

IMAP "\$Important" Keyword and "\Important" Special-Use Attribute

Abstract

RFC 6154 created an IMAP special-use LIST extension and defined an initial set of attributes. This document defines a new attribute, "\Important", and establishes a new IANA registry for IMAP folder attributes, which include the attributes defined in RFCs 5258, 3501, and 6154. This document also defines a new IMAP keyword, "\$Important", and registers it in the registry defined in RFC 5788.

Status of This Memo

This is an Internet Standards Track document.

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## 1. Introduction

The Internet Message Access Protocol (IMAP) specification [RFC3501] defines the use of message keywords, and an "IMAP Keywords" registry is created in [RFC5788]. [RFC6154] defines an extension to the IMAP LIST command for special-use mailboxes. The extension allows servers to provide extra information (attributes) about the purpose of a mailbox and defines an initial set of special-use attributes.

This document does the following:

- o defines a new message keyword, "\$Important", to apply to messages that are considered important for the user by some externally defined criteria;
- o registers the "\$Important" keyword in the "IMAP Keywords" registry;
- o defines a new special-use attribute, "\Important", to designate a mailbox that will hold messages that are considered important for the user by some externally defined criteria; and

- o creates a registry for IMAP mailbox attributes and registers the new attribute and those defined in [RFC5258], [RFC3501], and [RFC6154].

### 1.1. Conventions Used in This Document

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

## 2. Definition of the "\$Important" Message Keyword

The "\$Important" keyword is a signal that a message is likely important to the user. The keyword is generally expected to be set automatically by the system based on available signals (such as who the message is from, who else the message is addressed to, evaluation of the subject or content, or other heuristics). While the keyword also can be set by the user, that is not expected to be the primary usage.

This is distinct from the "\Flagged" system flag in two ways:

1. "\$Important" carries a meaning of general importance, as opposed to follow-up or urgency. It is meant to be used for a form of triage, with "\Flagged" remaining as a designation of special attention, need for follow-up, or time sensitivity. In particular, the sense of "\$Important" is that other messages that are "like this one" according to some server-applied heuristics will also be considered "\$Important".
2. The setting of "\$Important" is expected to be based at least partly on heuristics (generally set automatically by the server), whereas "\Flagged" is only intended to be set by the user with some sort of "flag this message" or "put a star on this message" interface.

## 3. Definition of the 'Important' Mailbox Attribute

The "\Important" mailbox attribute is a signal that the mailbox contains messages that are likely important to the user. In an implementation that also supports the "\$Important" keyword, this special use is likely to represent a virtual mailbox collecting messages (from other mailboxes) that are marked with the "\$Important" keyword. In other implementations, the system might automatically put messages there based on the same sorts of heuristics that are noted for the "\$Important" keyword (see Section 2). The distinctions between "\Important" and "\Flagged" for mailboxes are similar to those between "\$Important" and "\Flagged" for messages.

### 3.1. Formal Syntax

The following syntax specification adds to the one in Section 6 of [RFC6154] using Augmented Backus-Naur Form (ABNF) as described in [RFC5234]. Be sure to see the ABNF notes at the beginning of Section 9 of [RFC3501].

```
use-attr      =/ "\Important"
```

### 3.2. Examples

#### 3.2.1. Example of a LIST Response

In the following example, the mailbox called "Important Messages" is the one designated with the "\Important" attribute.

```
C: t1 LIST "" "Imp*"
S: * LIST (\HasNoChildren \Important) "/" "Important Messages"
S: * LIST (\HasNoChildren) "/" "Imported Wine"
S: t1 OK Success
```

#### 3.2.2. Examples of Creating a New Mailbox Using "\Important"

In the following example, the mailbox called "Important Messages" is created with the "\Important" attribute on a server that advertises the "CREATE-SPECIAL-USE" capability string.

```
C: t1 CREATE "Important Messages" (USE (\Important))
S: t1 OK Mailbox created
```

The following example is similar to the previous one, but the server is not able to assign the "\Important" attribute to the new mailbox.

```
C: t1 CREATE "Important Messages" (USE (\Important))
S: t1 NO [USEATTR] An \Important mailbox already exists
```

The following example is similar to the previous one, but the server does not support this extension.

```
C: t1 CREATE "Important Messages" (USE (\Important))
S: t1 NO [USEATTR] Mailbox not created; unsupported use \Important
```

In both of the failure-mode examples, the "USEATTR" response code lets the client know that the problem is in the "USE" parameters. Note that the same response code is given in both cases, and the human-readable text is the only way to tell the difference. That text is not parsable by the client (it can only be logged and/or reported to the user).

