



Glossary for the OASIS Security Assertion Markup Language (SAML)

Document identifier: cs-sstc-glossary-00

Location: <http://www.oasis-open.org/committees/security/docs>

Publication date: 19 April 2002

Maturity level: Committee Specification

Send comments to: If you are on the security-services@lists.oasis-open.org list for committee members, send comments there. If you are not on that list, subscribe to the security-services-comment@lists.oasis-open.org list and send comments there. To subscribe, send an email message to security-services-comment-request@lists.oasis-open.org with the word "subscribe" as the body of the message.

Editors:

Jeff Hodges, Sun Microsystems (jeff.hodges@sun.com)
Eve Maler, Sun Microsystems (eve.maler@sun.com)

Contributors:

Irving Reid, Baltimore Technologies
David Orchard, BEA
Zahid Ahmed, Commerce One
Hal Lockhart, Entegriety
Tim Moses, Entrust
Joe Pato, Hewlett-Packard
Marc Chanliau, Netegrity
Prateek Mishra, Netegrity
Darren Platt, formerly of RSA Security
Jahan Moreh, Sigaba
Bob Blakley, Tivoli
Marlena Erdos, Tivoli
RL "Bob" Morgan, University of Washington

Rev	Date	By Whom	What
00	21 Jan 2001	Jeff Hodges	Created.
01	8 Feb 2001	Jeff Hodges	Added various terms supplied by Bob Blakley, and others culled from S2ML 0.8a doc.
01	9 Feb 2001	Jeff Hodges	Cleaned up refs, added refs, added definitions, enhanced or otherwise mangled others.
00	30 Mar 2001	Jeff Hodges	Aligned terms with draft-sstc-use-domain-02 and discussion thereof in the security-use subgroup's conference calls. Aligned terms with usage in X.8xx/ISO-10181 series of docs. Added commentary to various definitions where security-use needs to come to consensus and/or make decision(s) on refining said definitions. Deleted various referenceable terms such as HTTP, LDAP, etc. Renamed doc to draft-sstc-glossary-00.
01	Jul 2001	Jeff Hodges	Incorporate extensive comments from Eve Maler Incorp. F2F #2 comments. Use Blakley-massaged F2F #3 version as starting point of crafting this version.
02	21 Dec 2001	Eve Maler	Prepared for interim end-of-year release.
cs-00	18 April 2002	Eve Maler	Final editorial changes for Committee Specification release. Removed all terms with missing definitions (keep-alive, rich session, time-in) and resolved all question marks. Added Acknowledgments section with current list of TC members. Changed handling of bibliographic references.

30
31 Glossary for the OASIS Security Assertion Markup Language (SAML) 1
32 1 Glossary 4
33 2 References 11
34 Appendix A. Acknowledgments 12
35 Appendix B. Notices 13
36

37

1 Glossary

38
39

This normative document defines terms used throughout the OASIS Security Assertion Markup Language (SAML) specifications and related documents.

40
41
42
43

Some definitions are derived directly from external sources (referenced in an appendix), some definitions based on external sources have been substantively modified to fit the SAML context, and some are newly developed for SAML. Please refer to the external sources for definitions of terms not explicitly defined here.

44
45

Some definitions have multiple senses provided. They are denoted by (a), (b), and so on. References to terms defined elsewhere in this glossary are italicized.

46
47

Following are the defined terms used in the SAML specifications and related documents.

