



SIF Test Harness
User Manual:
SIF 2 Enabled Applications

April 2012

V1.0

Contents

- Testing (SIF 2 Enabled Application Test Harness).....3
- Introduction3
- Accessing.....3
- Locating3
- Understanding Expectations4
- What Your Product Offers4
- Login15
- The Exception15
- Test Session16
- Submitting Results17
- Further Assistance17

Testing (SIF 2 Enabled Application Test Harness)

Introduction

The key to any certification is demonstrating mastery, so it should be no surprise that this holds true for SIF Certified Products. The SIF Association makes available to all its members the SIF Test Harness for both informal testing and testing in order to acquire a certification. This chapter will walk you through all the steps in testing your product.

Accessing

In order to use the Test Harness you must first secure a login to the SIF Community Site by following the directions found here: <http://www.sifassociation.org/us/community.asp>

Locating

The second incarnation of the SIF Test Harness can be found at:

<http://compliance.sifinfo.org/sifcompliance/home.jsp>

Once there you will be presented with many Test Suites for your use.

	SIF 2 Enabled Application	2.2-1
	SIF 2 Enabled Application	2.3-1
	SIF 2 Enabled Application	2.4-1

Only Test Suites with a SIF logo in the first column may be used for formal certification testing.

Understanding Expectations

Once you make your selection, there are several components to testing that you need to pay attention to.

<http://compliance.sifinfo.org/sifcompliance/productStandard.jsp?id=SIF+2+Enabled+Application+2.3-1>

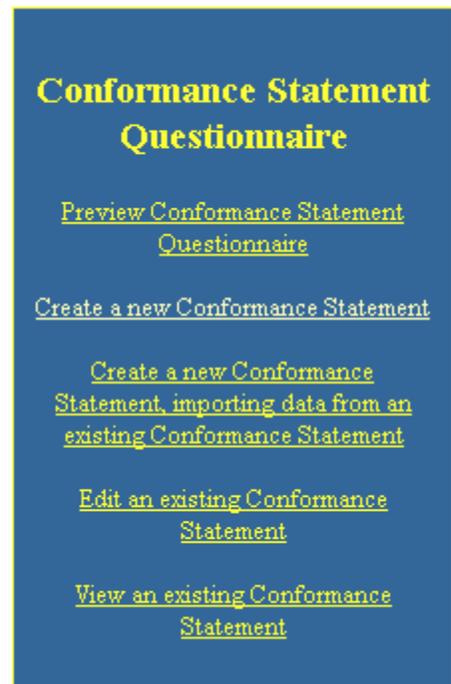


The Product Standard is the requirements above and beyond the specification that your product must adhere to in order to become certified.

What Your Product Offers

While there is a core SIF Infrastructure that all products must comply with, there are many choices to be made for: supported infrastructure components, completely optional technologies, objects and elements that are supported. These valid choices must be represented in fair testing of your software, so you must disclose these to the Test Harness. In addition this information will become public knowledge once your product is certified in order to inform customers of your software's SIF capabilities.

To do this, you must complete and submit a Conformance Statement Questionnaire (CSQ) which also carries critical branding and versioning information. In order to create a CSQ use the controls pictured here (note: they are located on the bottom left of the Test Suites front page). While the optional elements you declare support for are not required to appear in your data objects during testing, remember that: you warranty these capabilities and failing to disclose elements that you do support may result in loss of sales.



<http://compliance.sifinfo.org/sifcompliance/CSQEditor/new.jsp?csq=SIF+2+Enabled+Application&version=2.3-1>

SIF 2 Enabled Application (2.3-1) Conformance Statement

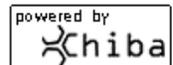
*Note to submitter: This conformance statement questionnaire (CSQ) contains a series of questions that need to be answered. Please complete **ALL** the fields in the questionnaire to produce a conformance statement for your product. Your completed conformance statement should be submitted as input to the test suite and it will be forwarded to the Certification Authority along with your test results. Please ensure that you use the current version of the questionnaire (available on the certification website) for your submission. See the Guide to SIF Certification for more information. Please note that all information in this conformance statement will appear on the public register of certified products, except for the Extra Information for Testing.*

Revision History:

Version	Date	Change History
2.3-1	March 21, 2009	This is the first release of the SIF 2 Enabled Application (2.3) Conformance Statement.

Begin

* - required | ? - help



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Consider reading the introductory text at least once.

