Informatica

Informatica® Cloud Data Integration

OData V2 Protocol Writer Connector

Informatica Cloud Data Integration OData V2 Protocol Writer Connector
October 2022

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Publication Date: 2024-07-15

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Preface

Use *OData V2 Protocol Writer Connector* to learn how to write to OData V2 Applications by using Cloud Data Integration. Learn to create an OData V2 Protocol Writer connection, develop mappings, and run mapping tasks in Cloud Data Integration.

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CHAPTER 1

Introduction to OData V2 Protocol Writer Connector

Use OData V2 Protocol Writer Connector to connect to the OData V2 service enabled on SAP or other applications in the cloud and on-premises.

Open Data Protocol (OData) is an OASIS standard that defines best practices to build and consume RESTful APIs. OData V2 Protocol Writer Connector communicates with the OData APIs, version 2, exposed through the Catalog Service in the OData V2 application. The catalog service lists all the available services in the OData V2 application.

In Data Integration, you can use OData V2 Protocol Writer Connector in a mapping through a Web Services transformation to pass requests in ATOM XML or JSON format to the OData V2 API and integrate the data. You can also pass data obtained from multiple transformations in the mapping pipeline and process the data before integrating the data in OData V2 Applications.

When you use OData V2 Protocol Writer Connector midstream in a mapping, you first create a business service for the operation that you want to perform in OData V2 Applications. You then associate the configured business service in a Web Services transformation midstream in a mapping to write data to OData V2 Applications.

In advanced mode, the Mapping Designer updates the mapping canvas to include transformations and functions that enable advanced functionality.

You can use OData V2 Protocol Writer Connector to insert, update, upsert, and delete data in OData V2 Applications.

Example

You want to create sales orders in SAP S/4HANA Cloud with sales details from a third-party system. Use OData V2 Protocol Writer Connector to call the required sales order OData V2 API in SAP S/4HANA. Select the SAP entity and post the sales order data. You can then process the response obtained from SAP S/4HANA Cloud before writing to a target.

You can also use OData V2 Protocol Writer Connector to communicate with the OData V2 Service APIs to integrate data related to business partner, customer, supplier, and vendor entities in SAP.

OData V2 Protocol Writer Connector assets

You can perform insert, update, upsert, and delete operations in an application target that is enabled for the OData V2 service.

You can use Web Services transformation in the following Data Integration assets:

- Mapping
- Mapping task

For more information about configuring assets and transformations, see *Mappings*, *Transformations*, and *Tasks* in the Data Integration documentation.

CHAPTER 2

Connections for OData V2 Protocol Writer

Use the OData V2 Protocol Writer connection to connect to any application that exposes data through an OData V2 service.

You create an OData V2 Protocol Writer connection on the Connections page and associate it with a business service. Use the business service in a Web Services transformation in the Mapping Designer when you create a mapping.
Note: You cannot use the OData V2 Protocol Writer connection in the Source and Target transformations.

OData V2 Protocol Writer connection properties

When you set up an OData V2 Protocol Writer connection, you must configure the connection properties.

The following table describes the OData V2 Protocol Writer connection properties:

Connection property	Description
Connection Name	The name of the connection. The name is not case sensitive and must be unique within the domain. You can change this property after you create the connection. The name cannot exceed 128 characters, contain spaces, or contain the following special characters:~ ` ! $ % ^ & * ( ) - + = { [}] | \ : ; " ' < , > . ? /
Description	Optional. The description of the connection. The description cannot exceed 4,000 characters.
Type	The **OData V2 Protocol Writer** connection type.
Runtime Environment	The name of the runtime environment where you want to run the tasks.
Authentication Type	The type of user authentication to connect to the OData V2 service. You can select from the following authentication types: - **Basic Authentication**. Requires the user name and password to log in to the OData V2 application. - **API Key**. Requires a unique API key to connect to the OData V2 application.

Connection property	Description
Token Type	The token used by the OData V2 application endpoint to perform the required CRUD operations. Default is CSRF Token.
Service Type	The service type of the OData V2 application endpoint to which you want to connect. Default is Catalog Service.

