AEGIS

Developers Integration Lab (DIL)

User Guide, Version 2.8

7/17/2013

REVISION HISTORY

	Date	Description of Change
0.1	9/19/2011	Initial Release
1.0	11/13/2012	Released with Participant Information
1.1	11/20/2012	Defined new format and additional DIL information
2.0	11/27/2012	Publication and Release
2.1	12/10/2012	Updated Gateway Profile section to include instructions for new participants to notify DIL Support after registration so that Service Endpoints can be updated for testing.
2.2	1/14/2013	Updated for Release 2.2
2.3	1/21/2013	Final Review, Screenshot changes
2.4	2/13/2013	Additional Changes Made
2.5	2/28/2013	Additional Changes made to URLs
2.6	3/17/2013	Additional functionality added to the User Guide.
2.7	5/13/2013	Additional information on set up and UDDI Connection Information posted.
2.8	7/17/2013	Document revisions

TABLE OF CONTENTS

1.0 INTRODUCTION

Document Purpose

The purpose of this document is to describe the functionality available to a Participant user in the Developer Integration Lab (DIL) application. The document will describe how to utilize common functions within the DIL:

- New User Registration
- Set Up Test
- Test Execution
- Gateway Transactions
- Participant Info
- Gateway Profile
- Test Harness
- Lab Analyzer
- FAQ
- User Guide
- Change Password

The Download Certificates function is covered at a high level within this User Guide. The majority of the Certificate Download and Installation functionalities are covered here: Certificate Download and Install Instructions.

DIL Users

The DIL is intended for use by developers from various organizations including, but not limited to

- eHealth Exchange Participants
- Federal Partners
- Hospitals/Universities/Providers

System Requirements

- Internet Access
    - Compatible Browser (Please note that screen shots are included throughout this document. Your browser may display some of the images differently.)
        - Firefox
        - IE8
        - IE9
        - Google Chrome

- Safari

User Requirements

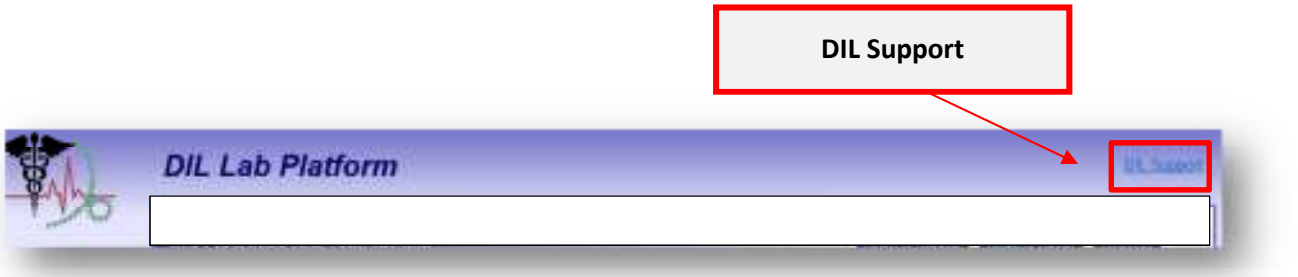
Prior to onboarding onto the DIL, the participant should have the following items ready for use:

	Item	Description	How to Obtain
1	OID / HCID	You will be required to input both an OID and Assigning Authority ID during the registration process.	Register for an OID here: http://www.hl7.org/oid/
2	Gateway Downloaded / Installed	A health IT gateway is required for testing interoperability. Ensure your Patient Discovery, Query for Document, and Retrieve Document endpoints are exposed.	You may download an Open Source Gateway here: http://www.connectopensource.org/ or use your own.
3	Valid Machine Name or IP Address	You will need the machine name or IP address later in establishing a secure handshake between the DIL and your system for testing.	Create a valid, simple test machine name you can remember and use, or know the IP address of the test machine. If you are using a machine name, you must have a DNS entry for this machine.
4	Patient Database	CONNECT comes with a small MPI out of the box. You will need this to enter the test patients.	Obtain a Patient Database / Master Patient Index (MPI)
5	Check Corporate Firewall Restrictions	You must allow your firewall to accept request and response messages from the following machines via port 443: dilhn000.dil.aegis.net dilhn001.dil.aegis.net dilhn002.dil.aegis.net dilhn003.dil.aegis.net dilhn004.dil.aegis.net dilhn005.dil.aegis.net dilhn097.dil.aegis.net dilhn098.dil.aegis.net dilhn099.dil.aegis.net For CRL checking, you open port 9345 for the machine ca.dil.aegis.net	Check with your System Administrator to ensure the DIL may send messages to your system if you are behind a firewall.
6	Obtain UDDI Connection Info File	The UDDI Connection File contains the endpoints for the DIL.	You may obtain an uddiConnectionInfo.xml configuration file by contacting DIL_Support@aegis.net.

Help

Various screens include access to the DIL online help documentation. The DIL online User Guide can be accessed from this icon:

For additional assistance, please contact DIL_Support@aegis.net or click the "DIL Support" hyperlink in the upper-right hand corner of any page within the DIL:



In addition, training and demonstration video is available for public viewing here: http://www.youtube.com/channel/UCLJWb9TvjoJuPnTEcj9MsOQ/videos.

The video outlines the basic steps of On Boarding and executing an initial set of tests. The video can be used in conjunction with this User Guide to help you get started in the DIL.

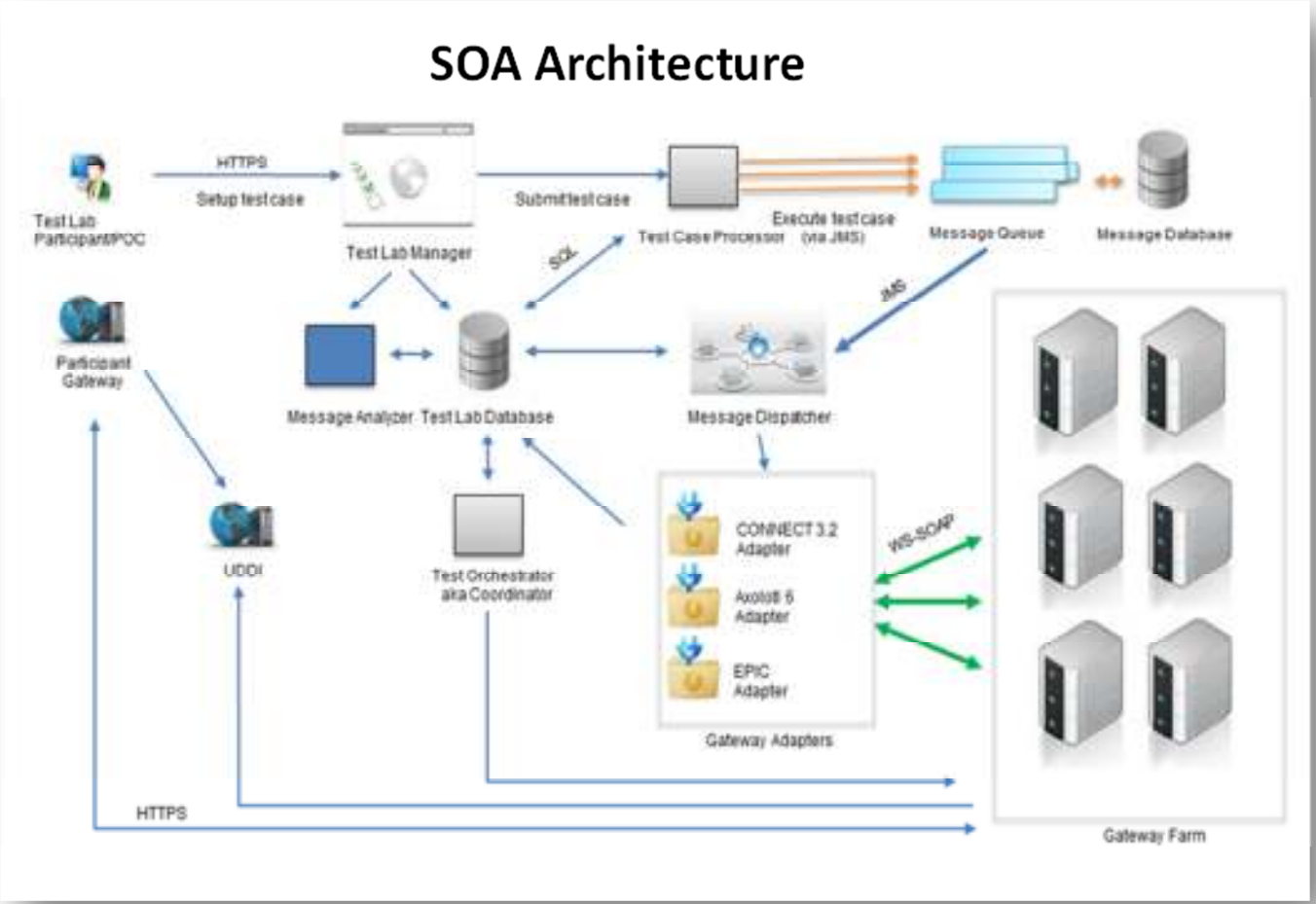
Background and Objectives

With the implementation of Meaningful Use Stage 2, a Healthcare provider must properly implement an Electronic Health Record (EHR) system and have it successfully exchange information or 'interoperate' within a Health Information Exchange (HIE) environment on the public internet. The healthcare organizations exchanging information over an HIE will operate as a 'node' on that network. These nodes may all use a different EHR vendor system, and in order for these systems to connect, an adapter and gateway layer must be developed and connected to the EHR vendor system to exchange healthcare information with another organization bi-directionally.

