



Canada Health Infoway

Projectathon Tooling

FHIR Validator



What is the FHIR Validator?

FHIR Validator: An online FHIR validator tool to structurally and semantically verify a FHIR instance against a FHIR profile. Based on the Matchbox Engine (<https://ahdis.github.io/matchbox/validation>) it includes a:

- ❖ Web UI (External Validation Service Front-End) for loading examples and viewing validation results through direct upload
- ❖ Remote Message Validation through the Gazelle Datahouse - Proxy for validating examples exchanged within the proxy-evidence workflow
- ❖ Result Log (External Validation Service Validation Log) for storing, viewing, and sharing result reports for test evidence

Training Objectives

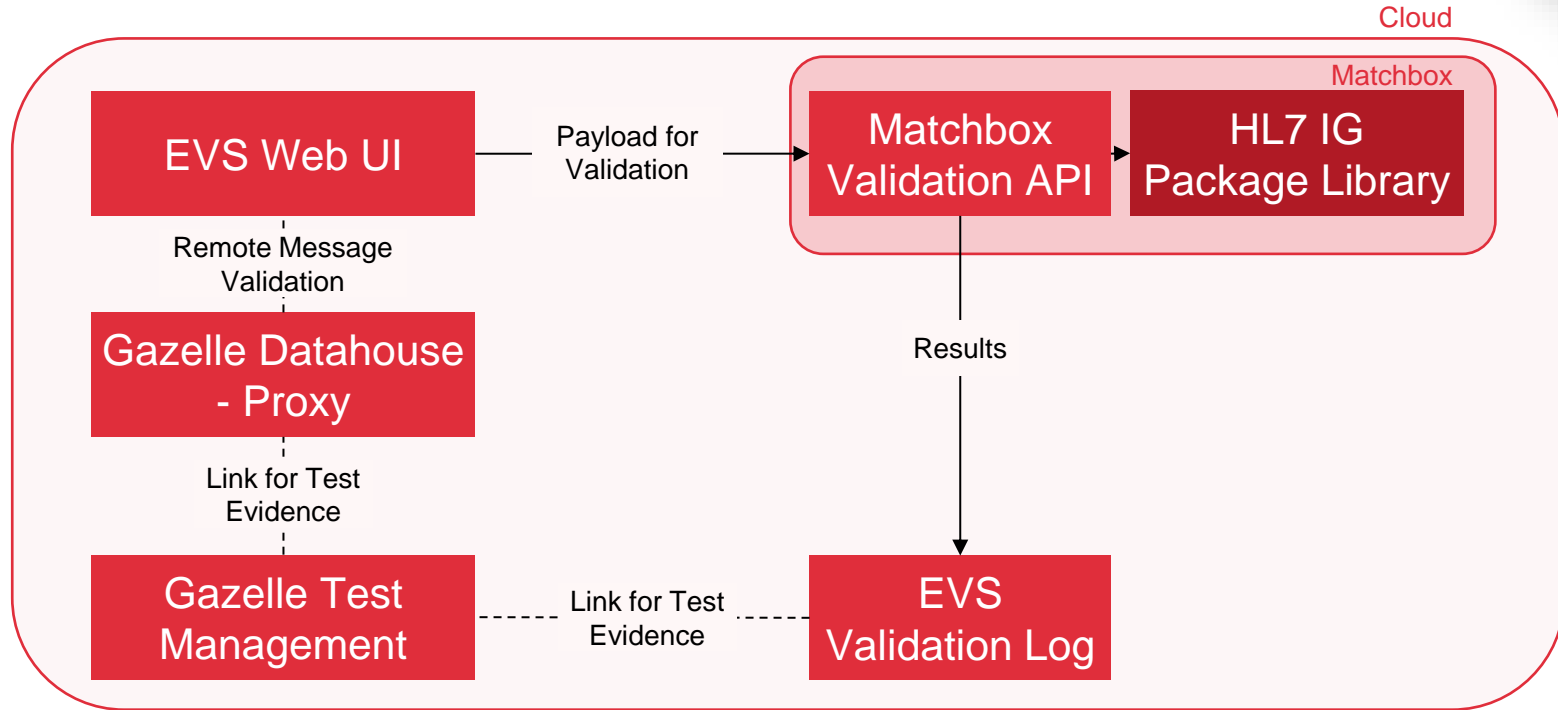


This training aims to meet the following objectives:

- ✓ Provide an understanding of the **FHIR Validator Web UI**, **when** to use it, **how** to use it, and **where** to access it
- ✓ Provide an understanding of the **FHIR Validator Remote Message Validation**, **when** to use it, **how** to use it, and **where** to access it



FHIR Validator Architectural Overview





When to use the FHIR Validator Web UI

The **FHIR Validator Web UI** can be used to validate FHIR Resource instances during Pre-Projectathon testing

