

HEALTH IT
STANDARDS TESTING INFRASTRUCTURE

NIST Immunization Test Suite Tutorial

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NIST

National Institute of Standards and Technology

NIST Immunization Test Suite Tool Overview

Tool Key Capabilities

SOAP Envelope Testing	The SOAP Envelope Testing ensures SOAP envelopes are correctly formed, validating the conformance of the messages to the requirements in the SOAP and Transport specifications. <i>This is not used for ONC certification testing.</i>
SOAP Connectivity Testing	The SOAP Connectivity Testing evaluates valid SOAP connectivity, the ability to send and receive SOAP messages, validating the conformance of the messages to the requirements in the SOAP and Transport specifications. <i>This is not used for ONC certification testing.</i>
Context-Free Testing	Provides a simple and convenient method for testing immunization messages structure and most vocabulary. Validation is performed on messages with or without a SOAP wrapper.
Context-Based Testing 2015 ONC Certified	Context-based testing provides, in addition to HL7 Context-free validation, message validation associated with a given test script that includes data for a specific test scenario where the context is known by the validation tool. It also validates messages with a SOAP wrapper.
Isolated Testing	Isolated testing provides a simulated operational environment that allows validation at the functional level in addition to context and context-free testing, where Test Agents simulate the functions of an EHR-S or IIS.

Environment: The NIST IZ Test Suite is currently only accessible as a web application.

Supported Browsers: Firefox, Chrome, Safari, and IE 9+

URL: <http://hl7v2-iz-r1.5-testing.nist.gov>

Tool Access and Navigation

Objectives

- Establish access to the NIST IZ Test Suite tool (web application).
- Locate the Navigation Bar.
- Locate relevant documentation.
- Locate the Test Suite.

Informative Reference

- The NIST IZ Test Suite is accessible through the following URL:
<http://hl7v2-iz-r1.5-testing.nist.gov>.
- This displays the NIST IZ Test Suite's Welcome Screen, which is indicated by the '**Home**' tab.
- The '**Documentation**' tab contains relevant downloadable User, Documentation, Resources/Artifacts, and Notations.

- 1 The tool's Navigation Bar is located along the top. The options are '**Home**', '**SOAP Envelope**', '**SOAP Connectivity**', '**HL7 Context free**', '**HL7 Context-based**', '**Isolated Testing**', '**Documentation**', '**About**', and '**Contact Us**'.

The Welcome Screen is located under the '**Home**' tab.

- 2 Scrolling down the Welcome Screen gives other useful information, such as the NIST IZ Test Suite:
- Components;
 - Focus of Each Testing Stage;
 - Testing Stage Benefits; and
 - Testing Types.

NIST Immunization Test Suite 1.1.1

Home SOAP Envelope SOAP Connectivity HL7 Context-free HL7 Context-based Transport Settings Documentation About Preferences

Welcome to the NIST Immunization Test Suite!

Supporting

The NIST Immunization Test Suite supports a broad range of testing in support of the Immunization Community, including transport, messaging (content), and functional.

- CDC SOAP Validation
- HL7 V2.5.1 Immunization Message Implementation Guide Release 1.5
- EHR and IIS Functional Capabilities (2016)
- 2015 ONC Health IT Certification

2015 ONC Health IT Certification

Start ONC Testing

The NIST Immunization Test Suite is the test tool used for certifying ONC 2015 Edition Health IT Modules. The capability used for ONC Certification can be accessed by navigating to the ONC 2015 Test Plan found on the HL7 Context-based tab. The ONC 2015 Test Plan is used to certify Modules for the §170.315(f)(1) Transmission to Immunization Registries ONC criterion.

Have a Question?

A Google Group (HL7v2 Immunization Testing) has been established for discussion/questions about the Implementation Guide, testing tool, and testing issues. No membership is required. A Google account is required for posting. **Note:** The same Google Group is being used for submitting questions/comments related to the 2014 and 2015 Editions of the NIST Certification Test Tool and general Immunization related topics. **When**

Supported Browsers

The following browsers are supported:

- Chrome (Recommended)
- Firefox (Recommended)
- Safari
- IE 9 and 10

SOAP Envelope Start Testing

SOAP Connectivity Start Testing

HL7 Context-free Start Testing

HL7 Context-based Start Testing

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HL7 SOAP Envelope Walk Through Tool Demonstration

SOAP Envelope Testing Work Flow

1) Select SOAP Envelope Test Case

- Open the IZ IIS Test Suite using the following link: <http://hl7v2-iz-r1.5-testing.nist.gov/iztool/#/home>.
- On the Navigation bar, click on the **'SOAP Envelope'** to display the available and testable Test Cases.
- Within the **'Test Cases'** window, select a target Test Case (expand/collapse selection using the arrows)
- Review the **'Test Story'**, **'Message Content'**, and **'Testing Instructions'** for the selected Test Case.
- Click **'Load Test Case'** to confirm Test Case selection and proceed with testing.

