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**IMAP4 Keyword Registry**  
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**Abstract**

The aim of this document is to establish a new IANA registry for IMAP keywords and to define a procedure for keyword registration, in order to improve interoperability between different IMAP clients.

**Note**

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, and should be sent to [morg@ietf.org](mailto:morg@ietf.org).

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## **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 [RFC 2119](#) [[Kwds](#)].

## **2. Introduction**

IMAP Keywords [[RFC3501](#)] are boolean named flags that can be used by clients to annotate messages in an IMAP mailbox. Although IMAP keywords is an optional feature of IMAP, the majority of IMAP servers can store arbitrary keywords. Many mainstream IMAP clients use a limited set of specific keywords, and some can manage (create, edit, display) arbitrary IMAP keywords.

Over years some IMAP keywords have become de-facto standard, with some specific semantics associated with them. In some cases different client implementors decided to define and use keywords with different names, but the same semantics. Some server implementors decided to map such keywords automatically in order to improve cross client interoperability.

In other cases, the same keywords have been used with different semantics, thus causing interoperability problems.

This document attempts to prevent further incompatible uses of IMAP keywords by establishing an IMAP Keyword registry, and allocating a special prefix for standardized keywords.

## **3. IANA Considerations**

IANA is requested to establish a new registry for IMAP keywords.

Registration of an IMAP keyword is requested by filling in the following template and following the instructions on the IANA pages for the registry for submitting it to IANA:

Subject:     Registration of IMAP keyword X

IMAP keyword name:



Purpose (description):

Private or Shared on a server: (One of PRIVATE, SHARED or BOTH.  
PRIVATE means that each different user has a distinct  
copy of the keyword. SHARED means that all different  
users see the same value of the keyword. BOTH means that  
an IMAP server can have the keyword as either private or  
shared.)

Is it an advisory keyword or may it cause an automatic action:

When/by whom the keyword is set/cleared:

Related keywords: (for example "mutually exclusive with keywords Y  
and Z")

Related IMAP capabilities:

Security considerations:

Published specification (recommended):

Person & email address to contact for further information:

Intended usage: (One of COMMON, LIMITED USE or DEPRECATED (i.e. not  
recommended for use))

Owner/Change controller: (MUST be "IESG" for any "common use"  
keyword registration specified in an IETF Review  
document. See definition of "common use" below in this  
section. When the Owner/Change controller is not a  
Standardization Organization, the registration request  
MUST make it clear if the registration is controlled by a  
company, or the individual performing the registration.)



Note: (Any other information that the author deems interesting may be added here, for example if the keyword(s) is supported by existing clients.)

Registration of an IMAP keyword requires Expert Review [[RFC5226](#)]. Registration of any IMAP keyword is initiated by posting a registration request to the Message Organization WG mailing list <morg@ietf.org> (or its replacement as chosen by the responsible Application Area Director) and CCing IANA (<iana@iana.org>). After allowing for at least 2 weeks for community input on the designated mailing list, the expert will determine the appropriateness of the registration request and either approve or disapprove the request with notice to the requestor, the mailing list, and IANA. Any refusal must come with a clear explanation.

The IESG appoints one or more Expert Reviewer for the IMAP Keyword registry established by this document.

Expert Reviewer should strive for timely reviews. Expert Reviewer should take no longer than 6 weeks to make and announce the decision, or notify the mailing list that more time is required.

Decisions (or lack of) made by an Expert Reviewer can be first appealed to Application Area Directors and, if the appellant is not satisfied with the response, to the full IESG.

There are two types of IMAP keywords in the "IMAP Keywords" registry: intended for common use and vendor/organization specific (also known as "limited use"). An IMAP keyword is said to be for "common use" if it is reasonably expected to be implemented in at least 2 independent client implementations. The two types of IMAP Keywords have different levels of requirements for registration (see below).

### **[3.1.](#) Review guidelines for the designated Expert Reviewer**

Expert Reviewers should focus on the following requirements.