1. Submitter Information ?

Organization:*

SIF Association

Author:*

John W. Doe

We may attempt to contact the author if problems arise.

2. Product Information

Application Name:*	<input type="text" value="Student Contacts Collector"/>
Application Version:*	<input type="text" value="1.x"/>
Application Vendor:*	<input type="text" value="SIF Association"/>
Agent Name:	<input type="text" value="Student Subscriber"/>
Agent Version:	<input type="text" value="1.x"/>
Agent Vendor:	<input type="text" value="SIF Association"/>

Suite Products



Note: The Versions here must match those in the Certification Agreement and should reflect your company's plans for long term support changes in version support require retesting and the associated additional fee.

3. Testing Environment



Test Suite Name:*

SIF 2 Enabled Application Test Suite

Version Number:*

2.3-1

Specification Version:*

2.3



Application Version
tested:*

1.2

Agent Version tested:

1.1



Operating System:*

Windows 7

Software Components:

Java 6
Apache Tomcat 6
MSSQL 2008



Hardware
Environment*

2.4 GHz Intel Core 2 Duo
4 GB 1067 MHz DDR3

This information helps others know rough requirements for running your software.

5. Characterization of the product's implementation-dependent behavior

Transport Support

Protocol*

SIF HTTPS SIF HTTP

Mode Support

Mode*

Push Pull

HTTPS Support

Which SSL versions does your application support for initiating connections to the ZIS?*

TLS 1.0 SSL 3.0 TLS 1.0 negotiated using an SSL 2.0 hello SSL 3.0 negotiated using an SSL 2.0 hello

If your application supports Push mode, which SSL versions can your agent accept when receiving incoming connections from the ZIS?

Note: If you are experiencing trouble getting SSL/TLS working correctly we provide a utility to help at: <http://compliance.sifinfo.org/sslhello/>

Push: An agent that supports push mode provides a network service that the ZIS uses to contact the agent whenever it has a message for it.

Pull: The agent that supports pull mode can be strictly a client; it uses a particular message to retrieve messages out of its queue on the ZIS.

Security

SIF Authentication Level Support

Authentication Level

- 0 - No authentication required and the sender **does not** have to submit a certificate.
- 1 - A valid certificate **must** be presented.
- 2 - A valid certificate from a trusted certificate authority **must** be presented.
- 3 - A valid certificate from a trusted certificate authority **must** be presented and the CN field of the certificate's subject entry **must** match the host, which is originating the message.

Is your agent capable of returning client certificates (authentication level 1-3)?*

Yes No

If your agent ever explicitly requests authentication levels 1-3 of other agents at delivery time, which authentication levels might be explicitly requested?

1 2 3

If your agent authenticates server certificates returned by the ZIS, which authentication levels might be required?

1 2 3

If your agent supports Push mode and your agent ever requires a client certificate from the ZIS, which authentication levels might be required?

Note: In the SIF Zone, every agent to agent message is dispatched to and routed by the Zone Integration Server (ZIS). It therefore may not be enough to demand a high level of encryption and security on any message sent to the ZIS. You may optionally demand the same level of security on the connection between the ZIS and every partner agent to which your message is being dispatched. This is done by setting the Authentication Level (above) and the Encryption Level (below).

SIF Encryption Level Support

Encryption Level

- 0 - No encryption required
- 1 - Symmetric key length of at least 40 bits
- 2 - Symmetric key length of at least 56 bits
- 3 - Symmetric key length of at least 80 bits
- 4 - Symmetric key length of at least 128 bits

Which encryption levels is your agent capable of supporting in SIF HTTPS?*

0 1 2 3 4

If your agent ever explicitly requests encryption levels of other agents at delivery time, which encryption levels might be required?

0 1 2 3 4

Which encryption levels might your agent require from a ZIS in SIF HTTPS?*

0 1 2 3 4

Message Validation

Is your application capable of performing XML validation on incoming messages?*

Yes No

Error Handling

If a SIF_Ack is returned with any type of error category other than a transport error, does the application stop trying to send the message (delete or inactivate the message) in order to avoid a potential deadlock condition?*

Yes No

Buffer Size

Minimum SIF_MaxBufferSize (in bytes):*

Maximum SIF_MaxBufferSize (in bytes):*

Note: Under Error Handling, “Yes” represents proper behavior.

