limitations on Changes

As a matter of local policy, implementations MAY limit which header fields may be deleted and which header fields may be added. However, implementations MUST NOT permit attempts to delete "Received" header fields and MUST permit both addition and deletion of the "Subject" header field.

If a script tries to make a change that isn't permitted, the attempt MUST be silently ignored.

7. Interaction with Other Sieve Extensions

Actions that generate [[MDN](#)], [[DSN](#)], or similar disposition messages MUST do so using the original, unmodified message header. Similarly, if an error terminates processing of the script, the original message header MUST be used when doing the implicit keep required by [[SIEVE](#)] [section 2.10.6](#).

With the exception of the special handling of redirect and "Received" header fields described above, all other actions that store, send, or alter the message MUST do so with the current set of header fields. This includes the addheader and deleteheader actions themselves. For example, the following leaves the message unchanged:

```
addheader "X-Hello" "World";
deleteheader :index 1 "X-Hello";
```

Similarly, given a message with three or more "X-Hello" header fields, the following example deletes the first and third of them, not the first and second:

```
deleteheader :index 1 "X-Hello";
deleteheader :index 2 "X-Hello";
```

Tests and actions such as "exists", "header", or "vacation" [[VACATION](#)] that examine header fields MUST examine the current state of a header as modified by any actions that have taken place so far.

As an example, the "header" test in the following fragment will always evaluate to true, regardless of whether the incoming message contained an "X-Hello" header field or not:

```
addheader "X-Hello" "World";
if header :contains "X-Hello" "World"
{
    fileinto "international";
}
```

However, if the presence or value of a header field affects how the implementation parses or decodes other parts of the message, then for the purposes of that parsing or decoding the implementation MAY ignore some or all changes made to those header fields. For example, in an implementation that supports the [\[BODY\]](#) extension, "body" tests may be unaffected by deleting or adding "Content-Type" or "Content-Transfer-Encoding" header fields. This does not rescind the requirement that changes to those header fields affect direct tests; only the semantic side effects of changes to the fields may be ignored.

For the purpose of weeding out duplicates, a message modified by addheader or deleteheader MUST be considered the same as the original message. For example, in an implementation that obeys the constraint in [\[SIEVE\] section 2.10.3](#) and does not deliver the same message to a folder more than once, the following code fragment

```
keep;
addheader "X-Flavor" "vanilla";
keep;
```

MUST only file one message. It is up to the implementation to pick which of the redundant "fileinto" or "keep" actions is executed, and which ones are ignored.

The "implicit keep" is thought to be executed at the end of the script, after the headers have been modified. (However, a canceled "implicit keep" remains canceled.)

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: editheader
Description: Adds actions 'addheader' and 'deleteheader'
that modify the header of the message being
processed
RFC number: this RFC
Contact Address: Jutta Degener <jutta@pobox.com>

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

9. Security Considerations

Someone with write access to a user's script storage may use this extension to generate headers that a user would otherwise be shielded from (e.g., by a gateway MTA that removes them).

A sieve filter that removes header fields may unwisely destroy evidence about the path a message has taken.

Any change in a message content may interfere with digital signature mechanisms that include the header in the signed material. Since normal message delivery adds "Received" header fields and other trace fields to the beginning of a message, many such schemas are impervious to headers prefixed to a message, and will work with "addheader" unless :last is used.

Any decision mechanism in a user's filter that is based on headers is vulnerable to header spoofing. For example, if the user adds an APPROVED header or tag, a malicious sender may add that tag or header themselves. One way to guard against this is to delete or rename any such headers or stamps prior to processing the message.

10. Acknowledgments

Thanks to Eric Allman, Cyrus Daboo, Matthew Elvey, Ned Freed, Arnt Gulbrandsen, Kjetil Torgrim Homme, Simon Josefsson, Will Lee, William Leibzon, Mark E. Mallett, Chris Markle, Alexey Melnikov, Randall Schwartz, Aaron Stone, Nigel Swinson, and Rand Wacker for extensive corrections and suggestions.

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12. Discussion

This section will be removed when this document leaves the Internet-Draft stage.

This draft is intended as an extension to the Sieve mail filtering language. Sieve extensions are discussed on the MTA Filters mailing list at [<ietf-mta-filters@imc.org>](mailto:ietf-mta-filters@imc.org). Subscription requests can be sent to [<ietf-mta-filters-request@imc.org>](mailto: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/>](http://www.imc.org/ietf-mta-filters/).

12.1 Changes from [draft-ietf-sieve-editheader-10.txt](#)

Update the deleteheader example to not violate the spec.

Remove the security consideration about deleting "Received" headers.

Add a "Capability Identifier" section to match existing RFCs.

Make the normative and information references subsections of a "References" section to match existing RFCs.

12.2 Changes from [draft-ietf-sieve-editheader-09.txt](#)

Add [section 5](#), completely banning <<deleteheader "Received">> but requiring that "Subject" changes be permitted.

