Internet Draft K. Murchison Category: Standards Track Oceana Matrix Ltd.

Expires: April 30, 2005 25 October 2004

# Sieve Email Filtering -- Regular Expression Extension

<<u>draft-murchison-sieve-regex-08.txt</u>>

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### Abstract

In some cases, it is desirable to have a string matching mechanism which is more powerful than a simple exact match, a substring match or a glob-style wildcard match. The regular expression matching mechanism defined in this draft should allow users to isolate just about any string or address in a message header or envelope.

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### 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 an extension to the Sieve mail filtering language, available from the RFC repository as <ftp://ftp.ietf.org/rfc/rfc3028.txt>.

This draft and the Sieve language itself are being discussed on the MTA Filters mailing list at <ietf-mta-filters@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 <<a href="http://www.imc.org/ietf-mta-filters/">http://www.imc.org/ietf-mta-filters/</a>>.

### 0.2. Noted Changes Since -07

Updated boilerplate.

## 0.3. Open Issues

The major open issue with this draft is what to do, if anything, about localization/internationalization. Are [POSIX.2] collating sequences and character equivalents sufficient? Should we reference the unicode technical specification? Should we punt and publish the document as experimental?

Should we allow shorthands such as  $\b$  (word boundary) and  $\b$  (word character)?

Should we allow backreferences (useful for matching double words, etc.)?

Should we integrate with variables, so that \$1, \$2, ... correspond to the first, second, ... groups within the regex?

### 1. Introduction

This is an extension to the Sieve language defined by [SIEVE] for comparing strings to regular expressions.

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

# 2. Capability Identifier

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

# 3. Regex Match Type

Commands that support matching may take the optional tagged argument ":regex" to specify that a regular expression match should be performed. The ":regex" match type is subject to the same rules and restrictions as the standard match types defined in [SIEVE]. For convenience, the "MATCH-TYPE" syntax element defined in [SIEVE] is augmented here as follows:

```
MATCH-TYPE =/ ":regex"
Example:
     require "regex";
     # Try to catch unsolicited email.
     if anyof (
       # if a message is not to me (with optional +detail),
       not address :regex ["to", "cc", "bcc"]
          "me(\\+.*)?@company\\.com",
       # or the subject is all uppercase (no lowercase)
       header :regex :comparator "i;octet" "subject"
         "^[^[:lower:]]+$" ) {
                   # junk it
        discard;
     }
```

The ":regex" match type is compatible with both the "i;octet" and "i;ascii-casemap" comparators and may be used with them.

Implementations MUST support extended regular expressions (EREs) as defined by [POSIX.2]. Any regular expression not defined by [POSIX.2], as well as [POSIX.2] basic regular expressions, word boundaries and backreferences are not supported by this extension. Implementations SHOULD reject regular expressions that are unsupported by this specification as a syntax error.

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The following table provides a brief summary of the regular expressions that MUST be supported. This table is presented here only as a guideline. [POSIX.2] should be used as the definitive reference.

+   Expression	Pattern				
	Items to match a single character				
.   []	Match any single character except newline.  Bracket expression. Match any one of the enclosed   characters. A hypen (-) indicates a range of   consecutive characters.  Negated bracket expression. Match any one   character NOT in the enclosed list. A hypen (-)   indicates a range of consecutive characters.  Escape the following special character (match   the literal character). Undefined for other   characters.  NOTE: Unlike [POSIX.2], a double-backslash is   required as per section 2.4.2 of [SIEVE].				
Items to be used within a bracket expression (localization)					
[: :]       [= =]   []	Character class (alnum, alpha, blank, cntrl,   digit, graph, lower, print, punct, space,   upper, xdigit).   Character equivalents.   Collating sequence.				
Quantifiers - Items to count the preceding regular expression					
?   *   +   {n,m}	Match zero or one instances.  Match zero or more instances.  Match one or more instances.  Match any number of instances between  n and m (inclusive). {n} matches exactly n  instances. {n,} matches n or more instances.				
	Anchoring - Items to match positions				
^     \$	Match the beginning of the line or string.     Match the end of the line or string.				

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+		+
Expression	Pattern	
Ī	Other constructs	İ
	Alternation. Match either of the separated regular expressions. Group the enclosed regular expression(s).	 

### 4. Security Considerations

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

However, a poor implementation COULD introduce security problems ranging from degradation of performance to denial of service. If an implementation uses a third-party regular expression library, that library should be checked for potentially problematic regular expressions, such as "(.\*)\*".

#### 5. 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: regex Capability keyword: regex Capability arguments: N/A

Standards Track/IESG-approved experimental RFC number: this RFC Person and email address to contact for further information:

Kenneth Murchison ken@oceana.com

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

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6.

Normative References

[KEYWORDS] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", RFC 2119, March 1997.

[SIEVE] Showalter, T., "Sieve: A Mail Filtering Language", RFC 3028, January 2001.

[POSIX.2], "Portable Operating System Interface (POSIX). Part 2, Shell and utilities", National Institute of Standards and Technology (U.S.).

# 7. Acknowledgments

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