



XMPP

XEP-0291: Service Delegation

Justin Karneges

<mailto:justin@karneges.com>

<xmpp:justin@andbit.net>

2011-01-26

Version 0.1

Status	Type	Short Name
Deferred	Standards Track	NOT_YET_ASSIGNED

This specification defines an approach for users to delegate certain services (e.g. pubsub) to alternative JIDs.

Legal

Copyright

This XMPP Extension Protocol is copyright © 1999 – 2024 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	How It Works	1
2.1	Discovering Delegate Services	1
2.2	Discovering Through a Third-Party Registry	2
2.3	Managing Third-Party Registry Information	2
2.4	Confirming With the Delegate	3
3	Implementation Notes	3
3.1	Use of Both Direct and Third-Party Queries	3
3.2	Caching	4
4	Security Considerations	4
5	IANA Considerations	4
6	XMPP Registrar Considerations	4
6.1	Protocol Namespaces	4
6.2	Namespace Versioning	5

1 Introduction

It is common to use XMPP user accounts for identity. Many features for user accounts have been proposed (for example, [User Avatar \(XEP-0084\)](#)¹, [Microblogging Over XMPP \(XEP-0277\)](#)², etc), and this list only grows as XMPP heads into social networking territory. However, not every XMPP server in the world supports every feature, nor can this ever be expected, and this limits the usefulness of the XMPP user account identity. Also, even when servers do support a feature it may not be clear how to bind an identity to it (see the never-solved problem of learning where a user's generic [Publish-Subscribe \(XEP-0060\)](#)³ service is, in the absence of [Personal Eventing Protocol \(XEP-0163\)](#)⁴). Organizations such as Buddycloud and Livefyre have recognized the need to be able to offer features to existing standard XMPP accounts by offering proprietary service delegation mechanisms. This specification proposes a Standards Track solution for discovering external services associated with XMPP user identities.

2 How It Works

2.1 Discovering Delegate Services

To learn of delegate services for a user, query the bare JID of the user:

Listing 1: Query for delegate services

```
<iq type="get" from="alice@example.com/home" to="bob@example.com" id="
  d1">
  <query xmlns="urn:xmpp:tmp:delegate"/>
</iq>
```

Listing 2: Success response

```
<iq type="result" from="bob@example.com" to="alice@example.com/home"
  id="d1">
  <query xmlns="urn:xmpp:tmp:delegate">
    <service type="pubsub" jid="pubsub.example.net"/>
    <service type="chess" jid="bob@chess.example.net"/>
  </query>
</iq>
```

In the above example, we learn that "chess" related communication should go through the "bob@chess.example.net" JID rather than the user's own JID ("bob@example.com").

¹XEP-0084: User Avatar <<https://xmpp.org/extensions/xep-0084.html>>.

²XEP-0277: Microblogging over XMPP <<https://xmpp.org/extensions/xep-0277.html>>.

³XEP-0060: Publish-Subscribe <<https://xmpp.org/extensions/xep-0060.html>>.

⁴XEP-0163: Personal Eventing Protocol <<https://xmpp.org/extensions/xep-0163.html>>.

2.2 Discovering Through a Third-Party Registry

As it is expected that most servers will not even support the ability to query user accounts for delegate services, it should be possible to contact a third-party or global registry holding the same information, to be queried in much the same way:

Listing 3: Query registry for delegate services

```
<iq type="get" from="alice@example.com/home" to="registry.example.com"
  id="r1">
  <query xmlns="urn:xmpp:tmp:delegate" jid="bob@example.com"/>
</iq>
```

Listing 4: Success response

```
<iq type="result" from="registry.example.com" to="alice@example.com/
  home" id="r1">
  <query xmlns="urn:xmpp:tmp:delegate">
    <service type="pubsub" jid="pubsub.example.net"/>
    <service type="chess" jid="bob@chess.example.net"/>
  </query>
</iq>
```

2.3 Managing Third-Party Registry Information

Here's how a user adds a mapping to the registry:

Listing 5: Adding an entry

```
<iq type="set" from="bob@example.com/home" to="registry.example.com"
  id="r2">
  <query xmlns="urn:xmpp:tmp:delegate">
    <service type="chess" jid="bob@chess.example.net"/>
  </query>
</iq>
```

Listing 6: Success response

```
<iq type="result" from="registry.example.com" to="bob@example.com/home"
  id="r2"/>
```

The registry will add the new service to the list of mapped services for the sender JID. To remove a service from the list, submit without a `jid` attribute:

Listing 7: Removing an entry

```
<iq type="set" from="bob@example.com/home" to="registry.example.com"
  id="r3">
```

```
<query xmlns="urn:xmpp:tmp:delegate">
  <service type="chess"/>
</query>
</iq>
```

Listing 8: Success response

```
<iq type="result" from="registry.example.com" to="bob@example.com/home"
  id="r3"/>
```

2.4 Confirming With the Delegate

Whether a delegate JID is discovered directly or via registry, the mapping is an assertion made by the user only and not by the delegate. This may have security implications. For example, a third party should not allow the user to pose as the delegate, nor should the mapping be considered an endorsement by the delegate, since anyone can assert any delegate. However, these types of things could be allowed if third parties confirm with the delegate that the association exists.

Here's how to query a delegate JID to confirm if it is indeed associated with a specific user for a specific service type:

Listing 9: Confirming a delegation

```
<iq type="get" from="alice@example.com/home" to="bob@chess.example.net"
  id="c1">
  <check xmlns="urn:xmpp:tmp:delegate" type="chess" jid="bob@example.com"/>
</iq>
```

Note that the user JID expected to be associated with the delegate must be provided in the request. It is not possible to query a delegate to determine the user JID, since a single delegate may act for many users.

Success response means the association exists:

Listing 10: Success response

```
<iq type="result" from="bob@chess.example.net" to="alice@example.com/home"
  id="c1"/>
```

3 Implementation Notes

3.1 Use of Both Direct and Third-Party Queries

Applications that are configured to use a third-party registry SHOULD still be able to query user accounts directly. For performance reasons, it is recommended to query both the user

account and the registry simultaneously, and take whichever answer arrives first. If one of the queries results in an error, then the application should wait for the other query to complete before assuming no such delegate records exists.

If both queries return errors, or a success result does not contain an entry for some desired delegate service, it can be assumed that the desired service is provided by the user account itself (not delegated).

3.2 Caching

It is RECOMMENDED that discovery or confirmation of delegate information be cached indefinitely and refreshed no more frequently than every 24 hours. Data refreshing should not block access to existing information. If over 24 hours pass since the last time delegate information was needed, the application should continue to use the old data while independently firing off a task to refresh the data. This way, latency associated with a particular user delegation only occurs the first time a user is ever seen.

4 Security Considerations

As discussed above, a delegate mapping is an assertion by the user only. If the user should be allowed to act for the delegate, or if the user should be considered endorsed by the delegate, then the delegation needs to be confirmed first.

5 IANA Considerations

No interaction with the [Internet Assigned Numbers Authority \(IANA\)](http://www.iana.org) ⁵ is required as a result of this document.

6 XMPP Registrar Considerations

6.1 Protocol Namespaces

This specification defines the following XML namespace:

- urn:xmpp:tmp:delegate

⁵The 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 <http://www.iana.org/>.

Upon advancement of this specification from a status of Experimental to a status of Draft, the XMPP Registrar⁶ shall add the foregoing namespace to the registry located at <https://xmpp.org/registrar/namespaces.html>, as described in Section 4 of XMPP Registrar Function (XEP-0053)⁷.

6.2 Namespace Versioning

If the protocol defined in this specification undergoes a revision that is not fully backwards-compatible with an older version, the XMPP Registrar shall increment the protocol version number found at the end of the XML namespaces defined herein, as described in Section 4 of XEP-0053.

⁶The 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 <https://xmpp.org/registrar/>.

⁷XEP-0053: XMPP Registrar Function <https://xmpp.org/extensions/xep-0053.html>.