SAML V2.0 Protocol Extension for Third-Party Requests

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Abstract:
This specification defines an extension to the SAML V2.0 protocol specification [SAML2Core] that facilitates requests made by parties other than the intended response recipient. Protocol extensions enable extension-aware SAML requesters and responders to modify protocol behavior.
in a generic, layered fashion. Readers should be familiar with [SAML2Core] before reading this document.

**Status**

This document was last revised or approved by the OASIS Security Services Technical Committee on the above date. The level of approval is also listed above. Check the "Latest Version" or "Latest Approved Version" location noted above for possible later revisions of this document.

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# Table of Contents

1 Introduction............................................................................................................................................4
   1.1 Notation...........................................................................................................................................4
2 Third-Party Request SAML Protocol Extension.................................................................................6
   2.1 Required Information.....................................................................................................................6
   2.2 Profile Overview............................................................................................................................6
   2.3 Element <thrpty:RespondTo>.........................................................................................................6
   2.4 Processing Rules.............................................................................................................................6
   2.5 Unsolicited Responses....................................................................................................................7
   2.6 Metadata Considerations...............................................................................................................7
      2.6.1 Metadata Example.....................................................................................................................7
3 References................................................................................................................................................9
   3.1 Normative References.....................................................................................................................9
Appendix A. Acknowledgements.............................................................................................................10
Appendix B. Notices................................................................................................................................11
1 Introduction

Protocol extensions consist of elements defined for inclusion in the `<samlp:Extensions>` element that modify the behavior of SAML requesters and responders when processing extended protocol messages. This specification defines an extension to the SAML V2.0 protocol specification that overrides the implicit relationship between the issuer of a request and the intended response recipient. Normally these are the same entity. The use of this extension allows a third party to make a request on behalf of another entity to whom the response should be delivered.

1.1 Notation

This specification uses normative text. The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this specification are to be interpreted as described in [RFC 2119]:

…they MUST only be used where it is actually required for interoperability or to limit behavior which has potential for causing harm (e.g., limiting retransmissions)…

These keywords are thus capitalized when used to unambiguously specify requirements over protocol and application features and behavior that affect the interoperability and security of implementations. When these words are not capitalized, they are meant in their natural-language sense.

Listings of XML schemas appear like this.

Example code listings appear like this.

Conventional XML namespace prefixes are used throughout the listings in this specification to stand for their respective namespaces as follows, whether or not a namespace declaration is present in the example:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>XML Namespace</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>saml:</td>
<td>urn:oasis:names:tc:SAML:2.0:assertion</td>
<td>This is the SAML V2.0 assertion namespace defined in the SAML V2.0 core specification [SAML2Core].</td>
</tr>
<tr>
<td>samlp:</td>
<td>urn:oasis:names:tc:SAML:2.0:protocol</td>
<td>This is the SAML V2.0 protocol namespace defined in the SAML V2.0 core specification [SAML2Core].</td>
</tr>
<tr>
<td>md:</td>
<td>urn:oasis:names:tc:SAML:2.0:metadata</td>
<td>This is the SAML V2.0 metadata namespace defined in the SAML V2.0 metadata specification [SAML2Meta].</td>
</tr>
<tr>
<td>thrpty:</td>
<td>urn:oasis:names:tc:SAML:protocol:ext:third-party</td>
<td>This is the namespace defined by this document and its accompanying schema [ThrPtyExt-xsd].</td>
</tr>
<tr>
<td>xsd:</td>
<td><a href="http://www.w3.org/2001/XMLSchema">http://www.w3.org/2001/XMLSchema</a></td>
<td>This namespace is defined in the W3C XML Schema specification [Schema1]. In schema listings, this is the default namespace and no prefix is shown.</td>
</tr>
<tr>
<td>xsi:</td>
<td><a href="http://www.w3.org/2001/XMLSchema-instance">http://www.w3.org/2001/XMLSchema-instance</a></td>
<td>This is the XML Schema namespace for schema-related markup that appears in XML instances [Schema1].</td>
</tr>
</tbody>
</table>
This specification uses the following typographical conventions in text: <SAMLElement>, <ns:ForeignElement>, Attribute, Datatype, OtherCode.
# Third-Party Request SAML Protocol Extension

## 2.1 Required Information

**Identification:** urn:oasis:names:tc:SAML:protocol:ext:third-party

**Contact information:** security-services-comment@lists.oasis-open.org

**Description:** Given below.

**Updates:** None

## 2.2 Profile Overview

This extension defines a mechanism for signaling in a request that the intended recipient of the protocol response is not the request's issuer (that is, the requester is a third party to an exchange between the responder and the eventual recipient). Practically, this has the effect of terminating the initial protocol exchange and producing an unsolicited response to the recipient identified by the extension. It is typically used when message integrity requires that a request be signed, making it impossible for the third party to simply impersonate the intended recipient.

