



Liberty ID-SIS Presence Service Specification

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Abstract:

This specification defines a web service for presence information within the context of the Liberty Alliance project.

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1. Introduction

1.1. Informational Description of Presence Service

The Liberty ID-WSF Data Services Template Specification [LibertyDST] introduced the concept of a data service. In general, a data service hosts information about a Principal and provides the ability to interact with that information (e.g., by querying for or modifying the information). A Presence Service implements the data service pattern by hosting information about the Principal's availability, enabling other services to query the Presence Service for that information, and enabling the Principal or other authorized entities to modify the Principal's presence information.

The core meaning of "presence" refers to a Principal's availability for communications over a network. Examples include availability to talk over a traditional or mobile telephony network, chat over an instant messaging (IM) network, and participate in a video conference. In this core sense, presence is a boolean, "on/off" indicator of network availability.

Over time, this core notion of presence has been extended to include other information about the Principal that changes quickly or that affects the Principal's interest in or ability to engage in communications. Examples of such "extended presence" include the Principal's proximity to or interaction with a user agent (e.g., "away" or "do not disturb"), activity (e.g., "driving"), mood (e.g., "grumpy"), and date/time ranges for availability.

This specification normatively defines the nature of a Presence Service in the context of the Liberty Alliance Project.

1.2. Encapsulation of Standard Presence Formats

The Presence Service data format defined herein encapsulates data from three existing presence standards, each of which is identified by a distinct service type:

1. IMPS (formerly Wireless Village) as defined in the Wireless Village 1.1 Presence Attributes specification [PA11] published by the Open Mobile Alliance (OMA); the `ServiceType` designator is "urn:liberty:id-sis-pres:imps:2005-02."
2. SIMPLE as defined in [RFC3863]: Presence Information Data Format (PIDF) published by the Internet Engineering Task Force (IETF); the `ServiceType` designator is "urn:liberty:id-sis-pres:simple:2005-02."
3. XMPP as defined in [RFC3921]: Extensible Messaging and Presence Protocol: Instant Messaging and Presence (XMPP IM) published by the IETF; the `ServiceType` designator is "urn:liberty:id-sis-pres:xmpp:2005-02."

N.B. Because these service types depend on protocols produced by other standards development organizations, those implementing this specification need to be aware that the non-Liberty protocols may be subject to change and that such change is outside the control or influence of the Liberty Alliance Project. This specification supports only the versions of the non-Liberty protocols defined in the specific documents referred to herein (i.e., [PA11], [RFC3863], and [RFC3921]).

1.3. Namespaces and Namespace Prefixes

There are three namespaces used for Liberty Alliance Presence Services, depending on the service type:

- urn:liberty:id-sis-pres:imps:2005-02
- urn:liberty:id-sis-pres:simple:2005-02
- urn:liberty:id-sis-pres:xmpp:2005-02

71 The following table summarizes the [XML] namespaces referenced herein as well as their conventional prefixes.

72 **Table 1. Referenced [XML] Namespaces**

Prefix	URI	Description
imps:	http://www.wireless-village.org/PA1.1	OMA Wireless Village Presence Attributes, version 1.1 [PA11]
pidf:	urn:ietf:params:xml:ns:pidf	IETF Presence Information Data Format (PIDF)
xmpp:	jabber:client	IETF Extensible Messaging and Presence Protocol (XMPP)
xsd:	http://www.w3.org/2002/XMLSchema	W3C XML Schema Definition [Schema1]

73 1.4. Notational conventions

74 The capitalized key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD",
75 "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document
76 are to be interpreted as described in [RFC2119].

2. Derivation of ID-SIS-PRES from DST and WSF

As defined herein, a Presence Service is an instance of a data service as described in the [LibertyDST]. All stipulations of the [LibertyDST] are hereby incorporated by reference unless expressly waived or modified in this document.

The following table summarizes the [LibertyDST] general service parameters supported for all service types in this specification.

Table 2. [LibertyDST] General Service Parameters

Parameter	Value
ServiceType for IMPS (Wireless Village) Support	urn:liberty:id-sis-pres:imps:2005-02
ServiceType for SIMPLE Support	urn:liberty:id-sis-pres:pidf:2005-02
ServiceType for XMPP Support	urn:liberty:id-sis-pres:xmpp:2005-02
Discovery Options	See Section 2
Data Schema	See Section 6
SelectType Definition	See Section 5
Semantics of the <Select> element	See Section 5
Element Uniqueness	Use XML id attribute for Entity and Account elements; use lang and script attributes for localizable elements
Data Extension Supported	The service types defined herein encapsulate data defined by other standards development organizations (IETF and OMA), and there is no separate schema for Liberty Alliance Presence Service formats; therefore, data extension MUST be pursued through the mechanisms specified for the encapsulated protocols and MUST NOT be attempted through use of the <Extension> element specified in the [LibertyDST].

