SAML 2.0 Interoperability Testing Procedures

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Abstract:

The conformance program is designed to validate core functionality via interoperability testing so that purchasers of Liberty-based technology can focus on other details specific to their market and/or deployment. This document describes the process and procedures for conducting interoperability testing for the Liberty Interoperable certification program. The goal of this document, combined with the SCR and the Liberty Conformance Process and Administration document is to unambiguously define the process and procedures that will be followed at conformance interoperability testing events. The procedures in this document are intended to streamline testing events, shorten testing times, and minimize disputes that could result in requests for arbitration.

Contents

1. Introduction

This document refers to SAML 2.0 and the conformance modes described in the *Conformance Requirements for the OASIS Security Assertion Markup Language (SAML) V2.0*. [SAMLConf].

The conformance program is designed to validate core functionality via interoperability testing so that purchasers of standards-based technology can focus on other details specific to their market and/or deployment. This document describes the process and procedures for conducting interoperability testing for conformance.

The goal of this document is to unambiguously define the procedures that will be followed at conformance interoperability testing events. The procedures in this document are intended to streamline testing events, shorten testing times, and minimize disputes that could result in requests for arbitration.

The [SAMLConf] document describes a total of nine conformance modes and the specific features that are required or optional for each mode:

- IdP – Identity Provider
- IdP Lite – Identity Provider Lite
- SP – Service Provider
- SP Lite – Service Provider Lite
- ECP – Enhanced Client/Proxy
- SAML Attribute Authority
- SAML Authorization Decision Authority
- SAML Authentication Authority
- SAML Requester.

Because significant features in some of these modes are Optional the Liberty Interoperability Testing Program has created an additional designation “Complete” to recognize and differentiate implementations that demonstrate interoperability of all optional features for a particular mode. The list of “Complete” interoperability designations is:

- SP Complete
- SAML Attribute Authority Complete
- SAML Authorization Decision Authority Complete
- SAML Authentication Authority Complete
- SAML Requester.Complete

2. Overview of Conformance Process

See [LibConfProc].

3. Test Procedures

3.1. Caveats

3.1.1. Metadata

There are no normative requirements in [SAMLConf] regarding the content or processing of metadata as described in [SAMLMeta]. However, for purposes of Interoperability Testing, implementations are REQUIRED to

- furnish correct metadata, and
- process metadata furnished by other testing partners

wherever such metadata is defined and meaningful for the SAML modes in question. For example, it is not meaningful for an ECP to produce or consume metadata.

Note that while metadata is not specified for SAML Attribute Requesters, interoperability with SAML Authorities is very difficult without it. Therefore, it is STRONGLY RECOMMENDED that SAML Attribute Requesters provide metadata as described in the draft metadata extension specification [SAMLMetaExt].

3.1.2. IdP Authentication

SAML does not normatively specify any requirements for user authentication at IdP for Web SSO. In fact, user authentication is explicitly described as “out of scope” [SAMLProf]. However, for purposes of interoperability testing, we will REQUIRE that IdP implementations offer at least one of these authentication methods:

1. HTTP Basic Auth.
2. HTTP Form Post
3. HTTP Get.

Similarly, we will require that user agents, particularly ECP implementations, be able to authenticate using at least one of these methods.

3.1.3. Mode Asymmetry

One of the fundamental aspects of interoperability testing is that two or more participants must work together in complementary roles to achieve a testing result. In several cases, one role (e.g. IdP) is required to support a feature that is optional for the complementary role (e.g. SP). In these cases, the IdP (e.g.) is dependent on the fact that enough partners will implement the optional features so that interoperability can be demonstrated.

Typically, a test participant will implement both roles (e.g., a SP and IdP) and they have a vested interest in making mutual interoperability possible. In this case, the sensible strategy is to build the optional features (i.e., observe the Golden Rule).

An extreme case of this is the SAML Requester mode, which has only optional features.

3.1.4. Trivial Processing

Several features specified by SAML (e.g., IdP Proxy) can be implemented such that any request simply returns an error response. While this trivial behavior is, strictly speaking, in conformance with the specifications, it is not meaningful in the context of Interoperability Testing. Except where explicitly indicated (e.g., for certain Name Identifier formats) all testing steps will require non-trivial responses in order to be deemed successful.