2) Upload SOAP Envelope Test Message and Execute Validation

- Assure the **'Validation'** tab is selected.
- Upload test message by inserting message data into the **'SOAP Envelope'** field (either paste or by local file selection).
- If no message data is available, select the **'Load Example'** option to populate generic prepopulated message content.
- Once satisfied with message content, select **'Validate'** to validate the message against the Test Case specifications.
- The **'SOAP Validation Result'** field displays information concerning the test.

3) Review Test Validation Results and Generate Report

- Data elements are populated within the **'Tree Representation'** field.
- For a message data element/segment, clicking the arrows expands/collapses the content
- The message line number is highlighted for each data element/segment.
- The **'SOAP Validation Result'** field displays **'Errors'**, **'Warnings'**, **'Alerts'**
- This field is searchable and provides the precise **'Line'**, **'Path'**, and **'Description'** for each notification.
- Clicking the **'Report'** tab generates a detailed summary of the validation test executed for the Test Case.
- The **'Message Validation Report'** can be saved locally in PDF, MS Word, XML, or HTML by selecting **'Save As'**.

SOAP Envelope Testing Work Flow

The screenshot displays the NIST Health IT Standards Testing Infrastructure web application. The top navigation bar includes links for Home, SOAP Envelope (selected), SOAP Connectivity, HL7 Context-free, HL7 Context-based, Transport Settings, Documentation, About, and Preferences. Below the navigation bar, the 'Test Selection' tab is active, showing a list of test cases under the 'Generic' category. The 'SOAPENV_1_Min_Test' is highlighted. A callout box labeled '1' points to the 'SOAP Envelope' tab in the navigation bar, stating 'Select the 'SOAP Envelope' tab.' A callout box labeled '2' points to the 'SOAPENV_1_Min_Test' in the list, stating 'Select a Test Case'. A callout box labeled '3' points to the 'Test Story' tab in the right-hand pane, stating 'The 'Test Story' is displayed once a Test Case is selected..'. The right-hand pane shows the 'Test Story' for 'Generic - SOAPENV_1_Min_Test', including a description and test objectives. A callout box at the bottom left states: 'The available Test Cases are listed within the 'Test Cases' selection area. They are grouped by the action/role of the System Under Test by 'Generic', 'Receiver', and 'Sender'.'

1 Select the 'SOAP Envelope' tab.

2 Select a Test Case

3 The 'Test Story' is displayed once a Test Case is selected..

The available Test Cases are listed within the 'Test Cases' selection area. They are grouped by the action/role of the System Under Test by 'Generic', 'Receiver', and 'Sender'.

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings Documentation About Preferences

Test Selection Test Execution

Test Cases

- Generic
 - SOAPENV_1_Min_Test
- Sender(Initiator)
 - SOAPENV_1_ConnectivityMessage_Requ
 - SOAPENV_2_SubmitSingleMessage_Requ
- Receiver(Responder)
 - SOAPENV_1_ConnectivityMessage_Respc
 - SOAPENV_2_SubmitSingleMessage_Respc
 - SOAPENV_3_MessageTooLarge_Fault
 - SOAPENV_4_Security_Fault
 - SOAPENV_5_UnsupportedOperation_Fault
 - SOAPENV_6_Unknown_Fault

TestCase: Generic - SOAPENV_1_Min_Test

Test Story Message Content Testing Instructions

SOAP Message

SOAP Part

SOAP Envelope

SOAP Header

Action	http://tempuri.org/IService/MyOperation
ActivityId	43ffa660-a0c6-4249-bb36-648b73a06213

SOAP Body

MyOperation	MyValue
	Some Value

Download Package Load Test Case

4 Selecting 'Message Content' displays the XML 'Content'.

7 Selecting 'Load Test Case' confirms Test Case selected and allows testing to proceed.

5 Selecting 'Testing Instructions' displays the step-by-step testing 'Instructions'.

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings Documentation About Preferences

Test Selection Test Execution

Test Cases

- Generic
 - SOAPENV_1_Min_Test
- Sender(Initiator)
 - SOAPENV_1_ConnectivityMessage_Requ
 - SOAPENV_2_SubmitSingleMessage_Requ
- Receiver(Responder)
 - SOAPENV_1_ConnectivityMessage_Respc
 - SOAPENV_2_SubmitSingleMessage_Respc
 - SOAPENV_3_MessageTooLarge_Fault
 - SOAPENV_4_Security_Fault
 - SOAPENV_5_UnsupportedOperation_Fault
 - SOAPENV_6_Unknown_Fault

TestCase: Generic - SOAPENV_1_Min_Test

Test Story Message Content Testing Instructions

Download Package Load Test Case

```

graph TD
    SUT[System Under Test] -- 1 --> SM[SOAP Message]
    T1[Tester] -- 2 -->|Copy & Paste| SM
    SM -- 3 --> V[Validation]
    TR[Technical Requirements: SOAP 1.2] --> V
    V -- 4 --> VR[Validation Report]
    VR -- 5 --> T2[Tester]
  
```

6 Click 'Download Package' to save a .docx copy of the the Test Case components to use for referencing off-line.

The downloaded 'Test Package' document includes information for only the specific Test Case selected.

