

IMAP4 OPTIMIZE-1 extension

Status of this Memo

This document is an Internet Draft. Internet Drafts are working documents of the Internet Engineering Task Force (IETF), its Areas, and its Working Groups. Note that other groups may also distribute working documents as Internet Drafts.

Internet Drafts are draft documents valid for a maximum of six months. Internet Drafts may be updated, replaced, or obsoleted by other documents at any time. It is not appropriate to use Internet Drafts as reference material or to cite them other than as a ``working draft'' or ``work in progress''.

To learn the current status of any Internet-Draft, please check the `1id-abstracts.txt` listing contained in the Internet-Drafts Shadow Directories on `ds.internic.net`, `nic.nordu.net`, `ftp.isi.edu`, or `munni.oz.au`.

A revised version of this draft document will be submitted to the RFC editor as a Proposed Standard for the Internet Community. Discussion and suggestions for improvement are requested. This document will expire before December 1996. Distribution of this draft is unlimited.

1. Abstract

The OPTIMIZE-1 extension of the Internet Message Access Protocol [[IMAP4](#)] provides a set of features intended to reduce the amount of time and resources used by some client operations. The features in OPTIMIZE-1 are primarily intended for disconnected-use clients.

2. Conventions Used in this Document

In examples, "C:" and "S:" indicate lines sent by the client and server respectively.

3. Introduction and Overview

The OPTIMIZE-1 extension is present in any IMAP4 server implementation which returns "OPTIMIZE-1" as one of the supported capabilities to the CAPABILITY command. The OPTIMIZE-1 extension contains two additional commands and additional data returned with successful APPEND and COPY commands.

Clients that wish to use the features in OPTIMIZE-1 must of course first test for the presence of the extension by issuing a CAPABILITY command. Each of the features in OPTIMIZE-1 are optimizations; clients can provide the same functionality, albeit more slowly, by using commands in the base protocol. With each feature, this document recommends a fallback approach to take when the OPTIMIZE-1 extension is not supported by the server.

4. Features

4.1. GETUIDS Command

Arguments: starting uid

Data: untagged response: GETUIDS

Result: OK - getuids completed
BAD - command unknown or arguments invalid

The GETUIDS command returns information about UIDs contained in the mailbox. One untagged GETUIDS response is returned.

If there is no message in the mailbox with a UID greater than or equal to the starting UID, the untagged GETUIDS response contains no arguments.

If there exists at least one message with a UID greater than or equal to the starting UID, the untagged GETUIDS response contains the lowest message sequence number with a UID greater than or equal to the starting UID, followed by a message set. The message set must contain the UIDs of every message in the mailbox with a UID greater than or equal to the starting UID. The message set must not contain the symbol '*', any UID less than the starting UID, or any UID not present in the mailbox. The UIDs in the message set must be in strictly ascending order.

Upon receiving the untagged GETUIDS response, the client knows that any message in its cache with a UID greater than or equal to the starting UID and not present in a returned message set has been expunged.

If the server does not support the OPTIMIZE-1 capability, the client should fall back to using the UID FETCH starting-uid:* UID command, where starting-uid is the starting UID.

Example: C: A003 GETUIDS 3475
S: * GETUIDS 17 3509:3519,3525,3590:3599
S: A003 OK GETUIDS completed
C: A004 GETUIDS 4000
S: * GETUIDS
S: A004 OK GETUIDS completed

4.2. UID EXPUNGE Command

Arguments: message set

Data: untagged responses: EXPUNGE

Result: OK - expunge completed
NO - expunge failure (e.g. permission denied)
BAD - command unknown or arguments invalid

The UID EXPUNGE command permanently removes from the currently selected mailbox all messages that both have the \Deleted flag set and have a UID that is included in the specified message set. If a message either does not have the \Deleted flag set or is has a UID that is not included in the specified message set, it is not affected.

This command may be used to ensure that a replayed EXPUNGE command does not remove any messages that have been marked as \Deleted between the time that the user requested the expunge operation and the time the server processes the command.

If the server does not support the OPTIMIZE-1 capability, the client should fall back to using the STORE command to temporarily remove the \Deleted flag from messages it does not want to remove. The client could alternatively fall back to using the EXPUNGE command, risking the unintended removal of some messages.