Since deletion of "Received" headers is now banned, this spec no longer updates the base-spec.

Updated references to Sieves specs that have been published.

12.3 Changes from [draft-ietf-sieve-editheader-08.txt](#)

Tighten up the permissible behaviors involving redirect and deleteheader "Recieved".

Consistently quote the names of header fields, but not actions.

For deleteheader, :last without :index is an error. On the other hand, the match-type and comparator are ignored if there are no value-patterns.

Clarify that addheader and deleteheader operate on the 'current' set of header fields and give examples demonstrating this.

12.4 Changes from [draft-ietf-sieve-editheader-07.txt](#)

Let implementations permit redirected messages to have fewer "Received" header fields, but warn about the consequences.

Updated boilerplate to match [RFC 4748](#).

Added "Intended-Status: Standards Track" and "Updates: [draft-ietf-sieve-3028bis-12](#)"

Change the references from appendices to sections.
Update [[SIEVE](#)], [[BODY](#)], [[DSN](#)], and [[MDN](#)] references.

12.5 Changes from [draft-ietf-sieve-editheader-06.txt](#)

Make deleteheader match addheader on the description of invalid field-names.

Update copyright boilerplate

Update references

12.6 Changes from [draft-ietf-sieve-editheader-05.txt](#)

MDN and DSN references are merely informative

12.7 Changes from [draft-ietf-sieve-editheader-04.txt](#)

Ignore leading and trailing whitespace when matching header field values.

Header modifications are ignored when continuing after an error or generating MDNs or DSNs

Added references for MDN and DSN

Update IANA registration to match 3028bis

Added [[KEYWORDS](#)] boilerplate text

Describe an invalid field-name to addheader as an error (might be detected at runtime)

12.8 Changes from [draft-ietf-sieve-editheader-03.txt](#)

Change "Syntax:" to "Usage:".

Updated references.

12.9 Changes from [draft-ietf-sieve-editheader-02.txt](#)

Clarify that value-patterns restrict which occurrences are deleted.

Add informative reference to [[BODY](#)].

12.10 Changes from [draft-ietf-sieve-editheader-01.txt](#)

Whitespace and line length tweaks noted by ID-nits.

Clarified what is being counted by :index.

Update the [[SIEVE](#)] reference to the I-D of the revision.

12.11 Changes from [draft-ietf-sieve-editheader-00.txt](#)

Updated IPR boilerplate to [RFC 3978/3979](#).

Many corrections in response to WGLC comments. Of particular note:

- correct a number of spelling and grammar errors
- document that neither addheader nor deleteheader affects the implicit keep
- add normative references to [RFC 2047](#) and [RFC 2231](#)
- it is not an error for deleteheader to affect nothing
- change "foo.tld" to "foo.example.com"
- add an informative reference to [[VACATION](#)], citing it as an example of an action that examines header fields
- add weasel words about changes to fields that have secondary effects
- add security consideration for combination of header changes and "reject"

12.12 Changes from [draft-degener-sieve-editheader-03.txt](#)

Renamed to [draft-ietf-sieve-editheader-00.txt](#);
tweaked the title and abstract.

Added Philip Guenther as co-author.

Updated IPR boilerplate.

12.13 Changes from [draft-degener-sieve-editheader-02.txt](#)

Changed the duplicate restrictions from "messages with different headers MUST be considered different" to their direct opposite, "messages with different headers MUST be considered the same," as requested by workgroup members on the mailing list.

Expanded mention of header signature schemes to Security Considerations.

Added IANA Considerations section.

13. References

13.1 Normative References

- [IMAIL] Resnick, P., "Internet Message Format", [RFC 2822](#), April 2001.
- [KEYWORDS] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997.
- [RFC2047] Moore, K., "MIME (Multipurpose Internet Mail Extensions) Part Three: Message Header Extensions for Non-ASCII Text", [RFC 2047](#), November 1996.
- [RFC2231] Freed, N. and K. Moore, "MIME Parameter Value and Encoded Word Extensions: Character Sets, Languages, and Continuations", [RFC 2231](#), November 1997.
- [SIEVE] Guenther, P. and T. Showalter, "Sieve: An Email Filtering Language", [RFC 5228](#), January 2008.

13.2. Informative References

- [BODY] Degener, J. and P. Guenther, "Sieve Email Filtering: Body Extension", [draft-ietf-sieve-body-09](#), March 2008.
- [DSN] Moore, K. and G. Vaudreuil, "An Extensible Message Format for Delivery Status Notifications", [RFC 3464](#), January 2003.
- [MDN] T. Hansen, Ed., G. Vaudreuil, Ed., "Message Disposition Notification", [RFC 3798](#), May 2004.
- [VACATION] Showalter, T. and N. Freed, "Sieve Email Filtering: Vacation Extension", [RFC 5230](#), January 2008.

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