#### 4. Implementation Notes

This section is non-normative and is intended to describe the intended (and current as of this publication) usage of "\$Important" in contrast with "\Flagged" on a message.

On the server:

- o "\Flagged" is set or cleared in response to an explicit command from the client.
- o "\$Important" is set via a heuristic process performed by the server and usually involves analysis of header fields, what mailbox the message is filed in, perhaps message content, attachments, and such. It may then be set or cleared in response to an explicit command from the client, and the server may use that to adjust the heuristics in the future. It's also possible that the server will re-evaluate this and make a message "\$Important" later if the user accesses the message frequently, for example.

On the client:

- o Typically, an icon such as a flag or a star (or an indication, such as red or bold text) is associated with "\Flagged", and the UI provides a way for the user to turn that icon or indication on or off. Manipulation of this results in a command to the server.
- o Typically, a lesser indication is used for "\$Important". The client might or might not provide the user with a way to manipulate it. If it does, manipulation results in a command to the server.

#### 5. Security Considerations

The security considerations in Section 7 of [RFC6154] apply equally to this extension, in particular, "Conveying special-use information to a client exposes a small bit of extra information that could be of value to an attacker." Moreover, identifying important messages or a place where important messages are kept could give an attacker a strategic starting point. If the algorithm by which messages are determined to be important is well known, still more information is exposed -- perhaps, for example, there is an implication that the senders of these messages are particularly significant to the mailbox owner, and perhaps that is information that should not be made public.

As noted in RFC 6154, it is wise to protect the IMAP channel from passive eavesdropping and to defend against unauthorized discernment of the identity of a user's "\Important" mailbox or of a user's "\$Important" messages. See Section 11 of [RFC3501] for security considerations about using the IMAP STARTTLS command to protect the IMAP channel.

## 6. IANA Considerations

IANA has completed three actions, which are specified in the sections below:

1. registration of the "\$Important" keyword;
2. creation of a new "IMAP Mailbox Name Attributes" registry; and
3. registration of initial entries in the "IMAP Mailbox Name Attributes" registry.

### 6.1. Registration of the "\$Important" Keyword

IANA has registered the "\$Important" keyword in the "IMAP Keywords" registry, as follows, using the template in [RFC5788].

IMAP keyword name: \$Important

Purpose (description): The "\$Important" keyword is a signal that a message is likely important to the user.

Private or Shared on a server: PRIVATE

Is it an advisory keyword or may it cause an automatic action:  
Advisory (but see the reference for details).

When/by whom the keyword is set/cleared: The keyword can be set by the user, or automatically by the system based on available signals (such as who the message is from, who else the message is addressed to, evaluation of the subject or content, or other heuristics).

Related keywords: None (see the reference for the related mailbox name attribute).

Related IMAP capabilities: None.

Security considerations: See Section 5 of RFC 8457.

Published specification: RFC 8457

Person & email address to contact for further information:  
IETF Applications and Real-Time Area <art@ietf.org>

Intended usage: COMMON

Owner/Change controller: IESG

Note: None.

## 6.2. Creation of the IMAP Mailbox Name Attributes Registry

IANA has created a new registry in the group "Internet Message Access Protocol (IMAP)". It is called "IMAP Mailbox Name Attributes", and it has two references: "RFC 3501, Section 7.2.2", and "RFC 8457, Section 6". This registry will be shared with the JSON Meta Application Protocol (JMAP) for Mail [JMAP-MAIL].

The registry entries contain the following fields:

1. Attribute Name
2. Description
3. Reference
4. Usage Notes

IANA keeps this list in alphabetical order by Attribute Name, which is registered without the initial backslash ("\"). The names are generally registered with initial capital letters but are treated as case-insensitive US-ASCII strings.