Term	Definition
Access	To interact with a <i>system entity</i> in order to manipulate, use, gain knowledge of, and/or obtain a representation of some or all of a system entity's <i>resources</i> . [RFC2828]
Access Control	Protection of <i>resources</i> against unauthorized access; a process by which use of resources is regulated according to a security policy and is permitted by only authorized system entities according to that policy. [RFC2828]
Access Control Information	Any information used for access control purposes, including contextual information [X.812] . Contextual information might include source IP address, encryption strength, the type of operation being requested, time of day, etc. Portions of access control information may be specific to the request itself, some may be associated with the connection via which the request is transmitted, and others (for example, time of day) may be "environmental". [RFC2829]
Access Rights	A description of the type of authorized interactions a <i>subject</i> can have with a <i>resource</i> . Examples include read, write, execute, add, modify, and delete. [Taxonomy]
Active Role	A role that a <i>system entity</i> has donned when performing some operation, for example accessing a <i>resource</i> .
Administrative Domain	An environment or context that is defined by some combination of one or more administrative policies, Internet Domain Name registrations, civil legal entities (for example, individuals, corporations, or other formally organized entities), plus a collection of hosts, network devices and the interconnecting networks (and possibly other traits), plus (often various) network services and applications running upon them. An administrative domain may contain or define one or more security domains. An administrative domain may encompass a single site or multiple sites. The traits defining an administrative domain may, and in many cases will, evolve over time. Administrative domains may interact and enter into agreements for providing and/or consuming services across administrative domain boundaries.

Term	Definition
Administrator	A person who installs or maintains a system (for example, a SAML-based security system) or who uses it to manage <i>system entities</i> , users, and/or content (as opposed to application purposes; see also <i>End User</i>). An administrator is typically affiliated with a particular <i>administrative domain</i> and may be affiliated with more than one administrative domain.
Anonymity	The quality or state of being anonymous, which is the condition of having a name or identity that is unknown or concealed. [RFC2828]
Assertion	A piece of data produced by a <i>SAML authority</i> regarding either an act of authentication performed on a <i>subject</i> , attribute information about the subject, or authorization permissions applying to the subject with respect to a specified <i>resource</i> .
Asserting Party	Formally, the <i>administrative domain</i> that hosts one or more <i>SAML authorities</i> . Informally, an instance of a <i>SAML authority</i> .
Attribute	A distinct characteristic of an object (in SAML, a <i>subject</i>). An object's attributes are said to describe it. Attributes are often specified in terms of physical traits, such as size, shape, weight, and color, etc., for real-world objects. Objects in cyberspace might have attributes describing size, type of encoding, network address, and so on. Which attributes of an object are salient is decided by the beholder. See also <i>XML attribute</i> .
Attribute Authority	A <i>system entity</i> that produces <i>attribute assertions</i> . [SAMLAgree]
Attribute Assertion	An <i>assertion</i> that conveys information about <i>attributes</i> of a <i>subject</i> .
Authentication	To confirm a <i>system entity's</i> asserted <i>principal identity</i> with a specified, or understood, level of confidence. [CyberTrust] [SAMLAgree]
Authentication Assertion	An <i>assertion</i> that conveys information about a successful act of <i>authentication</i> that took place for a <i>subject</i> .
Authentication Authority	A <i>system entity</i> that produces <i>authentication assertions</i> . [SAMLAgree]
Authorization	The process of determining, by evaluating applicable <i>access control information</i> , whether a <i>subject</i> is allowed to have the specified types of <i>access</i> to a particular <i>resource</i> . Usually, authorization is in the context of authentication. Once a subject is authenticated, it may be authorized to perform different types of access. [Taxonomy]
Authorization Decision	The result of an act of authorization. The result may be negative, that is, it may indicate that the <i>subject</i> is not allowed any access to the <i>resource</i> .
Authorization Decision Assertion	An <i>assertion</i> that conveys information about an <i>authorization decision</i> .

