



XMPP

XEP-0358: Publishing Available Jingle Sessions

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This specification defines an XMPP protocol extension that enables an XMPP entity to advertise the fact that it is willing accept a particular Jingle session request. The protocol is used mainly to inform other entities that a particular file is available for transfer via the Jingle File Transfer protocol defined in XEP-0234.

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1 Introduction

This document defines a way for an entity that can initiate a [Jingle \(XEP-0166\)](#)¹ session (often for the purpose of file transfer as specified in [Jingle File Transfer \(XEP-0234\)](#)²) to advertise that session, thus enabling a receiver to then request initiation of the session by the sender. In essence, this document defines the Jingle equivalent of [Publishing Stream Initiation Requests \(XEP-0137\)](#)³ (previously defined for [Stream Initiation \(XEP-0095\)](#)⁴).

2 Use Cases

2.1 Publishing a Jingle Session Request

A session owner uses the `<jinglepub/>` element to announce that it can initiate a specific Jingle session request. This element can be sent to a publish-subscribe node (see [Publish-Subscribe \(XEP-0060\)](#)⁵ and [Personal Eventing Protocol \(XEP-0163\)](#)⁶), or sent directly to potential recipients within a `<message/>` stanza.

The format of the `<jinglepub/>` element is as follows:

Listing 1: Sample `<jinglepub/>`

```
<jinglepub xmlns='urn:xmpp:jinglepub:1'
  from='sender-jid'
  id='someid'>
  [<uri/> element for an alternate or informational URI of the
  content]
  [<meta/> element(s) for human-friendly information]
  [<description/> element(s) for application format(s)]
</jinglepub>
```

The 'from' attribute MUST be present and MUST be the valid JID for the session owner.

The 'id' attribute is an opaque identifier, called the "jinglepub identifier". This attribute MUST be present, and MUST be a valid non-empty string. It uniquely identifies the published request at the session owner's JID.

The `<jinglepub/>` element MUST contain a `<description/>` element qualified by the namespace of the relevant Jingle application format (e.g., `<description xmlns='urn:xmpp:jingle:apps:file-transfer:4'>` for file transfer).

The `<jinglepub/>` element MAY contain one or more `<meta/>` elements qualified by the jingle-pub namespace; if more than one element is included, each element MUST have a different value for the 'xml:lang' attribute.

¹XEP-0166: Jingle <<https://xmpp.org/extensions/xep-0166.html>>.

²XEP-0234: Jingle File Transfer <<https://xmpp.org/extensions/xep-0234.html>>.

³XEP-0137: Publishing Stream Initiation Requests <<https://xmpp.org/extensions/xep-0137.html>>.

⁴XEP-0095: Stream Initiation <<https://xmpp.org/extensions/xep-0095.html>>.

⁵XEP-0060: Publish-Subscribe <<https://xmpp.org/extensions/xep-0060.html>>.

⁶XEP-0163: Personal Eventing Protocol <<https://xmpp.org/extensions/xep-0163.html>>.

The <jinglepub/> element MAY contain a <uri/> element which contains a URI for an alternative way to access the content, or other information about the content. The resource provided by the URI SHOULD be meaningful for clients that do not directly support the included Jingle content definitions, and accessing the URI MAY result in a different experience than initiating the published Jingle session. For example, the URI could be to a content landing page of an image hosting service from which an image could be viewed instead of directly downloading the image file.

The <jinglepub/> information is typically provided via pubsub.

The following example shows a possible payload for streaming of recorded audio/video sessions, here pushed out via PEP.