Registration of a vendor/organization specific ("limited use") IMAP keyword is easier. The Expert Reviewer only needs to check that the requested name doesn't conflict with an already registered name, and that the name is not too generic, misleading, etc. The Expert Reviewer MAY request the IMAP Keyword name change before approving the registration. The Expert Reviewer SHOULD refuse a registration if there is an already registered IMAP Keyword which serve the same purpose, but has a different name.

When registering an IMAP Keyword for "common use", the Expert





Reviewer performs the checks described for vendor/organization specific IMAP Keywords, plus additional checks as detailed below.

Keywords intended for common use SHOULD start with the "\$" prefix. (Note that this is a SHOULD because some of the commonly used IMAP keywords in widespread use don't follow this convention.)

IMAP keywords intended for common use SHOULD be standardized in IETF Review [[RFC5226](#)] documents. (Note that IETF Review documents still require Expert Review.)

Values in the "IMAP Keywords" IANA registry intended for common use must be clearly documented and likely to ensure interoperability. They must be useful, not harmful to the Internet. In cases when an IMAP Keyword being registered is already deployed, Expert Reviewers should favour registering it over requiring perfect documentation and/or requesting to change the name of the IMAP Keyword.

The Expert Reviewer MAY automatically "upgrade" registration requests for a "limited use" IMAP Keyword to "common use" level. The Expert Reviewer MAY also request that a registration targeted for "common use" be registered as "limited use" instead.

### **[3.2.](#) Comments on IMAP Keywords' Registrations**

Comments on registered IMAP Keywords should be sent to both the "owner" of the mechanism and to the mailing list designated to IMAP keyword review (see [Section 3](#)). This improves chances of getting a timely response.

Submitters of comments may, after a reasonable attempt to contact the owner and after soliciting comments on the IMAP mailing list, request the designated Expert Reviewer to attach their comment to the IMAP keyword registration itself. The procedure is similar to requesting an expert review for the affected keyword.

### **[3.3.](#) Change Control**

Once an IMAP keyword registration has been published by IANA, the owner may request a change to its definition. The change request (including a change to the "intended usage" field) follows the same procedure as the initial registration request, with the exception of changes to the "Person & email address to contact for further information" and "Owner/Change controller" fields. The latter can be changed by the owner by informing IANA; this can be done without discussion or review.

The IESG may reassign responsibility for an IMAP keyword. The most



common case of this will be to enable clarifications to be made to keywords where the owner of the registration has died, moved out of contact or is otherwise unable to make changes that are important to the community.

IMAP keyword registrations MUST NOT be deleted; keywords which are no longer believed appropriate for use can be declared DEPRECATED by a change to their "intended usage" field.

The IESG is considered to be the owner of all "common use" IMAP keywords that are published in an IETF Review document.

### **3.4. Initial registrations**

IANA is requested to register IMAP Keywords specified in subsections of this section in the registry established in this document.

#### **3.4.1. \$MDNSent IMAP keyword registration**

Subject: Registration of IMAP keyword \$MDNSent

IMAP keyword name: \$MDNSent

Purpose (description): Specifies that a Message Disposition Notification (MDN) must not be sent for any message annotated with the \$MDNSent IMAP keyword.

Private or Shared on a server: SHARED

Is it an advisory keyword or may it cause an automatic action: This keyword can cause automatic action by the client. See [[RFC3503](#)] for more details.

When/by whom the keyword is set/cleared: This keyword is set by an IMAP client when it decides to act on a MDN request, or when uploading a sent or draft message. It can also be set by a delivery agent. Once set the flag SHOULD NOT be cleared.



Related keywords: None

Related IMAP capabilities: None

Security considerations: See [section 6 of \[RFC3503\]](#)

Published specification (recommended): [[RFC3503](#)]

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

Intended usage: COMMON

Owner/Change controller: IESG

Note:

#### **[3.4.2.](#) \$Forwarded IMAP keyword registration**

Subject: Registration of the IMAP keyword \$Forwarded

IMAP keyword name: \$Forwarded

Purpose (description): \$Forwarded is used by several IMAP clients to specify that the message was resent to another email address, embedded within or attached to a new message. This keyword is set by the mail client when it successfully forwards the message to another email address. Typical usage of this keyword is to show a different (or additional) icon for a message that has been forwarded.