Unless specifically noted, nothing in this document should be taken to conflict with the SAML V2.0 protocol specification [SAML2Core]. Readers are advised to familiarize themselves with that specification first.

## 2.3 Element <thrpty:RespondTo>

The `<thrpty:RespondTo>` element, with complex type `saml:NameIDType`, specifies the intended recipient of the SAML protocol exchange initiated by the containing request. The element requires the use of a string to carry the intended recipient's name, but permits various pieces of descriptive data (see section 2.2.2 of [SAML2Core]).

Overriding the usual rule for this element's type, if no `Format` attribute is provided with this element, then the value `urn:oasis:names:tc:SAML:2.0:nameid-format:entity` is in effect (see section 8.3.6 of [SAML2Core]). Note that in such a case, the `NameQualifier`, `SPNameQualifier`, and `SPProvidedID` attributes MUST be omitted, in accordance with that format's definition.

The following schema fragment defines the `<thrpty:RespondTo>` element:

```xml
<element name="RespondTo" type="saml:NameIDType"/>
```

## 2.4 Processing Rules

This extension is included in a protocol request message by placing it in the optional `<samlp:Extensions>` element. Due to existing processing requirements, all extensions are explicitly deemed optional. Therefore, requesters SHOULD only include this extension when they can be reasonably confident that the extension will be understood by the recipient. The SAML V2.0 metadata extension defined in section 2.6 MAY be used for this purpose.

This extension element MUST NOT be used in conjunction with any protocol message element whose complex type is not derived from the `samlp:RequestAbstractType` complex type. Moreover, a requester MUST NOT include more than one `<thrpty:RespondTo>` element in a given request.

If a request message's `<samlp:Extensions>` element contains a `<thrpty:RespondTo>` element, then a responder that understands the extension MUST fulfill the request (if it does so at all) by issuing an
unsolicited response message to the entity identified by the extension, or else it SHOULD respond to the
requester with an error response.

In the event that it successfully processes the request, the responder MUST interpret the non-generic
content of the protocol request as though the request was issued by the entity identified by the extension.
That is, while generic content such as the <samlp:Issuer> element is interpreted in the usual manner,
protocol-specific content that affects the response is instead interpreted in the context of the eventual
recipient. An example of such content is the AssertionConsumerServiceIndex attribute in the
<samlp:AuthnRequest> element.

If the request is delivered using a SAML protocol binding [SAML2Bind] that supports the notion of “relay
state” (data to be communicated unmodified to the protocol recipient), then any state data accompanying
the request MUST be passed along to the recipient in accordance with the encoding rules specified by the
protocol binding used for the response.

Note that in the event of a successful response, the original requester is not involved in any subsequent
interactions within the scope of the SAML protocol exchange.

Specific profiles MAY define additional requirements or processing rules related to this extension, if the
desired profile behavior cannot be derived through a self-evident composition of the two.

2.5 Unsolicited Responses

As noted earlier, the effect of this extension is to produce an unsolicited response message to the entity
identified in the extension.

Many SAML protocols and profiles do not support the notion of an unsolicited response (in fact, in SAML
V2.0, only the Browser and Enhanced Client SSO profiles do [SAML2Prof]). The use of this extension in a
request used with a protocol or profile that does not provide any processing rules for an unsolicited
response is undefined. The use of this extension in conjunction with the SAML SOAP Binding
[SAML2Bind] is also undefined.

Note that the processing rule regarding “relay state” defined in the previous section takes precedence
over the usual handling of unsolicited responses, which normally permit the responder to attach its own
state information with the response.

2.6 Metadata Considerations

SAML metadata MAY be used to indicate support for this protocol extension at particular protocol
endpoints, using the extension capabilities of the metadata schema.

Support for this extension is expressed in SAML V2.0 metadata [SAML2Meta] by adding a boolean-typed
XML attribute to an element derived from the md:EndpointType complex type, indicating that SAML
request messages sent to that endpoint MAY include this extension.

The following schema fragment defines the thrpty:supportsRespondTo attribute:

```xml
<attribute name="supportsRespondTo" type="boolean"/>
```

2.6.1 Metadata Example

The example below shows a fragment of an <md:SingleSignOnService> element that advertises
support for this extension. The namespace declaration must be in scope, but the prefix is of course
arbitrary.

```xml
<md:SingleSignOnService
```
3 References

The following works are referenced in the body of this specification.

3.1 Normative References


Appendix A. Acknowledgements

The editors would like to acknowledge the contributions of the OASIS Security Services Technical Committee, whose voting members at the time of publication were:

- Hal Lockhart, BEA Systems, Inc.
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