SOAP Validation

The screenshot displays the NIST SOAP Validation tool interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Transport Settings, Documentation, and About. A secondary bar shows Test Selection, Test Execution, and the current test case: SOAPENV_1_Min_Test. The main area is titled 'Generic / SOAPENV_1_Min_Test' and features 'Validation' and 'Report' tabs. On the left, a 'SOAP Tree' panel shows a hierarchical view of the message structure, including Envelope, Header, Action, ActivityId, and Body. Callout 9 points to this tree, stating it is populated by message content segments within the 'SOAP Envelope' field and can be expanded or collapsed. The central 'SOAP Envelope' field contains an XML message. Callout 8 points to the 'Load Example' button, explaining that an HL7 message with a SOAP wrapper can be loaded here. Callout 10 points to the 'Validate' button, indicating that clicking it performs message validation against the test case. Below the XML field, the 'SOAP Validation Result' section shows counts for Errors, Warnings, and Alerts, all currently at zero. Callout 11 points to this section, explaining that it displays the outcome of validation testing, including the type and quantity of notifications and metadata links to specific message lines/segments.

8 Insert a HL7 message with a SOAP wrapper in the 'SOAP Envelope' field. This can be loaded using the folder button or populated with sample data by clicking 'Load Example'.

9 The 'Tree Representation' is populated by message content segments within the 'SOAP Envelope' field. Up/down arrows expand and collapse sections.

10 With message inserted, click 'Validate' to perform message validation against the Test Case.

11 The 'SOAP Validation Result' field displays the outcome of validation testing of the message against the Test Case. The type and quantity of notifications are represented within the respective field. Additional metadata links notifications to specific message lines/segments.

SOAP Validation Report

The screenshot shows the SOAP Validation Report application interface. The top navigation bar includes links for Home, SOAP Envelope (1), SOAP Connectivity (2), HL7 Context-free (3), HL7 Context-based (4), Transport Settings (T), Documentation, About, and Preferences. Below this, the 'Test Execution' tab is active, showing the 'Current Test Case: SOAPENV_1_Min_Test'. The main content area displays the 'Generic / SOAPENV_1_Min_Test' path. A callout (12) points to the 'Report' tab, stating: 'To review the executed validation testing results for a Test Case, click the 'Report' tab.' Below the tabs, there are icons for saving the report in PDF, Word, XML, and HTML formats. A callout (13) points to these icons, stating: 'The 'Message Validation Report' can be saved locally for offline viewing by clicking the an icon. The savable formats are PDF, Microsoft Office Word, XML, and HTML.' The 'Message Validation Report' section shows a summary table with the following data:

Summary	
Errors	0
Affirmatives	0
Warnings	0
Ignored	0
Alerts	0

A callout (14) points to the summary table, stating: 'The 'Message Validation Report' provides granularity for auditing and accountability purposes with Date and Time of test execution.' The footer contains the NIST logo, Application Information (Date: 04/01/2016 13:39:51, Application Version: 1.2.0, Resource Bundle Version: 1.2.0), Supported Browsers (Firefox, Chrome, Safari, IE 9 and 10), and External Links (Disclaimer, Privacy/Policy, Website Administrator). The ITL logo is also present.

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HL7 SOAP Connectivity Walk Through Tool Demonstration

SOAP Connectivity Testing Work Flow

1) Select SOAP Connectivity Test Case

- Open the IZ IIS Test Suite using the following link: <http://hl7v2-iz-r1.5-testing.nist.gov/iztool/#/home>
- Click '**SOAP Connectivity**' to display the available and testable Test Cases.
- Establish which role ('**Sender**' or '**Receiver**') to use for the System Under Test
- Within the '**Test Cases**' window, select a target Test Case (expand/collapse selection using the arrows)
- Review the '**Test Story**', '**Message Content**', and '**Testing Instructions**' for the selected Test Case.
- Click '**Load Test Case**' to confirm Test Case selection and proceed with testing.

2) Execute Test Case and Establish Connectivity

- For Sender Test Cases:
 - Initiate the test by clicking on the '**Receive**' button and view the data displayed in the '**Assigned Sender Information**' fields.
 - Your sending system must use this data to build the SOAP test message that it will transmit to the Tool
 - Click '**Start**' to initiate the test (the Tool will wait to receive a test message from the SUT to validate, and return a response message)
- For Receiver Test Cases:
 - The '**Outgoing SOAP Envelope**' field is populated with test data (elements with value "???" indicate configuration is required by user)
 - Configure by clicking the '**Configure**' button and filling in all the '**Receiver Configuration Panel**' fields. Click '**Save**' when finished
 - Click '**Send**' to initiate the test (the Tool will transmit a test message to the SUT and validate the response message)

3) Validate Message and Review Test Log

- For the Sender Test Cases, once the test has been started the 'Time Elapsed' tracks how long the tool has been waiting for a test message from the SUT (when 30 seconds has expired, the message and connection attempt will time out and must be restarted)
- The '**Console Log**' displays the active live connection and transmission of data between the Sending and Receiving systems.
- Once the message transmission has ended, both '**Incoming SOAP Envelope**' and '**Outgoing SOAP Envelope**' will be populated.
- The '**Validation Results**' fields for both the '**Incoming SOAP Envelope**' and '**Outgoing SOAP Envelope**' displays '**Errors**', '**Warnings**', and '**Alerts**'.
- This field is searchable and provides the precise '**Line**', '**Path**', and '**Description**' for each notification.