Term	Definition
Binding, Protocol Binding	An instance of mapping SAML request-response message exchanges into a specific protocol. Each binding is given a name in the pattern "SAML xxx binding".
Credentials	Data that is transferred to establish a claimed principal identity. [X.800] [SAMLAgree]
End User	A natural person who makes use of resources for application purposes (as opposed to system management purposes; see Administrator, User).
Identifier	A representation (for example, a string) mapped to a <i>system entity</i> that uniquely refers to it.
Login, Logon, Sign-On	The process whereby a <i>user</i> presents <i>credentials</i> to an <i>authentication authority</i> , establishes a <i>simple session</i> , and optionally establishes a <i>rich session</i> .
Logout, Logoff, Sign-Off	The process whereby a <i>user</i> signifies desire to terminate a <i>simple session</i> or <i>rich session</i> .
Markup Language	A set of <i>XML elements</i> and <i>XML attributes</i> to be applied to the structure of an XML document for a specific purpose. A markup language is typically defined by means of a set of <i>XML schemas</i> and accompanying documentation. For example, the <i>Security Assertion Markup Language</i> (SAML) is defined by two schemas and the set of normative SAML specification text.
Party	Informally, one or more <i>principals</i> participating in some process or communication, such as receiving an <i>assertion</i> or accessing a <i>resource</i> .
Policy Decision Point (PDP)	A <i>system entity</i> that makes <i>authorization decisions</i> for itself or for other system entities that request such decisions. [PolicyTerm] For example, a SAML PDP consumes authorization decision requests, and produces <i>authorization decision assertions</i> in response. A PDP is an "authorization decision authority".
Policy Enforcement Point (PEP)	A <i>system entity</i> that requests and subsequently enforces <i>authorization decisions</i> . [PolicyTerm] For example, a SAML PEP sends <i>authorization decision</i> requests to a PDP, and consumes the <i>authorization decision assertions</i> sent in response.
Principal	A <i>system entity</i> whose identity can be authenticated. [X.811]
Principal Identity	A representation of a principal's identity, typically an <i>identifier</i> .
Profile	A set of rules describing how to embed <i>assertions</i> into and extract them from a framework or protocol. Each profile is given a name in the pattern "xxx profile of SAML".
Proxy	<ul style="list-style-type: none"> a) An entity authorized to act for another. b) Authority or power to act for another. c) A document giving such authority. [Merriam]

Term	Definition
Proxy Server	A computer process that relays a protocol between client and server computer systems, by appearing to the client to be the server and appearing to the server to be the client. [RFC2828]
Pull	To actively request information from a <i>system entity</i> .
Push	To provide information to a <i>system entity</i> that did not actively request it.
Relying Party	A <i>system entity</i> that decides to take an action based on information from another system entity. For example, a SAML relying party depends on receiving <i>assertions</i> from an <i>asserting party</i> (a <i>SAML authority</i>) about a <i>subject</i> .
Requester	A <i>system entity</i> that utilizes a protocol to request services from another system entity. The term “client” for this notion is not used because many system entities simultaneously or serially act as both clients and servers.
Resource	<ul style="list-style-type: none"> a) Data contained in an information system (for example, in the form of files, information in memory, etc). b) A service provided by a system. c) An item of system equipment (in other words, a system component such as hardware, firmware, software, or documentation). d) A facility that houses system operations and equipment. [RFC2828] <p>SAML uses “resource” in the first two senses, and refers to resources by means of <i>URI references</i>.</p>
Role	Dictionaries define a role as “a character or part played by a performer” or “a function or position.” Principals don various types of roles serially and/or simultaneously, for example, active roles and passive roles. The notion of an Administrator is often an example of a role.
SAML Authority	An abstract <i>system entity</i> in the SAML domain model that issues <i>assertions</i> . See also <i>attribute authority</i> , <i>authentication authority</i> , and <i>policy decision point (PDP)</i> .
Security	A collection of safeguards that ensure the confidentiality of information, protect the systems or networks used to process it, and control access to them. Security typically encompasses the concepts of secrecy, confidentiality, integrity, and availability. It is intended to ensure that a system resists potentially correlated attacks. [CyberTrust]