3.1.5. Authentication Contexts

Some of the SAML Modes rely on a well-defined ordering of authentication contexts. The SAML specifications do not normatively specify an ordering [SAMLAuthnCxt] and leave the the comparison decisions up to the implementation [SAMLCore]. However, for puposes of testing we will arbitrarily define an ordering of authentication contexts to be used in the tests. This arbitrary listing of authentication class URIs, in order of increasing strength, is:

1. any defined authentication context not listed below.
2. urn:oasis:names:tc:SAML:2.0:ac:classes:PreviousSession
3. urn:oasis:names:tc:SAML:2.0:ac:classes:InternetProtocol
4. urn:oasis:names:tc:SAML:2.0:ac:classes:Password

This ordering should be observed by all implementations testing SAML modes where authentication contexts must be compared.

NOTE: complete implementation of these authentication contexts is NOT REQUIRED. These authentication context URIs should simply be asserted in requests and responses to demonstrate interoperability of authentiction context processing rules.

3.1.6. Name Identifier Formats

The following Name Identifer Formats are defined by [SAMLCore]:

1. Unspecified
2. Email
3. X.509 Subject
4. Windows
5. Kerberos
6. Entity
7. Persistent
8. Transient

Every implementation is REQUIRED to accept messages containing any of these formats, but [SAMLCore] only requires that the the last two be processed.

3.1.7. XML Signatures

The [SAMLConf] does not specifically indicate where XML Signatures are required, but the underlying specifications in [SAMLProf] make signing required for certain profiles. Specifically, these are:

1. Web SSO: The assertion element(s) in the `<Response>` MUST be signed for the HTTP POST binding.
2. ECP Profile: The assertion element(s) in the `<Response>` issued by the IdP MUST be signed.
3. Single Logout: The `<LogoutRequest>` and `<LogoutResponse>` MUST be signed for the HTTP redirect binding.
4. Name Identifer Management: The `<ManageNameIDRequest>` and `<ManageNameIDResponse>` MUST be signed for the HTTP redirect binding.

SP and IdP implementations may indicate via metadata a desire for requests or responses to be signed for other bindings than those indicated above. However, such stipulations in metadata are not binding and adherence is not required.

3.1.8. XML Encryption

[SAMLConf] stipulates several different encryption algorithms and key transport mechanisms that MUST be implemented. However, these testing procedures do not require demonstration of support for all these combinations and instead rely on successful interoperability as a measure of conformance.

Implementations should take care to ensure that elements to be encrypted include any XML namespace prefix declarations so that, when decrypted, the element will remain valid independent of context. One method for achieving this is described in [ExcXMLCan], but other approaches will work.

Note that while the <ds:KeyInfo> and <xenc:EncryptedKey> elements are not required in the SAML specifications or related schemas, it is STRONGLY RECOMMMENDED that these elements be included in messages for interoperability testing. There is no normative mechanism for exchanging these keys out-of-band.

Finally, encryption coupled with deflation and URL encoding may create URLs that exceed the maximum length supported by some browsers. Consequently, encryption is contraindicated for the MNI redirect profile testing steps.

3.1.9. Attribute Profiles

[SAMLConf] makes no normative statements about which Attribute Profiles in [SAMLProf] are required to be supported by SAML Attribute Authority or a SAML Requestor. These are the profiles described in [SAMLProf]:

1. Basic
2. X.500/LDAP
3. UUID
4. DCE PAC
5. XACML

This document does not describe any testing procedures regarding these profiles.

3.2. SAML Modes

The test procedures for the standard SAML modes are based on the conformance matrix in [SAMLConf] which is reproduced in Table 1.

