



# XMPP

## XEP-0108: User Activity

Ralph Meijer  
<mailto:ralphm@ik.nu>  
<xmpp:ralphm@ik.nu>

Peter Saint-Andre  
<mailto:ksf@stpeter.im>  
<xmpp:peter@jabber.org>  
<http://stpeter.im/>

2008-10-29  
Version 1.3

| Status | Type            | Short Name |
|--------|-----------------|------------|
| Draft  | Standards Track | activity   |

This specification defines a payload format for communicating information about user activities, such as whether a person is currently working, travelling, or relaxing. The payload format is typically transported using the personal eventing protocol, a profile of XMPP publish-subscribe specified in XEP-0163.

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# Contents

|          |  |          |
|----------|--|----------|
| <b>1</b> | <b>Introduction</b>                        | <b>1</b> |
| <b>2</b> | <b>Protocol</b>                            | <b>1</b> |
| 2.1      | Data Format . . . . .                      | 1        |
| 2.2      | Pubsub Transport . . . . .                 | 2        |
| <b>3</b> | <b>Activity Values</b>                     | <b>4</b> |
| <b>4</b> | <b>Mapping to RPID</b>                     | <b>7</b> |
| <b>5</b> | <b>Internationalization Considerations</b> | <b>8</b> |
| <b>6</b> | <b>Security Considerations</b>             | <b>8</b> |
| <b>7</b> | <b>IANA Considerations</b>                 | <b>8</b> |
| <b>8</b> | <b>XMPP Registrar Considerations</b>       | <b>9</b> |
| 8.1      | Protocol Namespaces . . . . .              | 9        |
| <b>9</b> | <b>XML Schema</b>                          | <b>9</b> |

## 1 Introduction

This document defines an extension mechanism for capturing "extended presence" data about user activities, above and beyond availability as defined in [XMPP IM](#)<sup>1</sup> (e.g., the 'away', 'extended away', and 'dnd' values of the <show/> child of the <presence/> stanza).

## 2 Protocol

### 2.1 Data Format

Information about user activities is provided by the user and propagated on the network by the user's client. The information is structured by means of an <activity/> element that is qualified by the 'http://jabber.org/protocol/activity' namespace. The general activity is provided as the element name of a first-level child of the <activity/> element (e.g., <relaxing/>); one such general activity element is REQUIRED. The general activity element MAY contain a child element that specifies a more particular form of the general activity (e.g., <partying/>). The user MAY also specify a natural-language description of the activity in the OPTIONAL <text/> child of the <activity/> element. Here is an example:

```
<activity xmlns='http://jabber.org/protocol/activity'>
  <relaxing>
    <partying/>
  </relaxing>
  <text xml:lang='en'>My nurse's birthday!</text>
</activity>
```

Instead of (but not in addition to) one of the specific activity elements defined herein, an application MAY include a properly-namespaced child element for the specific activity. Here is an example:

```
<activity xmlns='http://jabber.org/protocol/activity'>
  <relaxing>
    <tanning xmlns='http://www.ilovetanning.info'/>
  </relaxing>
</activity>
```

Finally, one of the specific activity elements defined herein MAY itself contain a properly-namespaced child element that provides more detailed information about the specific activity. Here is an example:

```
<activity xmlns='http://jabber.org/protocol/activity'>
```

---

<sup>1</sup>RFC 6121: Extensible Messaging and Presence Protocol (XMPP): Instant Messaging and Presence <<http://tools.ietf.org/html/rfc6121>>.

```

<inactive>
  <sleeping>
    <hibernating xmlns='http://www.ursus.info/states' />
  </sleeping>
</inactive>
</activity>

```

In accordance with [XMPP Core](#)<sup>2</sup>, the receiving application MUST ignore a specific activity element or detailed activity element if it does not understand the namespace that qualifies the element.

## 2.2 Pubsub Transport

Activity information SHOULD be communicated and transported by means of the [Publish-Subscribe \(XEP-0060\)](#)<sup>3</sup> subset specified in [Personal Eventing Protocol \(XEP-0163\)](#)<sup>4</sup>. Because activity information is not pure presence information and can change independently of the user's availability, it SHOULD NOT be provided as an extension to <presence/>.