Term	Definition
Security Architecture	A plan and set of principles for an <i>administrative domain</i> and its <i>security domains</i> that describe the security services that a system is required to provide to meet the needs of its users, the system elements required to implement the services, and the performance levels required in the elements to deal with the threat environment. A complete security architecture for a system addresses administrative security, communication security, computer security, emanations security, personnel security, and physical security, and prescribes security policies for each. A complete security architecture needs to deal with both intentional, intelligent threats and accidental threats. A security architecture should explicitly evolve over time as an integral part of its administrative domain's evolution. [RFC2828]
Security Assertion	An <i>assertion</i> that is scrutinized in the context of a security architecture.
Security Assertion Markup Language (SAML)	The set of specifications describing <i>security assertions</i> that are encoded in <i>XML</i> , <i>profiles</i> for attaching the assertions to various protocols and frameworks, the request/response protocol used to obtain the assertions, and <i>bindings</i> of this protocol to various transfer protocols (for example, SOAP and HTTP).
Security Domain	An environment or context that is defined by security models and a <i>security architecture</i> , including a set of <i>resources</i> and set of <i>system entities</i> that are authorized to access the resources. One or more security domains may reside in a single <i>administrative domain</i> . The traits defining a given security domain typically evolve over time. [Taxonomy]
Security Policy	A set of rules and practices that specify or regulate how a system or organization provides security services to protect <i>resources</i> . Security policies are components of <i>security architectures</i> . Significant portions of security policies are implemented via <i>security services</i> , using <i>security policy expressions</i> . [RFC2828] [Taxonomy]
Security Policy Expression	A mapping of <i>principal identities</i> and/or <i>attributes</i> thereof with allowable actions. Security policy expressions are often essentially access control lists. [Taxonomy]
Security Service	A processing or communication service that is provided by a system to give a specific kind of protection to resources, where said resources may reside with said system or reside with other systems, for example, an authentication service or a PKI-based document attribution and authentication service. A security service is a superset of AAA services. Security services typically implement portions of <i>security policies</i> and are implemented via security mechanisms. [RFC2828] [Taxonomy]
Session	A lasting interaction between system entities, often involving a user, typified by the maintenance of some state of the interaction for the duration of the interaction.

Term	Definition
Site	An informal term for an <i>administrative domain</i> in geographical or DNS name sense. It may refer to a particular geographical or topological portion of an administrative domain, or it may encompass multiple administrative domains, as may be the case at an ASP site.
Subject	A <i>principal</i> in the context of a <i>security domain</i> . SAML assertions make declarations about subjects.
System Entity	An active element of a computer/network system. For example, an automated process or set of processes, a subsystem, a person or group of persons that incorporates a distinct set of functionality. [RFC2828] [SAMLAgree]
Time-Out	A period of time after which some condition becomes true if some event has not occurred. For example, a <i>session</i> that is terminated because its state has been inactive for a specified period of time is said to “time out”.
User	A natural person who makes use of a system and its resources for any purpose [SAMLAgree]
Uniform Resource Identifier (URI)	A compact string of characters for identifying an abstract or physical <i>resource</i> . [RFC2396] URIs are the universal addressing mechanism for resources on the World Wide Web. Uniform Resource Locators (URLs) are a subset of URIs that use an addressing scheme tied to the resource’s primary access mechanism, for example, their network “location”.
URI Reference	A <i>URI</i> that is allowed to have an appended number sign (#) and fragment identifier. [RFC2396] Fragment identifiers address particular locations or regions within the identified resource.
XML	Extensible Markup Language, abbreviated XML, describes a class of data objects called XML documents and partially describes the behavior of computer programs which process them. [XML]
XML Attribute	An XML data structure that is embedded in the start-tag of an XML element and that has a name and a value. For example, the italicized portion below is an instance of an XML attribute: <pre><Address <i>AddressID="A12345"</i>>...</Address></pre> See also <i>attribute</i> .