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SOAP Connectivity Tests

Sender

SOAP Connectivity Tests

Sender (initiator)

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

- This test evaluates the capability of a sender (initiator) technology to connect to a specified web service - a NIST Test Agent representing an Immunization Information System (IIS) - and transmit a message that conforms to the SOAP 1.2 standard and CDC WSDL 1.0 which is used to verify the accessibility of the IIS.

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

NIST Immunization Test Suite 1.3.0

Home | 1 SOAP Envelope | 2 SOAP Connectivity | 3 HLT Context-free | 4 HLT Context-based | 5 Transport Settings | Documentation | About | Preferences

Test Selection | Test Execution

1 Select **Sender Test Case**

Test Cases

- Sender (Initiator)
 - SOAPCON_1_BasicMessage_ConnectivityRequest**
 - SOAPCON_3_SubmitSingleMessage_Message
- Receiver (Responder)
 - SOAPCON_1_BasicMessage_ConnectivityResponse
 - SOAPCON_2_SubmitSingleMessage_Response
 - SOAPCON_3_FaultDetection-Generation_AuthenticationFault
 - SOAPCON_4_FaultDetection-Generation_MessageSizeFault
 - SOAPCON_5_FaultDetection-Generation_UnsupportedOp_Fault

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

Download Package | Load Test Case

2 Select **'Load Test Case'**

Test Story | Message Content | Test Data Specification | Testing Instructions

Description

This test evaluates the capability of a sender (initiator) technology to connect to a specified web service - a NIST Test Agent representing an Immunization Information System (IIS) - and transmit a message that conforms to the SOAP 1.2 standard and CDC WSDL 1.0 which is used to verify the accessibility of the IIS.

Test Objectives

The sender (initiator) technology will demonstrate the ability to:

- Connect to a web service endpoint specified by the NIST test tool and transmit a SOAP message with a Body element containing:
 - the element connectivityTest, as defined in the CDC WSDL 1.0
 - user-chosen, non-empty, conformant string value for the child element of connectivityTest: echoBack

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Application Information
Date: 05/05/2016 15:14:02, Application Version: 1.3.0 Resource Bundle Version: 1.3.0

Supported Browsers
Firefox, Chrome, Safari, IE 9 and 10

External Links
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SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

NIST Immunization Test Suite 1.4.0-SNAPSHOT

[Home](#) [1 SOAP Envelope](#) [2 SOAP Connectivity](#) [3 HL7 Context-free](#) [4 HL7 Context-based](#) [Documentation](#) [About](#) Hello Guest

[Test Selection](#) [Test Execution](#) Current Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

Sender(Initiator) / SOAPCON_1_BasicMessage_ConnectivityRequest


Please collect and validate your incoming/outgoing messages in the [1 SOAP Envelope](#)

4 Connect your system to the NIST Endpoint (below) and transmit a *connectivityTest* message to the Tool
After receiving a response message from the Tool, select 'Soap Envelope' (above) to validate all messages sent & received

3 Optionally select **End Point** to view the tool's SOAP WSDL

Configuration Information

Field	Value	Comments
NIST Endpoint	http://hit-dev.nist.gov:8098/iztool/ws/iisService	This is the destination's endpoint
NIST Endpoint WSDL	http://hit-dev.nist.gov:8098/iztool/ws/iisService.wsdl	This is the destination's wsdl



National Institute of Standards and Technology
U.S. Department of Commerce

Application Information


Date: 08/08/2016 16:23:40, Application Version: 1.4.0-SNAPSHOT Resource Bundle Version:1.4.0-SNAPSHOT

Supported Browsers

Firefox, Chrome, Safari, IE 9+

External Links

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NIST 15

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

The screenshot displays the NIST SOAP Connectivity Tests (Sender) interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Documentation, and About. The current test case is **SOAPENV_1_ConnectivityMessage_Request**.

The interface is divided into two main sections: **Validation** and **Report**. The **Validation** section contains a **SOAP Tree** on the left and a **SOAP Envelope** editor on the right.

The **SOAP Tree** shows the structure of the message:

- Envelope
 - Header
 - Body
 - connectivityTest
 - echoBack

The **SOAP Envelope** editor displays the XML code:

```
1 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header />
3   <Body>
4     <connectivityTest xmlns="urn:cdc:iisb:2011">
5       <echoBack>Hello world!</echoBack>
6     </connectivityTest>
7   </Body>
8 </Envelope>
```

Annotations highlight key features:

- 5** Paste the message sent/received that you wish to validate (points to the SOAP Envelope editor).
- 6** 'Validate' Sent Message (points to the **Validate** button in the SOAP Envelope editor toolbar).

