XEP-0334: Message Processing Hints

Matthew Wild
mailto:mwild1@gmail.com
xmpp:me@matthewwild.co.uk

2018-01-25
Version 0.3.0

<table>
<thead>
<tr>
<th>Status</th>
<th>Type</th>
<th>Short Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred</td>
<td>Standards Track</td>
<td>hints</td>
</tr>
</tbody>
</table>

This document defines a way to include hints to entities routing or receiving a message.
Legal

Copyright

This XMPP Extension Protocol is copyright © 1999 – 2020 by the XMPP Standards Foundation (XSF).

Permissions

Permission is hereby granted, free of charge, to any person obtaining a copy of this specification (the "Specification"), to make use of the Specification without restriction, including without limitation the rights to implement the Specification in a software program, deploy the Specification in a network service, and copy, modify, merge, publish, translate, distribute, sublicense, or sell copies of the Specification, and to permit persons to whom the Specification is furnished to do so, subject to the condition that the foregoing copyright notice and this permission notice shall be included in all copies or substantial portions of the Specification. Unless separate permission is granted, modified works that are redistributed shall not contain misleading information regarding the authors, title, number, or publisher of the Specification, and shall not claim endorsement of the modified works by the authors, any organization or project to which the authors belong, or the XMPP Standards Foundation.

Warranty

## NOTE WELL: This Specification is provided on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. ##

Liability

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall the XMPP Standards Foundation or any author of this Specification be liable for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising from, out of, or in connection with the Specification or the implementation, deployment, or other use of the Specification (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if the XMPP Standards Foundation or such author has been advised of the possibility of such damages.

Conformance

This XMPP Extension Protocol has been contributed in full conformance with the XSF’s Intellectual Property Rights Policy (a copy of which can be found at <https://xmpp.org/about/xsf/ipr-policy> or obtained by writing to XMPP Standards Foundation, P.O. Box 787, Parker, CO 80134 USA).
Contents

1 Introduction .................................................. 1

2 Requirements ................................................. 1

3 Use Cases ..................................................... 1
   3.1 Session-based stanzas ...................................... 1
   3.2 Notifications ............................................... 2
   3.3 Sensitive messages ......................................... 2
   3.4 Storage-worthy messages ................................. 2

4 Hints .......................................................... 2
   4.1 No permanent store ...................................... 2
   4.2 No store ..................................................... 3
   4.3 No copies .................................................. 3
   4.4 Store ....................................................... 3

5 Business Rules ............................................... 3

6 Security Considerations ................................. 3

7 IANA Considerations ..................................... 3

8 XMPP Registrar Considerations ...................... 4

9 XML Schema ................................................. 4
1 Introduction

Message types ('normal', 'chat', 'headline', etc.) provide an existing framework for determining how an entity should deliver or handle a message. For example XMPP IM defines that messages of type 'headline' should not be stored offline by the server, and that messages of type 'groupchat' must not be directed to other resources. However this framework of rules is quite inflexible, and new extensions are being developed that push at the boundaries of what is capable of. This specification defines a more flexible approach that allows the sender to add finer-grained 'hints' to messages, which can be used as a generic mechanism for XMPP entities to handle messages. A similar but much more extensive framework is defined in Advanced Message Processing (XEP-0079) for applications that need it.

2 Requirements

This specification aims to solve the following common problems, and allow a sender to hint to the recipient:

• Whether to store a message (e.g. for archival or as an 'offline message').
• Whether to copy a message to other resources.
• Whether to store a message that would not have been stored under normal conditions

3 Use Cases

3.1 Session-based stanzas

Suppose that Romeo and Juliet are avoiding the surveillance of Prince Escalus and communicating using a session-based encryption protocol between their laptops. In order to prevent Juliet’s tablet computer that uses Message Carbons (XEP-0280) from receiving copies of the encrypted messages (and not being able to decrypt them), Romeo inserts the <no-copy/> hint into the messages he sends. Since it is also useless for these messages to be archived, he additionally adds the <no-store/> hint:

Listing 1: Sending a message with no-copy and no-store hints

```
<message
  from='romeo@montague.lit/laptop'
```

3.2 Notifications

Some automated notifications may be transient, and there would be no purpose in delaying their delivery. Such messages may be marked with the <no-store/> hint.

3.3 Sensitive messages

A sender may want to indicate their preference to have no permanent record of a message (also known as "off the record" messages), but may be happy for it to be stored temporarily as a normal part of delivery (e.g. if the recipient is offline at the time of sending). Such a message can be marked with the <no-permanent-store/> hint.

3.4 Storage-worthy messages

Offline storage and Message Archive Management (XEP-0313) 4 can define their own rules on what messages to store and usually only store messages that contain a body element. However a sender may want to indicate that a message is worth storing even though it might not match those rules (e.g. an encrypted message that carries the payload outside the body element). Such a message can be marked with a <store/> hint.

4 Hints

4.1 No permanent store

The <no-permanent-store/> hint informs entities that they shouldn't store the message in any permanent or semi-permanent public or private archive (such as described in Message Archiving (XEP-0136) 5 and Message Archive Management (XEP-0313) 6) or in logs (such as chatroom logs).

---

4.2 No store
A message containing a `<no-store/>` hint should not be stored by a server either permanently (as above) or temporarily, e.g. for later delivery to an offline client, or to users not currently present in a chatroom.

4.3 No copies
Messages with the `<no-copy/>` hint should not be copied to addresses other than the one to which it is addressed, for example through Message Carbons (XEP-0280)\(^7\).
This hint MUST only be included on messages addressed to full JIDs and explicitly does not override the behaviour defined in XMPP IM\(^8\) for handling messages to bare JIDs, which may involve copying to multiple resources, or multiple occupants in a Multi-User Chat (XEP-0045)\(^9\) room.

4.4 Store
A message containing the `<store/>` hint that is not of type 'error' SHOULD be stored by the entity.

5 Business Rules
It is important to note that message hints are, as the name implies, just hints. Implementations MUST NOT rely on other entities interpretation of the hints for any particular purpose.

6 Security Considerations
This specification introduces no known security considerations.

7 IANA Considerations
This document requires no interaction with the Internet Assigned Numbers Authority (IANA)\(^{10}\).

\(^4\)The Internet Assigned Numbers Authority (IANA) is the central coordinator for the assignment of unique parameter values for Internet protocols, such as port numbers and URI schemes. For further information, see
8 XMPP Registrar Considerations

This document requires no interaction with XMPP Registrar\textsuperscript{11}.

9 XML Schema

```xml
<?xml version='1.0' encoding='UTF-8'?>
<xs:schema
    xmlns:xs='http://www.w3.org/2001/XMLSchema'
    targetNamespace='urn:xmpp:hints'
    xmlns='urn:xmpp:hints'
    elementFormDefault='qualified'>

    <xs:element name='no-permanent-store' type='empty'/>
    <xs:element name='no-store' type='empty'/>
    <xs:element name='no-copy' type='empty'/>
    <xs:element name='store' type='empty'/>

    <xs:simpleType name='empty'>
        <xs:restriction base='xs:string'>
            <xs:enumeration value=''/>
        </xs:restriction>
    </xs:simpleType>

</xs:schema>
```

\textsuperscript{11}The XMPP Registrar maintains a list of reserved protocol namespaces as well as registries of parameters used in the context of XMPP extension protocols approved by the XMPP Standards Foundation. For further information, see \texttt{https://xmpp.org/registrar/}.  

\texttt{http://www.iana.org/}.  