Feature	*IdP*	*IdP Lite*	*SP*	*SP Lite*	*ECP*
Web SSO, <AuthnRequest>, HTTP redirect	MUST	MUST	MUST	MUST	N/A
Web SSO, <Response>, HTTP POST	MUST	MUST	MUST	MUST	N/A
Web SSO, <Response>, HTTP artifact	MUST	MUST	MUST	MUST	N/A
Artifact Resolution, SOAP	MUST	MUST	MUST	MUST	N/A
Enhanced Client/Proxy SSO, PAOS	MUST	MUST	MUST	MUST	MUST
Name Identifier Management, HTTP redirect (IdP-initiated)	MUST	MUST NOT	MUST	MUST NOT	N/A
Name Identifier Management, SOAP (IdP-initiated)	MUST	MUST NOT	OPTIONAL	MUST NOT	N/A
Name Identifier Management, HTTP redirect (SP-initiated)[1]	MUST	MUST NOT	MUST	MUST NOT	N/A
Name Identifier Management, SOAP (SP-initiated)	MUST	MUST NOT	OPTIONAL	MUST NOT	N/A
Single Logout (IdP-initiated) – HTTP redirect	MUST	MUST	MUST	MUST	N/A
Single Logout (IdP-initiated) – SOAP	MUST	OPTIONAL	MUST	OPTIONAL	N/A
Single Logout (SP-initiated) – HTTP redirect	MUST	MUST	MUST	MUST	N/A
Single Logout (SP-initiated) – SOAP	MUST	OPTIONAL	MUST	OPTIONAL	N/A
Identity Provider Discovery (cookie)	MUST	MUST	OPTIONAL	OPTIONAL	N/A

Table 1 Standard SAML Modes conformance matrix from [SAMLConf] (Copyright © OASIS Open 2005. All Rights Reserved).

157 The test procedures for all standard SAML modes are presented together even though some of the steps are
158 designated as MUST NOT for certain modes. In these cases, it is expected that an equivalent effect should be
159 achieved by an equivalent SAML feature (e.g., using HTTP redirect instead of SOAP), or some non-SAML (or out-
160 of-band) mechanism. If an implementation does not support OPTIONAL features, the same approach should be
161 employed.

162 Steps with a blue background indicate probable configuration changes that will need to be made, though this will
163 depend on the implementation.

[1] Per erratum PE11 in [SAMLErrata07]