The bottom section shows the **SOAP Validation Result** with 0 Errors, 0 Warnings, and 0 Alerts.

SOAP Connectivity Tests

Sender (Initiator)

Test Case: **SOAPCON_3_SubmitSingleMessage_Message**

- This test evaluates the capability of a sender (initiator) technology to connect to an immunization information system (IIS) and to generate and transmit a message conforming to the SOAP 1.2 standard and CDC WSDL 1.0 that may be used for transporting an HL7 message to an immunization information system (IIS).

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

The screenshot displays the NIST Immunization Test Suite interface, version 1.4.0-SNAPSHOT. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Documentation, and About. The current test case is SOAPCON_1_BasicMessage_ConnectivityRequest. The left sidebar shows a tree view of test cases under Sender(Initiator) and Receiver(Responder). The main content area displays the details for the selected test case, SOAPCON_3_SubmitSingleMessage_Message, including a description, test objectives, and buttons for downloading the package and loading the test case. Two callout boxes highlight the steps: '1 Select Sender Test Case' and '2 Load Test Case'.

NIST Immunization Test Suite 1.4.0-SNAPSHOT

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based Documentation About Hello Guest

Test Selection Test Execution Current Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

Test Cases

- Sender(Initiator)
 - SOAPCON_1_BasicMessage_ConnectivityRequest
 - SOAPCON_3_SubmitSingleMessage_Message**
- Receiver(Responder)

1 Select **Sender Test Case**

Test Case: SOAPCON_3_SubmitSingleMessage_Message

Download Package Load Test Case

2 'Load Test Case'

Test Story Message Content Test Data Specification Testing Instructions

Description

This test evaluates the capability of a sender (initiator) technology to connect to an immunization information system (IIS) and to generate and transmit a message conforming to the SOAP 1.2 standard and CDC WSDL 1.0 that may be used for transporting an HL7 message to an immunization information system (IIS).

Test Objectives

The body of the SOAP message must contain:

- the element submitSingleMessage, as defined in the CDC WSDL 1.0
- the hl7Message element set to a single HL7 v2 message (properly formatted for inclusion within XML, e.g. CDATA)
- the tool-assigned string values for the username, password and facilityID elements

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

NIST Immunization Test Suite 1.3.0

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based T Transport Settings Documentation About Preferences

Test Selection Test Execution Current Test Case: SOAPCON_3_SubmitSingleMessage_Message

Sender(Initiator) / SOAPCON_3_SubmitSingleMessage_Message

← Incoming SOAP Envelope Validate Download Receive

1

3 Select 'Receive'

✓ Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

→ Outgoing SOAP Envelope Validate Download

1

✓ Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------



Application Information

Date: 05/05/2016 15:14:02, Application Version: 1.3.0 Resource Bundle Version: 1.3.0

Supported Browsers

Firefox, Chrome, Safari, IE 9 and 10

External Links

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SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

Receiver Configuration Panel

NOTE: Once the tool displays the elapsed time waiting for the message, your system (the SUT) may transmit the submitSingleMessage Request message

Details of the incoming test message from the SUT, and the outgoing response message from the Tool will be displayed in the Log panel (below)

NIST Immunization Test Suite 1.3.0

Receiver Configuration Panel [Close]

Start Stop
Time Elapsed (seconds)

5 Select 'Start'

Assigned Sender Information

Username
vendor_4371_44
This is the username assigned to you to use in your message

Password
vendor_4371_44
This is the password assigned to you to use in your message

FacilityID
vendor_4371_44
This is the facilityID assigned to you to use in your message

Endpoint
http://hl7v2-iz-r1.5-testing.nist.gov/iztool/ws/ilsService

WSDL
http://hl7v2-iz-r1.5-testing.nist.gov/iztool/ws/ilsService.wsdl

Log

4 The **Assigned Sender Information** (Username/Password/FacilityID) must be used by your system (the SUT) to construct the SOAP message that it transmits to the Tool's Endpoint (shown below)

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

NIST Immunization Test Suite 1.1.1

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings 6 Documentation 7 About Preferences

Test Selection Test Execution Current Test Case: SOAPCON_3_SubmitSingleMessage_Message

Sender(Initiator) / SOAPCON_3_SubmitSingleMessage_Message

Incoming SOAP Envelope

Validate Download Receive

```
1 <env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope"
2   xmlns="http://www.w3.org/2003/05/soap-envelope">
3   <env:Header/>
4   <env:Body>
5     <submitSingleMessage xmlns="urn:cdc:iisb:2011">
6       <username>vendor_16_992</username>
7       <password>vendor_16_992</password>
8       <facilityID>vendor_16_992</facilityID>
9     </submitSingleMessage>
10    <hl7Message>
11      MSH|^~\&|Test EHR Application|X68|NIST Test Iz Reg|201207010822||VXU^V04^VXU_V04|NIST-IZ-00
12      PID|1|MR-99922^NIST MPI^MR|Montgomery^Lewis^^^^^L|20010821|M
13      ORC|RE|IZ-783276^NDA
14      RXA|0|1|20110215||118^HPV^CVX|999|||01^Historical information - source unspecified^NIP001
15    </hl7Message>
16  </env:Body>
17 </env:Envelope>
```

