CERNER Connect Accelerator Documentation

1.0 Overview

CERNER_Connect Accelerator is a workflow designed to streamline the integration of healthcare applications with Electronic Health Records (EHR) using the SMART on FHIR standard. By leveraging the EHR launch mechanism, this accelerator simplifies the process of initiating and authenticating connections between your application and CERNER's FHIR server.

1.1 Scope

This workflow is executed through the registered CERNER application and **does not require manual initiation from the Bridgegate Health Workbench.**

The scope of this accelerator is limited to only three FHIR APIs:

- Patient
- Encounter
- Condition

The app is launched by the EHR calling a launch URL specified in the EHR's configuration. The launch URL includes a launch token and the FHIR server's endpoint URL (ISS parameter) appended in the query string. The app, upon receiving the launch URL, exchanges the launch token and client identification parameters to obtain an authorization code and eventually the access token.

Upon successful authorization, BridgeGate is empowered to retrieve the requested APIs from CERNER EHR, securely storing them in a designated location for subsequent user operations, including transformation and validation.

It's important to note that this accelerator does not include destination connection (SFTP, API, HTTP etc…) and leaves it upon users' choice on how they will handle the accessed data.

For detailed information on the SMART on FHIR launch process, refer to the official documentation.

The accelerator has 3 workflows:

1. **01_ehr_smart_launch** – This will be initiated once the patient is selected in EPIC application and generates a launch token.

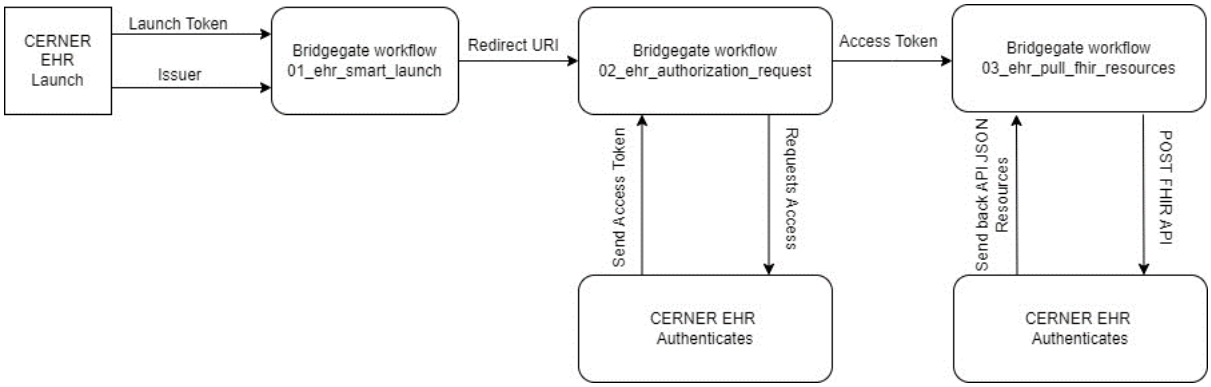
2. **02_ehr_authorization_request** – After launch, this will fetch the authentication token required to access FHIR API's.
3. **03_ehr_pull_fhir_resources** – This will use token to fetch the 3 resources configured.

1.1.2 Workflow

The workflow begins with the launch of the CERNER EHR, where a patient is selected, triggering the automatic initiation of the first workflow, 01_ehr_smart_launch. This initial step involves the EHR passing a launch token for authorization.

Following successful authorization, the process seamlessly transitions to the second workflow, 02_ehr_authorization_request, which generates the essential access token required for communication with the FHIR API.

Upon securing the access token, the third workflow, 03_ehr_pull_fhir_resources, is automatically initiated. This final step involves calling the requested FHIR API, facilitating the download of the patient data in JSON format, thus completing the comprehensive and automated data retrieval process.



1.2 Prerequisites

Before using the CERNER_Connect Accelerator, ensure that you have the following prerequisites in place:

1. **Registered CERNER Application:**
   - Register your application either through Cerner code console.

2. **CERNER Client ID:**
   - Obtain the CERNER client ID for your registered application.

3. **CERNER API Scope:**
   - Determine the necessary CERNER API scope required for your application.

4. **CERNER Redirect URL:**

- Set up a valid EPIC redirect URL to handle the callback from CERNER after the authentication process.

