Informatica®

Informatica® Cloud Data Integration

Zuora REST V2 Connector

Informatica Cloud Data Integration Zuora REST V2 Connector
October 2022

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Preface

Use *Zuora REST V2 Connector* to learn how to read from or write to Zuora by using Cloud Data Integration. Learn to create a connection, develop mappings, synchronization tasks, and run synchronization and mapping tasks in Cloud Data Integration.

Informatica Resources

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CHAPTER 1

Introduction to Zuora REST V2 Connector

This chapter includes the following topics:

- Zuora REST V2 Connector Overview, 7
- Zuora REST V2 Connector Task and Object Types, 7
- Administration of Zuora REST V2 Connector, 8

Zuora REST V2 Connector Overview

You can use Zuora REST V2 Connector to connect to Zuora from Data Integration. Use Zuora REST V2 Connector to read data from or write data to Zuora. You can use Zuora objects as sources and targets in Mapping tasks and mappings.

When you run a task or mapping, the Secure Agent uses the Zuora REST API to perform the specified operation and reads data from or writes data to Zuora.

You can switch mappings to advanced mode to include transformations and functions that enable advanced functionality.

Zuora REST V2 Connector Task and Object Types

The following table lists the Zuora object types that you can include in Data Integration tasks:

Task Type	Source	Target
Synchronization	No	No
Mapping	Yes	Yes

If a mapping or mapping task fails, the error messages are logged in the session log file located at `<Secure Agent installation directory>/apps/Data_Integration_Server/logs`.

Administration of Zuora REST V2 Connector

Before you use Zuora REST V2 Connector, complete the following prerequisites:

- Install the Secure Agent on a 64-bit machine.
- Access Zuora portal to create user credentials.
- Ensure that you have the tenant level permission for Bearer Token Management.
- Ensure that you have an API User role with the API Write Access.

Creating an OAuth Client

If you want to configure Zuora REST V2 connections to use OAuth 2.0 authentication to access Zuora, you must create an OAuth client in Zuora. The client ID and the client secret are generated for a new OAuth client, and the user needs to provide the client ID and the client secret in the REST request to create an access token for the API Gateway.

1. Login to **Zuora** website.
2. Click your username at the top right, and navigate to **Administration** > **Manage Users**.
3. Click the **First Name**, **Last Name**, or **User Name** of the user from the list of users on the **All Users** page.
4. In the **OAuth Clients** section, you can view or delete the existing OAuth Client for the user.
5. To create a new OAuth Client, enter the **Client Name**, **Description**, and select the **Accessible Entities** for those entities that you want to authenticate.
6. Click **create**.
7. Upon the successful creation, the Client ID and Client Secret appears on the screen. Save the Client ID and Client Secret.

   Note: The client secret appears only once on the screen.
8. Click **OK** to close the window.

CHAPTER 2

Zuora REST V2 Connections

This chapter includes the following topics:

- Zuora REST V2 connections overview, 9
- Zuora REST V2 connection properties, 9
- Rules and guidelines for Zuora REST V2 custom fields, 12

Zuora REST V2 connections overview

Create a Zuora REST V2 connection to connect to Zuora and read data from or write data to Zuora. You can use Zuora REST V2 connections in Mapping tasks and mappings.

Zuora REST V2 connection properties

When you create a Zuora REST V2 connection, you must configure the connection properties.

The following table describes the Zuora REST V2 connection properties:

Property	Description
Runtime Environment	Runtime environment that contains Secure Agent used to access Zuora.
Authentication	Select **ZuoraRESTV2**.
Base Url	Endpoint URL of REST API to which you want to make calls. Do not specify the query parameters with the Base URL. For example, https://rest.apisandbox.zuora.com/
Authentication Type	The type of user authentication to connect to the Zuora portal login. Select authentication method that the connector must use to login to the Zuora portal login. You can select the following authentication types: - Basic Auth - OAuth 2.0 Default is OAuth 2.0.

Property	Description
Username	User name for the Zuora portal login. You must enter the username if you select **Basic Auth** as the **Authentication Type**.
Password	Password for the Zuora portal login. You must enter the password if you select **Basic Auth** as the **Authentication Type**.
Client ID	The client ID to complete the OAuth 2.0 authentication to connect to Zuora. You must enter the client ID if you select **OAuth 2.0** as the **Authentication Type**.
Client Secret	The client secret key to complete the OAuth 2.0 authentication to connect to Zuora. You must enter the client secret key if you select **OAuth 2.0** as the **Authentication Type**.
Grant Type	The type of authentication used to obtain the token. Use **client_credentials**.
Entity ID	When you have multiple entities in a single tenant, specify the entity ID to connect to a particular entity. You can also specify the entity ID in the Request Message Editor. If you specify the entity ID in connection properties and Request Message Editor, entity ID specified in the connection properties takes precedence **Note: Entity ID** is mandatory when you select **OAuth 2.0** as the **Authentication Type** and specify custom fields in the **Custom Field Config** property.

