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# IMAP4 Extension for Returning STATUS Information in Extended LIST

## Abstract

Many IMAP clients display information about total number of messages / total number of unseen messages in IMAP mailboxes. In order to do that, they are forced to issue a LIST or LSUB command and to list all available mailboxes, followed by a STATUS command for each mailbox found. This document provides an extension to LIST command that allows the client to request STATUS information for mailboxes together with other information typically returned by the LIST command.

## Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in Section 2 of RFC 5741.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at http://www.rfc-editor.org/info/rfc5819.

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## 1. Introduction

Many IMAP clients display information about the total number of messages / total number of unseen messages in IMAP mailboxes. In order to do that, they are forced to issue a LIST or LSUB command and to list all available mailboxes, followed by a STATUS command for each mailbox found. This document provides an extension to LIST command that allows the client to request STATUS information for mailboxes together with other information typically returned by the LIST command.

### 1.1. Conventions Used in This Document

In examples, "C:" indicates lines sent by a client that is connected to a server. "S:" indicates lines sent by the server to the client.

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 RFC 2119 [Kwds].

## 2. STATUS Return Option to LIST Command

[RFC3501] explicitly disallows mailbox patterns in the STATUS command. The main reason was to discourage frequent use of the STATUS command by clients, as it might be quite expensive for an IMAP server to perform. However, this prohibition had resulted in an opposite effect: a new generation of IMAP clients appeared, that issues a STATUS command for each mailbox returned by the LIST command. This behavior is suboptimal to say at least. It wastes extra bandwidth and, in the case of a client that doesn’t support IMAP pipelining, also degrades performance by using too many round trips. This document tries to remedy the situation by specifying a single command that can be used by the client to request all the necessary information. In order to achieve this goal, this document is extending the LIST command with a new return option, STATUS. This option takes STATUS data items as parameters. For each selectable

mailbox matching the list pattern and selection options, the server MUST return an untagged LIST response followed by an untagged STATUS response containing the information requested in the STATUS return option.

If an attempted STATUS for a listed mailbox fails because the mailbox can't be selected (e.g., if the "l" ACL right [ACL] is granted to the mailbox and the "r" right is not granted, or due to a race condition between LIST and STATUS changing the mailbox to \NoSelect), the STATUS response MUST NOT be returned and the LIST response MUST include the \NoSelect attribute. This means the server may have to buffer the LIST reply until it has successfully looked up the necessary STATUS information.

If the server runs into unexpected problems while trying to look up the STATUS information, it MAY drop the corresponding STATUS reply. In such a situation, the LIST command would still return a tagged OK reply.

## 3. Examples

```
C: A01 LIST "" % RETURN (STATUS (MESSAGES UNSEEN))
S: * LIST () "."  "INBOX"
S: * STATUS "INBOX" (MESSAGES 17 UNSEEN 16)
S: * LIST () "." "foo"
S: * STATUS "foo" (MESSAGES 30 UNSEEN 29)
S: * LIST (\NoSelect) "." "bar"
S: A01 OK List completed.
```

The "bar" mailbox isn't selectable, so it has no STATUS reply.

```
C: A02 LIST (SUBSCRIBED RECURSIVEMATCH)"" % RETURN (STATUS
   (MESSAGES))
S: * LIST (\Subscribed) "."  "INBOX"
S: * STATUS "INBOX" (MESSAGES 17)
S: * LIST () "." "foo" (CHILDINFO ("SUBSCRIBED"))
S: A02 OK List completed.
```

The LIST reply for "foo" is returned because it has matching children, but no STATUS reply is returned because "foo" itself doesn't match the selection criteria.

## 4. Formal Syntax

The following syntax specification uses the augmented Backus-Naur Form (BNF) as described in [ABNF]. Terms not defined here are taken from [RFC3501] and [LISTEXT].

```
return-option =/ status-option

status-option = "STATUS" SP "(" status-att *(SP status-att) ")"
                ;; This ABNF production complies with
                ;; <option-extension> syntax.
```

## 5. Security Considerations

This extension makes it a bit easier for clients to overload the server by requesting STATUS information for a large number of mailboxes. However, as already noted in the introduction, existing clients already try to do that by generating a large number of STATUS commands for each mailbox in which they are interested. While performing STATUS information retrieval for big lists of mailboxes, a server implementation needs to make sure that it can still serve other IMAP connections and yield execution to other connections, when necessary.

## 6. IANA Considerations

IMAP4 capabilities are registered by publishing a Standards Track or IESG-approved Experimental RFC. The "IMAP 4 Capabilities" registry is available from the IANA webiste:

   http://www.iana.org

This document defines the LIST-STATUS IMAP capability. IANA has added it to the registry.

IANA has also added the following new LIST-EXTENDED option to the IANA registry established by [LISTEXT]:

To: iana@iana.org
Subject: Registration of LIST-EXTENDED option STATUS

LIST-EXTENDED option name: STATUS

LIST-EXTENDED option type: RETURN

LIST-EXTENDED option description: Causes the LIST command to return STATUS responses in addition to LIST responses.

Published specification: RFC 5819

Security considerations: RFC 5819

Intended usage: COMMON

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

Owner/Change controller: iesg@ietf.org

## 7. Acknowledgements

Thanks to Philip Van Hoof who pointed out that STATUS and LIST commands should be combined in order to optimize traffic and number of round trips.

## 8. Normative References

[ABNF] Crocker, D., Ed., and P. Overell, "Augmented BNF for Syntax Specifications: ABNF", STD 68, RFC 5234, January 2008.

[ACL] Melnikov, A., "IMAP4 Access Control List (ACL) Extension", RFC 4314, December 2005.

[Kwds] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[LISTEXT] Leiba, B. and A. Melnikov, "Internet Message Access Protocol version 4 - LIST Command Extensions", RFC 5258, June 2008.

[RFC3501] Crispin, M., "INTERNET MESSAGE ACCESS PROTOCOL - VERSION 4rev1", RFC 3501, March 2003.

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