1.3 Download and Installation

To download and use the CERNER_Connect Accelerator, follow these simple steps:

1. **Download:**
    - Download the accelerator package.

2. **Unzip:**
    - Unzip the downloaded package to reveal its contents.

3. **Extract to BridgeGate Installation Folder:**
    - Locate the BridgeGate installation folder on your system.

4. **Navigate to Accounts Folder:**
    - Inside the BridgeGate installation folder, navigate to the 'accounts' folder.

5. **Choose Your Folder:**
    - Select the appropriate folder based on your application or configuration.

6. **Extract Files:**
    - Extract the contents of the accelerator package into the chosen folder.

1.6 Step-By-Step Process with Screenshots.

Step 1: Register CERNER Client Application

Navigate to the CERNER developer portal or contact your CERNER representative to register a new client application.

Provide basic details such as:

- Name of the application
- API access scope for the application **(Needs to be added to accelerator)**
- Redirect URI (critical for authentication) **(Needs to be added to accelerator)**

Save the registration to generate:

- Client-ID **(Needs to be added to accelerator)**
- Client-secret
- Application-ID based on the chosen application scope.

Note: CERNER representative typically handles this registration process.

- The CERNER redirect URL string would be:

http://**[SERVER_URL]**/portal/executeworkflow?accountName=training&wfGroupName=epic_connect&wfName=02_ehr_authorization_request

Where **[SERVER_URL]** would be your server URL where the workflow is hosted, in this case I have hosted my workflow to https://training.bridgegatehealth.com, so my final URL would be:

Redirect URL: Needs to be added to CERNER application and accelerator

https://training.bridgegatehealth.com/portal/executeworkflow?accountName=training&wfGroupName=epic_connect&wfName=02_ehr_authorization_request