MaxBufferSize: SIF agents receive data response messages of various sizes based upon the requests for data they issue. In order to prevent a response message from overrunning a recipient’s buffer, the response is broken into multiple packets before the requesting agent receives it. This means, during registration, the recipient must provide the maximum buffer size it can accept.

Unicode Support

Does your agent support Unicode (e.g. it does not map back and forth between Unicode and a local character set)?*

Yes No

HTTP Compression

If your Agent is capable of sending compressed HTTP, which compression algorithms can it send in HTTP requests and return in HTTP responses?



If your Agent is capable of receiving compressed HTTP, which compression algorithms can it receive in HTTP requests and responses?



Note: This information must be accurate in order to ensure interoperability. For further details about filling out this section accurately you should see the infrastructure section/document of the version your agent is written to.

The table below is used to capture the types of SIF data your agent/application supports, and the way in which it uses that data to interoperate with other SIF Certified applications.

For each row:

The first column represents the name of a SIF data object.

Data can be queried and responded to. The next three columns indicate, for this object, whether your application/agent does either or both.

When the data for an object changes, or when it is desired to change that data, an event for the object type can be published, whereupon the event will be sent to all agent/applications which had previously subscribed. The next set of columns indicate whether your application will publish or subscribe (or do both) to such events for this object type, and is further divided into the three types of events (so for example your agent may only publish an event when a new object of this type is created).

The final column indicates that your application provides a facility to align its data with the data in the zone. This can be done through a series of queries and is a critical feature for subscribers, utilized whenever your application is brought into the zone.

StudentPersonal	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
StudentPicture	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Object	Provides	Responds	Requests	Publishes Events			Processes Events			Imports/Synchronizes
				Adds	Changes	Deletes	Adds	Changes	Deletes	
StudentPlacement	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
StudentRecordExchange	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery							<input type="checkbox"/>
StudentRecordPackage	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery							<input type="checkbox"/>
StudentResponseSet	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
StudentSchoolEnrollment	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	SIF_Query SIF_ExtendedQuery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Note: This information is also critical for those considering your product.

The table below is the most detailed part of the CSQ. It provides the level of detail necessary to flag interoperability issues between two SIF Certified applications (as for example if one or more optional elements in an object is needed by Application A, but not supplied by Application B).

7. Element Matrix 

StudentSchoolEnrollment 

Element/Attribute	Supplies	Processes	Requires	SIF_Query Support	SIF_ExtendedQuery Support
@RefId		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
@StudentPersonalRefId		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
@SchoolInfoRefId		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
@MembershipType		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
@TimeFrame		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
@SchoolYear		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EntryDate		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EntryType		<input type="checkbox"/>	<input type="checkbox"/>		
EntryType/Code		<input type="checkbox"/>	<input type="checkbox"/>		
EntryType/OtherCodeList		<input type="checkbox"/>	<input type="checkbox"/>		
EntryType/OtherCodeList/OtherCode		<input type="checkbox"/>	<input type="checkbox"/>		
EntryType/OtherCodeList/OtherCode/@Codeset		<input type="checkbox"/>	<input type="checkbox"/>		
GradeLevel		<input checked="" type="checkbox"/>	<input type="checkbox"/>		
GradeLevel/Code		<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Note: Optional elements are not required to appear during testing, however they are validated when they do appear.

8. Extra Information for Testing ?

Agent ID (SIF_SourceId):

Optional Functionality	Supported?
Agent invokes Selective Message Blocking (SMB) upon receiving a SIF_Event	<input type="radio"/> Yes <input checked="" type="radio"/> No
Agent sends SIF_Ping	<input type="radio"/> Yes <input checked="" type="radio"/> No
Agent sends SIF_Provision	<input checked="" type="radio"/> Yes <input type="radio"/> No
Agent sends SIF_Sleep	<input checked="" type="radio"/> Yes <input type="radio"/> No
Agent sends SIF_Wakeup	<input checked="" type="radio"/> Yes <input type="radio"/> No
Agent sends SIF_GetZoneStatus	<input checked="" type="radio"/> Yes <input type="radio"/> No
Agent requests SIF_ZoneStatus	<input type="radio"/> Yes <input checked="" type="radio"/> No
Agent processes SIF_ZoneStatus events	<input checked="" type="radio"/> Yes <input type="radio"/> No
Agent sends SIF_GetAgentACL	<input checked="" type="radio"/> Yes <input type="radio"/> No
Agent requests SIF_AgentACL	<input type="radio"/> Yes <input checked="" type="radio"/> No

Note: For further details about filling out this section accurately you should see the infrastructure section/document of the version your agent is written to.