Facilitating the interoperability testing among these organizations manually is time-consuming and requires a lot of overhead. The Developers Integration Lab (DIL) provides a method for a participant to point their gateway endpoints to the DIL and begin service testing (Patient Discovery (PD), Query for Document (QD), Retrieve Document (RD), among other services) against multiple versions of gateways and corresponding adapters to ensure interoperability and qualify for meaningful use.

The DIL provides a platform for non-CONNECT gateway products to test eHealth Exchange and IHE Conformance and Interoperability with the Exchange (formerly NHIN) specifications or IHE Specification. The DIL seeks to provide a community approach to open source development contribution and integration which will not impact the CONNECT Development Team. It does so by providing independent and enhanced testing capabilities.

DIL SOA Architecture



The DIL utilizes a Service Oriented Architecture (SOA) implementation to connect multiple independent components, allowing a participant to run multiple tests against multiple types of gateways.

The **Message Dispatcher** provides a method to send a participant's message to the selected gateway to test against. The **gateway farm** is hosted within the DIL, sending and receiving SOAP based messages to validate interoperability.

All tests are recorded within a database as a historical reference point. At any time a participant can retrieve a test which occurred earlier in the testing cycle.

2.0 Participant Guide

Participant Registration

After the user obtains a valid certificate (shown below with the customary lock indicating secure https exchange of encrypted information) the user may register for a DIL Participant account. Only registered users may execute test cases within the DIL.

Key steps for accessing and completing the DIL Participant registration are outlined below.

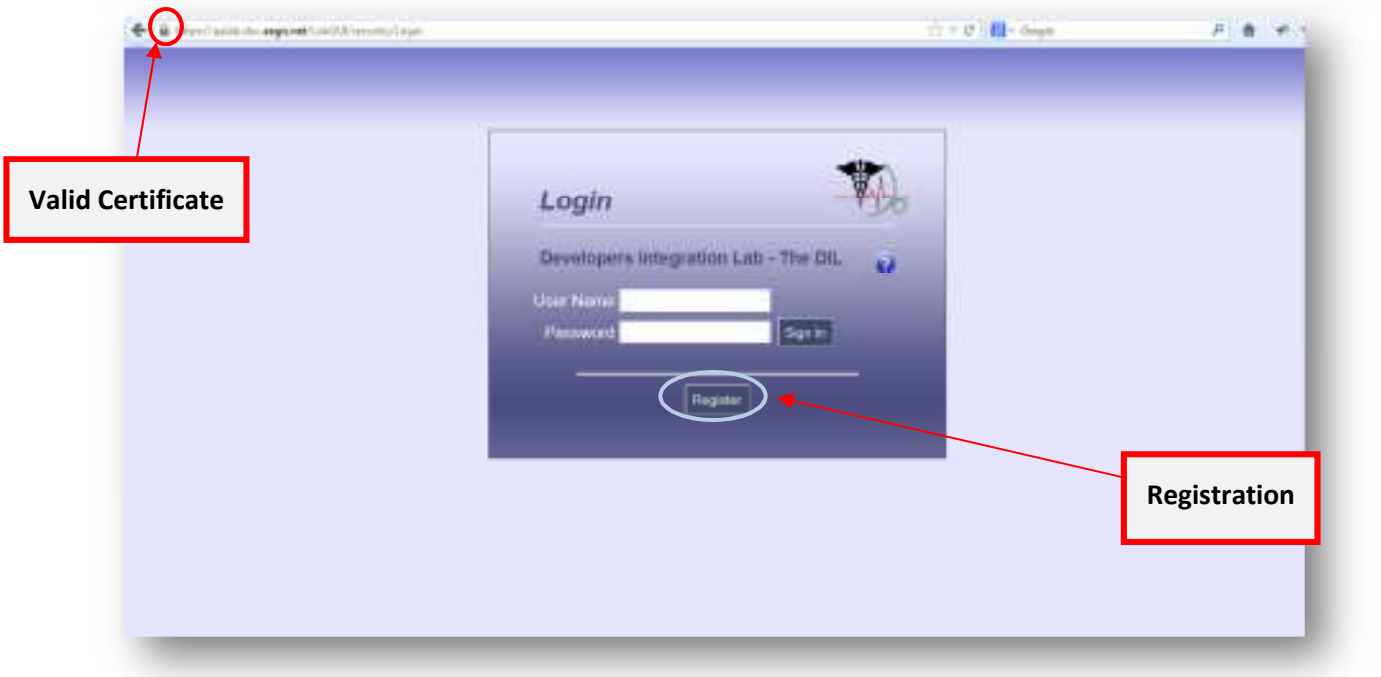
	Action	Details/Notes
1	Access the DIL environment	URL: https://lab.dil.aegis.net/ (see the *DIL Login Screen* below)
2	Enter a valid security code	1. On the Login page, click "Register" 2. Enter the security code presented 3. Click "Verify" If successful, the Participant registration page will display.

3	Enter Valid Participant Information	• **Account Name** = Create an Account Name (up to 256 characters). This will be the Participant's Log In ID (User ID) for the DIL. Special characters are not allowed in the Account Name.
		• **Account Password** = Create an Account Password. Note that the password must contain one upper case letter, one lower case letter, one special character (# or @) and should be at least 8 characters long.
		• **Participant Name** = Enter the Participant Name (up to 256 characters). This is the name that will be the Participant's screen name within the DIL.
		• **Community ID** = Enter your Home Community ID (HCID) in the OID format.
		• **Assigning Authority ID** = Enter the Assigning Authority ID (AAID) OID.
		• **Machine Name** = Enter a valid IP address (e.g., 100.01.01.01) or Machine Name (e.g. "machine.domain.com"). Note that the password for the DIL to access this machine will be the "machine name" entry to the left of the first period; e.g. "machine" or, in the case of an IP address, the numbers preceding the first period along with any trailing zeroes required to make a 6-character password, e.g. "100000".
		• **Gateway Description [Coming Soon!] =** enter a description of the type of gateway that will be used for testing, e.g., "Organization Gateway" or "CONNECT 3.2". This field is informational only.
		• **Contact Information**
		  ○ Contact Name (up to 256 characters)
		  ○ Contact Phone (format: XXX-XXX-XXXX)
		  ○ Contact Email
		• **Participant Attributes**

	Action	Details/Notes
		○ Specify if the Participant is an Initiator, Responder or both (by checking both boxes) ○ Specify if the Participant will allow SSN handling
4	Save Participant registration information	Click "Save" When "Save" is clicked, a confirmation message will display in a pop-up window. Click "OK" to confirm the registration. If the Participant registration is saved successfully, the Login page will display.