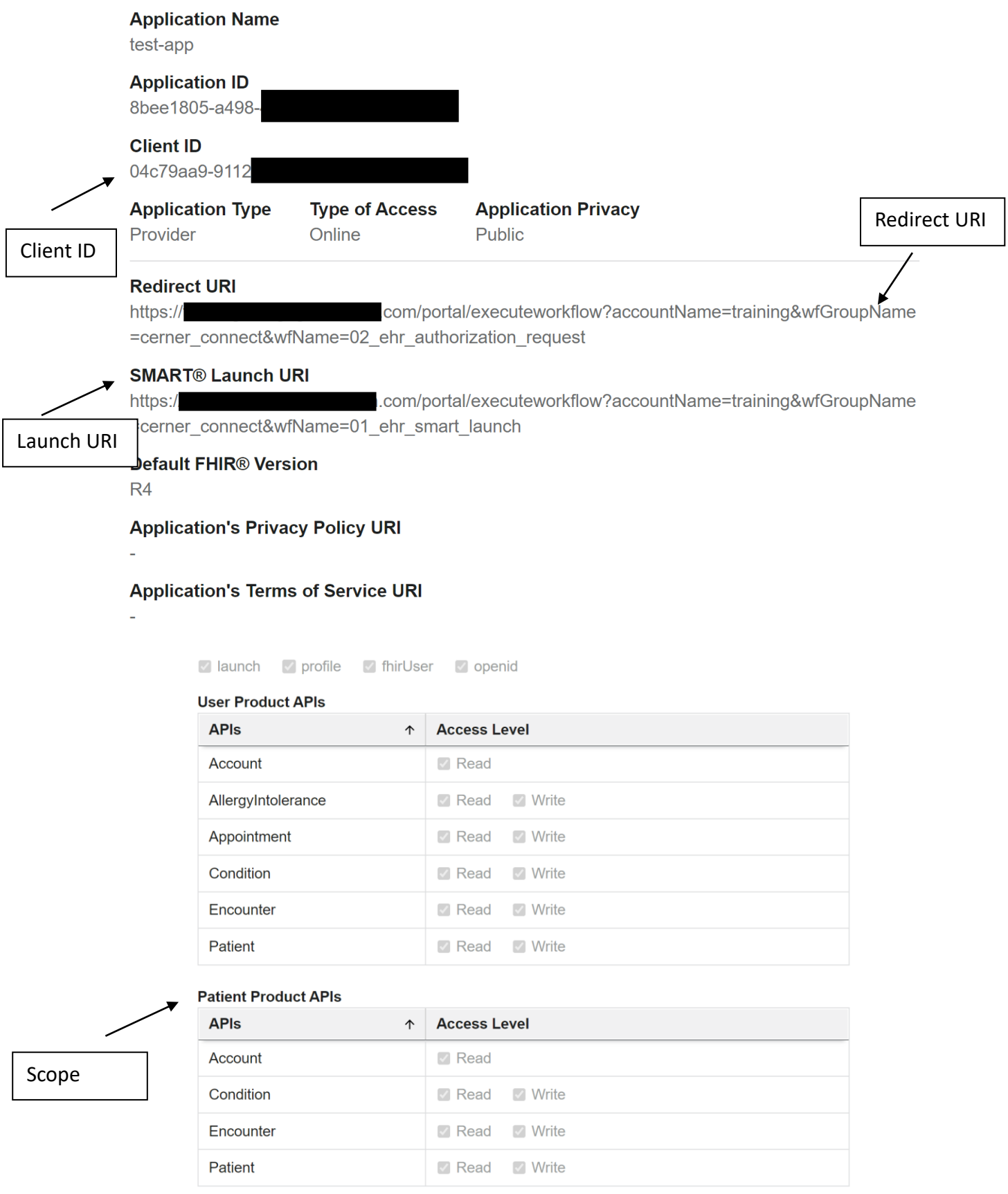


Figure 1: Cerner Application Screen

Step 2: Launching the Application

Following successful registration, launch the application either in the CERNER sandbox or production environment.

CERNER representative will configure the EHR by adding necessary details, with the launch URL set to the bridgeGate URL as mentioned below.

Note: CERNER representative will manage the configuration process, ensuring smooth integration.

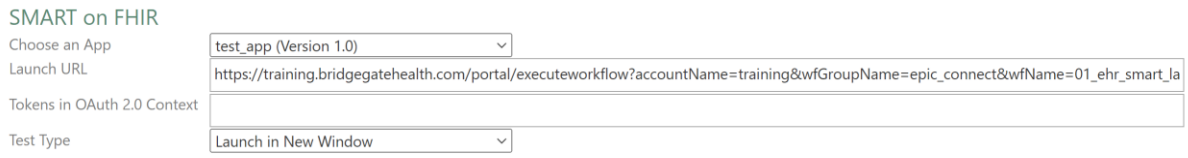


Figure 2: Sandbox EHR simulator with launch URL

- The CERNER launch URL to receive the request to your app would be:

http://**[SERVER_URL]**/portal/executeworkflow?accountName=training&wfGroupName=cerner_connect&wfName=01_ehr_smart_launch

Where **[SERVER_URL]** would be your server URL where the workflow is hosted, in this case I have hosted my workflow to https://training.bridgegatehealth.com, so my final URL would be:

Launch URL – Needs to be configured in launching EHR.

https://training.bridgegatehealth.com/portal/executeworkflow?accountName=training&wfGroupName=cerner_connect&wfName=01_ehr_smart_launch

Step 3: Configuring your accelerator

1. Open **BridgeGate Health** Workbench.
2. Check if the folder you moved is available in the following tabs:
    a. Inbound Tab
    b. Outbound Tab
    c. Workflow Tab
3. In the Workflow **"01_ehr_smart_launch"**, you should see three variables:
4. **CERNER_Client_ID:** This should be your client ID registered in the above step.
5. **EHR_Redirect_URL:** This should be the redirect URI we generated.
6. **EHR_Scope:** This should be exactly as per the APIs selected in your application.
7. Ensure that these variables are correctly configured for seamless integration with CERNER using the CERNER_Connect Accelerator.