Example: C: A003 UID EXPUNGE 3000:3002
S: * 3 EXPUNGE
S: * 3 EXPUNGE
S: * 3 EXPUNGE
S: A003 OK UID EXPUNGE completed

4.3. APPENDUID response code

Successful APPEND commands return an APPENDUID response code in the tagged OK response. The APPENDUID response code contains as arguments the UIDVALIDITY of the destination mailbox and the UID assigned to the appended message.

If the server does not support the OPTIMIZE-1 capability, the client can only discover this information by selecting the destination mailbox and issuing FETCH commands.

Example: C: A003 APPEND saved-messages (\Seen) {310}
C: Date: Mon, 7 Feb 1994 21:52:25 -0800 (PST)
C: From: Fred Foobar <foobar@Blurdybloop.COM>


```
C: Subject: afternoon meeting
C: To: mooch@owatagu.siam.edu
C: Message-Id: <B27397-0100000@Blurdybloop.COM>
C: MIME-Version: 1.0
C: Content-Type: TEXT/PLAIN; CHARSET=US-ASCII
C:
C: Hello Joe, do you think we can meet at 3:30 tomorrow?
C:
S: A003 OK [APPENDUID 38505 3955] APPEND completed
```

4.4. COPYUID response code

Successful COPY and UID COPY commands return a COPYUID response code in the tagged OK response whenever at least one message was copied. The COPYUID response code contains as an argument the UIDVALIDITY of the appended-to mailbox, a message set containing the UIDs of the messages copied to the destination mailbox, in the order they were copied, and a message containing the UIDs assigned to the copied messages, in the order they were assigned. Neither of the message sets may contain extraneous UIDs or the symbol '*'.

If the server does not support the OPTIMIZE-1 capability, the client can only discover this information by selecting the destination mailbox and issuing FETCH commands.

```
Example:  C: A003 COPY 2:4 MEETING
          S: A003 OK [COPYUID 38505 304,319:320 3956:3958] Done
          C: A003 UID COPY 305:310 MEETING
          S: A003 OK Done
```

5. Formal Syntax

The following syntax specification uses the augmented Backus-Naur Form (BNF) notation as specified in [[RFC-822](#)] as modified by [[IMAP4](#)]. Non-terminals referenced but not defined below are as defined by [[IMAP4](#)].

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.

```
getuids      ::= "GETUIDS" SPACE uniqueid
```

```
getuids_data  ::= "GETUIDS" [ SPACE nz_number SPACE set ]
```


resp_code_apnd ::= "APPENDUID" SPACE nz_number SPACE uniqueid

resp_code_copy ::= "COPYUID" SPACE nz_number SPACE set SPACE set

uid_expunge ::= "UID" SPACE "EXPUNGE" SPACE set

6. References

[IMAP4] Crispin, M., "Internet Message Access Protocol - Version 4rev1", [RFC 2060](#), University of Washington, December 1996.

[RFC-822] Crocker, D., "Standard for the Format of ARPA Internet Text Messages", STD 11, [RFC 822](#).

7. Security Considerations

There are no known security issues with this extension.

8. Author's Address

John Gardiner Myers
Netscape Communications
501 East Middlefield Road
Mail Stop MV-029
Mountain View, CA 94043

Email: jgmyers@netscape.com

TTTTaaaabbbbllllleeee ooooffff
CCCCooooonnnntttteeeennnnnttttssss

Status of this Memo	<u>i</u>
<u>1.</u> Abstract	<u>2</u>
<u>2.</u> Conventions Used in this Document	<u>2</u>
<u>3.</u> Introduction and Overview	<u>2</u>
<u>4.</u> Features	<u>3</u>
<u>4.1.</u> GETUIDS Command	<u>3</u>
<u>4.2.</u> UID EXPUNGE Command	<u>3</u>
<u>4.3.</u> APPENDUID response code	<u>4</u>
<u>4.4.</u> COPYUID response code	<u>5</u>
<u>5.</u> Formal Syntax	<u>5</u>
<u>6.</u> References	<u>6</u>
<u>7.</u> Security Considerations	<u>6</u>
<u>8.</u> Author's Address	<u>6</u>