Screenshots

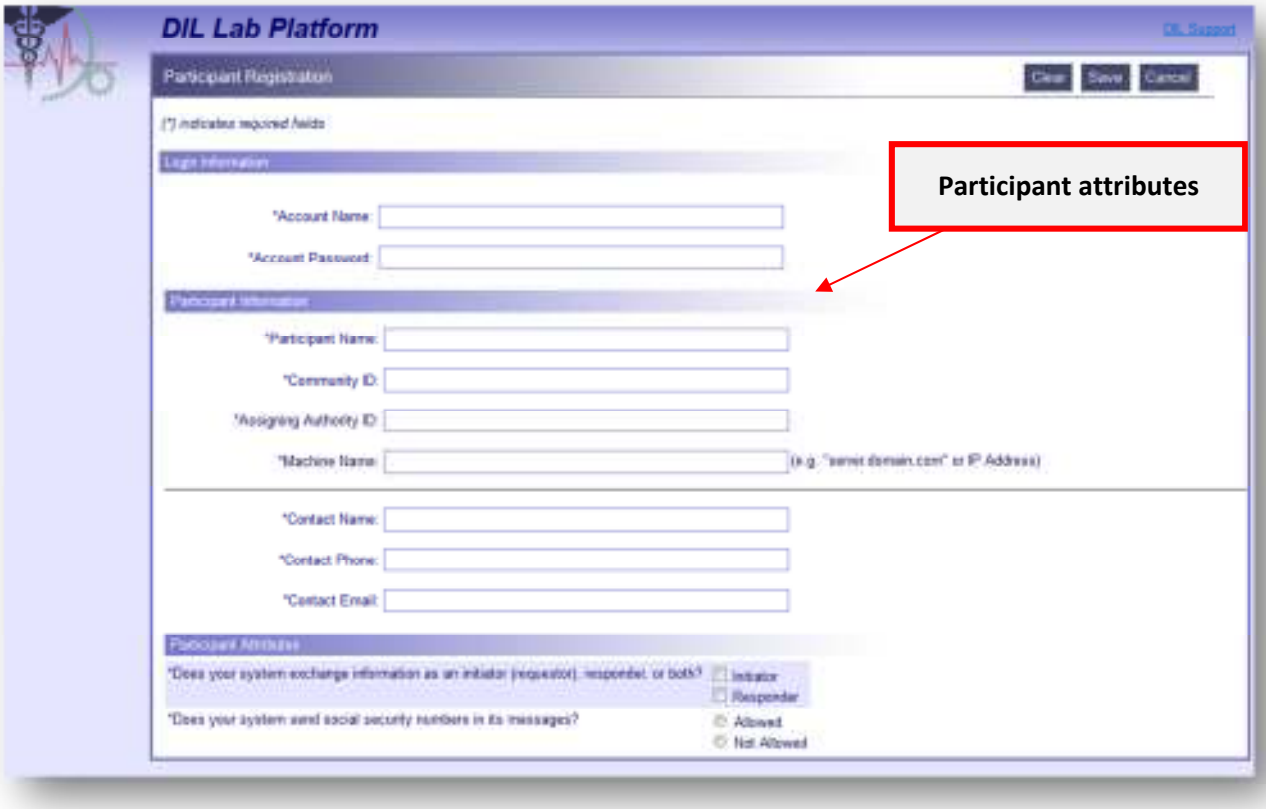
DIL Login Screen



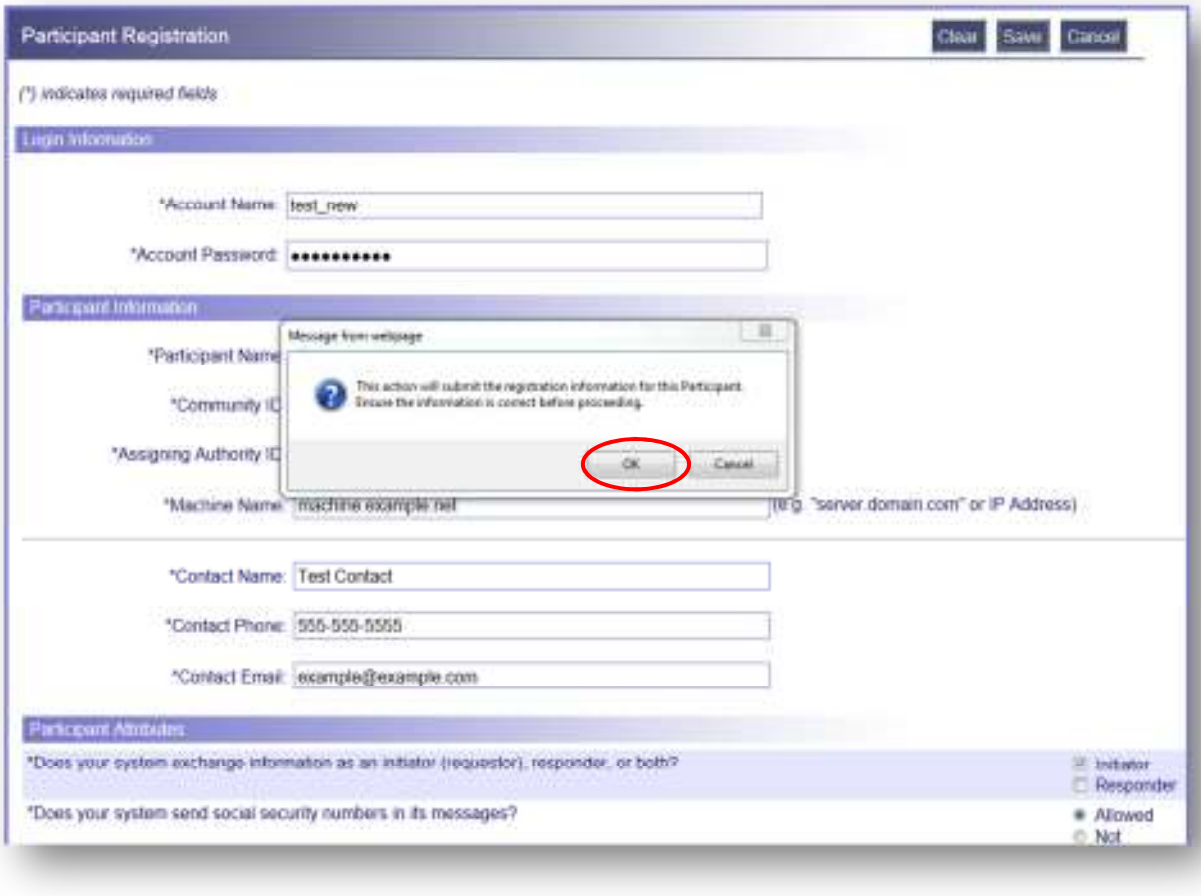
Invalid Security Code Entered

Enter Security Code and Verify

Participant Registration Entry Screen



Participant Registration Confirmation Pop-Up



Login

Now that the registration process is complete, you are ready to log into the DIL to set up and execute a test case. Enter the user name and password created during the registration process and click “Sign In”.

	Action	Details/Notes
1	Access the DIL environment	https://lab.dil.aegis.net/
2	Sign in to DIL	Enter DIL credentials • **User Name** = This is the Account Name created during the Participant registration process • **Password** = This is the Account Password created during the Participant registration process Click “Sign in”. Upon successful log in, the Dashboard screen will display.

Screenshots

DIL Login Screen

View Dashboard

Upon initial log in, the application will display the Participant's Dashboard. The Dashboard will display the Service Set selected from the Set Up Test screen which is described later in this document. The Dashboard will also display some information entered during the Registration process: Home Community ID, Assigning Authority ID and Machine Name. Also note that the specific endpoints for the connection are configured on the Gateway Profile screen which is described later in this document. These endpoints must be configured prior to executing any test cases.

Key functions available on the Dashboard screen are outlined below.

Action	Details/Notes
View Active Test Results Screen	Click on the name of the Service Set , e.g., "Patient and Document" in the screen shot below
Submit Service Set for Validation	Upon completion of executing the various testing scenarios within a service set, the user can submit the service set for validation to a validating body. When a service set is submitted for validation, a validating body representative will have access to the results. • Check the box next to the Service Set • Click "Save and Submit"

Action	Details/Notes
Change Service Sets	Upon completion of executing the various testing scenarios within a service set, the user can choose to select a different set service without submitting the prior service set for validation. Once a service set is closed, it cannot be submitted for validation. • Check the box next to the Service Set • Click “Save and Close”
Refresh	Click “Refresh” to see the most recent Service Set testing results

Screenshots

Participant Dashboard

Participant Info

The first section of this screen, “Connection Information”, shows the participant system’s addressing information. The second section, “Account Information,” displays the name, contact name, phone, and email. The “Participant Attributes” section, allows Users to set defaults for the test configuration attributes: Social Security Number (SSN) Handling, initiator vs. responder, document information, and SAML assertions. These attributes can vary per test case.

The Patient IDs for a specific service set must be mapped prior to activating the service set. If the Patients associated to the test cases in that service set have not been mapped, the user will receive an error message. A participant must ensure all patient demographic information within this screen is correlated within the testing organization’s system. These Participant Patient IDs can be entered in the text field under ‘Participant Patient ID’. This will allow for Patient Coorelation to occur and establish a connection with the DIL. Patient IDs must be established prior to executing any test cases within the DIL. This is required for proper participant setup and critical for successfully executing test cases and establishing a connection with the gateways installed in the DIL gateway farm.

Additional key functions available on the Participant Info screen are outlined below.

	Action	Details/Notes
1	Enter Participant Patient IDs	The DIL includes anonymous patient data for testing purposes. The Participant may assign a different Patient ID to each testing ID in order to facilitate testing. A participant will enter the Patient ID information to correlate with the DIL and provide methods to execute various service calls against individual Patient IDs. This information must be entered prior to executing a test case. Please see the screenshot below for additional details.

Please note that if a change to the Assigning Authority ID is required, an email request must be sent to DIL_Support@aegis.net. Please indicate the account name that requires updating as well as the new AAID.

Screenshots

DIL Participant Information Screen

Entering Participant Patient IDs

Manage Document Metadata

The Manage Document Metadata function allows the Participant to attach one or more documents' metadata to a Patient ID. Participants may also delete existing attachments using this function. If Document Metadata entry in the DIL is required for a specific test case, the test case will specify as such. Otherwise, this configuration is not required.

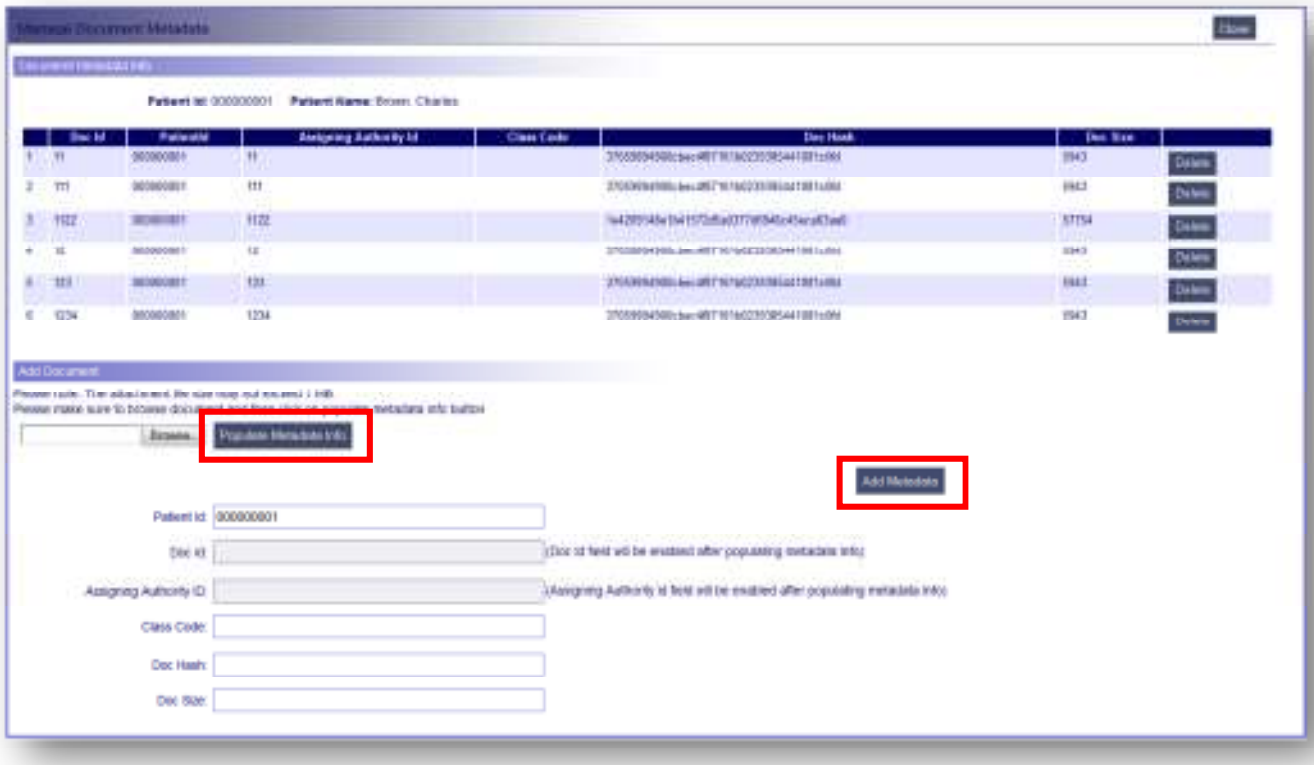
Key steps for adding an attachment to a Patient ID are outlined below.