Service URL	The OData service URL of the catalog service that contains the APIs exposed by the OData V2 application.
	For example, enter the service URL to access the data from the SAP catalog service in the following format:
	`http://<hostname of the SAP server>:<port number>/sap/opu/odata/iwfnd/CATALOGSERVICE;v=2/`
	If the host name and port number is *inpha1.informatica.com:8001* and the service endpoint is *CATALOGSERVICE*, enter the following URL:
	`https://inpha1.informatica.com:8001/sap/opu/odata/iwfnd/CATALOGSERVICE;v=2/`

Data Serialization Format	The data serialization format that the OData V2 catalog service supports. You can select from one of the following formats: - ATOM/XML - JSON Default is ATOM XML.
Username	Required for basic authentication. The user name to connect to the OData V2 application.
Password	Required for basic authentication. The password associated with the OData V2 application user name.
API Key	Required for API key authentication. The unique API key that the OData V2 application client provides for authorization when you make API calls to the OData V2 service.

CHAPTER 3

Mappings and mapping tasks with OData V2 Protocol Writer Connector

Create a mapping to write data to OData V2 Protocol Writer. When you create a mapping, you can configure a midstream transformation so that the Secure Agent connects to the OData V2 service to access, transform, or deliver data.

Use the Data Integration Mapping Designer to create a mapping. When you create a mapping, you configure a source or target to represent an ODBC object. In advanced mode, the Mapping Designer updates the mapping canvas to include transformations and functions that enable advanced functionality.

Before you configure a midstream transformation, you must create a business service from the **New** > **Components** tab. You must select an OData V2 Protocol Writer connection and an operation when you create a business service.

When you configure the midstream Web Services transformation, select the business service and the operation on the **Web Service** tab. You can map the input fields from source file to elements in the request structure on the **Request Mapping** tab.

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.

Define a business service

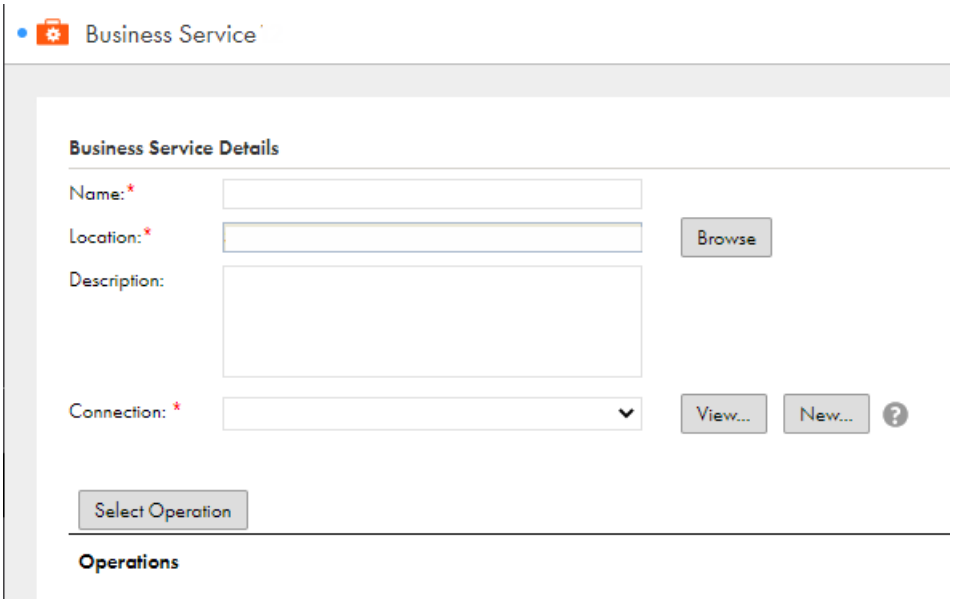
A business service is a web service with configured operations. Define a business service to add operations to the Web Services transformation in the Mapping Designer.

Create a business service to communicate with the OData V2 API.

1. Click **Data Integration** > **New** > **Components** > **Business Services** and then click **Create**.

   The **Business Service Details** page appears.

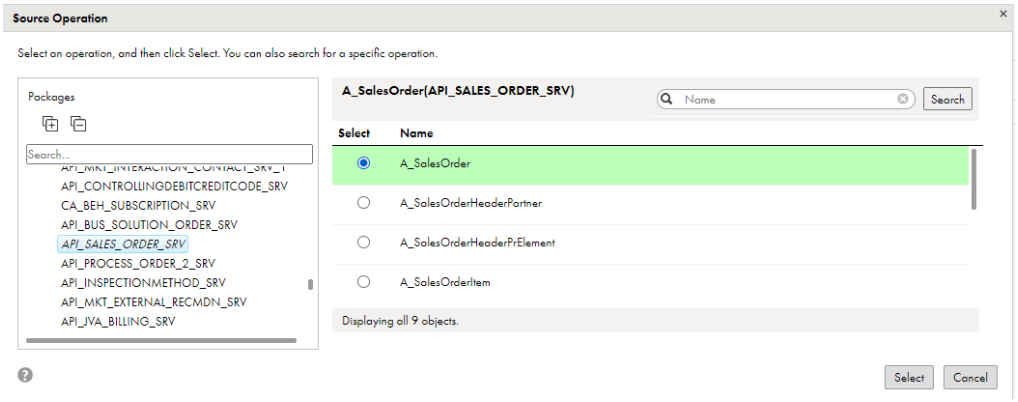
   The following image shows the **Business Service Details** page:



2. Enter a name and description for the business service, and specify the location to create the business service.
3. Select the OData V2 Protocol Writer connection that you want to use to make a call to OData V2 Applications.
4. Click **Select Operation**, and then click **Select**.
5. Enter the full name of the required OData V2 API and then click **Search**.
6. Select the operation name in the search result, and click **Select**.

   The **Select Operation** page appears.
7. Enter a name and description for the operation, and click **OK**.

The following image is an example of the listed SAP OData V2 services in the search result on the left-hand side and the selected entity on the right-hand side:



Repeat steps 4 through 6 to add multiple operations.

8. Click **Configure** to view the metadata and structure of the OData V2 API.

   The **Request** tab shows the import details, the **Response** tab shows the export details, and the **Fault** tab shows the fault code details.

Advanced midstream properties

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

Property	Description
Write Strategy	The write strategy for the operation. You can select Insert, Upsert, Update, and Delete.
Data Serialization Format	Overrides the format specified in the OData V2 Protocol Writer connection in which the data is transferred over the network. You can select from one of the following formats: - ATOM XML - JSON Default is JSON.
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.
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	The mapping task creates XML when it has all of the data for a group. When enabled, the mapping task flushes the XML after it receives all of the data for the root value. When not enabled, the mapping task stores the XML in memory and creates the XML after it receives data for all the groups. You cannot select the option to allow input flush if you are connecting to multiple source objects.

Property	Description
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.
Transformation Scope	The method in which the Secure Agent applies the transformation logic to incoming data. Default is All Input.

OData V2 Protocol Writer mapping example

You work in the sales department and you want to create a sales order in SAP S/4HANA. Create a flat file with the data that you want to add to the sales order. Create a business service in Data Integration to communicate to the OData V2 service. Then, create a Web Services transformation to integrate with the SAP OData V2 API, run the operation, and then write the response from SAP S/4HANA to a flat file.

Create a OData V2 Protocol Writer connection

Before you configure the mapping, create an OData V2 Protocol Writer connection to connect to the OData V2 service in SAP S/4HANA.

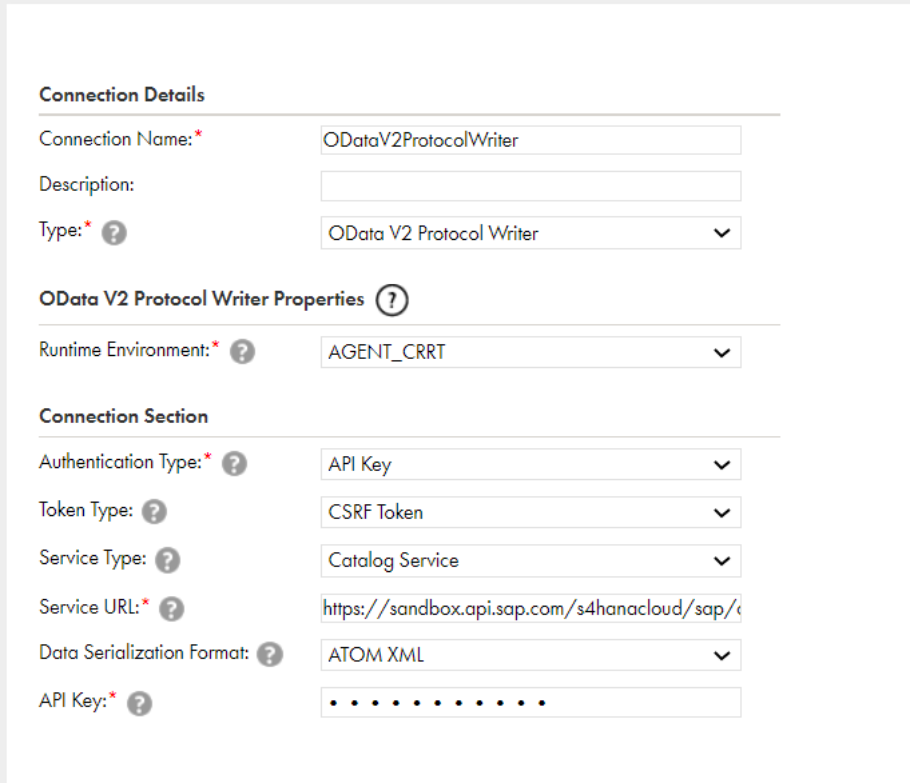
1. Click **Administrator** > **Connections**, and then click **New Connection** to create a connection.