Step	Code	Feature	IdP	IdP Lite	SP	SP Lite	ECP
1	META	Metadata exchange	MUST	MUST	MUST	MUST	N/A
2	ENC-OFF	Disable All Encryption					
	Web SSO and SLO						
3	NFMT-PERS	Name ID Formats = Persistent					
4	SSO-FED	Federate (NameIDPolicy AllowCreate=true)					
5	SSO-REQ	Web SSO, <AuthnRequest>, HTTP redirect	MUST	MUST	MUST	MUST	N/A
6	SSO-RPOST	Web SSO, <Response>, HTTP POST, Signed	MUST	MUST	MUST	MUST	N/A
7	SLO-HIDP	SLO (IdP-initiated) – HTTP redirect, Signed	MUST	MUST	MUST	MUST	N/A
8	SSO-NOFED	Already Federated (NameIDPolicy AllowCreate=false)					
9	ENC-ID	EncryptedID					
10	SSO-REQ	Web SSO, <AuthnRequest>, HTTP redirect	MUST	MUST	MUST	MUST	N/A
11	SSO-RPOST	Web SSO, <Response>, HTTP POST, Signed	MUST	MUST	MUST	MUST	N/A
12	SLO-HSP	SLO (SP-initiated) – HTTP redirect, Signed	MUST	MUST	MUST	MUST	N/A
13	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
14	ENC-OFF	Disable All Encryption					
15	MNI-TERM	<Terminate> name					
16	MNI-HIDP	MNI, (IdP-initiated) - HTTP redirect, Signed	MUST	MUST NOT	MUST	MUST NOT	N/A
17	SSO-FED	Federate (NameIDPolicy AllowCreate=true)					
18	SSO-REQ	Web SSO, <AuthnRequest>, HTTP redirect	MUST	MUST	MUST	MUST	N/A
19	SSO-RART	Web SSO, <Response>, HTTP artifact	MUST	MUST	MUST	MUST	N/A
20	ART-RES	Artifact Resolution, SOAP	MUST	MUST	MUST	MUST	N/A
21	SLO-SIDP	SLO (IdP-initiated) – SOAP	MUST	OPTIONAL	MUST	OPTIONAL	N/A
22	SSO-NOFED	Already Federated (NameIDPolicy AllowCreate=false)					
23	ENC-ASRT	EncryptedAssertion					
24	SSO-REQ	Web SSO, <AuthnRequest>, HTTP redirect	MUST	MUST	MUST	MUST	N/A
25	SSO-RART	Web SSO, <Response>, HTTP artifact	MUST	MUST	MUST	MUST	N/A
26	ART-RES	Artifact Resolution, SOAP	MUST	MUST	MUST	MUST	N/A
27	SLO-SSP	SLO (SP-initiated) – SOAP	MUST	OPTIONAL	MUST	OPTIONAL	N/A
	Name ID Management						
28	ENC-OFF	Disable All Encryption					
29	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
30	MNI-HIDP	MNI, (IdP-initiated) - HTTP redirect, Signed	MUST	MUST NOT	MUST	MUST NOT	N/A
31	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
32	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
33	SLO-AIDP	SLO (IdP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
34	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
35	MNI-HSP	MNI, (SP-initiated) – HTTP redirect, Signed	MUST	MUST NOT	MUST	MUST NOT	N/A
36	SLO-AIDP	SLO (IdP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
37	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
38	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
39	ENC-ID	EncryptedID					
40	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
41	MNI-SIDP	MNI, (IdP-initiated) – SOAP	MUST	MUST NOT	OPTIONAL	MUST NOT	N/A
42	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
43	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
44	SLO-AIDP	SLO (IdP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
45	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
46	MNI-SSP	MNI,(SP-initiated) – SOAP	MUST	MUST NOT	OPTIONAL	MUST NOT	N/A
47	SLO-AIDP	SLO (IdP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
48	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
49	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
	IDP Introduction						
50	CLR-CKY	Clear cookies					
51	IDP-CKY	IDP login, setting cookie	MUST	MUST	OPTIONAL	OPTIONAL	N/A
52	SSO-CKY	SSO (at SP) using common domain cookie	MUST	MUST	OPTIONAL	OPTIONAL	N/A
53	MNI-TERM	<Terminate> name					
54	MNI-HIDP	MNI, (IdP-initiated) - HTTP redirect, Signed	MUST	MUST NOT	MUST	MUST NOT	N/A
	Single Session Logout						
55	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
56	SSO-SESS	New Session in new browser					
57	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
58	SLO-SESS	Single Session (SessionIndex=xxx)					
59	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
60	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
61	SLO-AIDP	SLO (IdP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
	Unsolicited <Response>						
62	NFMT-TRANS	Name ID Formats = Transient					
63	SSO-UNSOL	Unsolicited <Response> profile					
64	SSO-RPOST	Web SSO, <Response>, HTTP POST, Signed	MUST	MUST	MUST	MUST	N/A
65	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
66	SSO-RART	Web SSO, <Response>, HTTP artifact	MUST	MUST	MUST	MUST	N/A
67	ART-RES	Artifact Resolution, SOAP	MUST	MUST	MUST	MUST	N/A
68	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
69	MNI-TERM	<Terminate> name					
70	MNI-ANY	MNI, Any Profile	MUST	MUST NOT	MUST	MUST NOT	N/A
	Affiliations						
71	AFL-ON	SPNameQualifier=[affiliation Id]					
72	NFMT-PERS	Name ID Formats = Persistent					
73	SSO-FED	Federate (NameIDPolicy AllowCreate=true)					
74	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
75	SLO-AIDP	SLO (IdP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
76	SSO-NOFED	Already Federated (NameIDPolicy AllowCreate=false)					
77	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
78	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST	MUST	MUST	N/A
79	SSO-ANY	Web SSO any profile	MUST	MUST	MUST	MUST	N/A
80	MNI-TERM	<Terminate> name					
81	MNI-HIDP	MNI, (IdP-initiated) - HTTP redirect, Signed	MUST	MUST NOT	MUST	MUST NOT	N/A
82	AFL-OFF	SPNameQualifier=[sp provider Id] or omit					
	ECP						
83	SSO-FED	Federate (NameIDPolicy AllowCreate=true)					
84	SSO-ECP	Enhanced Client/Proxy SSO, PAOS	MUST	MUST	MUST	MUST	MUST
85	SLO-ECP	Destroy Session (e.g., close Browser)					
86	SSO-NOFED	Already Federated (NameIDPolicy AllowCreate=false)					
87	SSO-ECP	Enhanced Client/Proxy SSO, PAOS	MUST	MUST	MUST	MUST	MUST
88	SLO-ECP	Destroy Session (e.g., close Browser)					

