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**A Protocol for Remotely Managing Sieve Scripts**  
**draft-martin-managesieve-10**

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Abstract

Sieve scripts allow users to filter incoming email. Message stores are commonly sealed servers so users cannot log into them, yet users must be able to update their scripts on them. This document describes a protocol "ManageSieve" for securely managing Sieve scripts on a remote server. This protocol allows a user to have multiple scripts, and also alerts a user to syntactically flawed scripts.

Changes since [draft-martin-managesieve-09](#)

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## **1. Introduction**

### **1.1. 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](#)].

In examples, "C:" and "S:" indicate lines sent by the client and server respectively. Line breaks that do not start a new "C:" or "S:" exist for editorial reasons.

### **1.2. Syntax**

This is a line oriented protocol much like [[IMAP4rev1](#)] or [[ACAP](#)]. There are three data types: atoms, numbers and strings. Strings may be quoted or literal. See [[ACAP](#)] for detailed descriptions of these types.

Each command consists of an atom (the command name) followed by zero or more strings and numbers terminated by a newline.

All client queries are replied to with either an OK, NO, or BYE response. Each response may be followed by a response code (see [Section 1.3](#)) and by a string consisting of human readable text in the local language. The contents of the string SHOULD be shown to the user and implementations MUST NOT attempt to parse the message for meaning.

The BYE response may be used if the server wishes to close the connection. A server may wish to do this because the client was idle for too long or there were too many failed authentication attempts. This response can be issued at any time and should be immediately followed by a server hang-up of the connection. If a server has an inactivity timeout resulting in client autologout it MUST be no less than 30 minutes.

### **1.3. Response Codes**

An OK, NO, or BYE response from the server MAY contain a response code to describe the event in a more detailed machine parsable fashion. A response code consists of data inside parentheses in the form of an atom, possibly followed by a space and arguments. Response codes are defined when there is a specific action that a client can take based upon the additional information. In order to support future extension, the response code is represented as a slash-separated (Solidus, %x2F) hierarchy with each level of hierarchy representing increasing detail about the error. Response



codes MUST NOT start with the Solidus character. Clients MUST tolerate additional hierarchical response code detail which they don't understand. For example, if the client supports the "QUOTA" response code, but doesn't understand the "QUOTA/MAXSCRIPTS" response code, it should treat "QUOTA/MAXSCRIPTS" as "QUOTA".

Client implementations MUST tolerate (ignore) response codes that they do not recognize.

The currently defined response codes are:

#### AUTH-TOO-WEAK

This response code is returned in the NO response from an AUTHENTICATE command. It indicates that site security policy forbids the use of the requested mechanism for the specified authentication identity.

#### ENCRYPT-NEEDED

This response code is returned in the NO response from an AUTHENTICATE command. It indicates that site security policy requires the use of a strong encryption mechanism for the specified authentication identity and mechanism.

#### QUOTA

If this response code is returned in the NO/BYE response, it means that the command would have placed the user above the site-defined quota constraints. If this response code is returned in the OK response, it can mean that the user is near its quota or that the user exceeded its quota, but the server supports soft quotas.

#### REFERRAL

This response code may be returned with a BYE result from any command, and includes a mandatory parameter that indicates what server to access to manage this user's sieve scripts. The server will be specified by a Sieve URL (see [Section 3](#)). The scriptname portion of the URL MUST NOT be specified. The client should authenticate to the specified server and use it for all further commands in the current session.

#### SASL

This response code can occur in the OK response to a successful AUTHENTICATE command and includes the optional final server response data from the server as specified by [\[SASL\]](#).





#### TRANSITION-NEEDED

This response code occurs in a NO response of an AUTHENTICATE command. It indicates that the user name is valid, but the entry in the authentication database needs to be updated in order to permit authentication with the specified mechanism. This is typically done by establishing a secure channel using TLS, followed by authenticating once using the [\[PLAIN\]](#) authentication mechanism. The selected mechanism SHOULD then work for authentications in subsequent sessions.

This condition can happen if a user has an entry in a system authentication database such as Unix /etc/passwd, but does not have credentials suitable for use by the specified mechanism.

#### TRYLATER

A command failed due to a temporary server failure. The client MAY continue using local information and try the command later. This response code only make sense when returned in a NO/BYE response.

### [1.4.](#) Active Script

A user may have multiple Sieve scripts on the server, yet only one script may be used for filtering of incoming messages. This is the active script. Users may have zero or one active scripts and MUST use the SETACTIVE command described below for changing the active script or disabling Sieve processing. For example, a user may have an everyday script they normally use and a special script they use when they go on vacation. Users can change which script is being used without having to download and upload a script stored somewhere else.

### [1.5.](#) Quotas

Servers SHOULD impose quotas to prevent malicious users from overflowing available storage. If a command would place a user over a quota setting, servers that impose such quotas MUST reply with a NO response containing the QUOTA response code. Client implementations MUST be able to handle commands failing because of quota restrictions.

### [1.6.](#) Script Names

A Sieve script name is a sequence of Unicode characters encoded in UTF-8 [\[UTF-8\]](#). Characters listed in Section 2.3 of [\[SASLprep\]](#) are prohibited in Sieve script names. [[anchor5: Should we just require that all Sieve script names must conform to [\[SASLprep\]](#) output?]]