	Action	Details/Notes
1	Access the Manage Document Metadata screen	• Click the Manage Document Metadata button on the Participant Info page for a specific Patient ID
2	Upload a document's Metadata	• Click the Browse button • Browse the desktop for the desired attachment • Once the attachment has been selected, click the Populate Metadata Info button. Note that the application will automatically populate the Doc Hash and Doc Size fields. • Enter a Doc ID value, Assigning Authority ID and Class Code • Click Add Metadata to save the metadata to the Patient ID
4	Return to the Participant Info page	• Click Close

Screenshots

Manage Document Metadata (optional)

Manage Document Metadata



Download & Install Certificates

To establish a secure connection with the DIL, a participant user must download and install the Certificates created internally within the DIL for testing. The DIL, acting as a Certificate Authority, provides a method to download and install trusted certificates. These certificates can only be used with the DIL for secure transfer of messages from a participant's machine to the DIL. Under InfraStructure, click 'Download Certificates' to begin the process of downloading a certificate.

IMPORTANT: The information provided here merely highlights the links and functions available on this screen. The information required for successful downloading and installation of certificates is found in the Certificate Install Instructions document on the Download Certificates page.

	Action	**Details/Notes**
1	Download Certificates	• Click 'Download Certificates' under InfraStructure • Download the Private Certificate • Download the DIL Root Certificate • Download the DIL Cross Certificate • Participant will be prompted to download the certificates to their local machine.

Screenshots

Download Certificates Page

Gateway Profile

IMPORTANT: The information provided here merely highlights the links and functions available on this screen. The information required for successful configuration of endpoints is found in the DIL UDDI Registration Guide.

NOTE: You do not have to set up your web service endpoints in the DIL Gateway Profile page IF you are testing an Initiating Gateway ONLY.

This screen allows the user to view, delete and update gateway profile information and secured endpoints. A Participant's Service Endpoints used to execute the Patient Discovery, Query for Document, and Retrieve Document services within the DIL can be registered here. These endpoints will be used for both initiating and responding scenarios.

A participant can perform the following functions upon entering their endpoints:

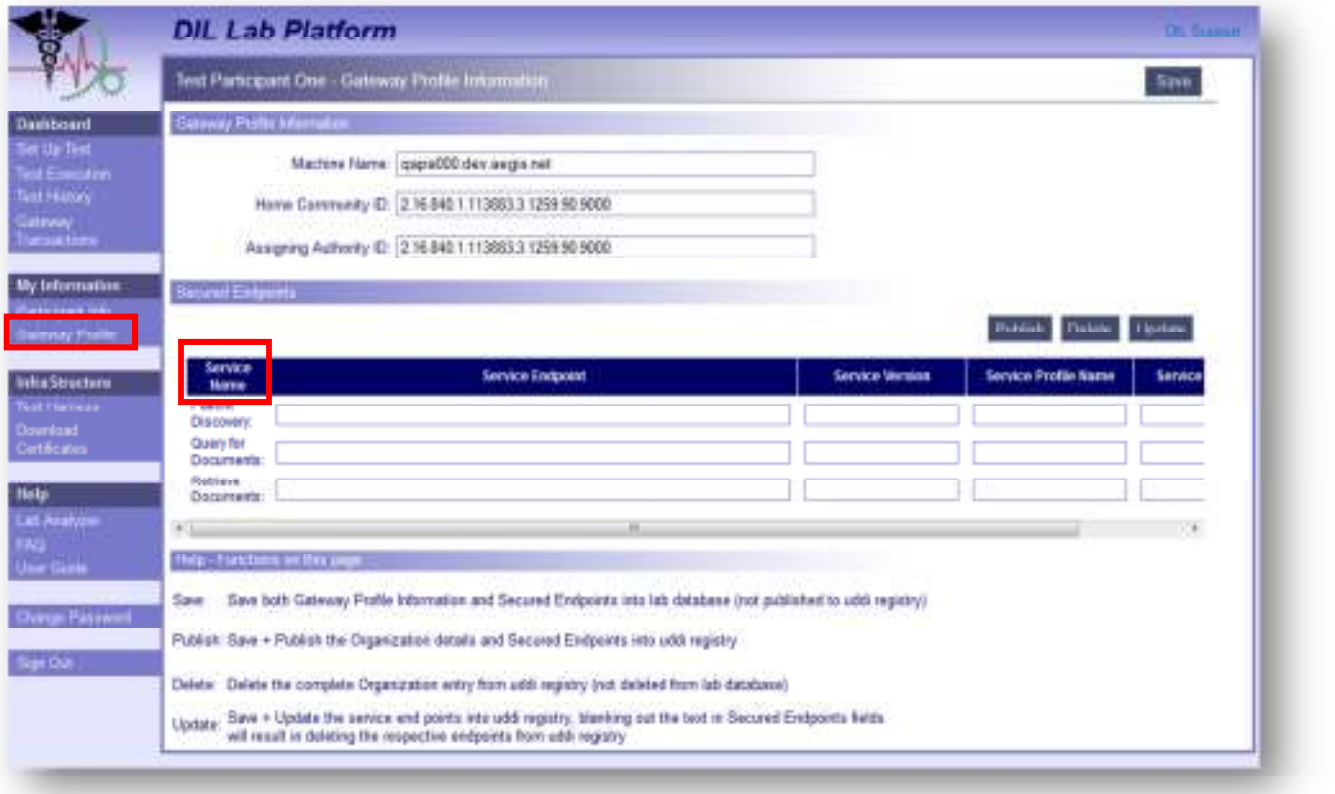
- **Save:** Saves the service endpoint to the DIL Database, but does not publish to the UDDI (used only if the participant is using their own UDDI implementation)
- **Publish:** Saves the service endpoints to the DIL Database and publishes the endpoints to the DIL UDDI. This is recommended for participants who wish to use the DIL's UDDI implementation.

- **Delete:** Delete the participant's organization service endpoints from the DIL's UDDI implementation, but keeps the service endpoints within the DIL's database. This can be used if a participant wishes to use their own UDDI implementation.
- **Update:** Allows a participant to enter new service endpoint information and update the information within the UDDI. Deleting an endpoint and clicking 'Update' will subsequently delete the service endpoint from the UDDI.

Screenshot

Gateway Profile Information

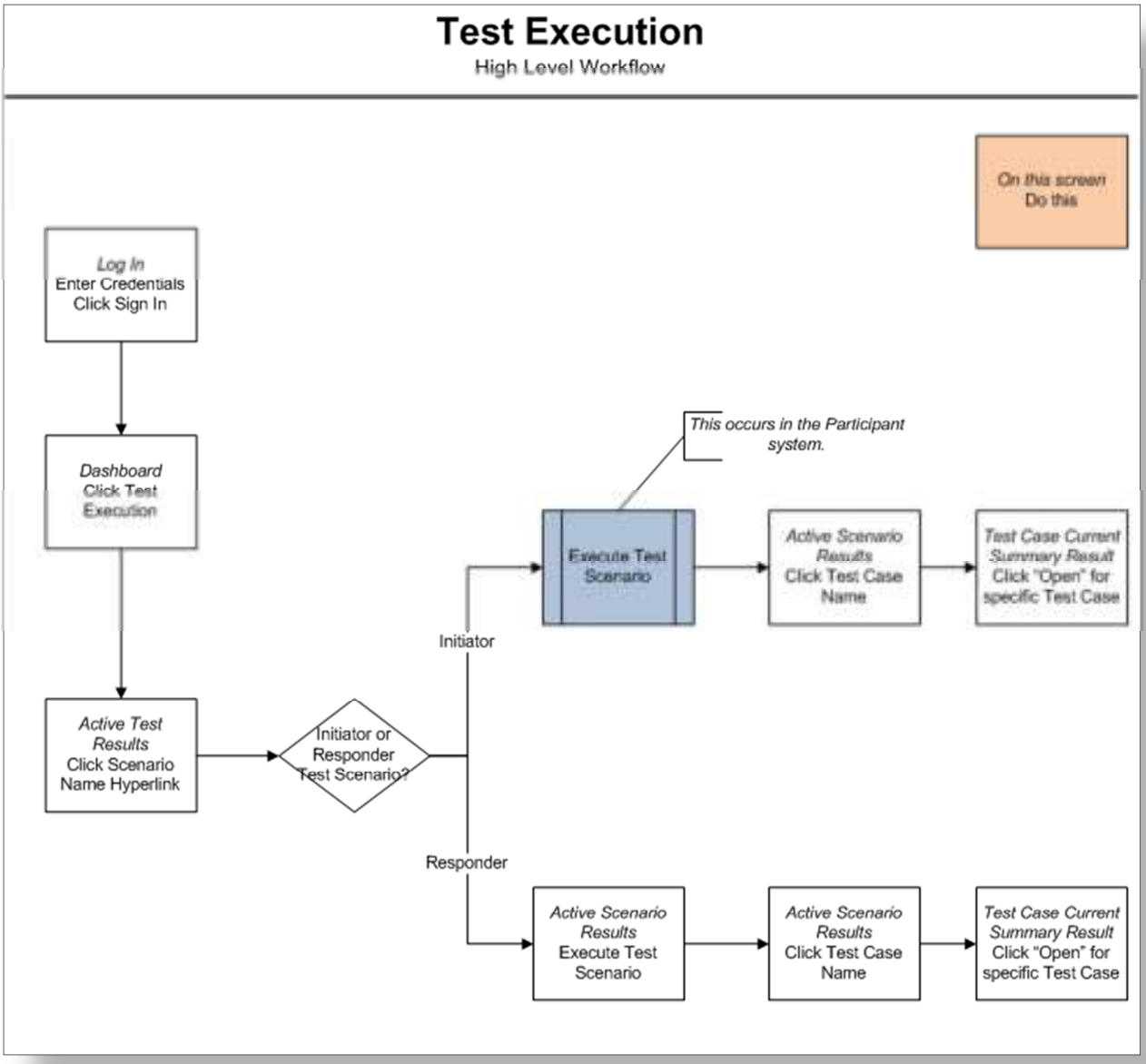
IMPORTANT: Once this screen has been completed, please send an email to DIL_Support@aegis.net with the subject line "Gateway Configuration Request." In the email itself, please include the Participant Account Name.



