

Timed Presence Extensions to the
Presence Information Data Format (PIDF) to
Indicate Status Information for Past and Future Time Intervals

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Abstract

The Presence Information Data Format (PIDF) defines a basic XML format for presenting presence information for a presentity. This document extends PIDF, adding a timed status extension (<timed-status> element) that allows a presentity to declare its status for a time interval fully in the future or the past.

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1. Introduction

Traditionally, presence information, e.g., represented as Presence Information Data Format [3] (PIDF) and augmented by Rich Presence Information Data format [9] (RPID), describes the current state of the presentity. However, a watcher can better plan communications if it knows about the presentity's future plans. For example, if a watcher knows that the presentity is about to travel, it might place a phone call earlier.

In this document, we use terms defined in RFC 2778 [7]. In particular, a "presentity", abbreviating presence entity, provides presence information to a presence service. It is typically a uniquely-identified person.

RPID already allows a presentity to indicate the period when a particular aspect of its presence is valid. However, the <status> element in the PIDF <tuple> does not have this facility, so that it is not possible to indicate that a presentity will be OPEN or CLOSED in the future, for example.

It is also occasionally useful to represent past information since it may be the only known presence information; it may give watchers an indication of the current status. For example, indicating that the presentity was at an off-site meeting that ended an hour ago indicates that the presentity is likely in transit at the current time.

It is unfortunately not possible to simply add time range attributes to the PIDF <status> element, as PIDF parsers without this capability would ignore these attributes and thus not be able to distinguish current from future presence status information.

This document defines the <timed-status> element that describes the status of a presentity that is either no longer valid or covers some future time period.

2. Terminology and Conventions

The key words MUST, MUST NOT, REQUIRED, SHOULD, SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL in this document are to be interpreted as described in BCP 14, RFC 2119 [1].

3. Timed-Status Element

The <timed-status> element is a child of the <tuple> element and MUST NOT appear as a child of a PIDF <status> element or another <timed-status> element. More than one such element MAY appear within a PIDF <tuple> element.

Sources of <timed-status> information should avoid elements that overlap in time, but since overlapping appointments are common in calendars, for example, receivers MUST be able to render such overlapping <timed-status> indications.

The <timed-status> element MUST be qualified with the 'from' attribute and MAY be qualified with an 'until' attribute to describe the time when the status assumed this value and the time until which this element is expected to be valid. If the 'until' attribute is missing, the information is assumed valid until the tuple is explicitly overridden or expires as defined by the publication mechanism used. The time range MUST NOT encompass the present time, i.e., the PIDF <timestamp> value, as that would provide an unnecessary and confusing alternate mechanism to describe presence. Thus, the 'from' attribute for tuples without an 'until' attribute MUST refer to the future.

During composition, a presence agent (PA) may encounter a stored <timed-status> element that covers the present time. The PA MAY either discard that element or MAY convert it to a regular <status> element if it considers that information more credible.

The <timed-status> element may contain the <basic> and <note> elements, as well as any other element that is appropriate as a PIDF <status> extension and that has a limited validity period. Examples include the PIDF-LO [8] extensions for location objects.

This extension chose absolute rather than relative times, since relative times would be too hard to keep properly updated when spacing notifications, for example. Originators of presence information MUST generate time values in the <timed-status> elements that are fully in the past or future relative to local real (wallclock) time and the time information contained in the optional PIDF <timestamp> element.

4. Example

An example combining PIDF and timed-status is shown below:

```
<presence xmlns="urn:ietf:params:xml:ns:pidf"
  xmlns:ts="urn:ietf:params:xml:ns:pidf:timed-status"
  entity="pres:someone@example.com">

  <tuple id="c8dqui">
    <status>
      <basic>open</basic>
    </status>
    <ts:timed-status from="2005-08-15T10:20:00.000-05:00"
      until="2005-08-22T19:30:00.000-05:00">
      <ts:basic>closed</ts:basic>
    </ts:timed-status>
    <contact>sip:someone@example.com</contact>
  </tuple>
  <note>I'll be in Tokyo next week</note>
</presence>
```

5. The XML Schema Definition

The XML [4] schema [5][6] is shown below.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:ts="urn:ietf:params:xml:ns:pidf:timed-status"
xmlns:pidf="urn:ietf:params:xml:ns:pidf"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="urn:ietf:params:xml:ns:pidf:timed-status"
elementFormDefault="qualified" attributeFormDefault="unqualified">

  <xs:import namespace="urn:ietf:params:xml:ns:pidf"/>

  <xs:annotation>
    <xs:documentation>
      Describes timed-status tuple extensions for PIDF.
    </xs:documentation>
  </xs:annotation>
  <xs:element name="timed-status" type="ts:timed-status"/>
  <xs:complexType name="timed-status">
    <xs:sequence>
      <xs:element name="basic" type="pidf:basic" minOccurs="0"/>
      <xs:element name="note" type="pidf:note" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0"
        maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="from" type="xs:dateTime" use="required"/>
    <xs:attribute name="until" type="xs:dateTime"/>
  </xs:complexType>
</xs:schema>
```

6. IANA Considerations

This document calls for IANA to register a new XML namespace URN and schema per [2].

6.1. URN Sub-Namespace Registration for 'urn:ietf:params:xml:ns:pidf:timed-status'

URI: urn:ietf:params:xml:ns:pidf:timed-status

Description: This is the XML namespace for XML elements defined by RFC 4481 to describe timed-status presence information extensions for the status element in the PIDF presence document format in the application/pidf+xml content type.

Registrant Contact: IETF, SIMPLE working group, simple@ietf.org;
Henning Schulzrinne, hgs@cs.columbia.edu

XML:

```
BEGIN
<?xml version="1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML Basic 1.0//EN"
"http://www.w3.org/TR/xhtml-basic/xhtml-basic10.dtd">
<html xmlns="http://www.w3.org/1999/xhtml
<head>
  <meta http-equiv="content-type"
    content="text/html; charset=iso-8859-1"/>
  <title>Timed Presence Extensions to the Presence
    Information Data Format (PIDF) to Indicate Status
    Information for Past and Future Time Intervals</title>
</head>
<body>
  <h1>Namespace for timed-status presence extension</h1>
  <h2>urn:ietf:params:xml:ns:pidf:timed-status</h2>
  <p>See <a href="http://www.rfc-editor.org/rfc/rfc4481.txt">
    RFC4481</a>.</p>
</body>
</html>
END
```

6.2. Schema Registration for Schema 'urn:ietf:params:xml:ns:pidf:timed-status'

URI: urn:ietf:params:xml:ns:pidf:timed-status

Registrant Contact: IESG

XML: See Section 5

7. Security Considerations

The security issues are similar to those for RPID [9].

8. References

8.1. Normative References

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- [2] Mealling, M., "The IETF XML Registry", BCP 81, RFC 3688, January 2004.
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- [5] Maloney, M., Beech, D., Thompson, H., and N. Mendelsohn, "XML Schema Part 1: Structures Second Edition", W3C REC REC-xmlschema-1-20041028, October 2004.
- [6] Malhotra, A. and P. Biron, "XML Schema Part 2: Datatypes Second Edition", W3C REC REC-xmlschema-2-20041028, October 2004.

8.2. Informative References

- [7] Day, M., Rosenberg, J., and H. Sugano, "A Model for Presence and Instant Messaging", RFC 2778, February 2000.
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- [9] Schulzrinne, H., Gurbani, V., Kyzivat, P., and J. Rosenberg, "RPID: Rich Presence Extensions to the Presence Information Data Format (PIDF)", RFC 4480, July 2006.

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