Listing 2: Sender advertises session via PEP

```
<iq from='bard@shakespeare.lit/globe' id='yhe51f39' type='set'>
  <pubsub xmlns='http://jabber.org/protocol/pubsub'>
    <publish node='scenes'>
      <jinglepub xmlns='urn:xmpp:jinglepub:1'
        from='bard@shakespeare.lit'
        id='9559976B-3FBF-4E7E-B457-2DAA225972BB'>
        <meta xml:lang='en'
          title='Act_III,_Scene_I_of_Hamlet'
          summary='High-definition_audio_and_video_recording
          .....for_Act_III,_Scene_I_of_Hamlet,_captured
          .....last_week_at_the_Globe_Theatre,_London.'/>
          <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='audio'>
          <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='video'>
        </jinglepub>
      </publish>
    </pubsub>
  </iq>
```

Listing 3: Pubsub service pushes announcement to all subscribers

```
<message from='bard@shakespeare.lit' to='juliet@capulet.com/balcony'>
  <event xmlns='http://jabber.org/protocol/pubsub#event'>
    <items node='scenes'>
      <item id='current'>
        <jinglepub xmlns='urn:xmpp:jinglepub:1'
          from='bard@shakespeare.lit'
          id='9559976B-3FBF-4E7E-B457-2DAA225972BB'>
          <meta xml:lang='en'
            title='Act_III,_Scene_I_of_Hamlet'
            summary='High-definition_audio_and_video_recording
            .....for_Act_III,_Scene_I_of_Hamlet,_captured
            .....last_week_at_the_Globe_Theatre,_London.'/>
            <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='audio'>
            <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='video'>
```

```

        </jinglepub>
    </item>
</items>
</event>
</message>

```

The <jinglepub/> element MAY also be included directly within a <message/> stanza sent to another entity (or multiple entities, e.g., in [Multi-User Chat \(XEP-0045\)](#)⁷). This can be especially useful for informing an offline entity about an available stream.

Listing 4: Advertising a stream in a message stanza

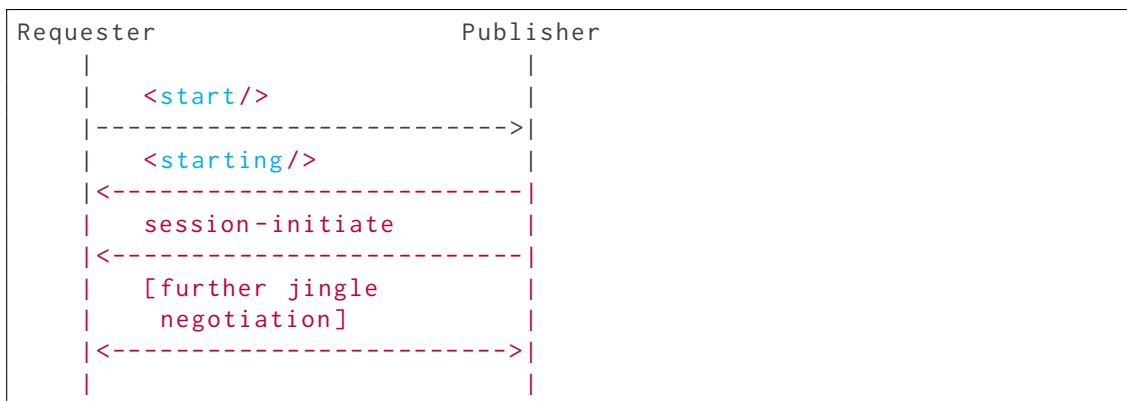
```

<message from='romeo@montague.net/pda' to='juliet@capulet.com'>
  <jinglepub xmlns='urn:xmpp:jinglepub:1'
    id='9559976B-3FBF-4E7E-B457-2DAA225972BB'>
    <meta xml:lang='en'
      title='Act_III,_Scene_I_of_Hamlet'
      summary='High-definition_audio_and_video_recording
.....for_Act_III,_Scene_I_of_Hamlet,_captured
.....last_week_at_the_Globe_Theatre,_London.'/>
    <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='audio'>
    <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='video'>
  </jinglepub>
</message>

```

2.2 Triggering the Stream Initiation Request

In general, the process to trigger a stream initiation request is as follows:



A potential receiver requests initiation of the session by sending an IQ-get to the sender, using the <start xmlns='urn:xmpp:jinglepub:1'/> element. This element contains the 'id' attribute to specify which published stream to retrieve:

⁷XEP-0045: Multi-User Chat <<https://xmpp.org/extensions/xep-0045.html>>.