IMPORTANT: The participant endpoint mapping is something the DIL gateways need in order to capture the web service traffic going to the participant from the DIL gateway(s). We are not altering the participant's actual web service endpoints. Please note that once the participant endpoints have been configured within the DIL, the endpoints displayed on the Gateway Profile page will be updated.

3.0 Executing Test Cases

Executing Service sets and obtaining results from the individual test cases executed is the primary objective of the DIL to help facilitate interoperability. The High Level Workflow diagram highlights the key steps in executing and viewing test results. Specific steps and screens are described below.



Test Execution

Prior to executing a test within the DIL, a Service Set must be selected. A Service Set is a collection of Initiator and/or Responder Test Cases which are grouped into Scenario Cases. Steps for viewing the details of the Test Cases and Scenario Cases within the Service Set are discussed later in this document. The Participant can verify the connection between the participant's system and the DIL upon executing a test case.

An image, 'The service set is currently active' will display following a successful selection. Only one Service Set at a time may be active for a Participant. Once the Service Set has been selected, the test cases within the Service Set can be executed.

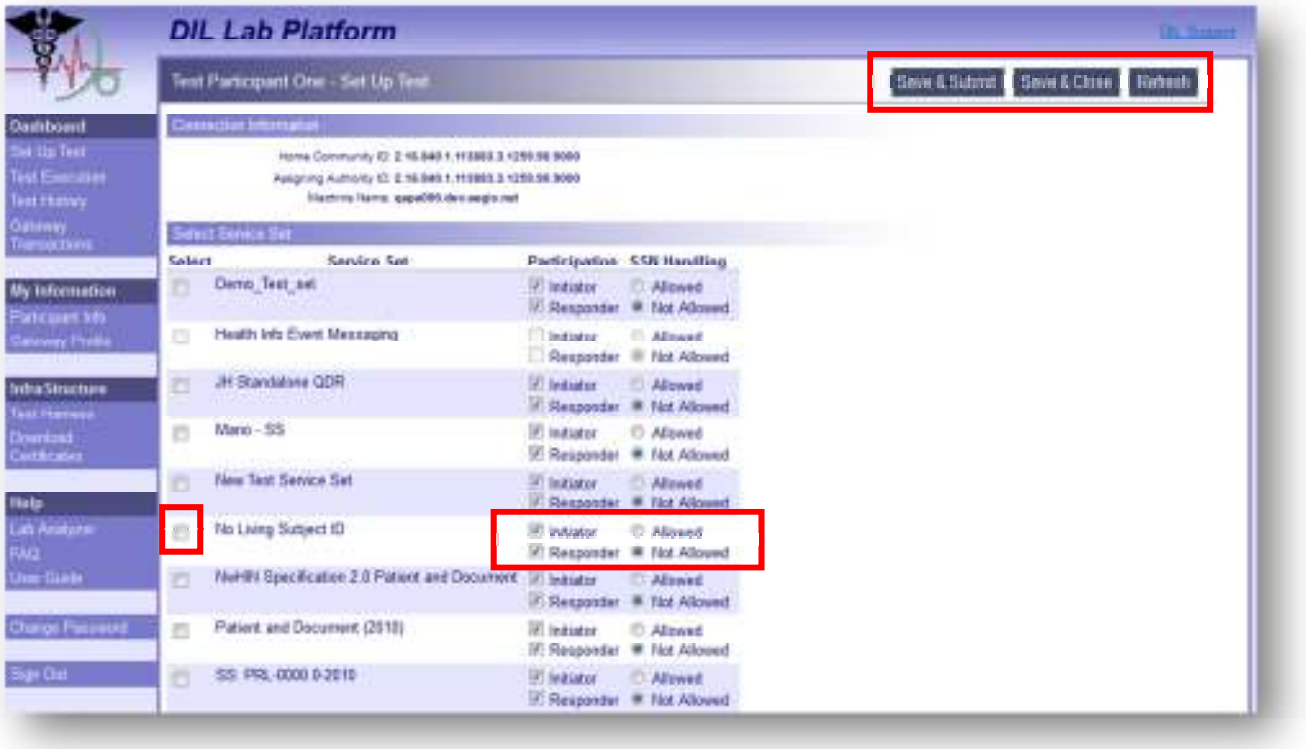
Key steps for setting up a test are outlined below.

	Action	Details/Notes
1	Select a Service Set to execute	• Click "Set Up Test" from the left-hand side bar • Check the box next to the desired Service Set • Click "Save & Close" to activate this Service Set. This will be the Service Set available on the Test Execution screen. • When a tester is ready to submit the test results to a validating body (e.g., CCHIT), the tester should select the Service Set and click "Save & Submit". This action allows a DIL Lab Representative user to see the results within the DIL.

Screenshots

Set Up Test

This screen allows the Participant to select a Service Set.



Initiator Test Scenario

The DIL testing process intends tests to be run one Test Scenario at a time. An Initiator Test Scenario must be executed from the Participant's system. The DIL will display the results of the Test Scenario execution on the Active Scenario Results screen. Responder scenarios are discussed later in this document. All initiating scenarios will have the icon adjacent to the name.

Key steps for setting up and executing an Initiator test are outlined below.

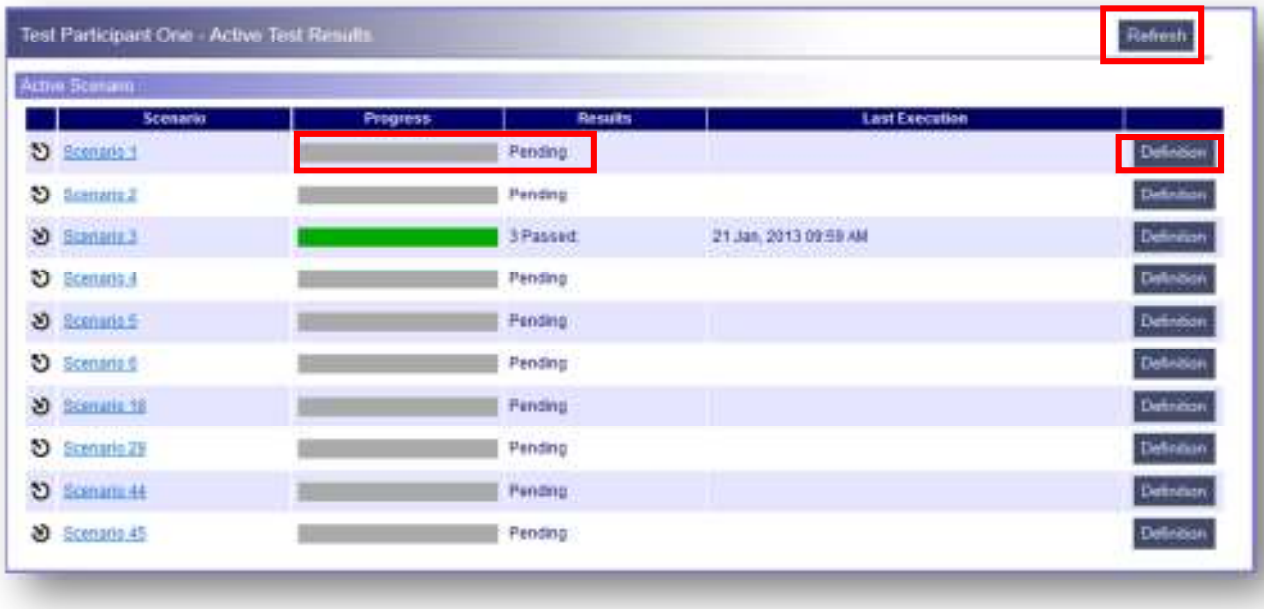
	Action	Details/Notes
1	Validate endpoints for request message	• Click "Test Execution" from the left-hand side bar within the DIL to view the Active Test Results screen • Click the Scenario name hyperlink to view the Active Results screen. • Note the 'RIs' column for the specific test case (e.g., RI0004). • Click "Test Harness" from the left-hand side bar • Note the Machine Name for the specific RI against which the test case should be executed. *For example, the Test Harness indicates that the Machine Name for RI0004 is dilhn003.dil.aegis.net.* *The endpoint in the PD Request should be https://dilhn003.dil.aegis.net:443/Gateway/PatientDiscovery/1_0/NhinService/NhinPatientDiscovery.* *The endpoint in the QD Request should be https://dilhn003.dil.aegis.net:443/Gateway/DocumentQuery/2_0/NhinService/RespondingGateway_Query_Service/DocQuery.* *The endpoint in the RD Request should be https://dilhn003.dil.aegis.net:443/Gateway/DocumentRetrieve/3_0/NhinService/RespondingGateway_Retrieve_Service/DocRetrieve.* Additional details on the Test Harness are found later in this document.
2	Initiate test	*This step occurs outside the DIL in the Participant's system*
3	View Initiator Test Scenario results	• Click "Test Execution" from the left-hand side bar within the DIL to view the Active Test Results screen • Click "Refresh" to see the most recent test results