   The **New Connection** page appears.
2. Enter a name for the OData V2 Protocol Writer connection.
3. Enter a description for the connection.
4. Select **OData V2 Protocol Writer** as the connection type.

   The **OData V2 Protocol Writer Connection Properties** section appears.
5. Select the name of the runtime environment where you want to run the tasks.
6. Select the authentication type to access the SAP OData V2 service:
   a. If you select **API Key**, specify the API key.
   b. If you select the **Basic Authentication**, enter the user name and password to access the SAP OData V2 service
7. Enter the data serialization format that you want to use to transfer data based on the format that the SAP OData V2 resource supports.
8. Enter the SAP OData V2 service URL.
9. Click **OK** to save the connection.

10. Click **Save** to save the connection.

    The following image shows the configured OData V2 Protocol Writer connection:



Create a business service

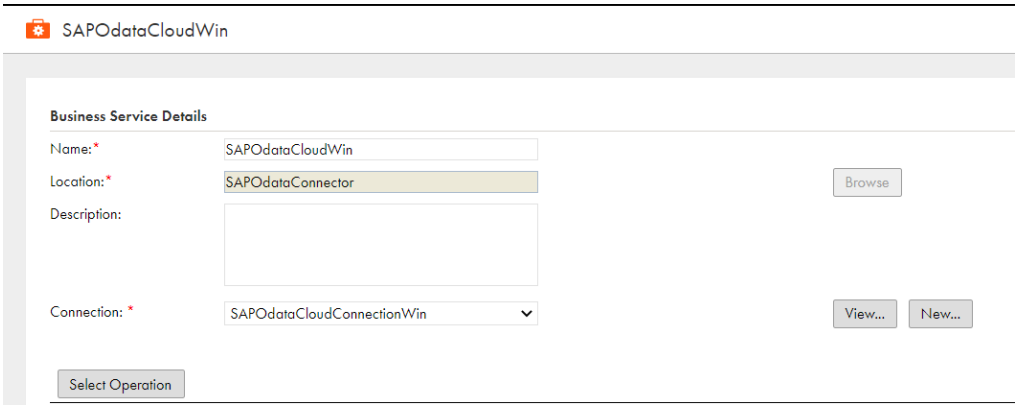
Create a business service, associate the configured OData V2 Protocol Writer connection, and add the operation for the business service.

1. Click **Data Integration** > **New** > **Components** > **Business Services** and then click **Create**.

   The **Business Service Details** page appears.

2. Enter a name and description for the business service, and specify the location to create the business service.
3. Select the OData V2 Protocol Writer connection that you want to use to make a call to the SAP OData V2 application.

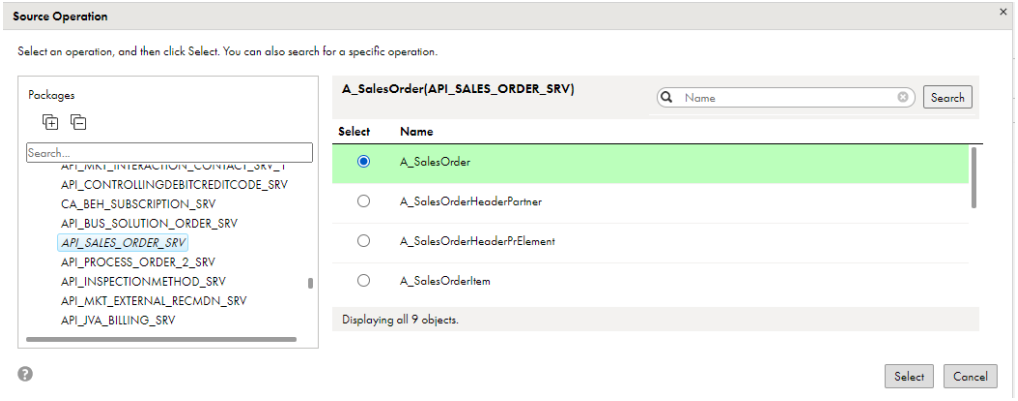
The following image shows the **Business Service Details** page:



All the services available in the catalog service are listed.