The following table summarizes the [LibertyDST] query parameters supported for all service types in this specification.

Table 3. [LibertyDST] Query Parameters

Parameter	Value
Support querying	MUST
Multiple <Query> elements	SHOULD
Multiple <QueryItem> elements	MUST NOT
Support sorting	No
<SortType> definition	N/A
Support changedSince	SHOULD
Supported formats	All
Support includeCommonAttributes	SHOULD
Support pagination	MUST NOT
Support static sets	MUST NOT
<Extension> in <Query>	MUST NOT

The following table summarizes the [LibertyDST] modify parameters supported for all service types in this specification.

88

Table 4. [LibertyDST] Modify Parameters

Parameter	Value
Support Modification	SHOULD
Multiple <Modify> elements	SHOULD
Multiple <Modification> elements	SHOULD
Support partial success	SHOULD
Support notChangedSince	SHOULD
<Extension> in <Modify>	MUST NOT

89 The following table summarizes the [LibertyDST] subscribe parameters supported for all service types in this
 90 specification.

91

Table 5. [LibertyDST] Subscribe Parameters

Parameter	Value
Support subscribing to notifications	SHOULD
Use of the <Subscribe> element for modifying and renewing subscriptions	Modifying, renewing, and canceling existing subscriptions SHOULD be supported
Multiple <Subscribe> elements	MAY
Multiple <Subscription> elements	MAY
Use of the <NotifyEndedTo> element	MAY
<TriggerType> definition	MAY
Start of a subscription	MAY
Subscription expiration	If the ServiceType is urn:liberty:id-sis-pres:pidf:2005-02, subscription expiration SHOULD be supported; if the ServiceType is urn:liberty:id-sis-pres:imps:2005-02 or urn:liberty:id-sis-pres:xmpp, then subscription expiration SHOULD NOT be supported
Use of expires and duration attributes	Both MAY be used if subscription expiration is supported
Support expires==starts	MAY
Support zero duration	MAY
<Extension> in <Subscribe>	MUST NOT

92 The following table summarizes the [LibertyDST] QuerySubscriptions parameters supported for all service types
 93 in this specification.

94

Table 6. [LibertyDST] QuerySubscriptions Parameters

Parameter	Value
Support querying subscriptions	MAY
Multiple <QuerySubscriptions> elements	MAY
<Extension> in <QuerySubscriptions>	MUST NOT

95 The following table summarizes the [LibertyDST] notify parameters supported for all service types in this speci-
 96 fication.

97

Table 7. [LibertyDST] Notify Parameters

Parameter	Value
Support notifications	MUST
Are notifications acknowledged	MAY
<Extension> in <Notify>	MUST NOT

98 The following table summarizes the [LibertyDST] EndNotify parameters supported for all service types in this
 99 specification.

100

Table 8. [LibertyDST] EndNotify Parameters

Parameter	Value
Support end notifications	MAY
Are notifications acknowledged	MAY
<Extension> in <Ended>	MUST NOT

3. Discovery Option Keywords

The [LibertyDST] specifies that discovery option keywords MAY be supported by an implementation and also defines a number of discovery option keywords. Although support for discovery option keywords is OPTIONAL, if a Liberty Alliance Presence Service supports discovery option keywords, it MUST publish the keywords shown in the following table if the relevant features are supported. Also included below is the [RFC2119] conformance level for implementation of the relevant features by a Liberty Alliance Presence Service.

Table 9. DST Discovery Option Keyword Support

Keyword	Description	Conformance
urn:liberty:dst:allPaths	Does not apply, since [XPATH] expressions are not supported	N/A
urn:liberty:dst:can:extend	Support for ability to extend schema	MUST NOT
urn:liberty:dst:changeHistorySupported	Support for changedSince and notChangedSince attributes	SHOULD
urn:liberty:dst:extend	Support for some schema extensions	MUST NOT
urn:liberty:dst:fullXPath	Does not apply, since [XPATH] expressions are not supported	N/A
urn:liberty:dst:multipleModification	Support for ability to modify more than one item per resource at a time	SHOULD
urn:liberty:dst:multipleQueryItems	Support for ability to query a resource for more than one QueryItem at a time	MUST
urn:liberty:dst:multipleResources	Support for ability to query more than one resource at a time	SHOULD
urn:liberty:dst:noModify	No support for modification of items	MAY
urn:liberty:dst:noQuery	No support for querying of items	MUST NOT
urn:liberty:dst:noSubscribe	No support for subscriptions and notifications	MUST NOT

It may prove helpful for Liberty Alliance Presence Services to advertise the specific presence features that they support (e.g., support for basic availability, free-form status descriptions, user mood, and the like). Support for these keywords is OPTIONAL.