Property	Description
Zuora API Version	Swagger file that you want to use for the Zuora REST V2 connection. You can select the **Zuora Swagger API V1_2017_09_06** or **Zuora Swagger API V1_2018_08_23** swagger file.
Custom Field Config	Specify the name of the Zuora objects for which you want to configure custom fields as comma-separated values. You can specify the following Zuora objects that support custom fields: - Account - Accounting Code - Accounting Period - Amendment - Contact - CreditBalanceAdjustment - CreditMemoItem - CreditMemo - DebitMemoItem - DebitMemo - Feature - InvoiceAdjustment - InvoiceItemAdjustment - InvoiceItem - Invoice - JournalEntryItem - JournalEntry - OrderAction - Order - Payment - ProductFeature - Product - ProductRatePlanCharge - ProductRatePlan - RatePlanCharge - RatePlan - Refund - RevenueEventItem - RevenueEvent - RevenueScheduleItem - RevenueSchedule - Subscription - SubscriptionProductFeature - TaxationItem - Usage **Note:** Applies only when you select the value of the **Zuora API Version** as **Zuora Swagger API V1_2018_08_23**. For more information about Zuora objects that support custom fields, visit https://knowledgecenter.zuora.com/BB_Introducing_Z_Business/Manage_Custom_Fields/Objects_that_Support_Custom_Fields_in_Zuora.

Rules and guidelines for Zuora REST V2 custom fields

Consider the following rules and guidelines to read data from or insert data to custom fields in Zuora:

- If you want to retrieve custom fields for all the Zuora objects, you can specify **ALL** instead of specifying all the Zuora objects in the **Custom Field Config** property.
- When you select the value of the **Zuora API Version** as **Zuora Swagger API V1_2017_09_06**, the custom fields do not appear in the **Field Mapping** tab.
- When you do not have the required API role or permission for the Zuora object specified in the **Custom Field Config** property, the custom fields do not appear in the **Field Mapping** tab.
- When you specify an object that does not support custom fields in the **Custom Field Config** property, the custom fields do not appear in the **Field Mapping** tab.

CHAPTER 3

Zuora REST V2 Operations

This chapter includes the following topics:

- Zuora REST V2 Operations Overview, 13
- Zuora REST V2 Source Operations, 13
- Zuora REST V2 Target Operations, 15
- Rules and Guidelines for Zuora REST V2 Operations, 16

Zuora REST V2 Operations Overview

Zuora exposes the web service API that the Secure Agent uses to perform integration tasks through the REST protocol.

When you create a mapping, you can associate a Zuora REST V2 connection and an operation. The Secure Agent connects to the web service to access, transform, or write data. The request and response are REST messages. The REST request and response messages contain hierarchical data, where the data follows a JSON schema. If you want to write data to a relational target, the Secure Agent converts the hierarchical data fetched from Zuora to relational data.

Note: When you use the Get operation, you can read maximum of 65,000 characters in a single call. If an error occurs while reading the records, reduce the limit specified for the Get operation and try again. For information about the operations, see the Zuora API documentation.

Zuora REST V2 Source Operations

Create a Source transformation in the Mapping Task wizard to read data from Zuora.

When you select a Zuora REST V2 connection for a Source transformation in a mapping to read data from Zuora, you can select an operation from the list of operations.

After you specify the connection, specify the operation on the **Source** tab of the Source transformation.

Select the operation you require, configure the request message in JSON from the sample template provided, and configure the advanced properties for the operation.

If you want to write to a relational target, define a relational structure for the source data by mapping the incoming fields that is in hierarchical format to the output fields in relational format. When you run the mapping, the Secure Agent retrieves data for the specified operation from Zuora.

Configuring a Request Using Request Message Editor

When you create a Source transformation, configure an JSON request message for the operation that you want to perform in Zuora.

Use the Request Message Editor to create a request message. The request message is in JSON format and contains request parameters exposed by Zuora REST API for a specific operation. You can use the default request message for the operation and then customize the request message to specify the data that you want to include.