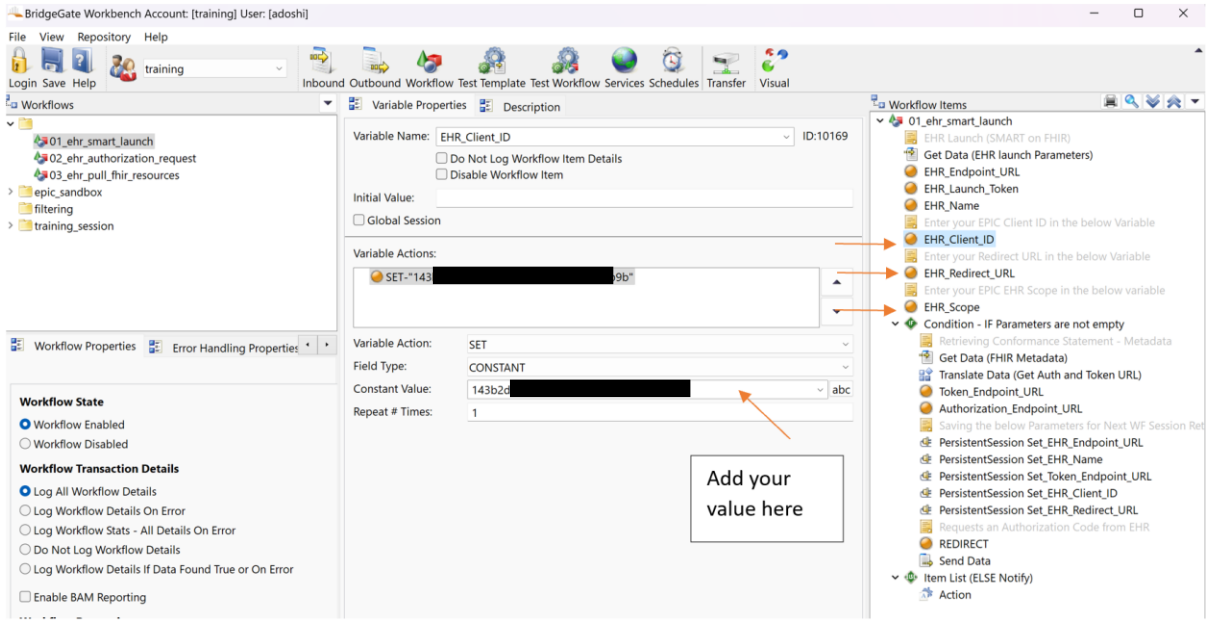


Figure 3: Bridgegate workflow screen

Step 4: Launch CERNER Application

- Access the CERNER application in either the sandbox or production environment.
- Log in with appropriate credentials.

Select Patient:

- Navigate to the patient selection section within the CERNER application.
- Choose the patient for whom you want to fetch FHIR resources.

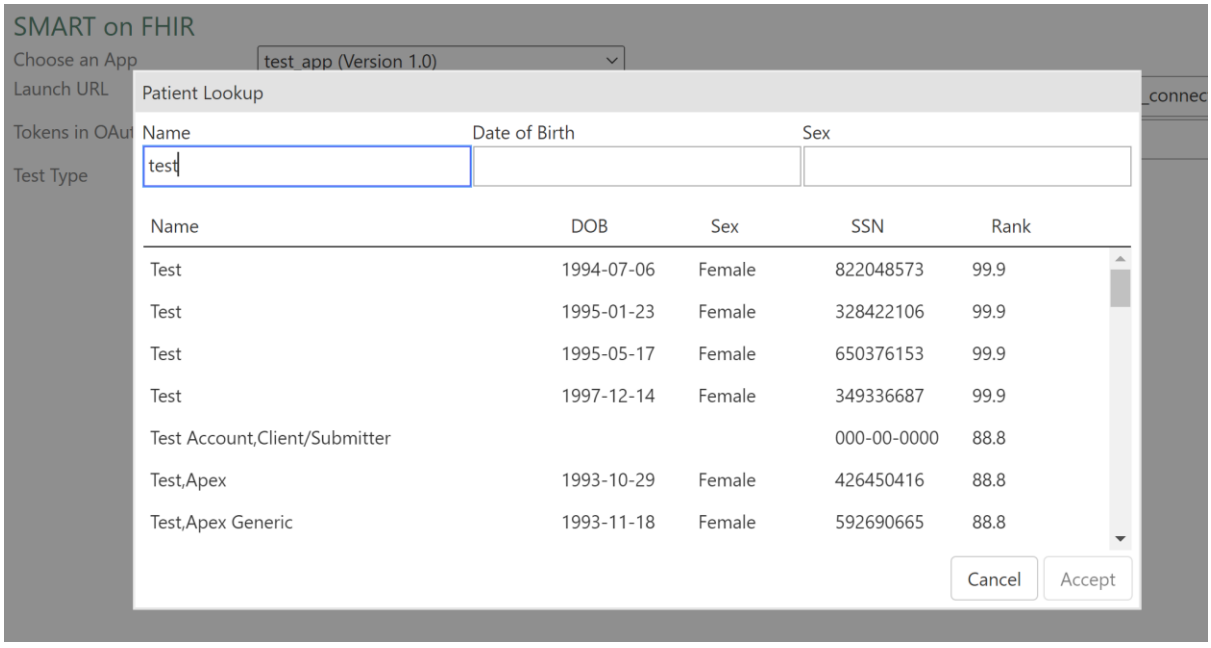


Figure 4: Patient selection screen

BridgeGate Data Fetch:

- Once the patient is selected, bridgeGate will automatically initiate the data fetching process by calling the configured APIs, as specified in the workflow (e.g., workflow 03_ehr_pull_fhir_resources).

Confirmation or Error:

- Upon successful data retrieval, a redirect will occur, and the FHIR JSON will be displayed on your web screen, confirming a successful operation.
- In the event of an error, an error message will be displayed instead.

Figure 5: Successful API fetch confirmation

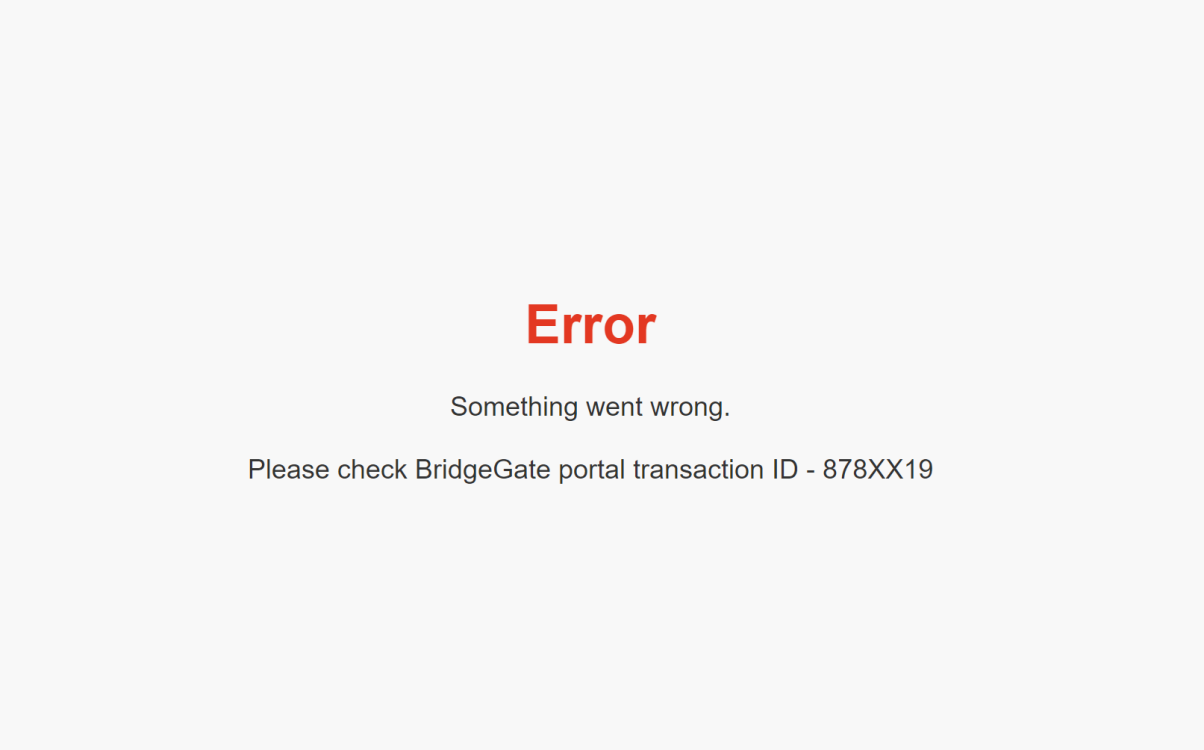


Figure 6: Error Screen if Authentication or API Failed

Review FHIR Resources:

- After a successful fetch, review the FHIR resources displayed on your screen. These resources are now available in the bridgeGate environment.
- Leverage the fetched FHIR resources for various purposes, such as translation, analysis, or forwarding to another destination as per your specific requirements.