Table 10. Presence Feature Keywords

Keyword	Description
urn:liberty:id-sis-pres:features:availabilityStatus	Basic on/off availability
urn:liberty:id-sis-pres:features:presenceAddress	The presence address of the presentity
urn:liberty:id-sis-pres:features:statusActivity	A presentity's current activity
urn:liberty:id-sis-pres:features:statusIcon	An icon associated with the presentity's current status
urn:liberty:id-sis-pres:features:statusMood	A presentity's current mood or emotional/physical state
urn:liberty:id-sis-pres:features:statusText	A free-form status description
urn:liberty:id-sis-pres:features:timestamp	A timestamp for the latest presence information
urn:liberty:id-sis-pres:features:timezone	The time zone in which the presentity is located

112 4. Subscriptions and Notifications

113 The [LibertyDST] enables a service provider to request subscriptions to data hosted by another service provider and
114 to receive notifications when specified changes occur related to that data. This functionality maps well to the problem
115 space of presence and availability, since most existing presence technologies enable an entity to subscribe to another
116 entity's presence data and subsequently receive notifications whenever that presence data changes.

117 The following considerations apply:

- 118 1. There are no differences between the use of the <Select> element inside the <Subscription> element and its
119 use in the <Query> and <Modify> elements.
- 120 2. The use of the <Type> element is not defined.
- 121 3. The use of the <Trigger> element is not defined; the only presence notifications that MUST be supported (if
122 subscriptions are supported) are triggered when the data specified by the <Select> element have changed.
- 123 4. A service MAY support acknowledgement of receiving <Notify> messages, but the decision to do so is
124 implementation-specific and/or a matter of local deployment policy and is not mandated by this service spec-
125 ification.

5. Selection Mechanisms

5.1. Query Selection

In the context of querying for presence data, the `<Select>` element MAY contain any query selection mechanism defined for the encapsulated protocol (IMPS, SIMPLE, or XMPP). However, definition of such mechanisms MUST be provided by the encapsulated protocol and is out of scope for the Liberty Alliance Presence Service specification. Therefore the definition of the `<SelectType>` element is also out of scope. The following broad guidelines may prove helpful to implementers, but are non-normative.

For IMPS, the IMPS specifications developed by the Wireless Village Initiative and now maintained by the Open Mobile Alliance (OMA) allow sending of the IMPS `PresenceSubList` element with empty child elements as a mechanism of querying for presence information; see section 4.2.1 of [PA11DTD]. However, the IMPS `PresenceSubList` element is defined by a DTD, not an XML schema. Therefore, while a schema for the IMPS presence namespace is imported by the schema for the "urn:liberty:id-sis-pres:imps:2005-07" namespace, it is non-normative.

For SIMPLE, the IETF's SIMPLE Working Group is in the process of defining query selection mechanisms for presence information but has not yet settled on a stable schema for such mechanisms. If an implementer wishes to use such mechanisms, it can include the relevant formal description in a modified version of the schema for the "urn:liberty:id-sis-pres:simple:2005-07" namespace (if validation is required) or simply include the relevant XML in the `<Select>` element, since elements from any namespace are allowed per the schema for the "urn:liberty:id-sis-pres:simple:2005-07" namespace. One mechanism under consideration by the SIMPLE WG is defined in Internet-Draft "draft-simple-filter-format," which is a work in progress.

For XMPP, no query selection mechanisms have been defined by the IETF's XMPP WG and a request for presence yields complete information about all resources associated with an XMPP presentity. Therefore, the `SelectType` for XMPP services is empty.

5.2. Modify Selection

In the context of modifying presence data, a `<Modification>` element MAY contain a `<Select>` child element to indicate that only the data specified within the `<NewData>` element is to be changed. If the `<Modification>` element does not contain a `<Select>` child element, then the presence data for the relevant resource shall be changed as specified within the `<NewData>` element. If the `overrideAllowed` attribute is set to a value of "False" (this is the default), then the data specified within the `<NewData>` element shall add new values only and shall not remove or replace existing data. If the `overrideAllowed` attribute is set to a value of "True," then the data specified within the `<NewData>` element shall remove or replace the data specified. In order to delete a specific data element, that element shall be included as an empty element within the `<NewData>` element. The `<NewData>` may contain any element or combination of elements qualified by the namespace or namespaces used to represent data appropriate to the relevant service type (e.g., in the case of IMPS, the namespace "http://www.wireless-village.org/PA1.1").