4. Click **Select Operation**, and then click **Select**.
5. Enter the full name of the required SAP OData V2 API and then click **Search**. For example, enter `API_SALES_ORDER_SRV` and click **Search**.

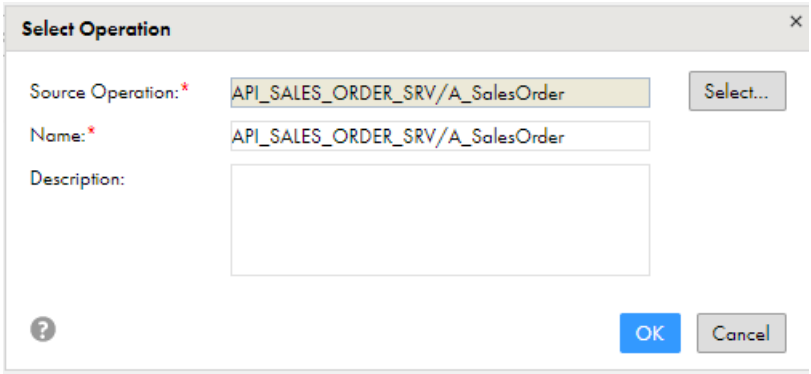
   The following image shows the `API_SALES_ORDER_SRV` SAP OData V2 API listed in the search result and the entity selected is A_SalesOrder:



6. Select the operation name in the search result, and click **Select**.

   The **Select Operation** page appears.

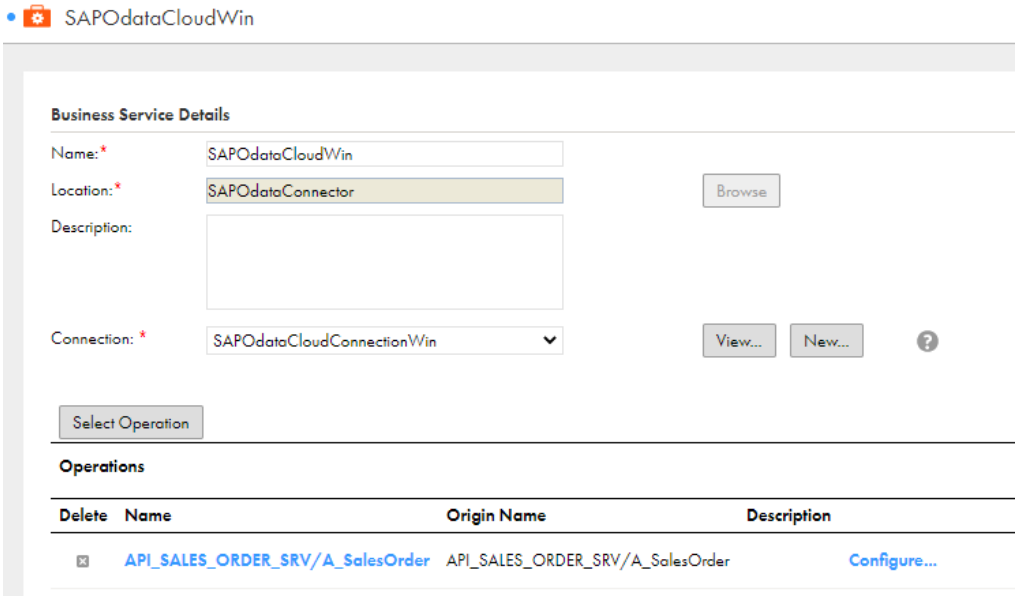
   The following image shows the **Select Operation** page, with the OData V2 service and entity:



7. Enter a name and description for the operation, and click **OK**.

Repeat steps 4 through 6 to add multiple operations.

The following image shows the configured business service:



8. Click **Configure** to view the metadata and structure of the SAP OData V2 API.

   The **Request** tab shows the import details, the **Response** tab shows the export details, and the **Fault** tab shows the fault code details.

Create a mapping

Create a mapping to include a Web Services transformation midstream in the pipeline.