Validation Result

0 Errors 0 Warnings 0 Alerts 0 Affirmatives

Path	Description	Line
------	-------------	------

Outgoing SOAP Envelope

Validate Download

```
1 <env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope">
2   <env:Header/>
3   <env:Body>
4     <ns2:submitSingleMessageResponse xmlns:ns2="urn:cdc:iisb:2011">
5       <ns2:return>MSH|^~\&|NIST_SENDER_APP|NIST_SENDER_FAC|GENERIC|20120701082240-0500||ACK^V04^A
6       MSA|AA|NIST-101004144709009|</ns2:return>
7     </ns2:submitSingleMessageResponse>
8   </env:Body>
9 </env:Envelope>
```

Validation Result

0 Errors 0 Warnings 0 Alerts 0 Affirmatives

Path	Description	Line
------	-------------	------

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Application Information Date: 03/11/2016 17:11:28, Application Version: 1.1.1 Resource Bundle Version: 1.1.1

Supported Browsers Firefox, Chrome, Safari, IE 9 and 10

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View the **Validation Result** panes for the displayed **Incoming SOAP Envelope** (i.e. the message transmitted from the SUT) and the displayed **Outgoing SOAP Envelope** (the response message from the Tool)

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SOAP Connectivity Tests

Receiver

SOAP Connectivity Tests

Receiver (responder)

Test Case: **SOAPCON_1_BasicMessage_ConnectivityResponse**

- This test evaluates the capability of a receiver (responder) technology conforming to the SOAP 1.2 standard and CDC WSDL 1.0 to receive a request message from a sender (initiator) technology, and to generate and transmit an appropriate response message, in order to verify the accessibility of an Immunization Information System (IIS).

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

NIST Immunization Test Suite 1.4.0-SNAPSHOT

[Home](#) [1 SOAP Envelope](#) [2 SOAP Connectivity](#) [3 ☒ HL7 Context-free](#) [4 ☐ HL7 Context-based](#) [Documentation](#) [About](#) Hello Guest

[Test Selection](#) [Test Execution](#) Current Test Case: SOAPCON_3_SubmitSingleMessage_Message

Test Cases

▼ Sender(Initiator)

SOAPCON_1_BasicMessage_ConnectivityRequest

SOAPCON_3_SubmitSingleMessage_Message

▼ Receiver(Responder)

SOAPCON_1_BasicMessage_ConnectivityResponse

SOAPCON_2_SubmitSingleMessage_Response

SOAPCON_3_FaultDetection-Generation_Authenticati

1

Select **Receiver Test Case**

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

[Download Package](#) [Load Test Case](#)

Test Story

Message Content

Test Data Specification

Testing Instructions

Description

This test evaluates the capability of a receiver (responder) technology conforming to the SOAP 1.2 standard and CDC WSDL 1.0 to receive a request message from a sender (initiator) technology, and to generate and transmit an appropriate response message, in order to verify the accessibility of an Immunization Information System (IIS).

Test Objectives

The receiver (responder) technology will demonstrate the ability to:

- Receive a SOAP message with the Body element containing the element connectivityTest and corresponding child element echoBack, as defined in the CDC WSDL 1.0
- Transmit a SOAP response message to the sender (initiator) which contains
 - the element connectivityTestResponse as defined in the CDC WSDL 1.0
 - the child element return as defined in the CDC WSDL 1.0, with a string value containing the string received in the echoBack element in the request message

2

'Load Test Case'

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

The screenshot displays the SOAP Connectivity tool interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Documentation, and About. The current test case is SOAPCON_1_BasicMessage_ConnectivityResponse. The main area shows the Receiver(Responder) configuration for the test case. A callout box labeled '3' points to the 'Configure' button, stating: 'Select Configure to enter the Receiver Configuration Panel and input the SOAP Endpoint information for your system (SUT)'. Another callout box labeled '4' points to the 'Save' button in the Receiver Configuration Panel, stating: 'Click 'Save' when finished.' A third callout box labeled '5' points to the 'Send' button, stating: 'Select 'Send' to transmit a test message from the Tool to your receiving system (SUT)'. The Receiver Configuration Panel shows the Endpoint as 'SUT Endpoint'. The outgoing SOAP envelope is displayed in the left pane, showing a valid XML structure. The bottom section shows the Validation Result, with 0 Errors, 0 Warnings, 0 Alerts, and 0 Affirmatives.