Server implementations MAY further restrict the list of allowed characters, but they MUST at least allow for US-ASCII DIGIT and ALPHA [[ABNF](#)] and '-' (hyphen) characters. Sieve script names MUST be at least one octet long. Zero octets script name has a special meaning (see [Section 2.8](#)). Servers MUST allow names of up to 128 Unicode characters in length, and MAY allow longer names.

### **[1.7.](#) Capabilities**

Server capabilities are sent automatically by the server upon a client connection, or after successful STARTTLS and AUTHENTICATE (which establishes a SASL security layer) commands. Capabilities may change immediately after a successfully completed STARTTLS command and/or immediately after a successfully completed AUTHENTICATE command. Capabilities MUST remain static at all other times.

Clients MAY request the capabilities at a later time by issuing the CAPABILITY command described later. The capabilities consist of a series of lines each with one or two strings. The first string is the name of the capability, which is case-insensitive. The second optional string is the value associated with that capability. Order of capabilities is arbitrary, but each capability name can appear at most once.

The following capabilities are defined in this document:

IMPLEMENTATION - Name of implementation and version.

SASL - List of SASL mechanisms supported by the server, each separated by a space. This list can be empty if and only if STARTTLS is also advertised. This means that the client must negotiate TLS encryption with STARTTLS first, at which point the SASL capability will list a non empty list of SASL mechanisms.

SIEVE - List of space separated Sieve extensions (as listed in Sieve "require" action [[SIEVE](#)]) supported by the Sieve engine.

STARTTLS - If TLS [[TLS](#)] is supported by this implementation.

NOTIFY - A space separated list of URI schema parts for supported notification methods. This capability MUST be specified if the Sieve implementation supports the "enotify" extension [[NOTIFY](#)].

[Section 2.11](#) defines some additional ManageSieve extensions and their respective capabilities.

A server implementation MUST return SIEVE and IMPLEMENTATION capabilities.



A client implementation MUST ignore any listed capabilities that it does not understand.

Example:

```
S: "IMPlEmENTATION" "Example1 ManageSieved v001"
S: "SASl" "DIGEST-MD5 GSSAPI"
S: "SIeVE" "fileinto vacation"
S: "StaRTTLS"
S: "NOTIFY" "xmpp mailto"
S: OK
```

### **1.8. Link Level**

The ManageSieve protocol assumes a reliable data stream such as that provided by TCP. When TCP is used, a ManageSieve server listens on port 2000.

[[anchor7: IANA registration is pending. Current implementations generally use port number 2000.]]

## **2. Commands**

The following commands are valid. Prior to successful authentication only the AUTHENTICATE, CAPABILITY, STARTTLS, and LOGOUT commands are valid. Servers MUST reject all other commands with a NO response. Clients may pipeline commands (send more than one command at a time without waiting for completion of the first command). However, a group of commands sent together MUST NOT have an AUTHENTICATE, a STARTTLS or a HAVESPACE command anywhere but the last command in the list.

### **2.1. AUTHENTICATE Command**

Arguments: String - mechanism  
            String - initial data (optional)

The AUTHENTICATE command indicates a SASL [[SASL](#)] authentication mechanism to the server. If the server supports the requested authentication mechanism, it performs an authentication protocol exchange to identify and authenticate the user. Optionally, it also negotiates a security layer for subsequent protocol interactions. If the requested authentication mechanism is not supported, the server rejects the AUTHENTICATE command by sending the NO response.

The authentication protocol exchange consists of a series of server challenges and client responses that are specific to the selected



authentication mechanism. A server challenge consists of a string (quoted or literal) followed by a CRLF. The contents of the string is a base-64 encoding [[BASE64](#)] of the SASL data. A client response consists of a string (quoted or literal) with the base-64 encoding of the SASL data followed by a CRLF. If the client wishes to cancel the authentication exchange, it issues a string containing a single "\*". If the server receives such a response, it MUST reject the AUTHENTICATE command by sending an NO reply.

Note that an empty challenge/response is sent as an empty string. If the mechanism dictates that the final response is sent by the server this data MAY be placed within the data portion of the SASL response code to save a round trip.

The optional initial-response argument to the AUTHENTICATE command is used to save a round trip when using authentication mechanisms that are defined to send no data in the initial challenge. When the initial-response argument is used with such a mechanism, the initial empty challenge is not sent to the client and the server uses the data in the initial-response argument as if it were sent in response to the empty challenge. If the initial-response argument to the AUTHENTICATE command is used with a mechanism that sends data in the initial challenge, the server rejects the AUTHENTICATE command by sending the NO response.

The service name specified by this protocol's profile of SASL is "sieve".

Reauthentication is not supported by ManageSieve protocol's profile of SASL. I.e. after a successfully completed AUTHENTICATE command, no more AUTHENTICATE commands may be issued in the same session. After a successful AUTHENTICATE command completes, a server MUST reject any further AUTHENTICATE commands with a NO reply.

If a security layer is negotiated through the SASL authentication exchange, it takes effect immediately following the CRLF that concludes the authentication exchange for the client, and the CRLF of the OK response for the server.

