

## IMAP4 Child Mailbox Extension

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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 June 1998. Distribution of this draft is unlimited.

### 1. Abstract

Many IMAP4 [[RFC-2060](#)] clients present to the user a hierarchical view of the mailboxes that a user has access to. Rather than initially presenting to the user the entire mailbox hierarchy, it is often preferable to show to the user a collapsed outline list of the mailbox hierarchy (particularly if there is a large number of mailboxes). The user can then expand the collapsed outline hierarchy as needed. It is common to include within the collapsed hierarchy a visual clue (such as a '+' ) to indicate that there are child mailboxes under a particular mailbox. When the visual clue is clicked the hierarchy list is expanded to show the child mailboxes.

The CHILDREN extension provides a mechanism for a client to efficiently determine if a particular mailbox has children, without

issuing a LIST '' \* or a LIST '' % for each mailbox name.

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## [2.](#) Conventions used in this document

In examples, "C:" and "S:" indicate lines sent by the client and server respectively. If such lines are wrapped without a new "C:" or "S:" label, then the wrapping is for editorial clarity and is not part of the command.

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](#)].

## [3.](#) Requirements

IMAP4 servers that support this extension MUST list the keyword CHILDREN in their CAPABILITY response.

The CHILDREN extension defines two new attributes that MAY be returned within a LIST response:

\HasChildren - The presence of this attribute indicates that the mailbox has child mailboxes.

A server SHOULD NOT set this attribute if there are child mailboxes, and the user does not have permissions to access any of them. In this case, \HasNoChildren SHOULD be used.

In many cases, however, a server may not be able to efficiently compute whether a user has access to all child mailboxes. As such a client MUST be prepared to accept the \HasChildren attribute as a hint. That is, a mailbox MAY be flagged with the \HasChildren attribute, but no child mailboxes will appear in the LIST response.

\HasNoChildren - The presence of this attribute indicates that the mailbox has NO child mailboxes that are accessible to the currently authenticated user.

Example 3.1:

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< Consider a server that has the following mailbox hierarchy:

```
INBOX
ITEM_1
    ITEM_1A
ITEM_2
    TOP_SECRET
```

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Where INBOX, ITEM\_1 and ITEM\_2 are top level mailboxes. ITEM\_1A is a child mailbox of ITEM\_1 and TOP\_SECRET is a child mailbox of ITEM\_2 that the currently logged on user does NOT have access to.

Note that in this case, the server is not able to efficiently compute access rights to child mailboxes and responds with a \HasChildren attribute for mailbox ITEM\_2, even though ITEM\_2/TOP\_SECRET does not appear in the list response. >

```
C: A001 LIST "" *
S: * LIST (\HasNoChildren) "/" INBOX
S: * LIST (\HasChildren) "/" ITEM_1
S: * LIST (\HasNoChildren) "/" ITEM_1/ITEM_1A
S: * LIST (\HasChildren) "/" ITEM_2
S: A001 OK LIST Completed
```

In some instances a server that supports the CHILDREN extension MAY NOT be able to determine whether a mailbox has children. For example it may have difficulty determining whether there are child mailboxes when LISTing mailboxes while operating in a particular namespace.

In these cases, a server MAY exclude both the \HasChildren and \HasNoChildren attributes in the LIST response. As such, a client can not make any assumptions about whether a mailbox has children based upon the absence of a single attribute. It is an error for the server to return both a \HasChildren and a \HasNoChildren attribute in a LIST response.

Note: the \HasNoChildren attribute should not be confused with the IMAP4 [[RFC-2060](#)] defined attribute \NoInferiors which indicates that

no child mailboxes exist now and none can be created in the future.

## 5. Formal Syntax

The following syntax specification uses the augmented Backus-Naur Form (BNF) as described in [ABNF].

Two new mailbox attributes are defined as flag\_extensions to the IMAP4 mailbox\_list response:

HasChildren = "\HasChildren"

HasNoChildren = "\HasNoChildren"

## 6. Security Considerations

This extension provides a client a more efficient means of determining whether a particular mailbox has children. If a mailbox

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has children, but the currently authenticated user does not have access to any of them, the server SHOULD respond with a \HasNoChildren attribute. In many cases, however, a server may not be able to efficiently compute whether a user has access to all child mailboxes. If such a server responds with a \HasChildren attribute, when in fact the currently authenticated user does not have access to any child mailboxes, potentially more information is conveyed about the mailbox than intended. In most situations this will not be a security concern, because if information regarding whether a mailbox has children is considered sensitive, a user would not be granted access to that mailbox in the first place.

## 7. References

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

[[RFC-2119](#)], Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), Harvard University, March 1997

[ABNF], DRUMS working group, Dave Crocker Editor, "Augmented BNF for Syntax Specifications: ABNF", [draft-drums-abnf-04.txt](#) (work in progress), Internet Mail Consortium, September 1997

## 8. Acknowledgments

The authors would like to thank the participants of the IMC Mail Connect 3 event for their input when this idea was originally presented.

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