Receiver(Responder) / SOAPCON_1_BasicMessage_ConnectivityResponse

Outgoing SOAP Envelope

Validate Download Configure Send

```
1 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header />
3   <Body>
4     <connectivityTest xmlns="http://hl7.org/hl7v2/soap:connectivityTest" id="iisb:2011">
5       <echoBack>Hello world!
6     </connectivityTest>
7   </Body>
8 </Envelope>
```

Select Configure to enter the Receiver Configuration Panel and input the SOAP Endpoint information for your system (SUT).

Select 'Send' to transmit a test message from the Tool to your receiving system (SUT)

Click 'Save' when finished.

Receiver Configuration Panel

Endpoint

SUT Endpoint

Save Cancel

Validation Result

0 Errors 0 Warnings 0 Alerts 0 Affirmatives

Path	Description	Line #
------	-------------	--------

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

The screenshot displays the NIST Immunization Test Suite interface for the test case **SOAPCON_1_BasicMessage_ConnectivityResponse**. The interface is divided into two main sections: **Outgoing SOAP Envelope** and **Incoming SOAP Envelope**, each with a **Validation Result** section below it.

Outgoing SOAP Envelope: The XML message is shown in a text area. Below it, the **Validation Result** section shows 0 Errors, 0 Warnings, 0 Alerts, and 0 Affirmatives. A table with columns **Path**, **Description**, and **Line** is present but empty.

Incoming SOAP Envelope: The XML response is shown in a text area. Below it, the **Validation Result** section shows 0 Errors, 0 Warnings, 0 Alerts, and 0 Affirmatives. A table with columns **Path**, **Description**, and **Line** is present but empty.

Arrows from a callout box point to the **Validation Result** sections of both the outgoing and incoming message areas.

Footer: The footer contains the NIST logo, application information (Date: 03/11/2016 17:11:28, Application Version: 1.1.1, Resource Bundle Version: 1.1.1), supported browsers (Firefox, Chrome, Safari, IE 9 and 10), external links (Disclaimer, Privacy/Policy, Website Administrator), and the ITL logo (Information Technology Laboratory).

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Once the Tool sends the test message to the SUT and a response is received, Validation occurs automatically. The results are displayed for both Outgoing and Incoming SOAP messages

SOAP Connectivity Tests

Receiver (responder)

Test Case: **SOAPCON_2_SubmitSingleMessage_Response**

- This test evaluates the capability of a receiver (responder) technology conforming to the SOAP 1.2 standard and CDC WSDL 1.0 to receive a SOAP request message (containing an HL7 message), and respond appropriately.

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

NIST Immunization Test Suite 1.3.0

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based Transport Settings Documentation About Preferences

Test Selection Test Execution Current Test Case: SOAPCON_3_SubmitSingleMessage_Message

Test Cases

- Sender(Initiator)
 - SOAPCON_1_BasicMessage_ConnectivityRequest
 - SOAPCON_3_SubmitSingleMessage_Message
- Receiver(Responder)
 - SOAPCON_1_BasicMessage_ConnectivityResponse
 - SOAPCON_2_SubmitSingleMessage_Response**
 - SOAPCON_3_FaultDetection-Generation_AuthenticationFault
 - SOAPCON_4_FaultDetection-Generation_MessageSizeFault
 - SOAPCON_5_FaultDetection-Generation_UnsupportedMsg_Fault

1

Select **Receiver Test Case**

Test Case: SOAPCON_2_SubmitSingleMessage_Response

Download Package Load Test Case

Test Story Message Content Test Data Specification Testing Instructions

Description

This test evaluates the capability of a receiver (responder) technology conforming to the SOAP 1.2 standard and CDC WSDL 1.0 to receive and respond appropriately.

Test Objectives

The receiver (responder) technology will demonstrate the ability to:

- Receive a SOAP message with the Body element containing submitSingleMessage, as defined in the CDC WSDL 1.0, and arbitrary conforming values for all child elements: username, password, facilityID, and hl7Message
- Transmit a SOAP response message to the sender (initiator) that contains the element submitSingleMessageResponse, as defined in the CDC WSDL 1.0 with the return child element containing a valid HL7 message

2

'Load Test Case'



Application Information

Date: 05/05/2016 15:14:02, Application Version: 1.3.0 Resource Bundle Version:1.3.0

Supported Browsers

Firefox, Chrome, Safari, IE 9 and 10

External Links

Disclaimer | Privacy/Policy | Website Administrator



SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

NIST Immunization Test Suite 1.3.0

[Home](#) [1 SOAP Envelope](#) [2 SOAP Connectivity](#) [3 HL7 Context-free](#) [4 HL7 Context-based](#) [5 Transport Settings](#) [Documentation](#) [About](#) [Preferences](#)

[Test Selection](#) [Test Execution](#) [Current Test Case: SOAPCON_2_SubmitSingleMessage_Response](#)

[Receiver\(Responder\)](#) / [SOAPCON_2_SubmitSingleMessage_Response](#)

→Outgoing SOAP Envelope

[Validate](#) [Download](#) [Configure](#) [Send](#)

```
1 <?xml version='1.0' encoding='UTF-8'?>
2 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
3   <Header />
4   <Body>
5     <submitSingleMessage xmlns="urn:cdc:iisb:
6       <username>???
```