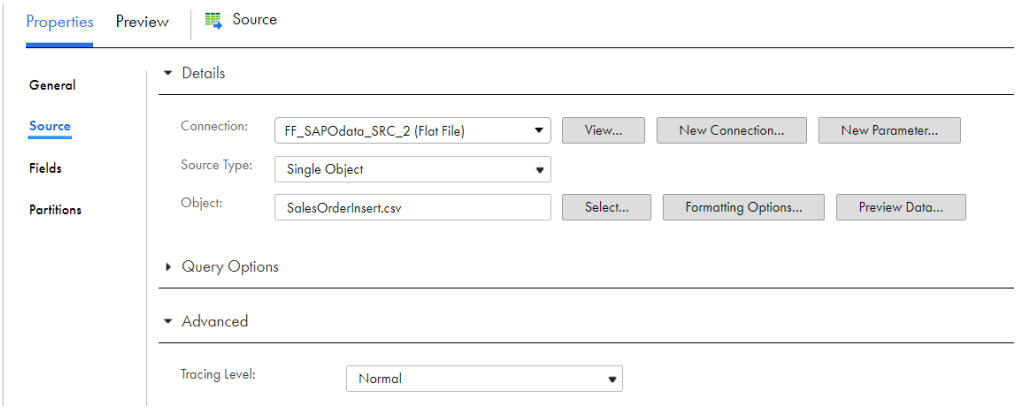
Include a flat file with the sales details such as the sales order type, organization, channel, and group to create a sales order in SAP S/4HANA. Then, add a Web Services transformation midstream in the mapping that includes the business service to integrate with the SAP OData V2 API. Include a flat file target to write the response from SAP S/4HANA to a flat file.

1. Create a mapping.



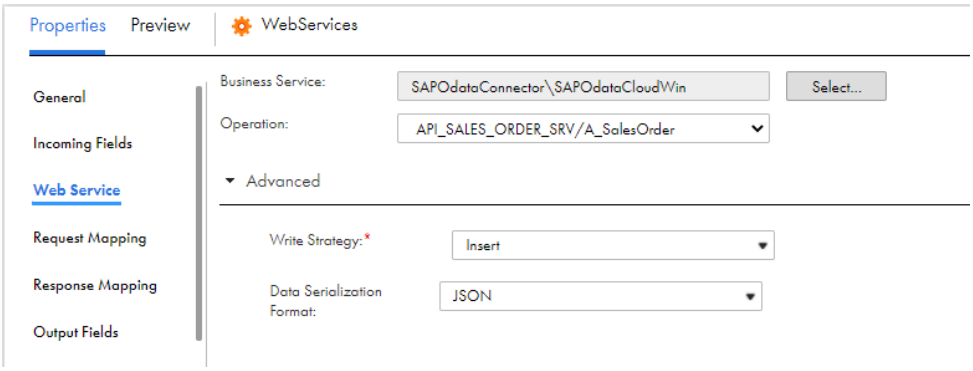
2. To add a Source transformation, on the **Transformation palette**, click **Source**.
   a. On the **General** tab, enter a name and description for the source.
   b. On the **Source** tab, specify a flat file connection.
   c. Add a source object that contains the required inputs to the Web Services transformation.

d. In the **Advanced** section, set the tracing level to normal.



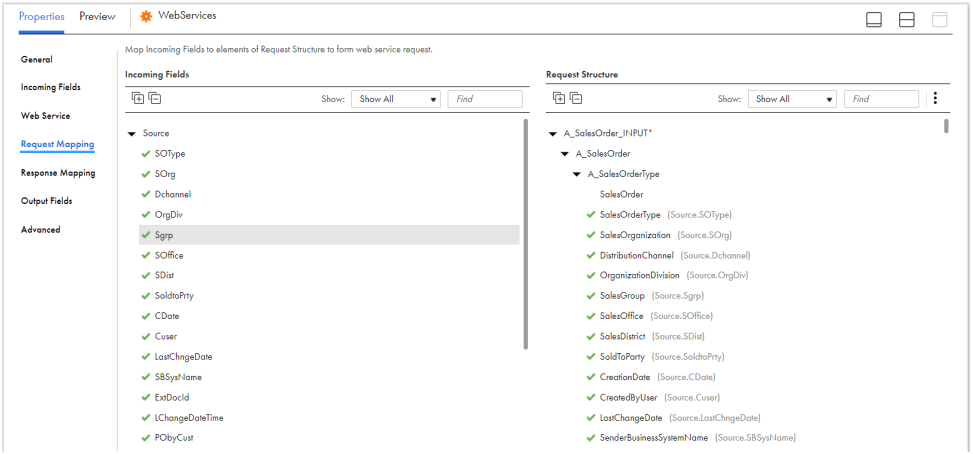
3. To add a Web Services transformation, on the **Transformation palette**, click **Web Services**.
   a. On the **General** tab, you can enter a name and description for the Web Services transformation.
   b. Click the **Web Service** tab, select the configured SAP OData business service that you created, and then select the required API object from the operation.