Private or Shared on a server: BOTH



Is it an advisory keyword or may it cause an automatic action:  
advisory

When/by whom the keyword is set/cleared: This keyword can be set either by a delivery agent or by a mail client. Once set the flag SHOULD NOT be cleared. Notes: There is no way to tell if a message with \$Forwarded keyword set was forwarded more than once.

Related keywords: None

Related IMAP capabilities: None

Security considerations: A server implementing this keyword as a shared keyword, may disclose that a confidential message was forwarded.

Published specification (recommended): [[RFC5550](#)]

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

Intended usage: COMMON

Owner/Change controller: IESG

Note:

#### **3.4.3. \$SubmitPending IMAP keyword registration**

Subject: Registration of IMAP keyword \$SubmitPending

IMAP keyword name: \$SubmitPending





Purpose (description): The \$SubmitPending IMAP keyword designates the message as awaiting to be submitted. This keyword allows storing messages waiting to be submitted in the same mailbox where messages that were already submitted and/or are being edited are stored.

A message that has both \$Submitted and \$SubmitPending IMAP keywords set is a message being actively submitted.

Private or Shared on a server: SHARED

Is it an advisory keyword or may it cause an automatic action: This keyword can cause automatic action by the client. See [Section 5.10 of \[RFC5550\]](#) for more details.

When/by whom the keyword is set/cleared: This keyword is set by a mail client when it decides that the message needs to be sent out.

Related keywords: \$Submitted

Related IMAP capabilities: None

Security considerations: A server implementing this keyword as a shared keyword, may disclose that a confidential message is scheduled to be sent out or is being actively sent out.

Published specification (recommended): [\[RFC5550\]](#)

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

Intended usage: COMMON

Owner/Change controller: IESG



Note:

#### **3.4.4. \$Submitted IMAP keyword registration**

Subject: Registration of IMAP keyword \$Submitted

IMAP keyword name: \$Submitted

Purpose (description): The \$Submitted IMAP keyword designates the message as being sent out.

A message that has both \$Submitted and \$SubmitPending IMAP keywords set is a message being actively submitted.

Private or Shared on a server: SHARED

Is it an advisory keyword or may it cause an automatic action: This keyword can cause automatic action by the client. See [Section 5.10 of \[RFC5550\]](#) for more details.

When/by whom the keyword is set/cleared: This keyword is set by a mail client when it decides to start sending it.

Related keywords: \$SubmitPending

Related IMAP capabilities: None

Security considerations: A server implementing this keyword as a shared keyword, may disclose that a confidential message was sent or is being actively sent out.

Published specification (recommended): [\[RFC5550\]](#)

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



Intended usage: COMMON

Owner/Change controller: IESG

Note:

#### **4. Security Considerations**

IMAP Keywords are one of the base IMAP features [[RFC3501](#)]. This document doesn't change their behaviour, so it is not adding new security issues.

A particular IMAP keyword might have specific security considerations, which are documented in IMAP keyword registration template standardized by this document.

#### **5. Acknowledgements**

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John Neystadt co-authored the first revision of this document.

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The author would also like to thank the developers of Mozilla mail clients for providing food for thoughts.

#### **6. References**

##### **6.1. Normative References**

- [Kwds] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997.
- [RFC3501] Crispin, M., "INTERNET MESSAGE ACCESS PROTOCOL - VERSION 4rev1", [RFC 3501](#), March 2003.
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## **6.2. Informative References**

- [RFC3503] Melnikov, A., "Message Disposition Notification (MDN) profile for Internet Message Access Protocol (IMAP)", [RFC 3503](#), March 2003.
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