6. XML Schemata

The XML Schemata for ID-SIS Presence (IMPS [Section 6.1](#), SIMPLE [Section 6.2](#), and XMPP [Section 6.3](#)) follow.

6.1. urn:liberty:id-sis-pres:imps:2005-07

```

162 <?xml version="1.0" encoding="UTF-8"?>
163 <xs:schema
164   targetNamespace="urn:liberty:id-sis-pres:imps:2005-07"
165   xmlns="urn:liberty:id-sis-pres:imps:2005-07"
166   xmlns:imps="http://www.wireless-village.org/PA1.1"
167   xmlns:xs="http://www.w3.org/2001/XMLSchema"
168   elementFormDefault="unqualified">
169   <xs:include schemaLocation="liberty-idwsf-dst-v2.0.xsd"/>
170   <xs:include schemaLocation="liberty-idwsf-dst-dt-v2.0.xsd"/>
171   <xs:import namespace="http://www.wireless-village.org/PA1.1"
172     schemaLocation="imps-presence-non-normative-v1.0.xsd"/>
173   <xs:complexType name="SelectType">
174     <xs:sequence>
175       <xs:element ref="imps:PresenceSubList"/>
176     </xs:sequence>
177   </xs:complexType>
178   <xs:complexType name="SortType">
179     <xs:complexContent>
180       <xs:restriction base="EmptyType"/>
181     </xs:complexContent>
182   </xs:complexType>
183   <xs:complexType name="TriggerType">
184     <xs:complexContent>
185       <xs:restriction base="EmptyType"/>
186     </xs:complexContent>
187   </xs:complexType>
188   <xs:complexType name="TypeType">
189     <xs:complexContent>
190       <xs:restriction base="EmptyType"/>
191     </xs:complexContent>
192   </xs:complexType>
193 </xs:schema>
194 
```

6.2. urn:liberty:id-sis-pres:simple:2005-07

```

196 <?xml version="1.0" encoding="UTF-8"?>
197 <xs:schema
198   targetNamespace="urn:liberty:id-sis-pres:simple:2005-07"
199   xmlns="urn:liberty:id-sis-pres:simple:2005-07"
200   xmlns:xs="http://www.w3.org/2001/XMLSchema"
201   elementFormDefault="unqualified">
202   <xs:include schemaLocation="liberty-idwsf-dst-v2.0.xsd"/>
203   <xs:include schemaLocation="liberty-idwsf-dst-dt-v2.0.xsd"/>
204   <xs:complexType name="SelectType">
205     <xs:sequence>
206       <xs:any namespace="##other"
207         minOccurs="0"
208         maxOccurs="unbounded"/>
209     </xs:sequence>
210   </xs:complexType>
211   <xs:complexType name="SortType">
212     <xs:complexContent>
213       <xs:restriction base="EmptyType"/>
214     </xs:complexContent>
215   </xs:complexType>
216   <xs:complexType name="TriggerType">
217     <xs:complexContent>
218 
```

```
219     <xs:restriction base="EmptyType" />
220   </xs:complexContent>
221 </xs:complexType>
222 <xs:complexType name="TypeType">
223   <xs:complexContent>
224     <xs:restriction base="EmptyType" />
225   </xs:complexContent>
226 </xs:complexType>
227 </xs:schema>
```

228 **6.3. urn:liberty:id-sis-pres:xmpp:2005-07**

```
229
230 <?xml version="1.0" encoding="UTF-8"?>
231 <xs:schema
232   targetNamespace="urn:liberty:id-sis-pres:xmpp:2005-07"
233   xmlns="urn:liberty:id-sis-pres:xmpp:2005-07"
234   xmlns:xs="http://www.w3.org/2001/XMLSchema"
235   elementFormDefault="unqualified">
236   <xs:include schemaLocation="liberty-idwsf-dst-v2.0.xsd" />
237   <xs:include schemaLocation="liberty-idwsf-dst-dt-v2.0.xsd" />
238   <xs:complexType name="SelectType">
239     <xs:complexContent>
240       <xs:restriction base="EmptyType" />
241     </xs:complexContent>
242   </xs:complexType>
243   <xs:complexType name="SortType">
244     <xs:complexContent>
245       <xs:restriction base="EmptyType" />
246     </xs:complexContent>
247   </xs:complexType>
248   <xs:complexType name="TriggerType">
249     <xs:complexContent>
250       <xs:restriction base="EmptyType" />
251     </xs:complexContent>
252   </xs:complexType>
253   <xs:complexType name="TypeType">
254     <xs:complexContent>
255       <xs:restriction base="EmptyType" />
256     </xs:complexContent>
257   </xs:complexType>
258 </xs:schema>
259
```

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