      The following image shows the SAP OData business service and selected operation:



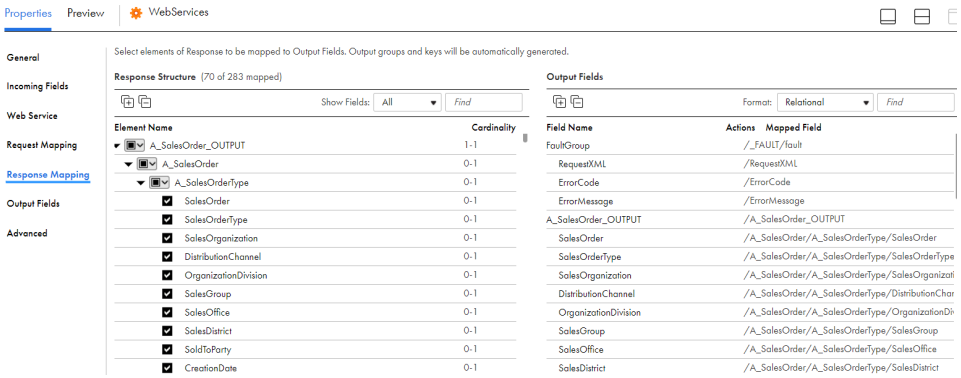
   c. Draw a link to connect the Source transformation to the Web Services transformation.
   d. On the **Request Mapping** tab, map the incoming fields from the flat file with the corresponding fields in the request structure that you want in the sales order.

      The following image shows the mapped incoming fields with the request structure:



e. On the **Response Mapping** tab, map the incoming fields from the response structure with the output fields.

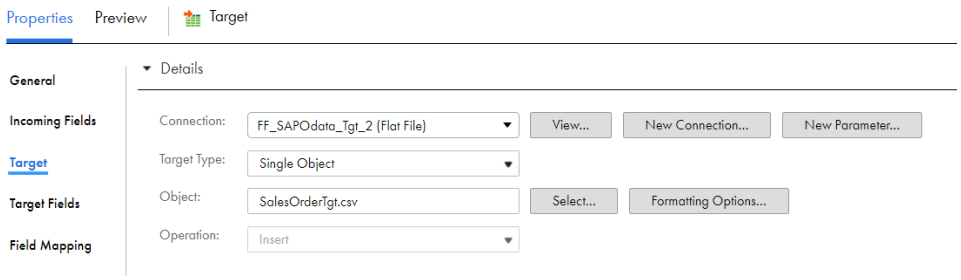
The following image shows the mapped fields between the response structure and the output fields:



f. On the **Advanced** tab, specify the required configurations.

4. To add a flat file Target transformation, on the **Transformation palette**, click **Target**.
   a. On the **General** tab, enter a name and description for the flat file target.
   b. Draw a link to connect the previous transformation to the Target transformation.
   c. Select the output group from the Web Services transformation that you want to connect to the target, and click **OK**.
   d. Click the **Target** tab, create a target at run time, specify the flat file target object, and configure the advanced target properties.
   e. Click **Field Mapping** and view the fields that are automatically mapped to the target.

   The following image shows the configured flat file properties.



5. Click **Save and Run** to run the mapping.

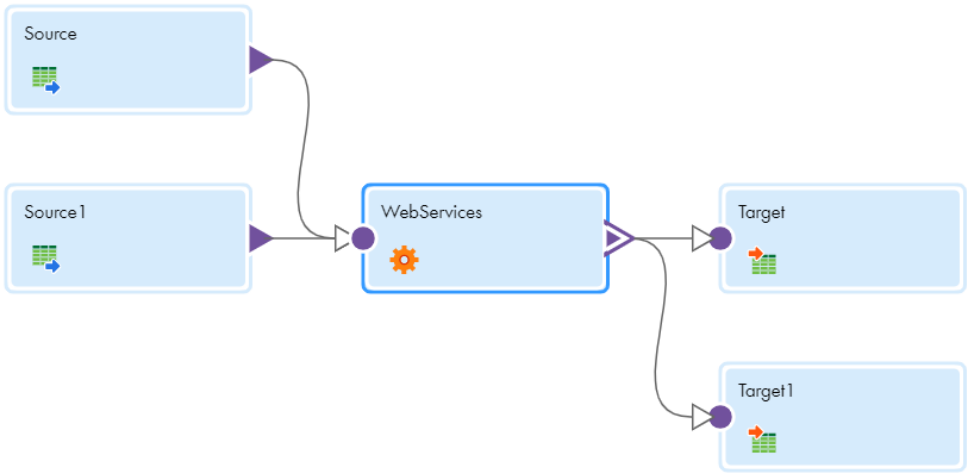
   You can also configure a mapping task based on the mapping.