Term	Definition
XML Element	<p>An XML data structure that is hierarchically arranged among other such structures in an XML document and is indicated by either a start-tag and end-tag or an empty tag. For example:</p> <pre data-bbox="610 359 1187 625"> <Address AddressID="A12345"> <Street>105 Main Street</Street> <City>Springfield</City> <StateOrProvince> <Full>Massachusetts</Full> <Abbrev>MA</Abbrev> </StateOrProvince> <Post Code="567890"/> </Address> </pre>
XML Namespace	<p>A collection of names, identified by a <i>URI reference</i>, which are used in XML documents as element types and attribute names. An XML namespace is often associated with an <i>XML schema</i>. For example, SAML defines two schemas, and each has a unique XML namespace.</p>
XML Schema	<p>The format developed by the World Wide Web Consortium (W3C) for describing rules for a <i>markup language</i> to be used in a set of XML documents. In the lowercase, a "schema" or "XML schema" is an individual instance of this format. For example, SAML defines two schemas, one containing the rules for XML documents that encode security assertions and one containing the rules for XML documents that encode request/response protocol messages. Schemas define not only XML elements and XML attributes, but also datatypes that apply to these constructs.</p>

48 2 References

- 49 **[CyberTrust]** *Trust in Cyberspace*. Committee on Information Systems Trustworthiness, Fred
50 B. Schneider, editor. National Research Council, ISBN 0-309-06558-5, 1999.
51 Online copy and ordering information available at
52 <http://www.nap.edu/readingroom/books/trust/>. Glossary:
53 <http://www.nap.edu/readingroom/books/trust/trustapkhtm>.
- 54 **[Merriam]** *Merriam-Webster Collegiate Dictionary*. CDROM Version 2.5, 2000. An online
55 version is available at <http://www.m-w.com>.
- 56 **[PolicyTerm]** *Policy Terminology*. Westerinen et al. Work in progress INTERNET-DRAFT,
57 draft-ietf-policy-terminology-02.txt. Available at [http://www.ietf.org/internet-](http://www.ietf.org/internet-drafts/draft-ietf-policy-terminology-02.txt)
58 [drafts/draft-ietf-policy-terminology-02.txt](http://www.ietf.org/internet-drafts/draft-ietf-policy-terminology-02.txt).
- 59 **[RFC2396]** *Uniform Resource Identifiers (URI): Generic Syntax*. T. Berners-Lee, R. Fielding,
60 L. Masinter. RFC 2396, 1998. Available at <http://www.ietf.org/rfc/rfc2396.txt>.
- 61 **[RFC2828]** *Internet Security Glossary*. Robert W. Shirey, RFC 2828, May 2000. Available at
62 <http://www.ietf.org/rfc/rfc2828.txt>.
- 63 **[RFC2829]** *Authentication Methods for LDAP*. M. Wahl, H. Alvestrand, J. Hodges, R.
64 Morgan. RFC 2829, May 2000. Available at [http://www.rfc-](http://www.rfc-editor.org/rfc/rfc2829.txt)
65 [editor.org/rfc/rfc2829.txt](http://www.rfc-editor.org/rfc/rfc2829.txt).
- 66 **[SAMLAgree]** *OASIS Security Services TC Use Case and Requirements Conference Call*
67 *Consensus*. Consensus on the wording for this item occurred during one or more
68 conference calls of the SAML Use Cases and Requirements subcommittee.
69 Meeting minutes are available at [http://lists.oasis-open.org/archives/security-](http://lists.oasis-open.org/archives/security-use/)
70 [use/](http://lists.oasis-open.org/archives/security-use/).
- 71 **[Taxonomy]** *Security Taxonomy and Glossary*. Lynn Wheler, ongoing. Availabe at
72 <http://www.garlic.com/~lynn/secure.htm>. See <http://www.garlic.com/~lynn/> for the
73 list of sources.
- 74 **[X.800]** *Information processing systems – Open Systems Interconnection – Basic*
75 *Reference Model – Part 2: Security Architecture*. ISO 7498-2:1989, ITU-T
76 Recommendation X.800 (1991). Available at [http://www.itu.int/itudoc/itu-](http://www.itu.int/itudoc/itu-t/rec/x/x500up/x800.html)
77 [t/rec/x/x500up/x800.html](http://www.itu.int/itudoc/itu-t/rec/x/x500up/x800.html).
- 78 **[X.811]** *Security Frameworks for Open Systems: Authentication Framework*. ITU-T
79 Recommendation X.811 (1995 E), ISO/IEC 10181-2:1996(E). Available at
80 <http://www.itu.int/itudoc/itu-t/rec/x/x500up/x811.html>.
- 81 **[X.812]** *Security frameworks for open systems: Access control framework*. ITU-T
82 Recommendation X.812 (1995 E), ISO/IEC 10181-3:1996(E). Available at
83 <http://www.itu.int/itudoc/itu-t/rec/x/x500up/x812.html>.
- 84 **[XML]** *Extensible Markup Language (XML) 1.0 (Second Edition)*. W3C
85 Recommendation, October 2002. Available at [http://www.w3.org/TR/2000/REC-](http://www.w3.org/TR/2000/REC-xml-20001006)
86 [xml-20001006](http://www.w3.org/TR/2000/REC-xml-20001006).