When a security layer takes effect, the ManageSieve protocol is reset to the initial state (the state in ManageSieve after a client has connected to the server). The server MUST discard any knowledge obtained from the client which was not obtained from the SASL (or TLS) negotiation itself. Likewise, the client MUST discard any knowledge obtained from the server, such as the list of ManageSieve extensions, which was not obtained from the SASL (or TLS) negotiation itself. (Note that a client MAY compare the advertised SASL mechanisms before and after authentication in order to detect an





active down-negotiation attack. See below.)

Once a SASL security layer is established, the server MUST re-issue the capability results, followed by an OK response. This is necessary to protect against man-in-the-middle attacks which alter the capabilities list prior to SASL negotiation. The capability results MUST include all SASL mechanisms. This is done in order to allow client to detect active down-negotiation attack.

When both [\[TLS\]](#) and SASL security layers are in effect, the TLS encoding MUST be applied (when sending data) after the SASL encoding, regardless of the order in which the layers were negotiated.

Server implementations SHOULD support SASL proxy authentication so that an administrator can administer a user's scripts. Proxy authentication is when a user authenticates as herself/himself but requests the server to act (authorize) as another user.

The authorization identity generated by this [\[SASL\]](#) exchange is a "simple username" (in the sense defined in [\[SASLprep\]](#)), and both client and server MUST use the [\[SASLprep\]](#) profile of the [\[StringPrep\]](#) algorithm to prepare these names for transmission or comparison. If preparation of the authorization identity fails or results in an empty string (unless it was transmitted as the empty string), the server MUST fail the authentication.

If an AUTHENTICATE command fails with a NO response, the client may try another authentication mechanism by issuing another AUTHENTICATE command. In other words, the client may request authentication types in decreasing order of preference.

Note that a failed NO response to the AUTHENTICATE command may contain one of the following response codes: AUTH-TOO-WEAK, ENCRYPT-NEEDED or TRANSITION-NEEDED. See [Section 1.3](#) for detailed description of the relevant conditions.

To ensure interoperability, client and server implementations of this extension MUST implement the [\[SCRAM\]](#) SASL mechanism.

Implementations MAY advertise the ANONYMOUS SASL mechanism [\[SASL-ANON\]](#). This indicates that the server supports ANONYMOUS SIEVE script syntax verification. Only the CAPABILITY, PUTSCRIPT and LOGOUT commands are available to the anonymous user. All other commands MUST give NO responses. Furthermore the PUTSCRIPT command MUST NOT persistently store any data. In this mode a positive response to the PUTSCRIPT command indicates that the given script does not have any syntax errors.



Examples (Note that long lines are folded for readability and are not part of protocol exchange):

```
S: "IMPLEMENTATION" "Example1 ManageSieved v001"
S: "SASL" "DIGEST-MD5 GSSAPI"
S: "SIEVE" "fileinto vacation"
S: "STARTTLS"
S: OK
C: Authenticate "DIGEST-MD5"
S: "cmVhbG09ImVsd29vZC5pbm5vc29mdC5jb20iLG5vbmNlPSJPQTZNRz10
RVFhbTJoaCIscW9wPSJhdXRoIixhbGdvcml0aG09bWQ1LXNlc3MsY2hh
cnNldD11dGYtOA=="
C: "Y2hhcnNldD11dGYtOCx1c2VybmFtZT0iY2hyaXMiLHJlYWxtPSJlbHdvb2
Quaw5ub3NvZnQuY29tIixub25jZT0iT0E2TUc5dEVRR20yaGgiLG5jPTAw
MDAwMDAxLGNub25jZT0iT0E2TUhYaDZwcVRyUmsiLGRpZ2VzdC11cmk9Im
ltYXAuZmx3b29kLmlubm9zb2Z0LmNvbSIscVzcG9uc2U9ZDM4OGRhZDkw
ZDRiYmQ3NjBhMTUyMzIxZjIxNDNhZjcscW9wPWF1dGg="
S: OK (SASL "cnNwYXV0aD11YTQwZjYwMzM1YzQyN2I1NTI3Yjg0ZGJhYmNkZ
mZmZA==" )
```

A slightly different variant of the same authentication exchange:

```
S: "IMPLEMENTATION" "Example1 ManageSieved v001"
S: "SASL" "DIGEST-MD5 GSSAPI"
S: "SIEVE" "fileinto vacation"
S: "STARTTLS"
S: OK
C: Authenticate "DIGEST-MD5"
S: {128}
S: cmVhbG09ImVsd29vZC5pbm5vc29mdC5jb20iLG5vbmNlPSJPQTZNRz10
RVFhbTJoaCIscW9wPSJhdXRoIixhbGdvcml0aG09bWQ1LXNlc3MsY2hh
cnNldD11dGYtOA=="
C: {276+}
C: Y2hhcnNldD11dGYtOCx1c2VybmFtZT0iY2hyaXMiLHJlYWxtPSJlbHdvb2
Quaw5ub3NvZnQuY29tIixub25jZT0iT0E2TUc5dEVRR20yaGgiLG5jPTAw
MDAwMDAxLGNub25jZT0iT0E2TUhYaDZwcVRyUmsiLGRpZ2VzdC11cmk9Im
ltYXAuZmx3b29kLmlubm9zb2Z0LmNvbSIscVzcG9uc2U9ZDM4OGRhZDkw
ZDRiYmQ3NjBhMTUyMzIxZjIxNDNhZjcscW9wPWF1dGg="
S: {56}
S: cnNwYXV0aD11YTQwZjYwMzM1YzQyN2I1NTI3Yjg0ZGJhYmNkZmZmZA=="
C: ""
S: OK
```