Conformance Statement Editor

Your Conformance Statement has been generated.

Note: Use the link to download the conformance statement you just created.

Login

<h3>Compliance Testing</h3>			
<h4>SIF Association Members</h4>			
Conformance Statement	Username	Password	2.3-1m
<input type="text" value="C:\Users\John\Downloads\2_3_C"/> <input type="button" value="Browse..."/>	<input type="text" value="jdoe"/> forgot?	<input type="password" value="....."/> forgot?	<input type="button" value="Start"/>

Now return to the front page of the selected Test Suite with our CSQ and credentials.

The Exception

<h3>SIF 2 Enabled Application (2.3-1) Testing</h3>
<hr/>
Agent ID <input type="text" value="StudentContactCollector"/>
<hr/>
<i>The following options may be used both in certification and non-certification sessions to work around non-compliance in underlying technologies or pending SIF issues.</i>
<input checked="" type="checkbox"/> If your product supports TLS 1.0 but does not or does not typically support DSA certificates in non-testing installations, you may click here to omit tests surrounding support for TLS 1.0's mandatory cipher suite, TLS_DHE_DSS_WITH_3DES_EDE_CBC_SHA.

Support of the mandatory TLS 1.0 cipher suite has (in practice) proven to be unnecessary; therefore we allow it to go untested.

Test Session

Help Problems?

SIF HTTPS Info **AGENT CONFIGURATION** **SESSION CONTROLS**

If your product needs to establish a trust with test harness certificates, they are available below. For more information about SIF HTTPS support in the test harness, click [here](#).

A [RSA Certificate](#)
[DSA Certificate](#)

PRODUCT CLAIMS

Please refer to your [conformance statement](#) to review claims.

AGENCY STATUS

Click [here](#) for calculated/expected Agent status.

ZIS Info

You can complete the bulk of your testing using a single HTTPS URL for the Zone (or HTTP URL in non-certification sessions). If your Agent supports a variety of SSL protocols and SIF_EncryptionLevels and your Agent cannot demonstrate those capabilities using a HTTPS URL where all protocols/SIF_EncryptionLevels combinations are available, separate HTTPS URLs for each of your supported combinations are available. To pass the applicable AgentSendsX tests, simply send a single message (e.g. SIF_Register) to each URL. The HTTPS URL that supports all protocols/SIF_EncryptionLevels in your Zone is:

C

```
hTtpS//eOmPllAncE.sifINFO.ORG:8452
/A202B2704DE911E1BD3FD804DF5A5BEEA202B2714DE911E1BD3F8BCE432F4DF7%10uY_DpgoKZ
%20%F5-%71P%BT%84%7m%64%65-R%3%40%9%40%AB%0%K%5E%v%w%60%7%3d-
```

TEST SUITE STATUS All Categories Status
Show

REMAINING	SUCCESSFUL	FAILED
<p>D</p> <ul style="list-style-type: none"> AgentPullMessage AgentReceivesEventInPullM... AgentReceivesNon23Event AgentReceivesNon23Respor... AgentReceivesResponseInFu... AgentReceivesStudentPerson... AgentReceivesStudentPerson... AgentReceivesStudentSchool... AgentReceivesStudentSchool... AgentRegistersPullModeCryp... AgentRequestsStudentPerson... 	<p>D</p> <ul style="list-style-type: none"> InvalidAgentMessages InvalidAgentTransportMess... 	

QUEUE

E

LOG

F

most recent first chronological

ID	Agent	Date	Method	URL	Message
2	StudentContactCo...	2012-02-02 17:02:44:92	HTTPS	A287621248E911E1BD3FD804DF5A5BEEA202B2714DE911E1BD3F8BCE432F4DF7%10uY_DpgoKZ%20%F5-%71P%BT%84%7m%64%65-R%3%40%9%40%AB%0%K%5E%v%w%60%7%3d-	SIF_Ack (SIF_AgentACL)
1	Agent281292504DE...	2012-02-02 17:02:44:85	HTTPS	A28A72048E911E1BD3FD804DF5A5BEEA202B2714DE911E1BD3F8BCE432F4DF7%10uY_DpgoKZ%20%F5-%71P%BT%84%7m%64%65-R%3%40%9%40%AB%0%K%5E%v%w%60%7%3d-	SIF_Register

SESSION CONTROLS

Your session will remain available until approximately:

Thu Feb 02 21:02:46 EST 2012

extended each time this page is refreshed below or via your browser. If you will not be actively using this page and require the session to be available for a longer period of time, you may extend the session's expiration time below.