Listing 1: User Publishes Activity

```

<iq type='set'
  from='juliet@capulet.lit/ca486eba-0f9a-11dc-8835-000bcd821bfb'
  id='publish1'>
  <pubsub xmlns='http://jabber.org/protocol/pubsub'>
    <publish node='http://jabber.org/protocol/activity'>
      <item>
        <activity xmlns='http://jabber.org/protocol/activity'>
          <relaxing>
            <partying />
          </relaxing>
          <text xml:lang='en'>My nurse's birthday!</text>
        </activity>
      </item>
    </publish>
  </pubsub>
</iq>

```

The activity is then delivered to all subscribers:

Listing 2: Activity is Delivered to All Subscribers

```

<message
  from='juliet@capulet.lit'

```

<sup>2</sup>RFC 6120: Extensible Messaging and Presence Protocol (XMPP): Core <<http://tools.ietf.org/html/rfc6120>>.

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

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

```

    to='romeo@montague.lit'>
  <event xmlns='http://jabber.org/protocol/pubsub#event'>
    <items node='http://jabber.org/protocol/activity'>
      <item id='b5ac48d0-0f9c-11dc-8754-001143d5d5db'>
        <activity xmlns='http://jabber.org/protocol/activity'>
          <relaxing>
            <partying/>
          </relaxing>
          <text xml:lang='en'>My nurse's birthday!</text>
        </activity>
      </item>
    </items>
  </event>
</message>

```

In order to indicate that the user is no longer publishing activities, the user's client shall send an empty <activity/> element, which can be considered a "stop command" for user activities:

Listing 3: User Disables Publishing

```

<iq from='juliet@capulet.lit/balcony'
  id='publish1'
  type='set'>
  <pubsub xmlns='http://jabber.org/protocol/pubsub'>
    <publish node='http://jabber.org/protocol/activity'>
      <item>
        <activity xmlns='http://jabber.org/protocol/activity' />
      </item>
    </publish>
  </pubsub>
</iq>

```

Listing 4: Empty Activity Information is Delivered to All Subscribers

```

<message
  from='juliet@capulet.lit'
  to='romeo@montague.net'>
  <event xmlns='http://jabber.org/protocol/pubsub#event'>
    <items node='http://jabber.org/protocol/activity'>
      <item id='b5ac48d0-0f9c-11dc-8754-001143d5d5db'>
        <activity xmlns='http://jabber.org/protocol/activity' />
      </item>
    </items>
  </event>
</message>

```

### 3 Activity Values

Each activity has a REQUIRED general category and an OPTIONAL specific instance. One can understand each specifier as '[user] is [activity]' (e.g., 'Juliet is partying'), where the relevant value is the most specific activity provided (e.g., specifically "partyng" rather than generally "relaxing").

The activity values defined in this taxonomy are as follows, where the first indentation level is the general category and the second indentation level is the specific instance. Note: The specific activity elements are RECOMMENDED as forms of the general activities shown below, but can be included under any general activity (e.g., "gardening" could be used as the specific activity under "relaxing" rather than "doing\_chores").

- doing\_chores
  - buying\_groceries
  - cleaning
  - cooking
  - doing\_maintenance
  - doing\_the\_dishes
  - doing\_the\_laundry
  - gardening
  - running\_an\_errand
  - walking\_the\_dog
- drinking
  - having\_a\_beer
  - having\_coffee
  - having\_tea
- eating
  - having\_a\_snack
  - having\_breakfast
  - having\_dinner
  - having\_lunch
- exercising
  - cycling
  - dancing
  - hiking

- jogging
- playing\_sports
- running
- skiing
- swimming
- working\_out
- grooming
  - at\_the\_spa
  - brushing\_teeth
  - getting\_a\_haircut
  - shaving
  - taking\_a\_bath
  - taking\_a\_shower
- having\_appointment
- inactive
  - day\_off
  - hanging\_out
  - hiding
  - on\_vacation
  - praying
  - scheduled\_holiday
  - sleeping
  - thinking
- relaxing
  - fishing
  - gaming
  - going\_out
  - partying
  - reading
  - rehearsing
  - shopping
  - smoking



- socializing
- sunbathing
- watching\_tv
- watching\_a\_movie
- talking
  - in\_real\_life
  - on\_the\_phone
  - on\_video\_phone
- traveling
  - commuting
  - cycling
  - driving
  - in\_a\_car
  - on\_a\_bus
  - on\_a\_plane
  - on\_a\_train
  - on\_a\_trip
  - walking
- working
  - coding
  - in\_a\_meeting
  - studying
  - writing