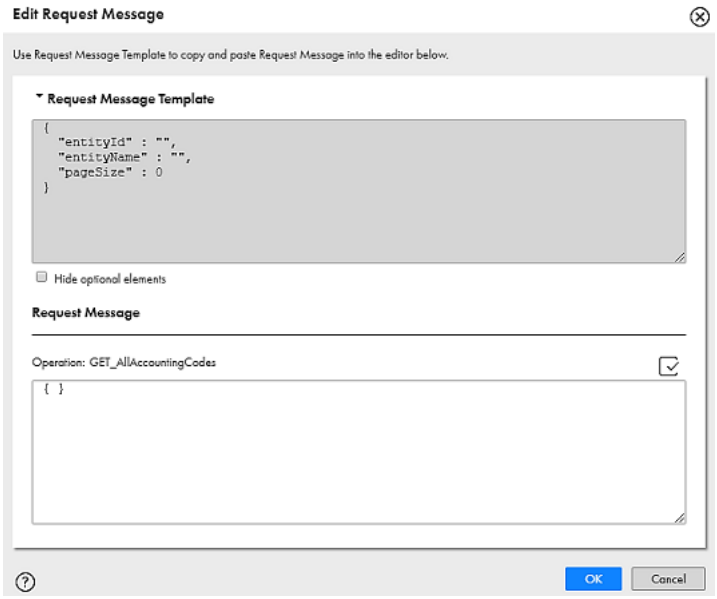
To customize your request, copy the request message from the sample template to the Request Message Editor pane where you can edit the JSON message and add the attributes for the request. Remove unnecessary and empty tags from the request message to avoid operation failure. You can hide the optional elements to see the mandatory elements required for the request message.

For example, you want to perform an operation GET_AllAccountingCodes using Zuora REST V2 Connector to retrieve reports for all users in a single call.

The following JSON sample shows the filters used for the GET_AllAccountingCodes operation:

```
{
  "entityId" : "",
  "entityName" : "",
  "pageSize" : 0
}
```

The following image shows the validated request message in a GET_AllAccountingCodes operation in the Mapping Designer:



The request message format in Zuora REST V2 Connector follows the service request definition in Zuora. Ensure that you use well-formed JSON formatting in the request message. You can verify if the JSON request is valid to ensure that the JSON matches the structure expected by the operation.

Field Mapping in a Source Transformation

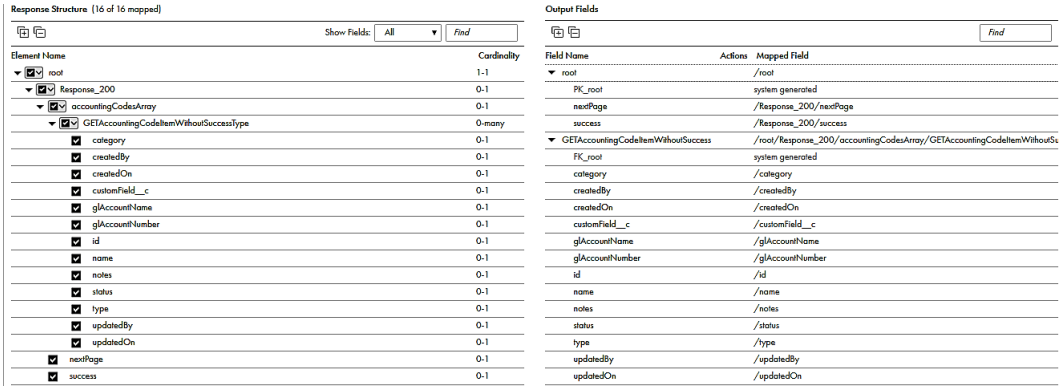
The response message format follows the service response definition in Zuora. You can map response fields from a hierarchical to a relational structure of output groups and fields.

After you configure an operation for a source and specify the request message, create the relational format from the hierarchical data to include groups and fields that you want in the output.

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

The output groups along with the primary and foreign keys are generated. You can pause on the output field to view the XPath expression, which indicates which field the output field is mapped to in the response structure of the hierarchy tree.

The following image shows an example hierarchical response structure generated from the request JSON for the Get_AllAccountingCodes operation and the corresponding relational output fields for the response:



You can edit the data type, precision, and scale for the groups and fields after mapping the fields.

Zuora REST V2 Target Operations

Create a Target transformation in the Mapping Task wizard to write data to Zuora. When you select a Zuora REST V2 connection for a Target transformation in a mapping, you can select an operation from the list of operations. When you want to write data that is in relational format to Zuora, the Secure Agent converts the relational data to a hierarchical format before writing to Zuora.

When you configure a Zuora target, you can select **Operations** on the **Target** tab to display the list of operations. The Secure Agent creates target fields based on the request message structure of the operation you select on the **Target** tab.

When you write data to Zuora, the Secure Agent includes all the incoming fields from the source, by default. You can exclude the incoming fields, if required. You can add multiple input sources to write data to Zuora target object and define the primary and foreign key relationships between the input sources before you run the mapping. Each input source appears as separate group in the **Field Mapping** tab in the target transformation. You can define key relationships on the **Field Mapping** tab.

File Preparation for Target Transformation

To write data to Zuora, the source file must include the container with the processing options and the wrapper referential elements to perform the specified operation in Zuora.