Refresh

G

TESTING CONTROLS

When your agent is configured, registered and ready, you may use the options below to send your agent the necessary messages to complete your testing. Feel free to do this as many times as needed before ending your session. Should your agent subsequently require additional/individual messages, you may also use the corresponding controls that follow. Just ensure that you have sent the complete set of messages at least once, as it tests not only success cases, but also error handling cases and special conditions.

Send Messages **H**

SIF EVENT CONTROLS

AccountingPeriod
Add

SIF REQUEST CONTROLS

AccountingPeriod
SIF_Query

SIF SYSTEMCONTROL CONTROLS

SIF_Ping

STUDENT RECORDS EXCHANGE

StateProvinceId:
LocalId:
StudentPersonalRefId:

- A. The encryption information is one of the most common areas to cause confusion; please read the provided document. Our certificates are self-signed and need to be trusted.
- B. The Agent Configuration information is based on responses previously given to us. If they do not accurately reflect your software, please edit your CSQ.
- C. The ZIS Info is based on the SIF Association's ZIS which has configured a Zone for your Test Session; you must configure your software to work with it.

- D. Once you fail one of these tests the only way to satisfy it is to start over with a new Test Session.
- E. While there is nothing wrong with seeing a few messages in the queue, this provides a clear view if messages are backing up.
- F. This is the log of the ZIS, pay attention to the source when analyzing these messages (your software is not alone in this zone).
- G. Two things to note here. The first is that in order to monitor your testing progress you will have to refresh your browser. Second, once you are done with your testing you will need to “End” the Test Session in order to submit the results.
- H. This control can be used to cause all actions that need to be initiated by the Test Harness to begin; however it cannot control your software, so even after handling all of this properly some tests may remain. Be sure to know which actions in your software will trigger what SIF traffic!
- I. From here on down are controls that allow you to micromanage what comes from the Test Harness, enabling you to address one test at a time.

Submitting Results

SIF 2 Enabled Application Test Suite (2.3-1)

Summary
 You passed 2 of 32 tests (6.25%)
 30 test(s) were not completed.

Certification
 You have completed a test session. If you would like to formally submit your test session for certification, use the link below.
 Note that at this time your test session has not been successfully completed, with only 2 of 32 tests passed. Unless you feel the test harness is in error, it is not recommended that you submit this test session for certification.
[Submit Test Session to Certification Authority](#)

FAILED TESTS

INCOMPLETE TESTS

- AgentFullMessage
- AgentReceivesEventInFullMode
- AgentReceivesNon2.3Event
- AgentReceivesNon2.3Response
- AgentReceivesResponseInFullMode
- AgentReceivesStudentPersonalEvent
- AgentReceivesStudentPersonalResponse
- AgentReceivesStudentSchoolEnrollment
- AgentReceivesStudentSchoolEnrollment
- AgentRegistersFullModeOverHTTPS
- AgentRequestsStudentPersonal

SUCCESSFUL TESTS

- NoInvalidAgentMessages
- NoInvalidAgentTransportMessages

LOG

ID	Source	Date	Status	Details
1	Agent281292504DE	2012-02-02 17:02:44.25	HTTP	AC0AAT1040E931E1E1B07DF8A01B92A90 SIF_Register
2	StudentContactCo...	2012-02-02 17:02:44.92	HTTP	AC0FE21240E931E1E1B07DF8A01B92A90 SIF_Ack (SIF_AgentACL)
3	Agent281292504DE	2012-02-02 17:02:47.43	HTTP	AC266E0140E931E1E1B07DF8A01B92A90 SIF_Provision
4	StudentContactCo...	2012-02-02 17:02:47.46	HTTP	A25ECC0240E931E1E1B07DF8A01B92A90 SIF_Ack (0)

If you would like to submit your results for certification, use the link at the bottom of the Certification section. Please “Close” the Test Session when you are done.

Further Assistance

Test Harness FAQ: <http://compliance.sifinfo.org/sifcompliance/docs/faq.html>

Official Email: TestResults@sifassociation.org