In addition, the specific activity element can be <other/> in order to handle activities not defined herein. <sup>5</sup>

---

<sup>5</sup>In the absence of a <text/> element, the recipient is free to draw whatever conclusions he or she may like regarding the nature of the "other" activity. Naturally, emoticons can be provided as the XML character data of the <text/> element. ;-)

## 4 Mapping to RPID

RFC 4480 <sup>6</sup> defines several extensions to the [Presence Information Data Format \(PIDF\)](#) <sup>7</sup> for so-called "rich presence". One such extension is the <activity/> element (see Section 4.2), which "describes what the presentity is currently doing". The following table shows a mapping from the defined RPID activity values to the Jabber values defined herein.

| RPID <activity/> | General activity element   | Specific activity element   |
|------------------|--|---|
| appointment      | having_appointment   | --  |
| away             | In XMPP, "away" is not an activity, but an availability state captured by means of a <presence/> stanza with a <show>away</show> child (see XMPP IM).  |   |
| busy             | In XMPP, "busy" is not an activity, but an availability state captured by means of a <presence/> stanza with <show>dnd</show> child (see XMPP IM). Alternatively, the RPID "busy" activity could map to any number of more specific Jabber activities as defined herein. |   |
| holiday          | inactive   | scheduled_holiday   |
| in-transit       | traveling  | Appropriate specific values in the "traveling" category would be "in_a_car", "on_a_bus", and "on_a_train".                  |
| meal             | eating   | The "eating" category can be further specified by "having_a_snack", "having_breakfast", "having_lunch", or "having_dinner". |
| meeting          | working  | in_a_meeting  |
| on-the-phone     | talking  | on_the_phone  |
| performance      | --   | --  |

<sup>6</sup>RFC 4480: RPID: Rich Presence Extensions to the Presence Information Data Format (PIDF) <<http://tools.ietf.org/html/rfc4480>>.

<sup>7</sup>RFC 3863: Presence Information Data Format (PIDF) <<http://tools.ietf.org/html/rfc3863>>.

| RPID <activity/>  | General activity element   | Specific activity element |
|-------------------|--|---------------------------|
| permanent-absence | In XMPP, "permanent absence" is not an activity, but instead would be sent to a contact via the <gone/> stanza error (see XMPP Core RFC 6120: Extensible Messaging and Presence Protocol (XMPP): Core < <a href="http://tools.ietf.org/html/rfc6120">http://tools.ietf.org/html/rfc6120</a> >.). |                           |
| sleeping          | inactive   | sleeping                  |
| steering          | traveling  | driving                   |
| travel            | traveling  | on_a_trip                 |
| vacation          | inactive   | on_vacation               |

The full range of activities defined herein is considerably richer than that defined in RPID; no mapping to RPID is provided by this specification for activity values that are not present in RPID, and any such mapping is the responsibility of a gateway between the two systems.

## 5 Internationalization Considerations

The XML character data values of the <text/> element are intended for presentation to human users; therefore, if a <text/> element is included the sending application SHOULD also ensure that the <text/> element or the parent <activity/> element possesses an 'xml:lang' attribute with an appropriate value.

## 6 Security Considerations

Because user activities may be published to a large number of pubsub subscribers, users should take care in approving subscribers and in characterizing their current activities.

## 7 IANA Considerations

This document requires no interaction with the [Internet Assigned Numbers Authority \(IANA\)](#)<sup>8</sup>.

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<sup>8</sup>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/>.

## 8 XMPP Registrar Considerations

### 8.1 Protocol Namespaces

The XMPP Registrar<sup>9</sup> includes 'http://jabber.org/protocol/activity' in its registry of protocol namespaces.

## 9 XML Schema

```
<?xml version='1.0' encoding='UTF-8'?>

<xs:schema
  xmlns:xs='http://www.w3.org/2001/XMLSchema'
  targetNamespace='http://jabber.org/protocol/activity'
  xmlns='http://jabber.org/protocol/activity'
  elementFormDefault='qualified'>

  <xs:element name='activity'>
    <xs:complexType>
      <xs:sequence>
        <xs:choice minOccurs='0'>
          <xs:element name='doing_chores' type='general'/>
          <xs:element name='drinking' type='general'/>
          <xs:element name='eating' type='general'/>
          <xs:element name='exercising' type='general'/>
          <xs:element name='grooming' type='general'/>
          <xs:element name='having_appointment' type='general'/>
          <xs:element name='inactive' type='general'/>
          <xs:element name='relaxing' type='general'/>
          <xs:element name='talking' type='general'/>
          <xs:element name='traveling' type='general'/>
          <xs:element name='undefined' type='general'/>
          <xs:element name='working' type='general'/>
        </xs:choice>
        <xs:element name='text' minOccurs='0' type='xs:string'/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

  <xs:complexType name='general'>
    <xs:choice minOccurs='0'>
      <xs:choice minOccurs='0'>
        <xs:element name='at_the_spa' type='specific'/>
      </xs:choice>
    </xs:choice>
  </xs:complexType>
</xs:schema>
```