For information about the required business process parameters and the wrapper elements, see the request elements for the specified operation in the Zuora web service directory. You need to prepare a file to include the wrapper elements along with the data that you want to write to Zuora. You can add the processing options in an Expression transformation later when you write the data to Zuora.

When you run the mapping, the Secure Agent writes data to a configured target .csv file. Later, use this file as a source from which you write data to Zuora.

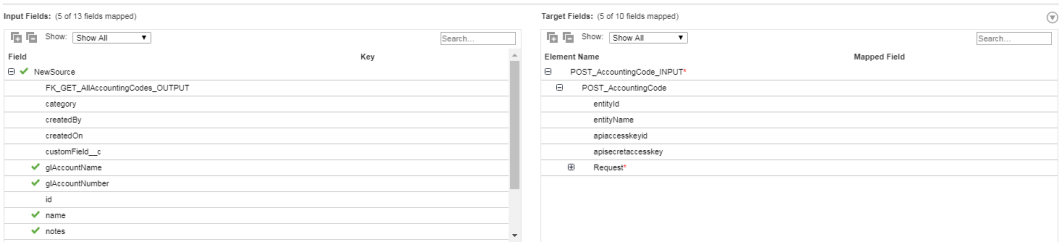
Field Mapping in a Target Transformation

You can map fields that are in a relational structure to the hierarchical structure used by a Zuora target.

On the **Field Mapping** tab for the Target transformation, the fields in the **Target Fields** appear in hierarchical format. The target fields are determined by the request message structure of the operation you select for the Target transformation.

Each source object displays as a group in the **Input Fields** area. You can select fields in the **Input Fields** area to map the fields to the request. If the input fields include multiple input groups, map the groups to the corresponding nodes in the request. Be sure to map all of the fields that you require in the request.

The following image shows an example of mapped input fields from the source file with the Zuora target in an operation to insert data into Accounting Code Types object:



Rules and Guidelines for Zuora REST V2 Operations

Consider the following rules and guidelines for Zuora REST V2 operations:

- To read large number of records from Zuora and increase the Secure Agent memory, you must edit the JVM options for DTM and INFA_MEMORY for Tomcat JRE.
  Specify JVMOption1 as `-Xmx2048m`, JVMOption2 as `-Xmx2048m`, and INFA_MEMORY as `'-Xms256m -Xmx2048m -XX:MaxPermSize=128m'` in the **System Configuration Details** section of the Secure Agent, and then restart the Secure Agent.
- When you select an operation for a Zuora source, target, or midstream, the **Select Operation** dialog box displays the first 200 operations that is listed in the Zuora Swagger API V1_2017_09_06 file. If the required operation is not listed, you must search for the operation that you want to perform on the Zuora source, target, or midstream.
- When you select the **Action_POSTQuery** operation for a Zuora source, target, or midstream, the **Field Mapping** tab does not display the **recordsArray** field.

CHAPTER 4

Mappings and Mapping Tasks with Zuora REST V2

Use the Data Integration Mapping Designer to create a mapping.In advanced mode, the Mapping Designer updates the mapping canvas to include transformations and functions that enable advanced functionality.

Zuora REST V2 Source Transformation in Mappings

When you configure a Source transformation, select the Zuora REST V2 connection and choose an operation to represent a Zuora source. You can parameterize a Zuora REST V2 connection.

When you select a Zuora REST V2 connection for a source, you can select an operation from the list of operations. You can use the request message template to configure the request message in a JSON format. You can parameterize the input values in the request message. Configure the advanced properties to set the tracing level and the cache size for the web service response.

You can view the response structure in the field mapping. When you map the elements from the response structure to the output fields, the Secure Agent creates the output groups, along with the primary and foreign keys for the field names. When you deploy the mapping in a mapping task and run the task, the Secure Agent reads the data from Zuora.

Source Transformation Properties

You can use one or more source transformations in a mapping. Use a Joiner transformation to join data from two sources.

When you select a source, the **Properties** panel displays the following information:

- **General**. Configure the name and a description for the source.
- **Source**. Select the connection and the operation, and configure the request options and advanced source properties.
- **Field Mapping**. Map elements of the response structure with the output fields.
- **Fields**. Edit the metadata source field metadata that you want to use in the mapping.

Advanced Source Properties

In a mapping, you can configure a source to represent a Zuora source. For Zuora REST V2 connections used in Mapping Configuration tasks, you can configure advanced properties on the **Source** page of the Mapping Configuration Task wizard.