Table 2 SAML Standard Modes test procedures

3.3. Extended SAML Modes

SAML 2.0 defines extended modes that build upon the SP and IdP modes defined above [SAMLConf]. These definitions can be seen in Table 3.

Feature	*IdP Extended*	*SP Extended*
Identity Provider proxy (Section 3.4.1.5 SAMLCore)	MUST	MUST
Name identifier mapping, SOAP	MUST	MUST

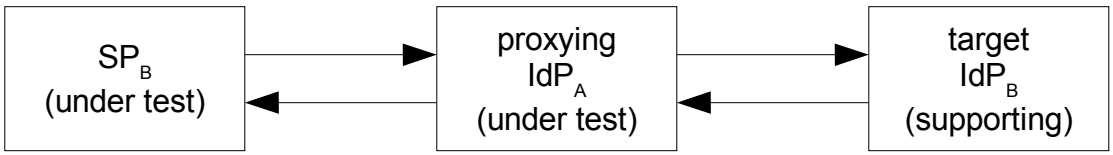
Table 3 Extended modes matrix from [SAMLConf] (Copyright © OASIS Open 2005. All Rights Reserved).

In order for an implementation to qualify for one of these extended modes, it must first successfully complete testing of one of the standard SP or IdP modes.

The testing procedures for the extended modes differ from the previous procedures in that it is necessary for three systems to participate in the testing steps as described below.

3.3.1. IdP Proxy Feature

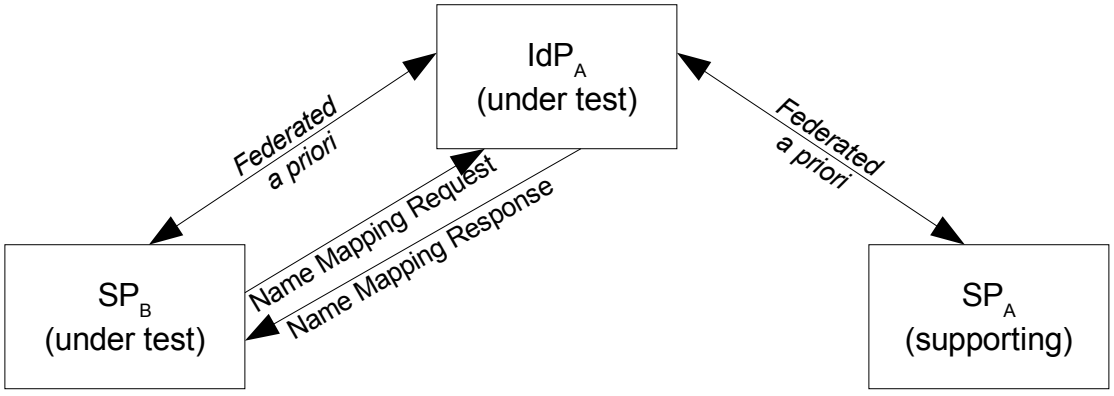
The IdP Proxy feature requires two IdP implementations and one SP implementation. If we have teams A and B, the following diagram depicts the roles of the test participants, assuming that IdP_A and SP_B are the implementations under test:



This configuration requires that team B is able to supply an IdP implementation to act as the target. If this is not feasible, then another team must be assigned.