Another example demonstrating use of SASL PLAIN mechanism under TLS. This example also demonstrate use of SASL "initial response" (the second parameter to the Authenticate command):



```
S: "IMPLEMENTATION" "Example1 ManageSieved v001"
S: "SASL" ""
S: "SIEVE" "fileinto vacation"
S: "STARTTLS"
S: OK
C: STARTTLS
S: OK
<TLS negotiation, further commands are under TLS layer>
S: "IMPLEMENTATION" "Example1 ManageSieved v001"
S: "SASL" "PLAIN"
S: "SIEVE" "fileinto vacation"
S: OK
C: Authenticate "PLAIN" "QJlrweAPyo6Q1T9xu"
S: NO
C: Authenticate "PLAIN" "QJlrweAPyo6Q1T9xz"
S: NO
C: Authenticate "PLAIN" "QJlrweAPyo6Q1T9xy"
S: BYE "Too many failed authentication attempts"
<Server closes connection>
```

The following example demonstrate use of SASL "initial response". It also demonstrates that an empty response can be sent as a literal:

```
C: AUTHENTICATE "GSSAPI" {1488+}
C: YIIIE[...1480 octets here ...]dA==
S: {208}
S: YIGZBgkqhkiG9xIBAgICAG+BiTCBhqADAgEFoQMCAQ+iejB4oAMCARKic
  [...114 octets here ...]
  /yzpAy9p+Y0LanLsk0TvMc0MnjgAa4YEr3eJ6
C: {0+}
C:
S: {44}
S: BQQF/wAMAAwAAAAAYRGFAo6W0vIHti8i1UXODgEAEAA=
C: {44+}
C: BQQE/wAMAAwAAAAAIsT1iv9UkZApw471iXt6cwEAAAE=
S: OK
```

## **2.2. STARTTLS Command**

Support for STARTTLS command in servers is optional. Its availability is advertised with "STARTTLS" capability as described in [Section 1.7](#).

The STARTTLS command requests commencement of a TLS negotiation. The negotiation begins immediately after the CRLF in the OK response. After a client issues a STARTTLS command, it MUST NOT issue further commands until a server response is seen and the TLS negotiation is complete.



The STARTTLS command is only valid in non-authenticated state. The server remains in non-authenticated state, even if client credentials are supplied during the TLS negotiation. The SASL [[SASL](#)] EXTERNAL mechanism MAY be used to authenticate once TLS client credentials are successfully exchanged, but servers supporting the STARTTLS command are not required to support the EXTERNAL mechanism.

After the TLS layer is established, the server MUST re-issue the capability results, followed by an OK response. This is necessary to protect against man-in-the-middle attacks which alter the capabilities list prior to STARTTLS. This capability result MUST NOT include the STARTTLS capability.

The client MUST discard cached capability information and replace it with the new information. The server MAY advertise different capabilities after STARTTLS.

Example:

```
C: StartTls
S: ok
<TLS negotiation, further commands are under TLS layer>
S: "IMPLEMENTATION" "Example1 ManageSieved v001"
S: "SASL" "PLAIN DIGEST-MD5 GSSAPI"
S: "SIEVE" "fileinto vacation"
S: ok
```

### [2.3.](#) LOGOUT Command

The client sends the LOGOUT command when it is finished with a connection and wishes to terminate it. The server MUST reply with an OK response and terminate the connection. The server MUST ignore commands issued by the client after the LOGOUT command.

Example:

```
C: Logout
S: Ok
<connection terminated>
```

### [2.4.](#) CAPABILITY Command

The CAPABILITY command requests the server capabilities as described earlier in this document.





Example:

```
C: CAPABILITY
S: "IMPLEMENTATION" "Example1 ManageSieved v001"
S: "SASL" "PLAIN KERBEROS_V4 GSSAPI"
S: "SIEVE" "fileinto vacation"
S: "STARTTLS"
S: OK
```

## **2.5. HAVESPACE Command**

Arguments: String - name  
          Number - script size

The HAVESPACE command is used to query the server for available space. Clients specify the name they wish to save the script as and its size in octets. Servers respond with an NO if storing a script with that name and size would fail or OK otherwise. Clients SHOULD issue this command before attempting to place a script on the server.

Example:

```
C: HAVESPACE "myscript" 999999
S: NO (QUOTA) "Quota exceeded"

C: HAVESPACE "foobar" 435
S: OK
```

## **2.6. PUTSCRIPT Command**

Arguments: String - Script name  
          String - Script content

The PUTSCRIPT command is used by the client to submit a Sieve script to the server.

If the script already exists, upon success the old script will be overwritten. The old script MUST NOT be overwritten if PUTSCRIPT fails in any way. A script of zero length SHOULD be disallowed.

This command places the script on the server. It does not affect whether the script is processed on incoming mail, unless it replaces the script which is already active. The SETACTIVE command is used to mark a script as active.