	Action	Details/Notes
4	View Initiator Test Case results	• Select a Scenario by clicking the hyperlink name from the Active Test Results screen • Click “Refresh” on the Active Results screen to see the most recent test results • Select a Test Case by clicking the hyperlink name from the Active Results screen • Click “Refresh” on the Test Case Current Summary Result screen to see the most recent test results

Screenshots

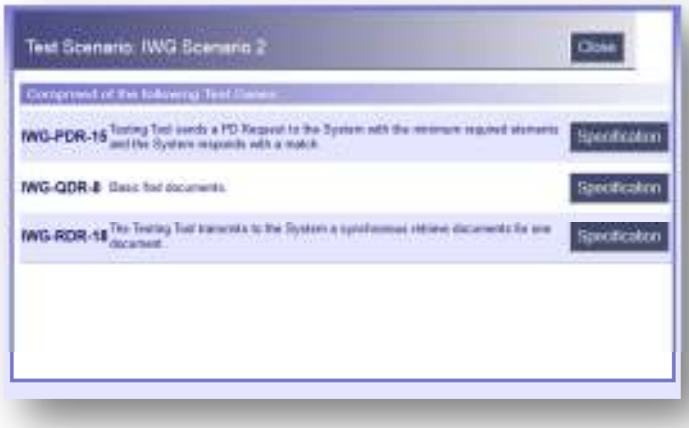
Active Test Results

This screen displays the status of all the Test Scenarios within the active Service Set. Click “Refresh” to see the most recent test results. Click the Scenario name to view the Active Scenario Results details.



Scenario Defintion

To view the details of the Test Cases within a Test Scenario, click the “Definition” button for the desired Test Scenario.



Specification Reference

Click the “Specification” button for the desired Test Case to see the specific area of the Exchange (formerly NHIN) specification addressed with this Test Case.

Active Scenario Results

This screen displays the current result for each Test Case within the selected Test Scenario. Click “Refresh” to see the most recent test results.

Additional key functions available on the Active Scenario Results screen are outlined below.

Action	Details/Notes
Test Case name hyperlink	Takes user to the Test Case Current Result Summary screen. Please see details below.
Current Result hyperlink	Takes user to the Test Case Current Result Summary screen. Please see details below.
Attach Document	Users may attach documents (e.g., log files) to the Test Case for tracking purposes. If the Test Case is executed again, the prior attachment will not be available.
Show	Users may view the attachment for the most recent execution of this Test

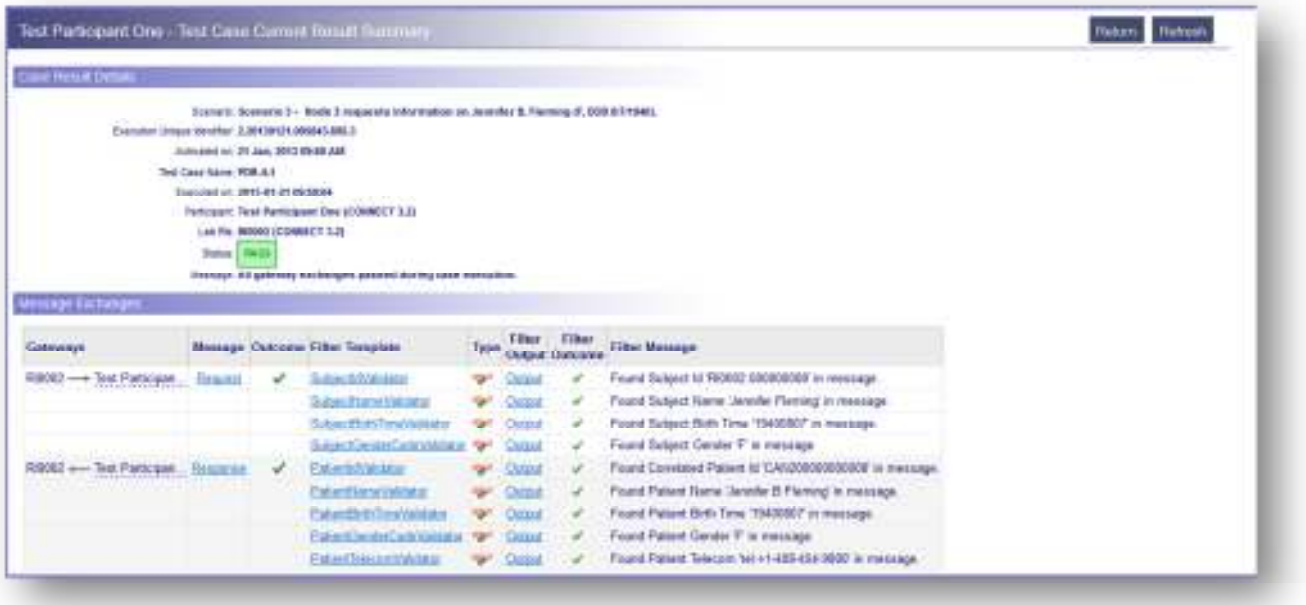
Action	Details/Notes
Attachments	Case
Specification	Click the “Specification” button for the desired Test Case to see the specific area of the specification addressed with this Test Case.
Clear Result	If the current result is Pending, In Progress, or Fail, the user may clear the result in order to proceed with the scenario. See the below screenshot.

Active Scenario Results

Displayed is an example of a Test Case which is still in progress. A participant can click an active ‘Clear Result’ button to clear the current test result and reset the specific test case. Note the column with the heading ‘RIs’, which tells the tester which RI against which this test case should be executed.

Test Case Current Result Summary
The Test Case Current Result Summary screen includes:

- Message Type
  - The Message Type will be Request or Response
  - Click the Message Type hyperlink to view the actual message content
- Outcome
  - The outcome will either be Pass (indicated by a green check mark) or Fail (indicated by a red 'X')
- Filter Template
  - The Filter Template is the set of validation rules associated with the Scenario Case. Filter Templates are created by administrative users as part of the Dynamic Test Case creation function within the DIL.
- Type
  - The Filter Template (set of validation rules) may be XML, XSLT or Message Transformation
- Filter Output
  - The Filter Output is configured as part of Filter Template creation. The Filter Output is the set of parameters and/or values that were validated and configured (as part of the Dynamic Test Case creation process) to be returned to the user as test execution output.
- Filter Message
  - The Filter Message is configured as part of Filter Template creation. The Filter Message is a message configured as part of the Dynamic Test Case creation process to be returned to the user as test execution output.



Additional key functions available on the Test Case Current Result Summary screen are outlined below.

Action	Details/Notes
Message hyperlink	Displays the contents of the SOAP message
Filter Template hyperlink	Displays the validator message
Filter Output hyperlink	Displays the various SOAP message elements identified and tested during this test case

Message

Filter Template

Clicking the hyperlink under the Filter Template column will display the validator message, i.e. the message which will be used to validate and ensure the message sent from the participant machine or DIL is valid. This message acts as a baseline and is compared to the SOAP message generated by your gateway or the DIL.

Filter Output

Under the filter Output column, the Output hyperlink will show the various SOAP message elements identified and tested during this test case. If a participant or DIL message contains proper information within the SOAP elements, a Green Checkmark will indicate this element was sent properly. However if a red 'Fail' is indicated next to the element, then the information within the SOAP element was incorrect. Failing to include correct information in the SOAP Message and message structure will result in a failure. However, the Output view will provide information on which element failed the exchange along with expected information.

Responder Test Scenario

When the participant system is the Responder, the user can execute Patient Discovery (PD), Query for Documents (QD) and Retrieve Documents (RD) test cases at any time from the DIL. Running a RD test case requires first running a QD test case within the specific scenario. The application will automatically run the next Test Case in the Test Scenario once a Test Case has completed successfully. All responder scenarios will include the icon adjacent to the scenario name.

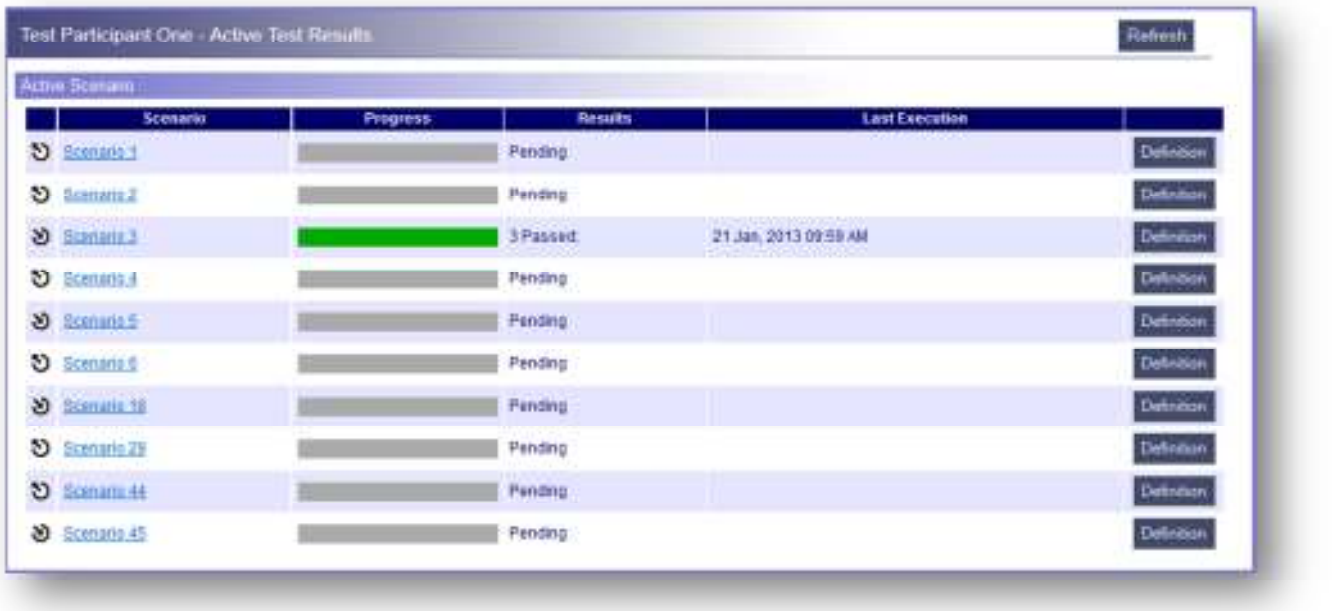
Key steps for setting up and executing a Responder test are outlined below.