- ❖ The FHIR resources must be uploaded in JSON or XML format and the tool verifies that they conform syntactically and semantically to the FHIR profile that the user selects (e.g., CA:eReC, PS-CA, CA-Core)
- ❖ Test results can also be easily claimed as test evidence, however No Peer and Peer to Peer testers are encouraged to participate in the end-to-end workflow using Remote Message Validation to validate exchanged messages for evidence for monitors
- ❖ Note: The FHIR validation tool tests whether a profile's "hard constraints" (minimal cardinality, required terminology, etc.) are met in the supplied resource. Results submitted as test evidence will also be manually reviewed by monitors for the presence of optional Must Support elements

When to use Remote Message Validation



The **Remote Message Validation** can be used to validate FHIR Resource instances during all phases of testing; Pre-Projectathon, No Peer, and Peer to Peer testing

- ❖ Remote Message Validation is launched from within the Message View in Gazelle Datahouse to support simultaneous validation of the transaction and payload
- ❖ The exchanged FHIR resources must be in JSON or XML format and the tool verifies that they conform syntactically and semantically to the FHIR profile that the user selects (e.g., CA:eReC, PS-CA, CA-Core)
- ❖ Test results can be easily claimed as test evidence for monitors to review by copy/pasting the Gazelle Datahouse permanent link into Gazelle Test Instance Steps. Results submitted as test evidence will also be manually reviewed by monitors for the presence of optional Must Support elements

Tool Demonstration – FHIR Validator Web UI



1 Select the Pan-Canadian Specification for validation from “Canada” dropdown

2 Select “Validate” Option

3 Paste or upload your example for validation

4 Select the profile for validation

5 Click “Validate” Button

The screenshot shows the 'External Validation Service Front-end' interface. At the top, there is a blue header with 'IHE' and 'Canada' dropdown menus. A 'Login' link is in the top right. Below the header, a dropdown menu is open, showing 'CA.eReC' (highlighted with a red box and callout 1), 'PS:CA', 'Validate' (with a checkmark icon and callout 2), 'Validation logs', and 'Statistics'. The main content area has a 'Content selection' section with a text input field (callout 3) and an 'Upload the file you want to validate' section with an 'Add...' button (callout 3). Below that is a 'Validator selection' section with a 'Select a validator:' label and a search input field (callout 4) containing a URL. A dropdown menu is open below the search field, showing a 'Matchbox' and two URLs. At the bottom, there are 'Validate' and 'Get XML Request' buttons (callout 5).

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Tool Demonstration – Remote Message Validation



- 1 Navigate to the desired message in the Gazelle Data Warehouse, Click “Access Detail”

Tip: Use the Sender/Receiver filters to find your messages more quickly

- 2 In Message View, Review your Message Content and Click “Validate” button

Gazelle datahouse - Proxy

Standard	Sender hostname	Sender ip address	Proxy port	Receiver hostname	Receiver ip address	Message type	Secured message
Start typing...	Start typing...	Start typing...	11001 X	66.23.63.19 X	Start typing...	Start typing...	Clear all

Date from / to: mm/dd/yyyy, --:-- AM AST - mm/dd/yyyy, --:-- AM AST Hide error messages

Standard	Timestamp	Sender	Proxy	Receiver	Message type	Action
HTTP [TLS]	09:50:31:444 AM - AST Nov 20, 2024	dev-ps-swagger-api.apibox.ca	11001	66.23.63.19	Decoder Error	<input type="checkbox"/> Access details
HTTP [TLS]	05:27:23:835 PM - AST Nov 16, 2024	dev-ps-swagger-api.apibox.ca	11001	66.23.63.19	200	<input type="checkbox"/> Access details
HTTP [TLS]	04:43:51:587 PM - AST Nov 15, 2024	dev-ps-swagger-api.apibox.ca	11001	66.23.63.19	404	<input type="checkbox"/> Access details
HTTP [TLS]	12:31:34:646 PM - AST Nov 15, 2024	dev-ps-swagger-api.apibox.ca	11001	66.23.63.19	200	<input checked="" type="checkbox"/> Access details

Gazelle datahouse - Proxy

Go back

Connection detail	Initiator	Responder
Type: HTTP [TLS] Connection id: 67377732e8c2a02c36a81cf Permanent link: copy URL Proxy port: 11001 Certificate subject: CN=pancanadianiothe-catalyst.net	Hostname: 66.23.63.19 IP address: 66.23.63.19 Port: 64733 TLS version: TLSv1.3 Cipher suite: TLS_AES_256_GCM_SHA384	Hostname: dev-ps-swagger-api.apibox.ca IP address: 15.157.226.2 Port: 443 TLS version: TLSv1.3 Cipher suite: TLS_AES_128_GCM_SHA256 Certificate subject: CN=*.apibox.ca, CN=Amazon RSA 2048 M02, O=Amazon, C=US, CN=Amazon Root CA 1, O=Amazon, C=US