When submitting large scripts clients SHOULD use the HAVESPACE command beforehand to query if the server is willing to accept a script of that size.



The server MUST check the submitted script for syntactic validity. If the script fails this test the server MUST reply with a NO response. Any script that fails the validity test MUST NOT be stored on the server. The message given with a NO response MUST be human readable and SHOULD contain a specific error message giving the line number of the first error. Implementors should strive to produce helpful error messages similar to those given by programming language compilers. Client implementations should note that this may be a multiline literal string with more than one error message separated by newlines.

Example:

```
C: Putscrip "foo" {31+}
C: #comment
C: InvalidSieveCommand
C:
S: NO "line 2: Syntax error"

C: Putscrip "mysievescript" {110+}
C: require ["fileinto"];
C:
C: if envelope :contains "to" "tmartin+sent" {
C:   fileinto "INBOX.sent";
C: }
S: OK
```

## [2.7.](#) **LISTSCRIPTS Command**

This command lists the scripts the user has on the server. Upon success a list of CRLF separated script names (each represented as a quoted or literal string) is returned followed by an OK response. If there exists an active script the atom ACTIVE is appended to the corresponding script name. The atom ACTIVE MUST NOT appear on more than one response line.



Example:

```
C: Listscripts
S: "summer_script"
S: "vacation_script"
S: {13}
S: clever"script
S: "main_script" ACTIVE
S: OK
```

```
C: listscripts
S: "summer_script"
S: "main_script" active
S: OK
```

### [2.8.](#) **SETACTIVE Command**

Arguments: String - script name

This command sets a script active. If the script name is the empty string (i.e. "") then any active script is disabled. Disabling an active script when there is no script active is not an error and MUST result in OK reply.

If the script does not exist on the server then the server MUST reply with a NO response.

Examples:

```
C: Setactive "vacationscript"
S: Ok
```

```
C: Setactive ""
S: Ok
```

```
C: Setactive "baz"
S: No "There is no script by that name"
```

```
C: Setactive "baz"
S: No {31}
S: There is no script by that name
```

### [2.9.](#) **GETSCRIPT Command**



Arguments: String - script name

This command gets the contents of the specified script. If the script does not exist the server MUST reply with a NO response. Upon success a string with the contents of the script is returned followed by a OK response.

Example:

```
C: Getscript "myscript"
S: {54}
S: #this is my wonderful script
S: reject "I reject all";
S:
S: OK
```

#### **2.10. DELETESCRIPT Command**

Arguments: String - script name

This command is used to delete a user's Sieve script. Servers MUST reply with a NO response if the script does not exist. The server MUST NOT allow the client to delete an active script, so the server MUST reply with a NO response if attempted. If a client wishes to delete an active script it should use the SETACTIVE command to disable the script first.

Example:

```
C: Deletescrypt "foo"
S: Ok

C: Deletescrypt "baz"
S: No "You may not delete an active script"
```

#### **2.11. Recommended extensions**

This Section defines several extensions support for which is RECOMMENDED.

The RENAME extension (advertised as the "RENAME" capability with no parameters) defines a new RENAMESCRIPT command.

The NOOP extension (advertised as the "NOOP" capability with no parameters) defines a new NOOP command.





### [2.11.1.](#) RENAMESCRIPT Command

Arguments: String - Old Script name  
            String - New Script name

This command is used to rename a user's Sieve script. Servers MUST reply with a NO response if the old script does not exist, or a script with the new name already exists. [[anchor16: Is a new response code needed for the latter case?]] Renaming the active script is allowed, the renamed script remains active.

Example:

```
C: Renamescript "foo" "bar"  
S: Ok
```

```
C: Renamescript "baz" "bar"  
S: No "bar already exists"
```

If the server doesn't support the RENAMESCRIPT command, the client can emulate it by performing the following steps:

1. List available scripts with LISTSCRIPTS. If the script with the new script name exists, then the client should ask the user whether to abort the operation, to replace the script (by issuing the DELETESCRIPT <newname> after that) or to chose a different name.
2. Download the old script with GETSCRIPT <oldname>.
3. Upload the old script with the new name: PUTSCRIPT <newname>.
4. If the old script was active (as reported by LISTSCRIPTS in step 1), then make the new script active: SETACTIVE <newname>
5. Delete the old script: DELETESCRIPT <oldname>

Note that these steps don't describe how to handle various other error conditions (for example NO response containing QUOTA response code in step 3). Error handling is left as an excercise for the reader.

### [2.11.2.](#) NOOP Command



Arguments: String - tag to echo back (optional)

The NOOP command does nothing, beyond returning a response to the client. It may be used by clients for protocol re-synchronisation or to reset any inactivity auto-logout timer on the server.

The response to the NOOP command is always OK, followed by the supplied string; if no string was supplied, the returned string MUST be "NOOP". This returned string MUST NOT be subject to translation to the user's local language.

Older servers may not understand the NOOP client and robust clients SHOULD be prepared to receive a NO response.