87 **Appendix A. Acknowledgments**

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

- 90 • Allen Rogers, Authentica
- 91 • Irving Reid, Baltimore Technologies
- 92 • Krishna Sankar, Cisco Systems
- 93 • Simon Godik, Crosslogix
- 94 • Gilbert Pilz, E2open
- 95 • Hal Lockhart, Entegrity
- 96 • Carlisle Adams, Entrust
- 97 • Don Flinn, Hitachi
- 98 • Joe Pato, Hewlett-Packard (co-chair)
- 99 • Jason Rouault, Hewlett-Packard
- 100 • Marc Chanliau, Netegrity
- 101 • Chris McLaren, Netegrity
- 102 • Prateek Mishra, Netegrity
- 103 • Charles Knouse, Oblix
- 104 • Steve Anderson, OpenNetwork
- 105 • Rob Philpott, RSA Security
- 106 • Jahan Moreh, Sigaba
- 107 • Bhavna Bhatnagar, Sun Microsystems
- 108 • Jeff Hodges, Sun Microsystems (co-chair)
- 109 • Eve Maler, Sun Microsystems (former chair)
- 110 • Aravindan Ranganathan, Sun Microsystems
- 111 • Emily Xu, Sun Microsystems
- 112 • Bob Morgan, University of Washington
- 113 • Phillip Hallam-Baker, VeriSign

114 **Appendix B. Notices**

115 OASIS takes no position regarding the validity or scope of any intellectual property or other rights that
116 might be claimed to pertain to the implementation or use of the technology described in this document or
117 the extent to which any license under such rights might or might not be available; neither does it
118 represent that it has made any effort to identify any such rights. Information on OASIS's procedures with
119 respect to rights in OASIS specifications can be found at the OASIS website. Copies of claims of rights
120 made available for publication and any assurances of licenses to be made available, or the result of an
121 attempt made to obtain a general license or permission for the use of such proprietary rights by
122 implementors or users of this specification, can be obtained from the OASIS Executive Director.

123 OASIS invites any interested party to bring to its attention any copyrights, patents or patent applications,
124 or other proprietary rights which may cover technology that may be required to implement this
125 specification. Please address the information to the OASIS Executive Director.

126 Copyright © The Organization for the Advancement of Structured Information Standards [OASIS] 2001.
127 All Rights Reserved.

128 This document and translations of it may be copied and furnished to others, and derivative works that
129 comment on or otherwise explain it or assist in its implementation may be prepared, copied, published
130 and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice
131 and this paragraph are included on all such copies and derivative works. However, this document itself
132 may not be modified in any way, such as by removing the copyright notice or references to OASIS,
133 except as needed for the purpose of developing OASIS specifications, in which case the procedures for
134 copyrights defined in the OASIS Intellectual Property Rights document must be followed, or as required to
135 translate it into languages other than English.

136 The limited permissions granted above are perpetual and will not be revoked by OASIS or its successors
137 or assigns.

138 This document and the information contained herein is provided on an "AS IS" basis and OASIS
139 DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY
140 WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR
141 ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.