	Action	Details/Notes
1	Select Responder Test Scenario	• Click "Test Execution" from the left-hand side bar within the DIL to view the Active Test Results screen • Select a Scenario by clicking the hyperlink description from the Active Test Results screen
2	Execute Responder Test Scenario	• From the Active Scenario Results screen, click "Execute Scenario" to execute all the tests in this scenario. • From the Active Scenario Results screen, click "Execute" next to an individual test to run that specific test. • Click "Refresh" to see the most recent test results
3	View Responder Test Case results	• Select a Scenario by clicking the hyperlink name from the Active Test Results screen • Click "Refresh" on the Active Results screen to see the most recent test results • Select a Test Case by clicking the hyperlink name from the Active Results screen • Click "Refresh" on the Test Case Current Summary Result screen to see the most recent test results

Screenshots

Active Test Results

This screen displays the status of all the Test Scenarios within the active Service Set. Click “Refresh” to see the most recent test results. Click the Scenario name to view the Active Scenario Results details.



Active Scenario Results

Click “Execute Test Scenarios” to start the test.

Test Case Results

While tests are running, the DIL populates live results as it receives messages. The DIL parses and reviews audit logs every two minutes to correlate and populate test results within a given test case. A progress bar displays the status of the test case. By clicking on “Refresh”, the DIL updates the Current Result field on the screen. Each test shows the following results:

- Gray: Not yet started
- **Blue**: In progress (typically the DIL is waiting for a response or an incoming message)
- **Green**: Success
- **Red**: Failure (a participant can re-execute a test case if necessary)
- **Yellow**: Requires external validation by a validating testing body.

Active Scenario Results

Test Case Current Result Summary Page

This screen shows the results of a test case and allows the user to view audit information as well as specific test case information. By reviewing the Case Execution Details section in the Case Result Details section, the User can compare what the test expected and what the test returned. Within the Case Log Summary section, users can click on the "Open" button to view specific messages related to the request/response exchange results.

	Action	Details/Notes
1	Access Test Case Current Result Summary Page	• Click "Test Execution" from the left-hand side bar within the DIL to view the Active Test Results screen • Click "Refresh" to see the most recent test results • Click the Scenario Case the Participant wishes to view ○ Participant is in the Active Scenario Results screen • Click on a specific Test Case link or on the Current Result link (as shown in the screenshot below)

Screenshots

Active Scenario Results

This screen displays the results of the Test Cases executed within a specific scenario.

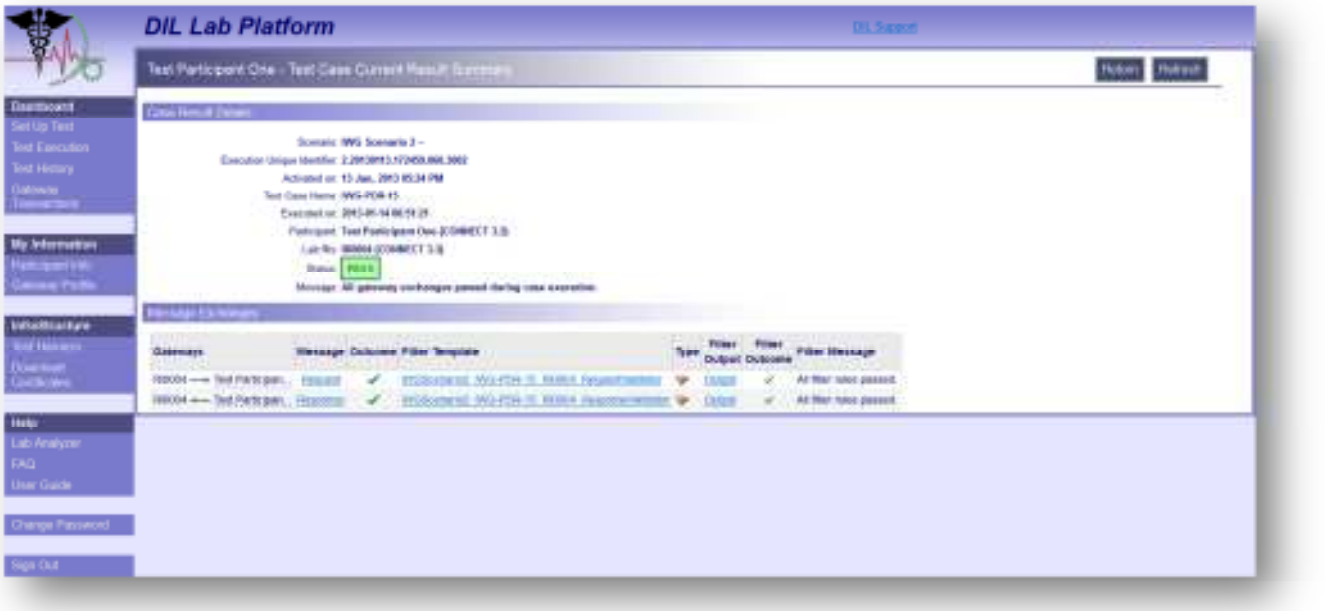
Test Case Current Result Summary

This screen displays the results of a specific Test Case. Click "Refresh" to see the most recent test results.

The Test Case Current Result Summary screen includes:

- Message Type
  - The Message Type will be Request or Response
  - Click the Message Type hyperlink to view the actual message content
- Outcome
  - The outcome will either be Pass (indicated by a green check mark) or Fail (indicated by a red 'X')
- Filter Template
  - The Filter Template is the set of validation rules associated with the Scenario Case. Filter Templates are created by administrative users as part of the Dynamic Test Case creation function within the DIL.
- Type
  - The Filter Template (set of validation rules) may be XML, XSLT or Message Transformation
- Filter Output
  - The Filter Output is configured as part of Filter Template creation. The Filter Output is the set of parameters and/or values that were validated and configured (as part of the Dynamic Test Case creation process) to be returned to the user as test execution output.
- Filter Message
  - The Filter Message is configured as part of Filter Template creation. The Filter Message is a message configured as part of the Dynamic Test Case creation process to be returned to the user as test execution output.

Example of a test case with a Pass status



Example of a test case with a Fail status

Additional key functions available on the Test Case Current Result Summary screen are outlined below.

Action	Details/Notes
Message hyperlink	Displays the contents of the SOAP message
Filter Template hyperlink	Displays the validator message
Filter Output hyperlink	Displays the various SOAP message elements identified and tested during this test case

Request/Response Message

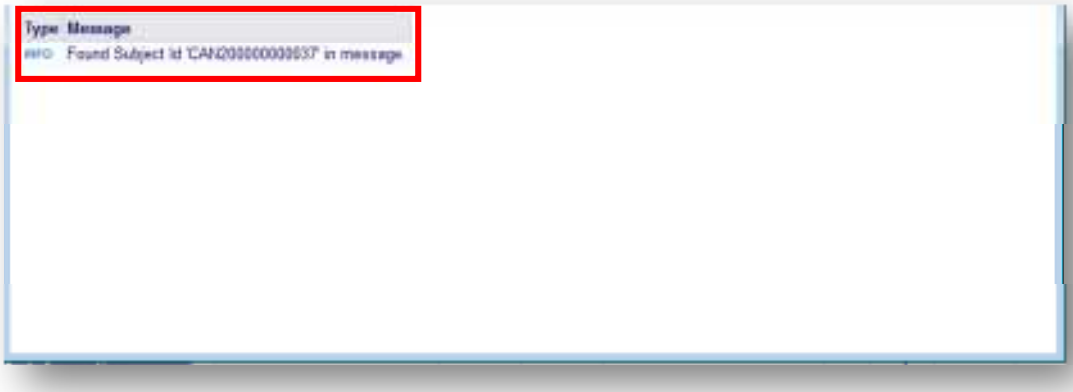
This screen displays the message for the specific Test Case. Click “Request” or “Response” hyperlink in the Message column for the desired transaction to view the message. This will display the contents of the SOAP message. Below is an example of what the message may look like:

Filter Template

Clicking the hyperlink under the Filter Template column will display the validator message, i.e. the message which will be used to validate and ensure the message sent from the participant machine or DIL is valid. This message acts as a baseline and is compared to the SOAP message generated by your gateway or the DIL.

Filter Output

Under the filter Output column, the Output hyperlink will show the various SOAP message elements identified and tested during this test case. If a participant or DIL message contains proper information within the SOAP elements, a Green Checkmark will indicate this element was sent properly. However if a red 'Fail' is indicated next to the element, then the information within the SOAP element was incorrect. Failing to include correct information in the SOAP Message and message structure will result in a failure. However, the Output view will provide information on which element failed the exchange along with expected information.