Examples:

```
C: NOOP
S: OK "NOOP"
```

```
C: NOOP "STARTTLS-SYNC-42"
S: OK {16}
S: STARTTLS-SYNC-42
```

### **3. Sieve URL Scheme**

URI scheme name: sieve

Status: permanent

URI scheme syntax:

Described using ABNF [[ABNF](#)] and ABNF entities from [[URI-GEN](#)].

sieveurl = sieveurl-server / sieveurl-script

sieveurl-server = "sieve://" authority

sieveurl-script = "sieve://" [ authority ] "/" scriptname

scriptname = \*pchar

URI scheme semantics:

A Sieve URL identifies a Sieve server or a Sieve script on a Sieve server. The latter form is associated with the application/sieve MIME type defined in [[SIEVE](#)]. There is no MIME type associated with the former form of Sieve URI.



The server form is used in the REFERRAL response code in order to designate another server where the client should perform its operations.

The script form allows to retrieve (GETSCRIPT), update (PUTSCRIPT), delete (DELETESCRIPT) or activate (SETACTIVE) the named script, however the most typical action would be to retrieve the script. If the script name is empty, the URI requests that the client lists available scripts using the LISTSCRIPTS command.

Encoding considerations: The script name, if present, is in UTF-8. Non-US-ASCII UTF-8 octets MUST be percent-encoded as described in [\[URI-GEN\]](#).

The user name (in the "authority" part), if present, is in UTF-8. Non-US-ASCII UTF-8 octets MUST be percent-encoded as described in [\[URI-GEN\]](#).

Applications/protocols that use this URI scheme name: ManageSieve [RFC XXXX] clients and servers. Clients that can store user preferences in protocols such as [\[LDAP\]](#) or [\[ACAP\]](#).

Interoperability considerations: None.

Security considerations:

The <scriptname> part of a ManageSieve URL might potentially disclose some confidential information about the author of the script or, depending on a ManageSieve implementation, about configuration of the mail server. The latter might be used to prepare for a more complex attack on the mail system.

Clients resolving ManageSieve URLs that wish to achieve data confidentiality and/or integrity SHOULD use the STARTTLS command (if supported by the server) before starting authentication, or use a SASL mechanism, such as GSSAPI, that provides a confidentiality security layer.

Contact: Alexey Melnikov <[alexey.melnikov@isode.com](mailto:alexey.melnikov@isode.com)>

Author/Change controller: IESG.

References: This document and [RFC 5228](#) [\[SIEVE\]](#).

#### **4. Formal Syntax**

The following syntax specification uses the augmented Backus-Naur Form (BNF) notation as specified in [\[ABNF\]](#). This uses the ABNF core



rules as specified in [Appendix A](#) of the ABNF specification [[ABNF](#)].  
"UTF8-2", "UTF8-3" and "UTF8-4" non-terminal are defined in [[UTF-8](#)].

Except as noted otherwise, all alphabetic characters are case-insensitive. The use of upper or lower case characters to define token strings is for editorial clarity only. Implementations MUST accept these strings in a case-insensitive fashion.

```
SAFE-CHAR           = %x01-09 / %x0B-0C / %x0E-21 / %x23-5B /  
                      %x5D-7F  
                      ;; any TEXT-CHAR except QUOTED-SPECIALS  
  
QUOTED-CHAR         = SAFE-UTF8-CHAR / DQUOTE QUOTED-SPECIALS  
  
QUOTED-SPECIALS     = DQUOTE / "\"  
  
SAFE-UTF8-CHAR       = SAFE-CHAR / UTF8-2 / UTF8-3 / UTF8-4  
                      ;; <UTF8-2>, <UTF8-3> and <UTF8-4>  
                      ;; are defined in [UTF-8]  
  
ATOM-CHAR           = "!" / %x23-27 / %x2A-5B / %x5D-7A / %x7C-7E  
                      ;; Any CHAR except ATOM-SPECIALS  
  
ATOM-SPECIALS       = "(" / ")" / "{" / SP / CTL /  
                      QUOTED-SPECIALS  
  
QUOTED-SPECIALS     = "<" / "\"  
  
atom                = 1*1024ATOM-CHAR  
  
iana-token          = atom  
                      ;; MUST be registered with IANA  
  
auth-type           = DQUOTE auth-type-name DQUOTE  
  
auth-type-name      = iana-token  
                      ;; as defined in SASL [SASL]  
  
command            = command-authenticate / command-logout /  
                      command-getsript / command-setactive /  
                      command-listscripts / command-deletescript /  
                      command-putsript / command-capability /  
                      command-havespace / command-starttls /  
                      command-renamescript / command-noop  
  
command-authenticate = "AUTHENTICATE" SP auth-type [SP string]  
                      *(CRLF string) CRLF
```





command-capability = "CAPABILITY" CRLF

command-deletescript = "DELETESCRIPT" SP sieve-name CRLF

command-getsript = "GETSCRIPT" SP sieve-name CRLF

command-havespace = "HAVESPACE" SP sieve-name SP number CRLF

command-listscripts = "LISTSCRIPTS" CRLF

command-noop = "NOOP" [SP string] CRLF

command-logout = "LOGOUT" CRLF

command-putsript = "PUTSCRIPT" SP sieve-name SP string CRLF

command-renamescript = "RENAMESCRIPT" SP old-sieve-name SP  
new-sieve-name CRLF

old-sieve-name = sieve-name

new-sieve-name = sieve-name

command-setactive = "SETACTIVE" SP sieve-name CRLF

command-starttls = "STARTTLS" CRLF

extend-token = atom  
;; MUST be defined by a standards track or  
;; IESG approved experimental protocol  
;; extension

extension-data = extension-item \*(SP extension-item)

extension-item = extend-token / string / number /  
"(" [extension-data] ")"

literal-c2s = "{" number "+" CRLF \*OCTET  
;; The number represents the number of  
;; octets.  
;; This type of literal can only be sent  
;; from the client to the server.

