

Google Talk multi-user chat specifications

This document covers the differences between Google's implementation of multi-user chat (MUC) and the XMPP specs at <http://www.xmpp.org/extensions/xep-0045.html>. Third-party clients wishing to create or join private MUC rooms on the **talk.google.com** service need to follow these specifications.

Differences between Talk and XMPP specifications

There are three main differences between the published specifications and Google's implementation:

1. Room names must follow a specific format of `private-chat-GUID@groupchat.google.com`.

Example:

```
private-chat-11111x1x-11xx-111x-1111-111x1xx11x11@groupchat.google.com
```

([Learn more](#) about **Globally Unique IDentifiers** (wikipedia.org).)

2. Presence broadcasts from the client to `talk.google.com` must include an *entity capability* element, as follows:

```
<c xmlns="http://jabber.org/protocol/caps"
  node="http://www.google.com/xmpp/client/caps" ext="pmuc-v1"/>
```

This element isn't required in presence stanzas to the `groupchat.google.com` server. The connection server checks for the capability element when sending an invitation to the client -- if it isn't found, the invitation will take the form of a link to a webpage, from which the Google Talk Gadget can be launched.

Example:

```
<presence xmlns="jabber:client"
  from="ollie@gmail.com/nickname"
  to="talk.google.com">
  <show/>
  <status/>
  <x xmlns="vcard-temp:x:update"/>
  <c xmlns="http://jabber.org/protocol/caps"
    node="http://www.google.com/xmpp/client/caps" ext="pmuc-v1"/>
</presence>
```

[RFC 3920](#) (XMPP: Core) specifies that "a stanza sent from a client to a server for handling by that server (e.g., presence sent to the server for broadcasting to other entities) **SHOULD NOT** possess a 'to' attribute." The `to` attribute is included in the example above to make clear that this presence stanza is being sent to the `talk.google.com` server, not to the `groupchat.google.com` server.

Note that this entity capability element follows Version 1.3 of the XEP-0115 specification (more information is available from the [Legacy Format](#) section of the current XEP-0115 spec). Specifically, it uses the (now deprecated) `ext` attribute, but not the (now required by Version 1.4) `ver` or `hash` attributes.

3. If a user wishes to change their nickname within the room, the client must set the old nickname as unavailable before sending a presence stanza with the new nickname:

```
<presence
  from="ollie@gmail.com/resource"
  to="private-chat-11111x1x-11xx-111x-1111-111x1xx11x11@groupchat.
google.com/nickname"
  type="unavailable">
</presence>

<presence
  from="ollie@gmail.com/resource"
  to="private-chat-11111x1x-11xx-111x-1111-111x1xx11x11@groupchat.google.
com/new_nickname">
</presence>
```

Example stanzas

The example stanzas below cover only a few of the possible stanzas that will be sent from a client. They exist to highlight the use of the entity capability element in presence stanzas, and the required room name format. Additional example stanzas are available in the [XEP-0045](#) specification.

- [Creating or joining a private MUC room](#)
- [Inviting another user](#)
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- [Changing presence](#)

Creating or joining a private MUC room

```
<presence
  from="ollie@gmail.com/resource"
  to="private-chat-11111x1x-11xx-111x-1111-111x1xx11x11@groupchat.
google.com/nickname" />
  <x xmlns="http://jabber.org/protocol/muc#user" />
</presence>
```

If a room with this name does not already exist:

- a MUC room with name `private-chat-11111x1x-11xx-111x-1111-111x1xx11x11` will be created
- the user who created the room will be added as the owner of the room with nickname `'nickname.'`

If a room with this name already exists, the server will confirm that the user sending the presence stanza has been invited to this room. If so, the user will be added as a participant with the nickname `'nickname.'` If the user has not been invited, they'll receive an error message, as described in [section 7.1.8](#) of XEP-0045.

Inviting another user

```
<message
  from="ollie@gmail.com/resource"
  to="private-chat-11111x1x-11xx-111x-1111-111x1xx11x11@grouchat.
google.com">
  <x xmlns="http://jabber.org/protocol/muc#user">
    <invite to="gordo@gmail.com">
      <reason>Let's all talk about tractors</reason>
      <continue/>
    </invite>
  </x>
</message>
```

When inviting the user, the server will check for the presence of the entity capability stanza advertising support of `pmuc-v1`.

Stanza from server if `pmuc-v1` is advertised:

```
<message to="gordo@gmail.com"
  jid="ollie@gmail.com"
  from="private-chat-GUID@grouchat.google.com"
  xmlns="jabber:client">
  <x xmlns="http://jabber.org/protocol/muc#user">
    <invite from="ollie@gmail.com/resource">
      <reason>Let's all talk about tractors</reason>
      <continue/>
    </invite>
  </x>
</message>
```

If not found, the client will receive a `<message/>` stanza with a link to a webpage from which the Google Talk Gadget can be launched and the MUC joined.

Stanza from server if `pmuc-v1` is not found:

```
<message
  to="gordo@gmail.com" type="chat"
  from="ollie@google.com/resource">
  <body>
    http://talkgadget.google.com/talkgadget/joinpmuc?r=xxxxx&si=1
  </body>
</message>
```

Sending a message

```
<message
  to="private-chat-11111x1x-11xx-111x-1111-111x1xx11x11@grouchat.
google.com"
  type="groupchat"
  xmlns="jabber:client">
  <body>
    hello, world
  </body>
</message>
```

Changing presence

Changing presence within the MUC:

```
<presence xmlns="jabber:client"
  from="ollie@gmail.com/resource"
  to="private-chat-11111x1x-11xx-111x-1111-111x1xx11x11@grouchat.
google.com/nickname">
  <show>dnd</show>
  <status>Busy in MUC</status>
  <x xmlns="vcard-temp:x:update"/>
</presence>
```

Changing presence on the `talk.google.com` server. Note the entity capability element:

```
<presence xmlns="jabber:client"
  from="ollie@gmail.com/resource"
  to="talk.google.com">
  <show>dnd</show>
  <status>Busy</status>
  <x xmlns="vcard-temp:x:update"/>
  <c xmlns="http://jabber.org/protocol/caps"
    node="http://www.google.com/xmpp/client/caps" ext="pmuc-v1"/>
</presence>
```