The "Usage Notes" field is free-form US-ASCII text that will normally be empty (and is empty if it's not specified in the registration request). It is intended to hold things such as "not used by JMAP" and "JMAP only". The field is for human use, and there is no need for a registry of strings that may appear here.

The registration policy for the new registry is listed as "IETF Review" or "Expert Review" [RFC8126], and new registrations will be accepted in one of two ways:

1. For registrations requested in an IETF consensus document, the registration policy will be IETF Review, and the request will be made in the IANA Considerations section of the document, which gives the requested values for each of the fields.
2. For other registrations, the policy will be Expert Review policy (see Section 6.2.1), and the request will be made by sending email to IANA asking for a new IMAP Mailbox Name Attribute and giving the requested values for each of the fields. While a

formal specification is not required, the reference document should provide a description of the proposed attribute sufficient for building interoperable implementations. An Informational RFC (submitted, for example, through the IETF or Independent stream) is a fine way to publish a reference document (see also Section 6.2.1).

#### 6.2.1. Instructions to the Designated Expert

The expert reviewer, who will be designated by the IESG, is expected to provide only a general review of the requested registration, checking that the reference and description are adequate for understanding the intent of the registered attribute. Efforts should also be made to generalize the intent of an attribute so that multiple implementations with the same requirements may reuse existing attributes. Except for this check, this is intended to be very close to a first come first served policy, and the expert should not block serious registration requests with a reasonable reference. The reference may be to any form of documentation, including a web page, but consideration should be given to providing one that is expected to be long-lived and stable.



## 6.3. Initial Entries for the IMAP Mailbox Name Attributes Registry

The registry initially contains these entries:

Attribute Name	Description	Reference	
All	All messages	[RFC6154]	
Archive	Archived messages	[RFC6154]	
Drafts	Messages that are working drafts	[RFC6154]	
Flagged	Messages with the \Flagged flag	[RFC6154]	
HasChildren	Has accessible child mailboxes	[RFC5258]	*
HasNoChildren	Has no accessible child mailboxes	[RFC5258]	*
Important	Messages deemed important to user	RFC 8457	
Junk	Messages identified as Spam/Junk	[RFC6154]	
Marked	Server has marked the mailbox as "interesting"	[RFC3501]	*
NoInferiors	No hierarchy under this name	[RFC3501]	*
NonExistent	The mailbox name doesn't actually exist	[RFC5258]	*
Noselect	The mailbox is not selectable	[RFC3501]	*
Remote	The mailbox exists on a remote server	[RFC5258]	*
Sent	Sent mail	[RFC6154]	
Subscribed	The mailbox is subscribed to	[RFC5258]	
Trash	Messages the user has discarded	[RFC6154]	
Unmarked	No new messages since last select	[RFC3501]	*

The rows marked with "\*" at the end have their Usage Notes field set to "not used by JMAP".

## 7. References

### 7.1. Normative References

- [RFC3501] Crispin, M., "INTERNET MESSAGE ACCESS PROTOCOL - VERSION 4rev1", RFC 3501, DOI 10.17487/RFC3501, March 2003, <<https://www.rfc-editor.org/info/rfc3501>>.
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- [RFC6154] Leiba, B. and J. Nicolson, "IMAP LIST Extension for Special-Use Mailboxes", RFC 6154, DOI 10.17487/RFC6154, March 2011, <<https://www.rfc-editor.org/info/rfc6154>>.
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- [JMAP-MAIL] Jenkins, N. and C. Newman, "JMAP for Mail", Work in Progress, draft-ietf-jmap-mail-07, August 2018.
- [RFC5258] Leiba, B. and A. Melnikov, "Internet Message Access Protocol version 4 - LIST Command Extensions", RFC 5258, DOI 10.17487/RFC5258, June 2008, <<https://www.rfc-editor.org/info/rfc5258>>.
- [RFC5788] Melnikov, A. and D. Cridland, "IMAP4 Keyword Registry", RFC 5788, DOI 10.17487/RFC5788, March 2010, <<https://www.rfc-editor.org/info/rfc5788>>.

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