literal-s2c = "{" number "}" CRLF \*OCTET  
;; Almost identical to literal-c2s,  
;; but with no '+' character.  
;; The number represents the number of  
;; octets.



```
;; This type of literal can only be sent
;; from the server to the client.

number          = 1*DIGIT
                ;; A 32-bit unsigned number.
                ;; (0 <= n < 4,294,967,296)

quoted          = DQUOTE *1024QUOTED-CHAR DQUOTE
                ;; limited to 1024 octets between the <">s

resp-code       = "AUTH-TOO-WEAK" / "ENCRYPT-NEEDED" /
                "QUOTA" / resp-code-sasl /
                resp-code-referral /
                "TRANSITION-NEEDED" / "TRYLATER" /
                resp-code-ext

resp-code-referral = "REFERRAL" SP sieveurl

resp-code-sasl    = "SASL" SP string

resp-code-name    = iana-token
                ;; The response code name is hierarchical,
                ;; separated by '/'.
                ;; The response code name MUST NOT start
                ;; with '/'.

resp-code-ext     = resp-code-name [SP extension-data]
                ;; unknown response codes MUST be tolerated
                ;; by the client.

response         = response-authenticate /
                response-logout /
                response-getsript /
                response-setactive /
                response-listscripts /
                response-deletescript /
                response-putsript /
                response-capability /
                response-havespace /
                response-starttls /
                response-renamescript /
                response-noop

response-authenticate = *(string CRLF) (response-oknobye)

response-capability    = *(single-capability) response-oknobye

single-capability      = capability-name [SP string] CRLF
```



```
capability-name      = string
                      ;; Note that literal-s2c is allowed.

initial-capabilities = DQUOTE "IMPLEMENTATION" DQUOTE SP string /
                      DQUOTE "SASL" DQUOTE SP sasl-mechs /
                      DQUOTE "SIEVE" DQUOTE SP sieve-extensions /
                      DQUOTE "NOTIFY" DQUOTE SP notify-mechs /
                      DQUOTE "STARTTLS" DQUOTE /
                      DQUOTE "RENAME" DQUOTE /
                      DQUOTE "NOOP" DQUOTE
                      ;; Each capability conforms to
                      ;; the syntax for single-capability.
                      ;; Also note that the capability name
                      ;; can be returned as either literal-s2c
                      ;; or quoted, even though only "quoted"
                      ;; string is shown above.

sasl-mechs = string
            ; space separated list of SASL mechanisms,
            ; can be empty

sieve-extensions = string
                  ; space separated list of supported SIEVE extensions,
                  ; can be empty

notify-mechs = string
              ; space separated list of URI schema parts
              ; for supported notification [NOTIFY] methods.
              ; MUST NOT be empty

response-deletescript = response-oknobye

response-getscript     = (string CRLF response-ok) /
                        response-noby

response-havespace     = response-oknobye

response-listscripts   = *(sieve-name [SP "ACTIVE"] CRLF)
                        response-oknobye
                        ;; ACTIVE may only occur with one sieve-name

response-logout        = response-oknobye

response-ok            = "OK" [SP "(" resp-code ")"]
                        [SP string] CRLF

response-noby          = ("NO" / "BYE") [SP "(" resp-code ")"]
                        [SP string] CRLF
```



```
response-oknobyte      = response-ok / response-nobyte

response-noop           = response-ok

response-putsript      = response-oknobyte

response-renamescript  = response-oknobyte

response-setactive     = response-oknobyte

response-starttls      = response-oknobyte

sieve-name             = string
                        ;; See Section 1.6 for the full list of
                        ;; prohibited characters.

string                 = quoted / literal-c2s / literal-s2c
                        ;; literal-c2s is only allowed when sent
                        ;; from the client to the server.
                        ;; literal-s2c is only allowed when sent
                        ;; from the server to the client.
                        ;; quoted is allowed in either direction.
```

## 5. Security Considerations

The AUTHENTICATE command uses SASL [[SASL](#)] to provide authentication and authorization services. Integrity and privacy services can be provided by [[SASL](#)] and/or [[TLS](#)]. When a SASL mechanism is used the security considerations for that mechanism apply.

This protocol's transactions are susceptible to passive observers or man in the middle attacks which alter the data, unless the optional encryption and integrity services of the SASL (via the AUTHENTICATE command) and/or [[TLS](#)] (via the STARTTLS command) are enabled, or an external security mechanism is used for protection. It may be useful to allow configuration of both clients and servers to refuse to transfer sensitive information in the absence of strong encryption.

## 6. IANA Considerations

IANA is requested to reserve TCP port number 2000 for use with the Manage Sieve protocol described in this document.