Http Response < 12 of 12

Validation

Tool Demonstration – Remote Message Validation



- 3 In the pop-up window, Select “Body only” and select the FHIR profile you would like to validate the message against
- 4 Click “Validate” button
- 5 A summary of validation results will appear in the validation box.
Tip: Click the EVS Validation Report for detailed view of validation findings
- 6 Once passed, Copy permanent link for pasting into Gazelle Test Instance

The screenshot shows the 'Validate' tool interface. A pop-up window titled 'Validate' is open, showing a dropdown menu with 'Body only' selected (marked with a red circle 3) and a search bar for validation profiles. A 'Validate' button is visible (marked with a red circle 4). Below the pop-up, the main interface displays validation results for a responder. The results include connection details, host information, and TLS configuration. A 'Validation' section at the bottom right shows a green 'PASSED' status (marked with a red circle 5) and a 'View EVS validation report' link. The timestamp is 11:31:27:709 AM - Nov 21, 2024.

Validate

Body only

Select or search by typing validation profile

Validate

Responder

Hostname: dev-ps-swagger-api.apibox.ca
IP address: 15.157.226.2
Port: 443
TLS version: TLSv1.3
Cipher suite: TLS_AES_128_GCM_SHA256
Certificate subject: CN=*apibox.ca, CN=Amazon RSA 2048 M02, O=Amazon, C=US, CN=Amazon Root CA 1, O=Amazon, C=US

Connection id: 67377732ef8c2a02c35a1cf
Permanent link: [copy URL](#) (marked with a red circle 6)
Proxy port: 11001
Certificate subject: CN=pancanadianio/the-catalyst.net

Hostname: 66.23.63.12
IP address: 66.23.63.19
Port: 64733
TLS version: TLSv1.3
Cipher suite: TLS_AES_256_GCM_SHA384

Http Response < 12 of 12

Validation

Validate

PASSED View EVS validation report (marked with a red circle 5)

Validation timestamp: 11:31:27:709 AM - Nov 21, 2024

Tool Demonstration – Reviewing EVS Validation Report



1 Clicking the EVS Validation Report will open a new tab with details on your results

2 Scroll down to review Validation Items and File Content to help with troubleshooting (if applicable)

Note: Messages with errors will have a status of Failed. Testers are still encouraged to review and resolve warnings.

External Validation Service Front-End

IHE - Canada - Add-ons - Log in

Validation result

Information

File Name
OID : 1.3.6.1.4.1.12559.11.50.4.115
Validation Date : 11/21/24 10:31:27 AM (EST GMT-0500)
Matchbox (3.9.0) <http://fhir.infoway-inforoute.ca/oi/psca/StructureDefinition/bundle-ca-ps/1.1.0>
Validation Results : **DONE PASSED**
Permanent link : <https://pancanadario.ihe-catalyst.net/evs/report.seam?oid=1.3.6.1.4.1.12559.11.50.4.115>
Data Visibility : Public

Validate again Perform another validation

Validation Results

Matchbox Standard Report Additional Metadata Matchbox XML

Validation Summary 99 85

2 Validation of item #230 PASSED

Validation Summary 99 85

Constraint ID	Type_Specific_Checks_DT_URL_Resolve
Constraint Type	InstanceValidator
Constraint Description	URL value 'http://ex-ps-identifier-system.org' does not resolve
Location in validated object	line 11, column 51, FHIRPath: Bundle.identifier.system
Constraint ID	All_observations_should_have_a_performer
Constraint Type	InstanceValidator
Constraint Description	Best Practice Recommendation: In general, all observations should have a performer
Location in validated object	line 834, column 6, FHIRPath: Bundle.entry[23].resource.*Observation.null?



Where to Access the FHIR Validator

Validator	URL
FHIR Validator Web UI - CA:eReC Validation - PS-CA Validation	https://pancanadianio.ca/evs - https://pancanadianio.ca/evs/default/validator.seam?standard=4 - https://pancanadianio.ca/evs/default/validator.seam?standard=5
Gazelle Datahouse – Proxy for Remote Message Validation	https://pancanadianio.ca/datahouse-ui
CA:eReC FHIR profiles	https://simplifier.net/CA-eReC
PS-CA FHIR profiles	https://simplifier.net/PS-CA-R1
CA-Core FHIR profiles	https://simplifier.net/CA-Core



Canada Health Infoway

Thank you!

To learn more about the Projectathon 2025, visit:

<https://infoscribe.infoway-inforoute.ca/display/PCI/Scope%3A+Projectathon+2025>

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