Listing 5: Receiver requests start of session

```
<iq type='get'
  id='jinglepub-request-0'
  from='juliet@capulet.com/balcony'
  to='romeo@montague.net/pda'>
  <start xmlns='urn:xmpp:jinglepub:1'
    id='9559976B-3FBF-4E7E-B457-2DAA225972BB' />
</iq>
```

If the sender accepts the request, it responds with an IQ-result containing a <starting/> element. This element indicates the session identifier to be used:

Listing 6: Sender accepts request to start session

```
<iq type='result'
  id='jinglepub-request-0'
  from='romeo@montague.net/pda'
  to='juliet@capulet.com/balcony'>
  <starting xmlns='urn:xmpp:jinglepub:1'
    sid='851ba2' />
</iq>
```

Then the sender initiates the Jingle session:

Listing 7: Sender starts negotiation

```
<iq from='romeo@montague.lit/orchard'
  id='nzu25s8'
  to='juliet@capulet.lit/balcony'
  type='set'>
  <jingle xmlns='urn:xmpp:jingle:1'
    action='session-initiate'
    initiator='romeo@montague.lit/orchard'
    sid='851ba2'>
    <content creator='initiator' name='scene-audio'>
      <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='audio'>
        <payload-type id='101' name='opus' clockrate='48000'>
          <parameter name='stereo' value='1' />
          <parameter name='sprop-stereo' value='1' />
        </payload-type>
        <payload-type id='97' name='speex' clockrate='8000' />
        <payload-type id='18' name='G729' />
      </description>
      <transport xmlns='urn:xmpp:jingle:transports:ice-udp:1'>
        <candidate component='1'
          foundation='1'
          generation='0'
          id='or2ii2syr1'
          ip='192.0.2.1'
```

```

        network='0'
        port='3478'
        priority='2130706431'
        protocol='udp'
        type='host' />
    </transport>
</content>
<content creator='initiator' name='scene-video'>
  <description xmlns='urn:xmpp:jingle:apps:rtp:1' media='video'>
    <payload-type id='98' name='theora' clockrate='90000'>
      <parameter name='height' value='600' />
      <parameter name='width' value='800' />
      <parameter name='delivery-method' value='inline' />
      <parameter name='configuration' value='somebase16string' />
      <parameter name='sampling' value='YCbCr-4:2:2' />
    </payload-type>
    <payload-type id='28' name='nv' clockrate='90000' />
    <payload-type id='25' name='CelB' clockrate='90000' />
    <payload-type id='32' name='MPV' clockrate='90000' />
    <bandwidth type='AS'>128</bandwidth>
  </description>
  <transport xmlns='urn:xmpp:jingle:transports:ice-udp:1' />
</content>
</jingle>
</iq>

```

If the requested identifier is not valid, the sender SHOULD respond with a <not-acceptable/> error:

Listing 8: Sender denies because of invalid id

```

<iq type='error'
  id='jinglepub-set-1'
  from='romeo@montague.net/pda'
  to='juliet@capulet.com/balcony'>
  <start xmlns='urn:xmpp:jinglepub:1'>9559976B-3FBF-4E7E-B457-2
    DAA225972BB</start>
  <error code='405' type='modify'>
    <not-acceptable xmlns='urn:ietf:params:xml:ns:xmpp-stanzas' />
  </error>
</iq>

```

If the receiver does not have permission to request the data stream, the sender SHOULD respond with a <forbidden/> error:

Listing 9: Sender denies because receiver is forbidden

```

<iq type='error'
  id='jinglepub-set-1'

```



```
from='romeo@montague.net/pda'  
to='juliet@capulet.com/balcony'  
<start xmlns='urn:xmpp:jinglepub:1'>9559976B-3FBF-4E7E-B457-2  
DAA225972BB</start>  
<error code='403' type='auth'>  
  <forbidden xmlns='urn:ietf:params:xml:ns:xmpp-stanzas' />  
</error>  
</iq>
```

2.3 Jingle Session XMPP URI/IRI Query Type

This document defines the 'jingle' XMPP URI/IRI querytype, which MUST posses an 'id' key/value pair, whose value is the "jinglepub identifier".