3.3.2. Name Identifier Mapping Feature

The name identifier mapping feature requires that an IdP provide an indirect reference for a principal at SP_A in response to a request from SP_B. Assuming again that teams A and B are testing IdP_A and SP_B, it is necessary for the principal to federate her identity at both SP_B and SP_A with IdP_A. This can be depicted as follows:



This configuration requires team A to provide an SP implementation and federate an identity for the principal at SP_B. If this is not feasible then an SP from another team must be assigned.

3.3.3. Test Procedures

Step #	Code	Feature	IdP Extended	SP Extended
1	META	Metadata exchange		
	Proxy			
2	PRX-PC0	ProxyCount = 0 (proxy disallowed)	MUST	MUST
3	SSO-ANY	Web SSO any profile	MUST	MUST
4	PRX-NOPC	ProxyCount missing (proxy allowed)	MUST	MUST
5	SSO-ANY	Web SSO any profile	MUST	MUST
6	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST
7	PRX-PC1	ProxyCount = 1 (proxy allowed)	MUST	MUST
8	SSO-ANY	Web SSO any profile	MUST	MUST
9	SLO-ASP	SLO (SP-initiated) – Any Profile	MUST	MUST
	Name Mapping			
10	ENC-ID	EncryptedID		
11	NFMT-PERS	Name ID Formats = Persistent		
12	SSO-ANY-B	Web SSO any profile (with Second SP)		
13	SLO-AIDP	SLO (IdP-initiated) – Any Profile	MUST	MUST
14	MAP-REQ	NameIDMappingRequest	MUST	MUST
15	MAP-RSP	NameIDMappingResponse	MUST	MUST

Table 4 Extended SAML Modes test procedures

The test procedures for the SAML Extended modes are shown in table 4. Note that the `<IDPList>` element is not used in this context to direct the selection of a target IdP since this is not required by [SAMLCore]. The only normative requirement is that the `<IDPList>` is carried forward in the proxy chain.

3.4. SAML Authority and Requester Modes

The SAML Authority and Requester modes are summarized in the matrix in Table 5.

Feature	***SAML Authentication Authority***	***SAML Attribute Authority***	***SAML Authorization Decision Authority***	***SAML Requester***
Authentication Query, SOAP	MUST	OPTIONAL	OPTIONAL	OPTIONAL
Attribute Query, SOAP	OPTIONAL	MUST	OPTIONAL	OPTIONAL
Authorization Decision Query, SOAP	OPTIONAL	OPTIONAL	MUST	OPTIONAL
Request for Assertion by Identifier, SOAP	MUST	MUST	MUST	OPTIONAL
SAML URI Binding	MUST	MUST	MUST	OPTIONAL

Table 5 SAML Authority and Requester matrix from [SAMLConf] (Copyright © OASIS Open 2005. All Rights Reserved).

The testing procedures for these modes are collected together in Table 6, though there is not much direct overlap. Note that there are several configuration settings that must be observed to correctly exercise these modes.

3.4.1. Authentication Authority

The overall concept of the testing of the Authentication Authority is to create several different assertions using different authentication contexts defined in Authentication Contexts. Then these are queried using the query terms (“exact”, “better”, “maximum”, “minumum”) and a reference authentication context.

3.4.2. Attribute Authority

The testing sequence involves acquiring all attributes for a subject, and then restricting by attribute name and/or value. Encrypted attributes are also exercised.

3.4.3. Authorization Decision Authority

We define Resource URIs for use in the <AuthzDecisionQuery>:

1. “never” - the subject is never authorized for access
2. “maybe” - the subject is authorized if it is a “particular” subject
3. “always” - the subject is is always authorized

3.4.4. Requester Profile

SAML makes no provision a SAML Requester to create a valid `<Subject>` with which to invoke a SAML responder. In implementations where Web SSO is also supported, it is possible to extract the required information (e.g. a `<NameID>`) from an assertion for use in invoking a SAML Authority. However, for “stand-alone” SAML Requesters that do not support Web SSO, it may be necessary to exchange the required identifier information out-of-band.

3.4.5. Test Procedures

The table below lists the test steps for each of the SAML Authority modes and the SAML Requester mode.