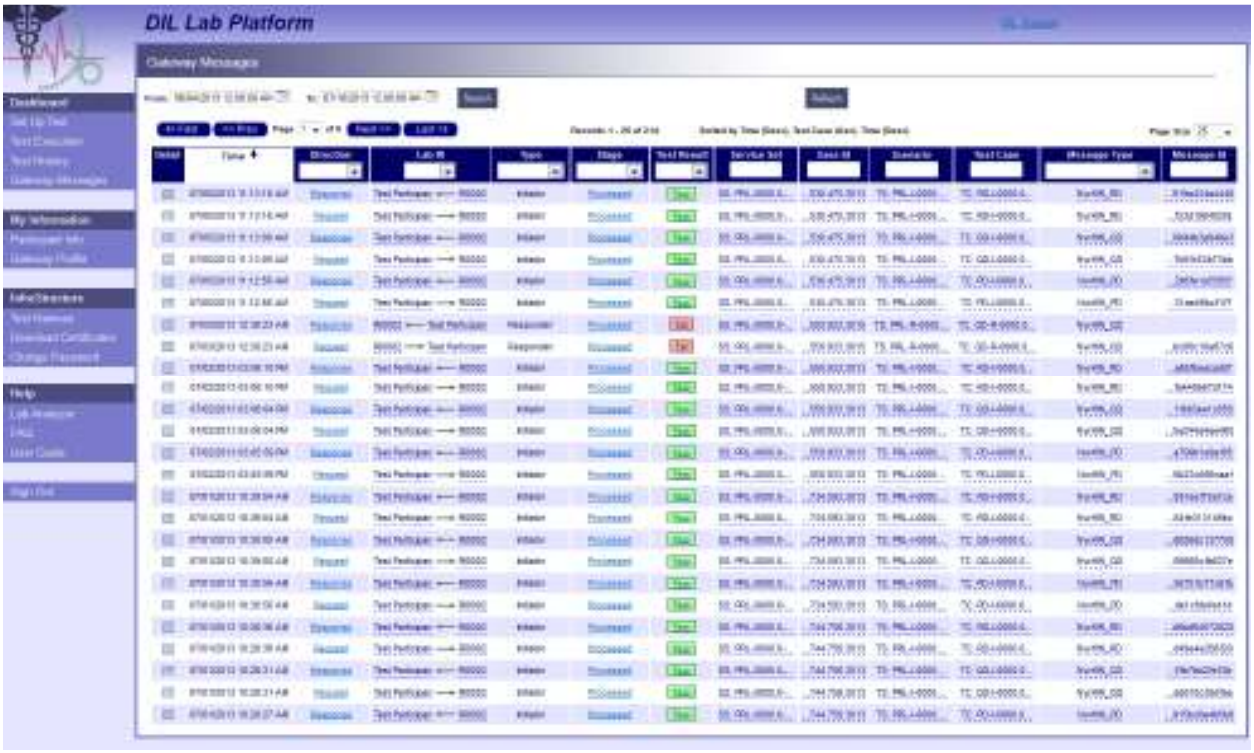


Gateway Messages

This Screen allows a user to view all historical information for the gateway transactions executed between the participant gateway and the DIL backend gateway farm implementation. A user can view and download messages generated during previous tests. Users can query for transaction history based on time and date or between specific gateways.

Screenshot:

Gateway Messages



Test History

The Test History functionality found under the 'Dashboard' group of functionality displays the history of all Service Sets which have been executed by the participant. It also shows the amount of progress each service set had successfully completed. The Test History section also shows an Execution Unique ID, which is used by a Lab Validator to validate a service set, time executed and submitted, status, and comments recorded during the service set transaction.

Screenshots

Test History Screen

View Lab Analyzer

The Lab Analyzer section brings up a pop-up window, which links to specific troubleshooting information for PD, QD, and RD testing information that Users can refer to if any problems arise when executing the test case.

Lab Analyzer Patient Discovery

This screen displays patient discovery details.

Lab Analyzer Query for Documents

This screen displays query for documents results.

Analyzer Retrieve Documents

This screen displays analyzer retrieve document results.

Test Harness

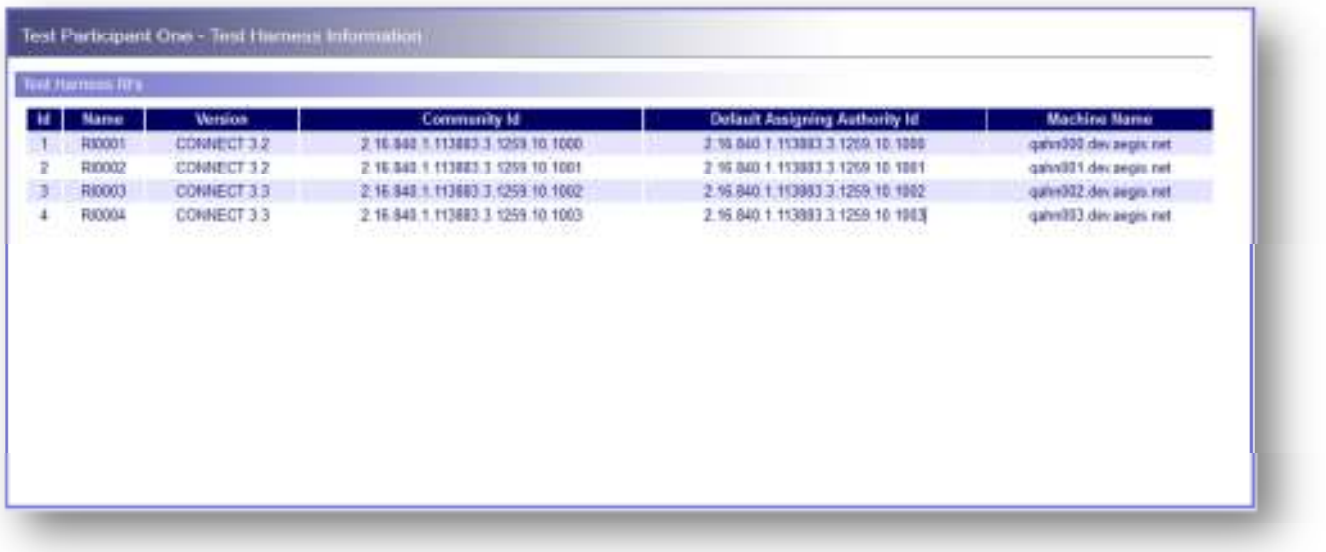
The Test Harness screen provides information on the Reference Implementations (RIs) and the gateways installed for testing on these RIs. Each gateway installed within the DIL is used as a RI for testing against other participant gateways. These RIs exist within the gateway farm.

The information provided within the Test Harness is included within the test cases. A participant can determine which gateway server they are running a test against by looking at the information within a Test Case. The following information is displayed in the Test Harness screen:

- ID
- Name
- Version
- Community ID
- Default Assigning Authority ID
- Machine Name

Screenshots

Test Harness Information



4.0 FAQ

The FAQ contains all relevant data on the DIL and its various components.

Screenshots

FAQ

5.0 Change Password

This screen allows the user to change his/her password. Enter your current password and a new password. Confirm the new password by entering the new password again. Click “Change Password”. You may not create a new password that is equal to the current password. Passwords are case-sensitive so the password “DILUser” is not the same as “diluser”.

Screenshots

Change Password

6.0 GLOSSARY and Additional Information

Active Test	The set of test groups currently executed by the Participant
Certificate Authority	A **certificate authority**, or **certification authority**, (**CA**) is an entity that issues digital certificates. The digital certificate certifies the ownership of a public key by the named subject of the certificate. This allows others (relying parties) to rely upon signatures or assertions made by the private key that corresponds to the public key that is certified. In this model of trust relationships, a CA is a trusted third party that is trusted by both the subject (owner) of the certificate and the party relying upon the certificate. CAs are characteristic of many public key infrastructure (PKI) schemes.
Attachment	A log or other file attached to a test group for manual verification.
Cross Gateway Query	Sends a query from one community to another to identify the location of healthcare information satisfying specific constraints. This is used within gateway testing and test cases in the DIL.
Cross Gateway Retrieve	Requests the retrieval of a specific set of healthcare information (a document or documents) from another community. This is used within gateway testing and test cases in the DIL.
DIL Test Platform	Set of self-service testing tools and processes used to conduct gateway to gateway testing. This includes a test harness or **automated test framework** which is a collection of software and test data configured to test a program unit by running it under varying conditions and monitoring its behavior and outputs. Test harnesses allow for the automation of tests. They can call functions with supplied parameters and print out and compare the results to the desired value. A test harness should allow specific tests to run (this helps in optimizing), orchestrate a runtime environment, and provide a capability to analyze results.
Initiating Gateway	Initiates an inter-community communication across an Health Information Exchange (HIE).
Participant	Organization, Candidate, or Entity that has developed a technical solution (gateway) it wishes to test to exchange data.
Participant System	The Participant's technical solution, which the Participant is operating and using to test gateway connectivity.
Responding Gateway	Participation in an inter-community communication in the DIL initiated by another gateway.
Test Case	One path through the DIL to test communications. The test case includes a set of test inputs, execution conditions, and expected results, identified for the purpose of making an evaluation of a participants ability to test gateway communication
Test Data	Set(s) of anonymous patient data. The DIL provides test data to test gateway communications. Participants do not need to enter Patient Demographics. Participants need only to enter Patient Ids and correlate these Ids with their organization's system.
Test Results	Within the DIL, the grouping of a set of runs of test groups and test cases for a participant, including any attached evidence. The DIL assigns each set of test results a unique execution ID.