Listing 10: Jingle Action: IRI/URI

```
xmpp:files.montague.net?jingle;id=9559976B-3FBF-4E7E-B457-2DAA225972BB
```

The information found in such an URI, an XMPP address and a "jinglepub identifier", can be used to trigger an an Jingle session initiation request as specified in § 2.2. This Jingle session can be used to transfer files ([Jingle File Transfer \(XEP-0234\)](#)⁸), audio and video streams ([Jingle RTP Sessions \(XEP-0167\)](#)⁹) and other Jingle application formats.

3 Security Considerations

This document introduces no security concerns beyond those specified in [Publish-Subscribe \(XEP-0060\)](#)¹⁰ and the relevant Jingle application format in use.

4 IANA Considerations

This document requires no interaction with the [Internet Assigned Numbers Authority \(IANA\)](#)¹¹.

⁸XEP-0234: Jingle File Transfer <<https://xmpp.org/extensions/xep-0234.html>>.

⁹XEP-0167: Jingle RTP Sessions <<https://xmpp.org/extensions/xep-0167.html>>.

¹⁰XEP-0060: Publish-Subscribe <<https://xmpp.org/extensions/xep-0060.html>>.

¹¹The 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/>>.

5 XMPP Registrar Considerations

5.1 Protocol Namespaces

The [XMPP Registrar](#)¹² will be requested to include 'urn:xmpp:jinglepub:1' in its registry of protocol namespaces.

5.2 XMPP URI/IRI Querytype registration

As authorized by [XMPP URI Query Components \(XEP-0147\)](#)¹³, the XMPP Registrar maintains a registry of queries and key-value pairs for use in XMPP URIs (see <https://xmpp.org/registrar/querytypes.html>). The following submission registers the 'jingle' querytype.

```
<querytype>
  <name>jingle</name>
  <proto>urn:xmpp:jinglepub:1</proto>
  <desc>enables retrieving Jingle sessions (file transfer, etc.)</desc>
  <doc>XEP-0358</doc>
  <keys/>
  <key>
    <name>id</name>
    <desc>The 'jinglepub' identifier</desc>
  </key>
</querytype>
```

6 XML Schema

```
<?xml version='1.0' encoding='UTF-8'?>
<xs:schema
  xmlns:xs='http://www.w3.org/2001/XMLSchema'
  xmlns:xml='http://www.w3.org/XML/1998/namespace'
  targetNamespace='urn:xmpp:jinglepub:1'
  xmlns='urn:xmpp:jinglepub:1'
  elementFormDefault='qualified'>
  <xs:element name='jinglepub'>
```

¹²The 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/>.

¹³XEP-0147: XMPP URI Query Components <https://xmpp.org/extensions/xep-0147.html>.

```
<xs:complexType>
  <xs:all>
    <xs:any namespace='##other' minOccurs='0' maxOccurs='unbounded'
      />
    <xs:element name='meta' type='metaElementType' minOccurs='0'
      maxOccurs='unbounded' />
    <xs:element name='uri' type='xs:anyURI' minOccurs='0'
      maxOccurs='1' />
  </xs:all>
  <xs:attribute name='description' type='xs:string' use='optional'
    />
  <xs:attribute name='from' type='xs:string' use='required' />
  <xs:attribute name='id' type='xs:string' use='required' />
  <xs:attribute name='title' type='xs:string' use='optional' />
</xs:complexType>
</xs:element>

<xs:complexType name='metaElementType'>
  <xs:simpleContent>
    <xs:extension base='empty'>
      <xs:attribute name='summary'
        type='xs:string'
        use='optional' />
      <xs:attribute name='title'
        type='xs:string'
        use='required' />
      <xs:attribute ref='xml:lang' use='optional' />
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>

<xs:element name='start'>
  <xs:complexType>
    <xs:attribute name='id' type='xs:string' use='required' />
  </xs:complexType>
</xs:element>

<xs:element name='starting'>
  <xs:complexType>
    <xs:attribute name='sid' type='xs:string' use='required' />
  </xs:complexType>
</xs:element>

</xs:schema>
```