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Step #	Code	Feature	SAML Authentication Authority	SAML Attribute Authority	SAML Authorization Decision Authority	SAML Requester
	Authentication Authority					
1	AC-ONE	ac:classes:[not TWO – FOUR]				
2	NFMT-PERS	Name ID Formats = Persistent				
3	REQ-SESS	Establish Session (e.g. via Web SSO)				
4	AC-FOUR	ac:classes:Password				
5	REQ-SESS	Establish Session (e.g. via Web SSO)				
6	AC-EXACT	AC Comparison = “exact”				
7	SEC-PBA	Preemptive HTTP Basic Auth				
8	AUTHN-QRY	Authentication Query, SOAP	MUST	OPTIONAL	OPTIONAL	OPTIONAL
9	AC-BET	AC Comparison = “better”				
10	AC-TWO	ac:classes:PreviousSession				
11	AUTHN-QRY	Authentication Query, SOAP	MUST	OPTIONAL	OPTIONAL	OPTIONAL
12	AC-MIN	AC Comparison = “minimum”				
13	AUTHN-QRY	Authentication Query, SOAP	MUST	OPTIONAL	OPTIONAL	OPTIONAL
14	AC-MAX	AC Comparison = “maximum”				
	Attribute Authority					
15	AQ-NONE	AttributeQuery, No Attributes				
16	ATT-QRY	Attribute Query, SOAP	OPTIONAL	MUST	OPTIONAL	OPTIONAL
17	AQ-NAME	AttributeQuery, Attribute Named				
18	ATT-QRY	Attribute Query, SOAP	OPTIONAL	MUST	OPTIONAL	OPTIONAL
19	AQ-VALUE	AttributeQuery, Attribute Value				
20	ATT-QRY	Attribute Query, SOAP	OPTIONAL	MUST	OPTIONAL	OPTIONAL
21	ENC-ATT	EncryptedAttribute				
22	AQ-NAME	AttributeQuery, Attribute Named				
23	ATT-QRY	Attribute Query, SOAP	OPTIONAL	MUST	OPTIONAL	OPTIONAL
	Authorization Decision Authority					
24	SEC-PBA	Preemptive HTTP Basic Auth				
25	RSRC-NEVER	AuthzQuery Resource=never (never permitted)				
26	AUTHZ-QRY	Authorization Decision Query, SOAP	OPTIONAL	OPTIONAL	MUST	OPTIONAL
27	RSRC-MAYBE	AuthzQuery Resource=maybe (permit if auth match)				
28	AUTHZ-QRY	Authorization Decision Query, SOAP	OPTIONAL	OPTIONAL	MUST	OPTIONAL
29	RSRC-ALWAYS	AuthzQuery Resource=always (always permitted)				
30	AUTHZ-QRY	Authorization Decision Query, SOAP	OPTIONAL	OPTIONAL	MUST	OPTIONAL
	SAML URI Binding					
31	SEC-PBA	Preemptive HTTP Basic Auth				
32	ID-QRY	Request for Assertion by Identifier, SOAP	MUST	MUST	MUST	OPTIONAL
33	SEC-PBA	Preemptive HTTP Basic Auth				
34	SAML-URI	SAML URI Binding	MUST	MUST	MUST	OPTIONAL

Table 6 SAML Authority and Requestor test procedure steps

4. Testing Checklist

This form must be completed for each complete test run. Both parties to the test must agree to the indication of pass/fail for each feature tested and sign each copy of the form. A copy of the form will go to each testing party and the original will be kept on record by the LCRT.

The product name is simply an identifier; it does not have to be the public name of the product.

IDP Tester	
Product Name	
Version (major.minor)	
Implementation Type(s)	IDP IDP Extended
Company	
Contact Name	
Contact Phone	
Contact Email	
Signature (after testing)	

SP Tester	
Product Name	
Version (major.minor)	
Implementation Type(s)	SP Basic SP Complete SP Extended
Company	
Contact Name	
Contact Phone	
Contact Email	
Signature (after testing)	

LECP Tester	
Product Name	
Version (major.minor)	
Company	
Contact Name	
Contact Phone	
Contact Email	
Signature (after testing)	

LCRT Representative	
Contact Name	
Signature (after testing)	

5. References

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