IICS REST V2 Connector

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Agenda

• Introduction
• What is REST API?
• Deep Dive: IICS REST V2 Connector
• Connection Properties
• Authorization
• Swagger File Generation
• REST V2 Operations
• Demo – Retrieving IICS activity log entries using REST V2 connection
• Q&A
An API (application program interface) is a set of rules that enables different programs to communicate with one another. It outlines the appropriate way for a software developer to compose a program on a server that communicates with various client applications.

What is REST API?

REST stands for REpresentational State Transfer, meaning when a REST API is called, the server will transfer a representation of the requested resource’s state to the client. This representation of the state can be in a JSON, XML, or HTML format.
A RESTful web application exposes information about itself in the form of information about its resources. It also enables the client to take actions on those resources, such as create new resources (i.e. create a new user) or change existing resources (i.e. edit a post). For example, when a developer calls Instagram API to fetch a specific user (the resource), the API will return the state of that user, including the name, the number of posts that user posted on Instagram so far, how many followers they have, and more.
REST API breaks a transaction down to generate a sequence of small components. Every component addresses a specific fundamental aspect of the transaction. This modularity makes it a flexible development approach.

It uses the following requests:
- **GET** to fetch data
- **PUT** to alter the state of data (updating)
- **POST** to create data
- **DELETE** to delete data
IICS REST V2 Connection

• One can use REST V2 Connector in IICS to interact with web service applications that support REST API.

• You can use REST V2 Connector in a Source transformation, Target transformation, or midstream in a Web Services transformation in IICS mapping.

• You can use the following REST methods in source, target, and midstream transformation: GET, PUT, POST, DELETE, OPTIONS, HEAD

• You can configure TLS authentication to establish one-way or two-way secure communication with the REST API. To do you will have to configure jvm options for trust store/key store properties.

• When you create a connection, it is mandatory specify the swagger specification file and the authentication method if required.

• REST V2 Connector supports swagger specification version 2.0.
• You create a REST V2 connection on the Connections page in Administrator console.

• Choose the runtime environment, Authentication Type that the webservice endpoint supports, Auth/Oauth configuration properties, Swagger file path, Trust store/KeyStore properties, proxy configurations and advanced fields section.

• Advanced field includes properties such as Connection Timeout, connection delaytime, retry attempts, qualified Schema.

• If your REST endpoint does not have a swagger specification, you can generate the swagger specification file from Administrator.
A successful REST V2 connection in IICS
Authorization and media types supported

• Supported authentication types:
  1) Standard
     - BASIC
     - DIGEST
     - OAuth 1.0
  2) OAuth 2.0 client credentials
  3) OAuth 2.0 authorization code
  4) JWT bearer token

• Supported media types
  application/xml, application/json, application/x-www-form-urlencoded, JSON subtype, JSON custom type, Extended JSON mime type, text/xml
Swagger is a specification for documenting REST API. It specifies the format (URL, method, and representation) to describe REST web services.

A Swagger file is JSON format file.

It is mandatory to have Swagger file to configure IICS RestV2 connection to integrate with any REST API.

Swagger file describes the HTTP method, parameters required and the expected response fields for that API.

It is similar to WSDL file in SOAP based Webservices.
Swagger file generation

- Login to IICS Org > Administrator Section > Swagger files > New.
- Swagger Generation page will appear.
- Fill in the details according to the type of REST call and other parameters for the REST API CALL such as API paths, authentication details, header parameters, response json file and click OK.
- Typically we have 4 operations in REST, GET, POST, PUT or DELETE.
- An entry for the file will be created in the Swagger page.
- Click download to save the Swagger file to a local directory in Secure Agent machine.
Swagger file

Swagger File Details

- **Name**: aks_activity_swagger
- **Runtime Environment**: aks_local_agent
- **URL**: https://no1.demos.informaticacloud.com
- **Verb**: GET
- **Authentication Type**: None
- **API Base Path**: /apis/acs/v2
- **API Path**: /activity/activitylog
- **Username**:
- **Password**:
- **Token**:
- **Token Secret**:
- **Consumer Key**:
- **Consumer Secret**:
- **Accept**: application/json
- **Headers**: {'idxSessionId': '1'}
- **Query Params**: {'offset': '0', 'rowLimit': '1'}
- **Operation Id**: activity
- **Content Type**: application/json
- **Raw Body**: 

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REST V2 Operations

- One can create a mapping in the Mapping Designer to read or write data to the web service application.
- Use REST V2 connection in mappings, DSS doesn’t support this connection.
- REST V2 as source/target/midstream
- You can use REST V2 Connector to perform paging in Source and Midstream transformations.
• When you create a Source transformation, configure an XML request message for the operation that you want to perform in the web service application.

• Use the Request Message Editor to create a request message.

• Select the elements in the response structure that you want to include as output fields. The Secure Agent converts the XML response in the hierarchical structure to relational groups at run time.

• Use case: For example, make a GET call to webservice endpoint and return the response of the user details.
When you use REST V2 Connector midstream in a mapping, you first create a business service for the operation that you want to perform in the web service application.

You then associate the business service in a Web Services transformation midstream in a mapping to read from or write data to the web service application.

Use case: You can use REST v2 in midstream when you want to make a GET/POST/PUT request to the webservice endpoint. This is the most widely used approach.

For example, you can use REST V2 Connector as a midstream transformation to make a GET call to the web service/ POST call to web service.
• Create a Target transformation in the Mapping Designer to write data to a web service application
• When you select a REST V2 connection for a Target transformation, you can select an operation.
• You can add multiple input groups into the REST target and define the primary and foreign key relationships between the multiple input groups before the mapping.
• Use case: For example when you want to make a UPDATE call to update the details of user resource
• REST V2 connector supports paging for parsing the response from the web service endpoint in IICS.

• You would need to specify "Page" under Paging Type property present under Advanced Properties of the ReST V2 connection.

• This property enables paging support for ReST V2 connector and considers the values of Page Parameter, Start Page, End Page and End of Response Expression properties.
I will be showing you a demo on how you can make use of REST V2 connector to fetch activity log entries using IICS REST API
To capture the REST API Request/Response in the session log of the task, enable log level debug property at the agent level:
Best Practices

• You can configure the Cache Size for Web Service Request/Response.

• If you want to process special characters, set infa_codepagename property to UTF-8 at the agent level.

• It is recommended to try out the REST API request/response outside IICS using any REST clients like Postman/Advanced REST client before creating the REST V2 connection in IICS.

• For more information on the supported objects please have a check on the Rest v2 connector guide.
References

• IICS REST V2 connector guide

https://docs.informatica.com/integration-cloud/cloud-data-integration-connectors/current-version/rest-v2-connector

• Informatica Knowledge Base: https://search.informatica.com
Thank You