<sup>9</sup>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/>>.

```
<xs:element name='brushing_teeth' type='specific'/>
<xs:element name='buying_groceries' type='specific'/>
<xs:element name='cleaning' type='specific'/>
<xs:element name='coding' type='specific'/>
<xs:element name='commuting' type='specific'/>
<xs:element name='cooking' type='specific'/>
<xs:element name='cycling' type='specific'/>
<xs:element name='dancing' type='specific'/>
<xs:element name='day_off' type='specific'/>
<xs:element name='doing_maintenance' type='specific'/>
<xs:element name='doing_the_dishes' type='specific'/>
<xs:element name='doing_the_laundry' type='specific'/>
<xs:element name='driving' type='specific'/>
<xs:element name='fishing' type='specific'/>
<xs:element name='gaming' type='specific'/>
<xs:element name='gardening' type='specific'/>
<xs:element name='getting_a_haircut' type='specific'/>
<xs:element name='going_out' type='specific'/>
<xs:element name='hanging_out' type='specific'/>
<xs:element name='having_a_beer' type='specific'/>
<xs:element name='having_a_snack' type='specific'/>
<xs:element name='having_breakfast' type='specific'/>
<xs:element name='having_coffee' type='specific'/>
<xs:element name='having_dinner' type='specific'/>
<xs:element name='having_lunch' type='specific'/>
<xs:element name='having_tea' type='specific'/>
<xs:element name='hiding' type='specific'/>
<xs:element name='hiking' type='specific'/>
<xs:element name='in_a_car' type='specific'/>
<xs:element name='in_a_meeting' type='specific'/>
<xs:element name='in_real_life' type='specific'/>
<xs:element name='jogging' type='specific'/>
<xs:element name='on_a_bus' type='specific'/>
<xs:element name='on_a_plane' type='specific'/>
<xs:element name='on_a_train' type='specific'/>
<xs:element name='on_a_trip' type='specific'/>
<xs:element name='on_the_phone' type='specific'/>
<xs:element name='on_vacation' type='specific'/>
<xs:element name='on_video_phone' type='specific'/>
<xs:element name='other' type='specific'/>
<xs:element name='partying' type='specific'/>
<xs:element name='playing_sports' type='specific'/>
<xs:element name='praying' type='specific'/>
<xs:element name='reading' type='specific'/>
<xs:element name='rehearsing' type='specific'/>
<xs:element name='running' type='specific'/>
<xs:element name='running_an_errand' type='specific'/>
<xs:element name='scheduled_holiday' type='specific'/>
<xs:element name='shaving' type='specific'/>
```

```
<xs:element name='shopping' type='specific' />
<xs:element name='skiing' type='specific' />
<xs:element name='sleeping' type='specific' />
<xs:element name='smoking' type='specific' />
<xs:element name='socializing' type='specific' />
<xs:element name='studying' type='specific' />
<xs:element name='sunbathing' type='specific' />
<xs:element name='swimming' type='specific' />
<xs:element name='taking_a_bath' type='specific' />
<xs:element name='taking_a_shower' type='specific' />
<xs:element name='thinking' type='specific' />
<xs:element name='walking' type='specific' />
<xs:element name='walking_the_dog' type='specific' />
<xs:element name='watching_a_movie' type='specific' />
<xs:element name='watching_tv' type='specific' />
<xs:element name='working_out' type='specific' />
<xs:element name='writing' type='specific' />
</xs:choice>
<xs:any namespace='##other' />
</xs:choice>
</xs:complexType>

<xs:complexType name='specific'>
  <xs:sequence minOccurs='0'>
    <xs:any namespace='##other' />
  </xs:sequence>
</xs:complexType>

</xs:schema>
```