6. When you save and run the mapping task, the Secure Agent creates a sales record in SAP S/4HANA based on the details provided in the flat file source and then writes the response to the target flat file.

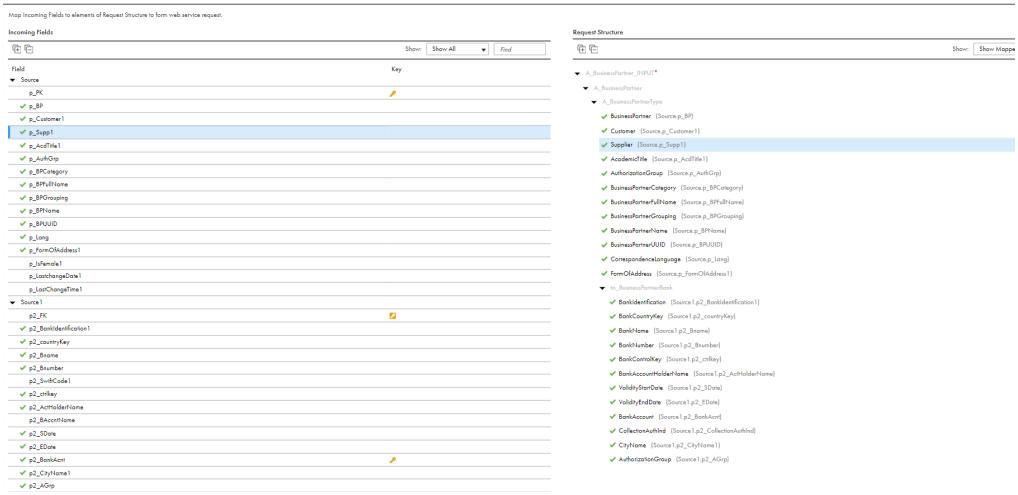
Example: Deep insert data

You want to deep insert a business partner entity with multiple bank details to S4 HANA.

1. Create a mapping and include two sources. One of the sources must include the details of the business partner with the primary key. The other source must include the bank details with the primary key and foreign key from the business partner source.



2. Map the two sources to the web service fields and mark the primary and foreign keys:



3. In the Web Service transformation, select the insert operation.
4. Run the mapping.

OData V2 Protocol Writer rules and guidelines

Consider the following rules and guidelines when you configure mappings with OData V2 Protocol Writer:

- If the data serialization format used is ATOM/XML when you update or delete a row that does not exist in SAP, an error message appears in the logs stating that the resource is not found. However, the status of the job shows as a success.

- In the Web Services transformation, the fields from the source are parsed as null when written to the target file.
- You cannot use the fault group to receive error messages for the Web Services transformation. To check failed rows, enable verbose mode for the session logs.
- In an update operation, the agent updates only the mapped fields to the OData V2 endpoint and makes no changes to the unmapped fields. The response for the update operation from the OData V2 endpoint returns only the updated fields, while the rest of the fields are returned as empty or blank to the next transformation configured downstream in the mapping.
- When you perform a deep insert operation using the XML format, the following date format exception occurs: `org.apache.olingo.odata2.api.edm.EdmSimpleTypeException: The literal '2020-09-14T07:15:16.1447570' is not formatted properly`
- The output fields from the web service transformation does not match with the response from the SAP OData V2 endpoint.

APPENDIX A

OData V2 Protocol Writer data type reference

Data Integration uses the following data types in mappings and mapping tasks with OData V2 Protocol Writer Connector:

Native data types

OData V2 data types appear in the **Fields** tab for Source and Target transformations when you choose to edit metadata for the fields.

Transformation data types

Set of data types that appear in the 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 source data, it converts the native data types to the comparable transformation data types before transforming the data. When Data Integration writes to a target, it converts the transformation data types to the comparable native data types.

OData V2 Protocol Writer and transformation data types

The following table lists the OData V2 data types that OData V2 Protocol Writer Connector supports along with the corresponding transformation data types:

OData V2 Protocol Writer Data Type	Transformation Data Type
String	String
Boolean	String
GUID	String
Int32	Integer
Int16	Integer
DateTime	DateTime

OData V2 Protocol Writer Data Type	Transformation Data Type
DateTimeOffset	DateTime
Decimal	Decimal
Byte	Integer

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