IANA is requested to register the "sieve" URI scheme defined in [Section 3](#) of this document.





IANA is requested to create a new registry for Manage Sieve capabilities. The registration template for Manage Sieve capabilities is specified in [Section 6.1](#). Manage Sieve protocol capabilities MUST be specified in a standards track or IESG approved experimental RFC.

IANA is requested to create a new registry for Manage Sieve response codes. The registration template for Manage Sieve response codes is specified in [Section 6.3](#). Manage Sieve protocol response codes MUST be specified in a standards track or IESG approved experimental RFC.

### **[6.1](#). Manage Sieve Capability Registration Template**

To: iana@iana.org  
Subject: Manage Sieve Capability Registration  
Please register the following Manage Sieve Capability:  
Capability name:  
Description:  
Relevant publications:  
Person & email address to contact for further information:  
Author/Change controller:

### **[6.2](#). Registration of Initial Manage Sieve capabilities**

To: iana@iana.org  
Subject: Manage Sieve Capability Registration  
Please register the following Manage Sieve Capabilities:

Capability name: IMPLEMENTATION

Description: Its value contains name of server implementation and its version.

Relevant publications: this RFC, [Section 1.7](#).

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Capability name: SASL

Description: Its value contains a space separated list of SASL mechanisms supported by server.

Relevant publications: this RFC, [Section 1.7](#) and [Section 2.1](#).



Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Capability name: SIEVE

Description: Its value contains a space separated list of supported SIEVE extensions

Relevant publications: this RFC, [Section 1.7](#). Also [[SIEVE](#)].

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Capability name: STARTTLS

Description: This capability is returned if server supports TLS (STARTTLS command).

Relevant publications: this RFC, [Section 1.7](#) and [Section 2.2](#).

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Capability name: NOTIFY

Description: This capability is returned if server supports 'enotify' [[NOTIFY](#)] Sieve extension.

Relevant publications: this RFC, [Section 1.7](#).

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Capability name: RENAME

Description: This capability is returned if the server supports the RENAMESCRIPT command.

Relevant publications: this RFC, [Section 2.11.1](#).



Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Capability name: NOOP

Description: This capability is returned if the server supports the NOOP command.

Relevant publications: this RFC, [Section 2.11.2](#).

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

### **[6.3.](#) Manage Sieve Response Code Registration Template**

To: iana@iana.org

Subject: Manage Sieve Response Code Registration

Please register the following Manage Sieve Response Code:

Response Code:

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified):

Purpose:

Published Specification(s):

Person & email address to contact for further information:

Author/Change controller:

### **[6.4.](#) Registration of Initial Manage Sieve Response Codes**

To: iana@iana.org

Subject: Manage Sieve Response Code Registration

Please register the following Manage Sieve Response Codes:

Response Code: AUTH-T00-WEAK

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified): NONE



Purpose: This response code is returned in the NO response from an AUTHENTICATE command. It indicates that site security policy forbids the use of the requested mechanism for the specified authentication identity.

Published Specification(s): [RFCXXXX]

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Response Code: ENCRYPT-NEEDED

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified): NONE

Purpose: This response code is returned in the NO response from an AUTHENTICATE command. It indicates that site security policy requires the use of a strong encryption mechanism for the specified authentication identity and mechanism.

Published Specification(s): [RFCXXXX]

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Response Code: QUOTA

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified): NONE

Purpose: If this response code is returned in the NO/BYE response, it means that the command would have placed the user above the site-defined quota constraints. If this response code is returned in the OK response, it can mean that the user is near its quota or that the user exceeded its quota, but the server supports soft quotas.

Published Specification(s): [RFCXXXX]

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.





Response Code: REFERRAL

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified): <sieveurl>

Purpose: This response code may be returned with a BYE result from any command, and includes a mandatory parameter that indicates what server to access to manage this user's sieve scripts. The server will be specified by a Sieve URL (see [Section 3](#)). The scriptname portion of the URL MUST NOT be specified. The client should authenticate to the specified server and use it for all further commands in the current session.

Published Specification(s): [RFCXXXX]

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Response Code: SASL

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified): <string>

Purpose: This response code can occur in the OK response to a successful AUTHENTICATE command and includes the optional final server response data from the server as specified by [\[SASL\]](#).

Published Specification(s): [RFCXXXX]

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Response Code: TRANSITION-NEEDED

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified): NONE

Purpose: This response code occurs in a NO response of an AUTHENTICATE command. It indicates that the user name is valid, but the entry in the authentication database needs to be updated in order to permit authentication with the specified mechanism. This is typically done by establishing a secure channel using TLS, followed by authenticating once using the [\[PLAIN\]](#) authentication mechanism. The selected mechanism SHOULD then work for



authentications in subsequent sessions.

Published Specification(s): [RFCXXXX]

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

Response Code: TRYLATER

Arguments (use ABNF to specify syntax, or the word NONE if none can be specified): NONE

Purpose: A command failed due to a temporary server failure. The client MAY continue using local information and try the command later. This response code only make sense when returned in a NO/BYE response.

Published Specification(s): [RFCXXXX]

Person & email address to contact for further information: Alexey Melnikov <alexey.melnikov@isode.com>

Author/Change controller: IESG.

## **7. Acknowledgements**

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