The following table describes the advanced properties that you can configure in a source:

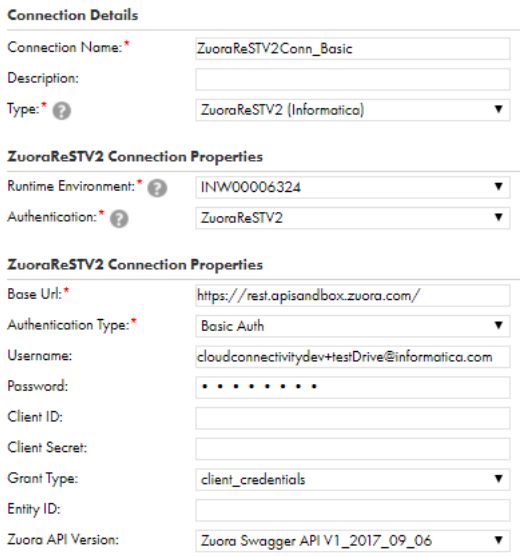
Property	Description
Tracing Level	Amount of detail that appears in the log. Use the following tracing levels: - Terse - Normal - Verbose Initialization - Verbose Default is normal.
Cache Size for Web Service Response (KB)	Memory available for the web service response. If the web service response contains many rows or columns, you might want to increase the cache size. Default is 100 KB.

Source Transformation Mapping Example

You are a payroll administrator and you want to extract accounting codes details for all employees from Zuora to a flat file using Zuora REST V2 connection.

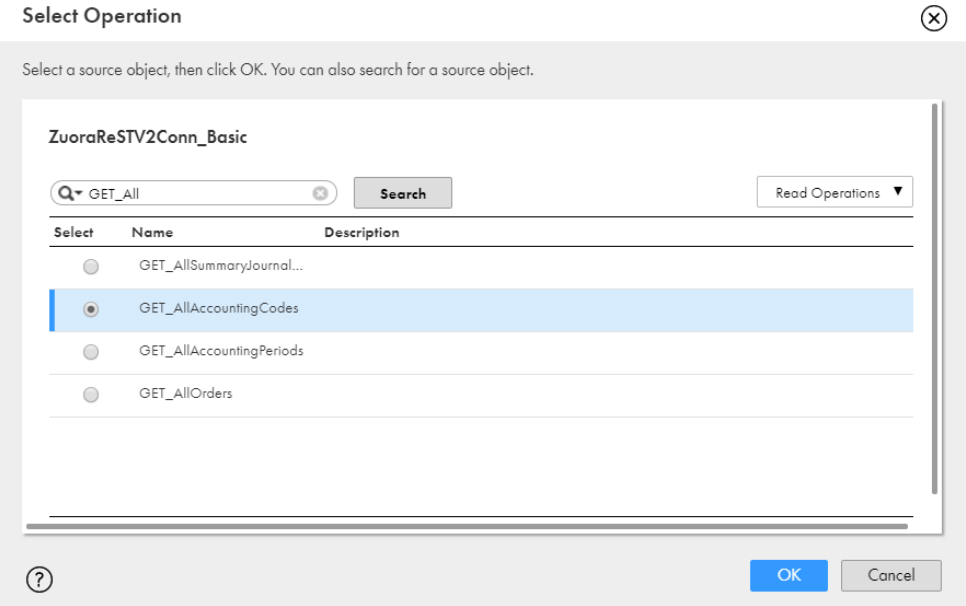
To read data from Zuora and write to a flat file using Zuora REST V2 connection, perform the following tasks:

1. Create a Zuora REST V2 connection. Verify that you select the Swagger file that contains accounting codes object in the connection properties.
   The following image shows the configured Zuora REST V2 connection:



2. Create a flat file connection to write data to the flat file.
3. Create a Zuora REST V2 mapping.
4. Add a Source transformation. Specify a name and description in the general properties.

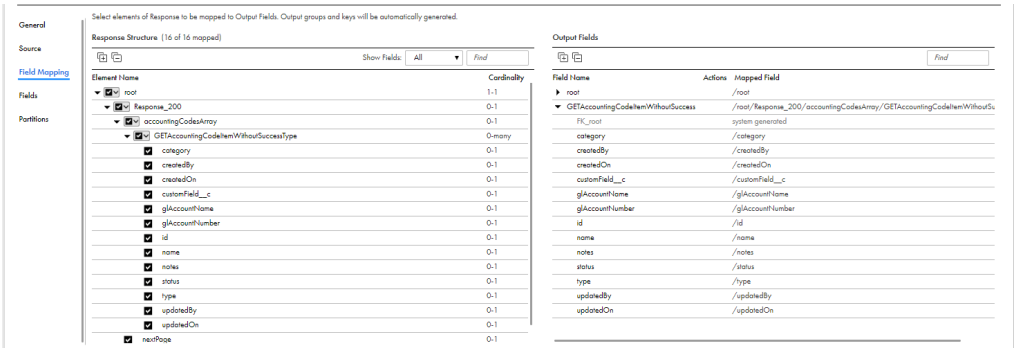
5. On the **Source** tab, perform the following steps:
   a. In the **Connection** field, select the configured Zuora REST V2 connection to connect to Zuora REST V2.
   b. In the **Operation** field, select Get_AllAccountingCodes as the operation.
   The following image shows the GetAccountingCodes operations:



   c. In the **Request Options** section, configure the request message in the following JSON format, specify the attributes in the message, and validate the message:

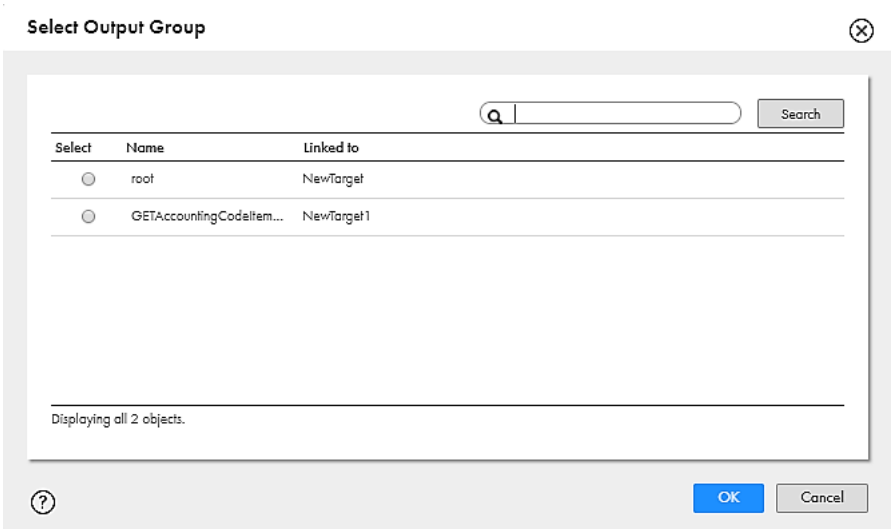
```
{
  "entityId" : "",
  "entityName" : "",
  "pageSize" : 0
}
```

   The request message specifies the criteria to include accounting codes for all employees. You can hide the optional elements to see the mandatory elements required for the request message. You must have the Web Services Admin (Professional) or Can Administer (Standard) user role to use the user parameter.
   d. In the **Advanced Properties** section, set the tracing level to Normal, and use the default cache size of 1024.
6. On the **Field Mapping** tab, select the elements, such as glAccountName, glAccountNumber, id, name, and status in the response structure that you want to map to the output fields.
   The following image shows the response structure on the left pane in a hierarchical format and the output groups on the right pane in a relational format:

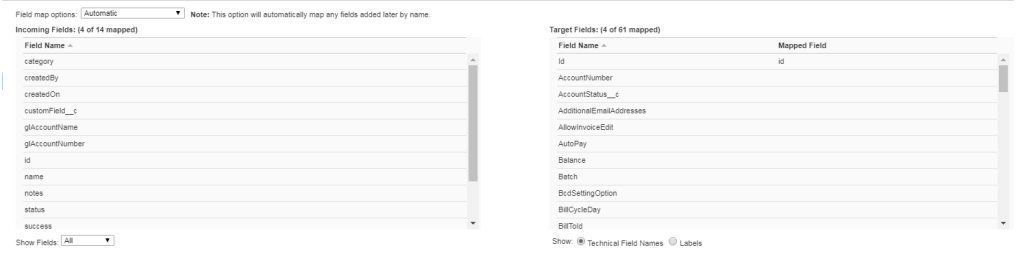


The Secure Agent creates two output groups, root and GETAccountingCodeItemWithoutSuccess, which results in two relational output files. Primary and foreign keys are auto-generated.

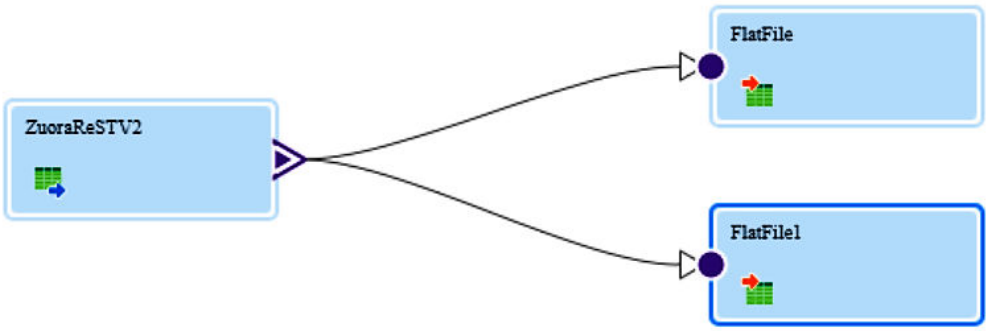
7. Add two Target transformations. Specify name and description in the general properties.
8. Select a flat file connection for the target transformations.
9. Draw a link to connect the `GETAccountingCodeItemWithoutSuccess` output group to the ZuoraRestV2_Read2_1.csv flat file. Draw another link to connect the `root` output group to the ZuoraRestV2_Read2_2.csv flat file.
   The following image shows the **Select Output Group** dialog box where you select the output group to write to each target:



10. On the **Field Mapping** tab, select the automatic field map option.
    The following image shows the target field mapping when you select the automatic field map option for the ZuoraRestV2_Read2_1.csv flat file:



11. Save and run the mapping.
    The following image shows the Zuora REST V2 mapping:



Zuora REST V2 Target Transformation in Mappings

When you select a Zuora REST V2 connection for a target, you can select an operation from the list of operations.

You can add multiple input groups into the Zuora REST V2 target and define the primary and foreign key relationships between the multiple input groups before the mapping.

Target Transformation Properties

You can configure target properties, such as target details and advanced properties, based on the connection type you select. Configure target transformation properties on the **Target** tab of the Properties panel.

When you select a target, the **Properties** panel displays the following areas and information:

- **General**. Defines the transformation name and a description.
- **Incoming Fields**. Includes the field rules that define the data written to the target. Allows a preview of target fields.
- **Target**. Defines the target connection, operation, and advanced options.
- **Target Fields**. Not applicable for Web Service targets.
- **Field Mapping**. Defines the field mappings from the upstream transformation to the target.

Advanced Target Properties

In a mapping, you can configure a target to represent a Zuora REST V2 target. For Zuora REST V2 target connections used in mapping tasks, you can configure advanced properties in the Targets page of the Mapping Task wizard.

The following table describes the advanced properties that you can configure in a Target transformation:

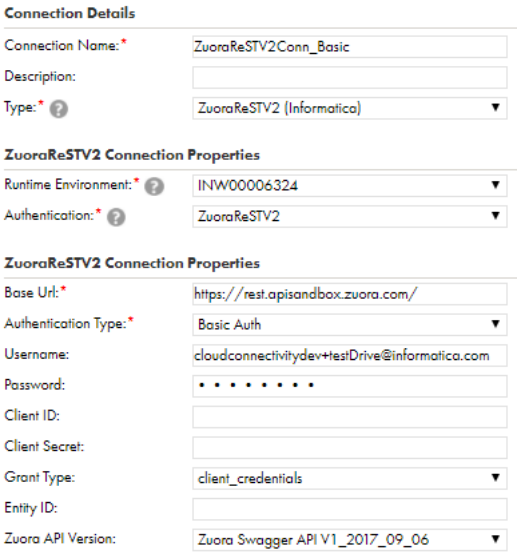
Property	Description
Cache Size for Web Service Request (KB)	Memory available for the web service request. If the web service request contains many rows or columns, you might want to increase the cache size. Default is 100 KB.
Transaction Commit Control	Control to commit or roll back transactions based on the set of rows that pass through the transformation. Use the transaction commit control if you have a large amount of data and you want to control how it is processed.

Target Transformation Mapping Example

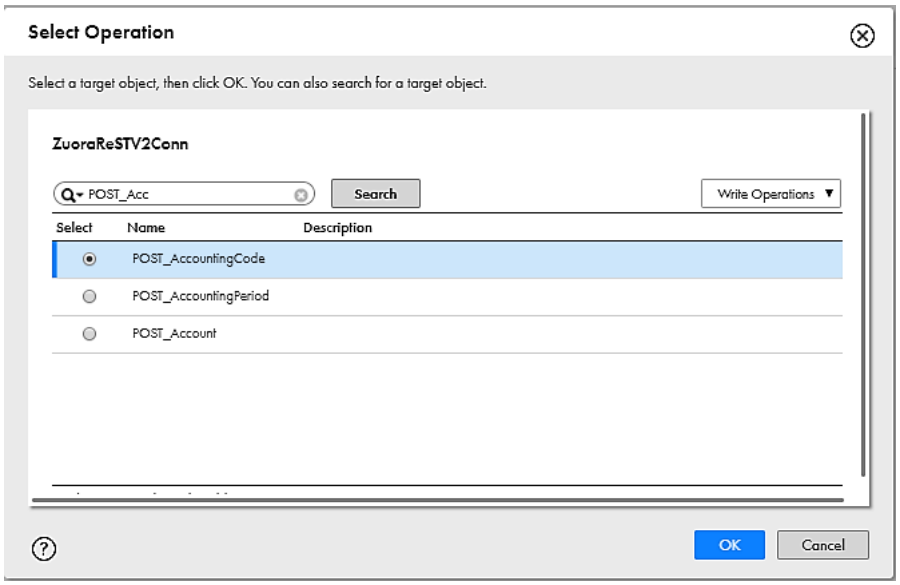
You are an operation administrator and you want to create an Accounting Codes in Zuora using Zuora REST V2 connection.