3

Select 'Configure'

✓ Validation Result

0 Errors

0 Warnings

0 Alerts

0 Affirmatives

Path	Description	Line
------	-------------	------

←Incoming SOAP Envelope

[Validate](#) [Download](#)

```
1
```

✓ Validation Result

Errors

Warnings

Alerts

Affirmatives

Path	Description	Line
------	-------------	------

NIST

National Institute of Standards and Technology

U.S. Department of Commerce

Application Information

Date: 05/05/2016 15:14:02, Application Version: 1.3.0 Resource Bundle Version:1.3.0

Supported Browsers

Firefox, Chrome, Safari, IE 9 and 10

External Links

[Disclaimer](#) | [Privacy/Policy](#) | [Website Administrator](#)

ITL

INFORMATION TECHNOLOGY LABORATORY

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

The screenshot displays the NIST SOAP Connectivity Test interface. A modal window titled "Receiver Configuration Panel" is centered on the screen. It contains four input fields: "Username", "Password", "FacilityID", and "Endpoint". Each field has a small circular icon to its right, and a blue circle with the number "4" is positioned near the "Password" field. Below the "Endpoint" field are "Save" and "Cancel" buttons. A yellow callout box points to the "Password" field, containing the text: "Receiver Configuration Panel. Enter your system (SUT) SOAP Endpoint and the credentials (Username/Password/FacilityID) required for systems to transmit to your site. (The NIST Tool will use this information in order to build a submitSingleMessage message and transmit it to your system (SUT)). Press Save when finished." The background interface shows a "Test Selection" tab, a "Test Execution" tab, and a "Current Test Case: SOAPCON_2_SubmitSingleMessage_Response" section. Below this, there is an "Outgoing SOAP Envelope" section with a code editor showing XML. At the bottom, there are "Validation Result" sections with tabs for "Errors", "Warnings", "Alerts", and "Affirmatives".

Receiver Configuration Panel

Username
Password
FacilityID
Endpoint

SUT Endpoint

Save Cancel

Receiver Configuration Panel
Enter your system (SUT) SOAP Endpoint and the credentials (Username/Password/FacilityID) required for systems to transmit to your site. (The NIST Tool will use this information in order to build a *submitSingleMessage* message and transmit it to your system (SUT))
Press **Save** when finished.

Home SOAP Envelope SOAP Connectivity Hello Guest

Test Selection Test Execution Current Test Case: SOAPCON_2_SubmitSingleMessage_Response

Receiver(Responder) / SOAPCON_2_SubmitSingleMessage_Response

Outgoing SOAP Envelope

```
1 <?xml version='1.0' encoding='UTF-8'?>
2 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope" >
3   <Header />
4   <Body>
5     <submitSingleMessage xmlns="urn:cdc:iisb:2011">
6       <username>???

Validation Result



Errors Warnings Alerts Affirmatives



| Path | Description | Line # |
|------|-------------|--------|
|------|-------------|--------|


```

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

NIST Immunization Test Suite 1.3.0

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings Documentation About Preferences

Test Selection Test Execution Current Test Case: SOAPCON_2_SubmitSingleMessage_Response

Receiver(Responder) / SOAPCON_2_SubmitSingleMessage_Response

→ Outgoing SOAP Envelope

Validate Download Configure Send

```
1 <?xml version="1.0" encoding="UTF-8"?><Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header/>
3   <Body>
4     <submitSingleMessage xmlns="urn:cdc:iisb:2011">
5       <username>good</username>
6       <password>good</password>
7       <facilityID>1234</facilityID>
8       <hl7Message>MSH|^~\&amp;|Test EHR Application|X68||NIST Test Iz Reg|201207010822||VXU^V04^
9     </submitSingleMessage>
10  </Body>
11 </Envelope>
```

✓ Validation Result

0 Errors 0 Warnings 0 Alerts 0 Affirmatives

Path	Description	Line
------	-------------	------

← Incoming SOAP Envelope

Validate Download

```
1 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header/>
3   <Body>
4     <submitSingleMessageResponse xmlns="urn:cdc:iisb:2011">
5       <return>MSH|^~\&amp;||NIST Test Iz Reg|Test EHR Application|X68|20160816132256.056-0400||AC
6       MSA|AA|NIST-IZ-007.00
7     </return>
8   </submitSingleMessageResponse>
9   </Body>
10 </Envelope>
```

✓ Validation Result



0 Errors 0 Warnings 0 Alerts 0 Affirmatives

Path	Description	Line
------	-------------	------

Application Information
Date: 05/05/2016 15:14:02, Application Version: 1.3.0 Resource Bundle Version:1.3.0

Supported Browsers
Firefox, Chrome, Safari, IE 9 and 10

External Links
Disclaimer | Privacy/Policy | Website Administrator

5

Once the Tool sends the test message to the SUT and a response is received, Validation occurs automatically. The results are displayed for both Outgoing and Incoming SOAP messages