XEP-0482: Call Invites

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This document defines how to invite someone to a call and how to respond to the invite.

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Contents

1 Introduction

A call can take place between two or more parties and can be initiated and conducted via various protocols. This specification defines a way to invite someone to a call providing one or more ways in which to join.

Jingle Message Initiation (XEP-0353) [1] provides partially overlapping functionality. It allows to initiate any kind of Jingle session, for example calls but also file transfers. However, it is not suitable for inviting someone to any kind of call, since a call can also be established through other means than a simple Jingle session-initiate.

This specification defines a way to invite someone to a call. The call can for example be initiated via Jingle RTP Sessions (XEP-0167) [2] or via an external URI. It also allows to define multiple ways to join the same call. Furthermore, it defines how to retract, accept and reject the call invite and how to indicate that a client left the call.

2 Use Cases

2.1 Proposing a call

To invite someone to a call, a message containing an <invite> element in the urn:xmpp:call-invites:0 namespace is sent. The element has an optional 'video' attribute that indicates if the call is intended to be joined with participants sending video ("true") or not ("false", default). An 'audio' attribute is defined analogously, defaulting to "true". The <invite> element contains one sub-element for each way to join the call.

In order to invite someone to a Jingle RTP Sessions (XEP-0167) [3] call, a <jingle> element is placed in the <invite> element. The <jingle> element has a 'sid' attribute specifying the ID of the Jingle session. It can optionally also contain a 'jid' element, to indicate the JID the Jingle session will be initiated from. If no 'jid' element is provided, the default is the sender of the message stanza.

Listing 1: Invite to a Jingle video call

```
<message to='mara@example.com' id='id1' type='chat'>
  <invite video='true' xmlns='urn:xmpp:call-invites:0'>
    <jingle sid='sid1'/>
  </invite>
</message>
```

External ways to join the call can be specified via an <external> element placed in the <invite> element with an 'uri' attribute that contains a URI. The URI can for example contain a URL to a browser webclient or a dial-in telephone number.

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[1]XEP-0353: Jingle Message Initiation <https://xmpp.org/extensions/xep-0353.html>.

[2]XEP-0167: Jingle RTP Sessions <https://xmpp.org/extensions/xep-0167.html>.

[3]XEP-0167: Jingle RTP Sessions <https://xmpp.org/extensions/xep-0167.html>.

Listing 2: Invite to a mixer groupcall with webclient and dial-in fallback

```
<message to='mara@example.com' id='id2' type='chat'>
  <invite xmlns='urn:xmpp:call-invites:0'>
    <jingle sid='sid2' jid='mixer@example.com/uuid' />
    <external uri='https://example.com/uuid' />
    <external uri='tel:+12345678' />
  </invite>
</message>
```

Specifications that describe further ways to join a call define their own sub-elements to the <invite> element containing all necessary information for joining.

2.2 Retracting a call

A call invite can be retracted by sending a message containing a <retract> element with an 'id' attribute containing the id of the invite message qualified by the urn:xmpp:call-invites:0 namespace.

Listing 3: Retracting a call

```
<message to='mara@example.com' type='chat'>
  <retract id='id1' xmlns='urn:xmpp:call-invites:0' />
</message>
```

2.3 Accepting a call

A call invite can be accepted by sending a message containing an <accept> element with an 'id' attribute containing the id of the invite message and qualified by the urn:xmpp:call-invites:0 namespace.
The element describing the connection method used by the accepting client (e.g. <jingle> or <external>) including all of its attributes and children is placed in the <accept> element.

Listing 4: Accepting a call

```
<message to='mara@example.com' type='chat'>
  <accept id='id1' xmlns='urn:xmpp:call-invites:0'>
    <jingle sid='sid1' jid='mixer@example.com/uuid' />
  </accept>
</message>
```

After the <accept> was sent, the initiating or accepting client continues to establish the call depending on the selected connection method: If an <external> method was selected, the accepting client handles the URI. The exact behaviour of opening the URI is implementation specific. If a <jingle> method was selected, the initiating client triggers a Jingle session-initiate from the JID and with the session ID specified in the 'jid' and 'sid' attributes of the <jingle>

element, respectively.

2.4 Rejecting a call

A call invite can be rejected by sending a message containing a <reject> element with an 'id' attribute containing the id of the invite message and qualified by the urn:xmpp:call-invites:0 namespace.

Listing 5: Rejecting a call

```
<message to='mara@example.com' type='chat'>
  <reject id='id1' xmlns='urn:xmpp:call-invites:0' />
</message>
```

2.5 Leaving a call

When a client leaves a call, it sends a message containing a <left> element with an 'id' attribute containing the id of the invite message and qualified by the urn:xmpp:call-invites:0 namespace.

Listing 6: Leaving a call

```
<message to='mara@example.com' type='chat'>
  <left id='id1' xmlns='urn:xmpp:call-invites:0' />
</message>
```

3 Business Rules

Clients must ensure that they will receive the accept or reject responses of other resources by the same user (if any) when implementing this specification. This can be achieved by implementing Message Carbons (XEP-0280) [4].

3.1 Using the correct ID

For messages of type 'groupchat', the stanza's 'id' attribute MUST NOT be used for call retracts, accepts, rejects or lefts. Instead, in group chat situations, the ID assigned to the stanza by the group chat itself must be used. This is discovered in a <stanza-id> element with a 'by' attribute that matches the bare JID of the group chat, as defined in Unique and Stable Stanza IDs (XEP-0359) [5].
This implies that invite messages should only be sent in group chats that attach a Unique and

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[4]XEP-0280: Message Carbons <https://xmpp.org/extensions/xep-0280.html>.
[5]XEP-0359: Unique and Stable Stanza IDs <https://xmpp.org/extensions/xep-0359.html>.

Stable Stanza IDs (XEP-0359) [6] stanza-id.

For other message types the sender should use the 'id' from a Unique and Stable Stanza IDs (XEP-0359) [7] <origin-id> if present, or the value of the 'id' attribute on the <message> otherwise.

4 Security Considerations

None.

5 IANA Considerations

This document requires no interaction with the Internet Assigned Numbers Authority (IANA) [8].

6 XMPP Registrar Considerations

This document requires no interaction with XMPP Registrar [9].

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[6]XEP-0359: Unique and Stable Stanza IDs <https://xmpp.org/extensions/xep-0359.html>.

[7]XEP-0359: Unique and Stable Stanza IDs <https://xmpp.org/extensions/xep-0359.html>.

[8]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 <http://www.iana.org/>.

[9]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 <https://xmpp.org/registrar/>.