To create an Accounting Codes object in Zuora from a flat file using Zuora REST V2 connection, perform the following tasks:

1. Create a flat file connection to read data from the flat file.
2. Create a Zuora REST V2 connection to write data to Zuora.
   The following image shows the configured Zuora REST V2 connection:

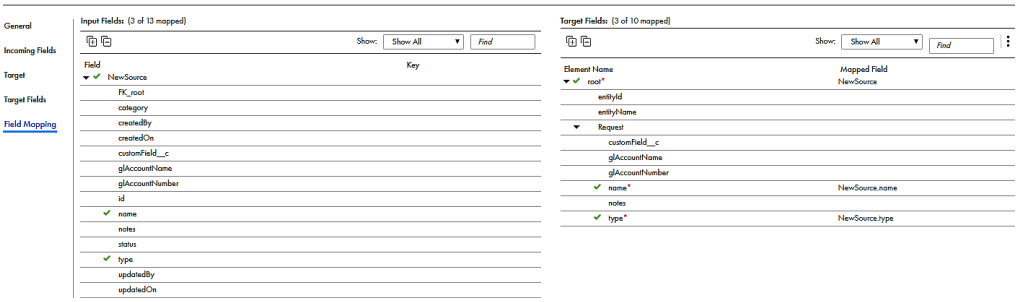


3. Create a Zuora REST V2 mapping.
4. Add a Source transformation to include the flat file object that contains the Accounting Codes information. Add the flat file connection.
5. Add a Target transformation to write the Accounting Codes data to Zuora. Perform the following tasks on the **Target** tab:
   a. In the **Connection** field, select the Zuora REST V2 connection to connect to Zuora.
   b. In the **Operation** field, select POST_AccountingCode as the operation.
      The following image shows the POST_AccountingCode in the list of write operations:



c. In the **Advanced Properties** section, set the cache size and the transaction commit interval.

6. On the **Field Mapping** tab, select the input elements to map to the target fields.
The following image shows all the mapped fields between the input file and the Zuora REST V2 target:



7. When you save and run the mapping in a mapping task, the Secure Agent creates the accounting codes in Zuora.
The following image shows the Zuora REST V2 mapping:

Zuora REST V2 Midstream Transformation in Mappings

Before you configure a midstream transformation, you must create a business service from the **Configure** tab. You must select a Zuora REST V2 connection and an operation when you create a business service.

When you configure the midstream transformation, select the business service and the operation on the **Web Service** tab.

You can map the incoming fields from source file to elements in request structure on the **Request Mapping** tab.

You can view the response structure on the **Response Mapping** tab. When you map the elements from the response structure to the output fields, the Secure Agent creates the output groups, along with the primary and foreign keys for the field names.

Advanced Midstream Properties

The following table describes the advanced properties that you can configure for a midstream transformation:

Property	Description
Cache Size for Web Service Request (KB)	Memory available for the web service request. If the request is more than 100 KB, you can increase the cache size. Default is 100 KB.
Cache Size for Web Service Response (KB)	Memory available for the web service response. If the web service response contains many rows or columns, you might want to increase the cache size. Default is 100 KB.
Allow Input Flush	Not applicable.
Transaction Commit Control	Not applicable.

APPENDIX A

Zuora REST V2 Data Type Reference

This appendix includes the following topics:

- Zuora REST V2 Data Type Reference Overview, 25
- Zuora REST V2 and Transformation Data Types, 25

Zuora REST V2 Data Type Reference Overview

Data Integration uses the following data types in mappings and mapping tasks with Zuora:

Zuora native data types

Zuora data types appear in the parameters in the Zuora REST V2 operations and you cannot change these data types.

Transformation data types

Set of data types that appear in the remaining transformations. They are internal data types based on ANSI SQL-92 generic data types, which Data Integration uses to move data across platforms. Transformation data types appear in all remaining transformations in a mapping, or mapping task.

When Data Integration reads or writes Zuora data, it converts the native data types to the comparable transformation data types before transforming the data.

Zuora REST V2 and Transformation Data Types

The following table lists the Zuora data types that Data Integration supports and the corresponding transformation data types:

Zuora Data Type	Transformation Data Type	Description
boolean	string	1 to 65536 characters
double	decimal	Precision 31, scale 10

Zuora Data Type	Transformation Data Type	Description
float	decimal	Precision 31, scale 10
integer	integer	-2,147,483,648 to 2,147,483,647 Precision 12, scale 0
string	string	1 to 65536 characters. In Zuora, string data type handles date/time values.

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