

Informatica[®] Cloud Data Integration

Google Sheets Connector

Informatica Cloud Data Integration Google Sheets Connector November 2024

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Preface

Use *Google Sheets Connector* to learn how to read from or write to Google Sheets 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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The telephone numbers for Informatica Global Customer Support are available from the Informatica web site at https://www.informatica.com/services-and-training/support-services/contact-us.html.

Introduction to Google Sheets Connector

You can use Google Sheets Connector to read data from and write data to any application that is Google Sheets compliant.

You can use Google Sheets Connector to connect to Google Sheets from Data Integration. Use Google Sheets Connector to read data from and write data to Google Sheets.

You can use a Google Sheets object as a source and a target in synchronization tasks, mapping tasks, and mappings.

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

When you run a task or mapping, the Secure Agent uses the JAVA client libraries of the Google Sheets APIs to integrate with Google Sheets.

Note: This connector is developed by Informatica partners, third-party system integrators, or customers. You can look up the Product Availability Matrix or Informatica Marketplace for more information.

Google Sheets Connector assets

Create assets in Data Integration to integrate data using Google Sheets Connector.

When you use Google Sheets Connector, you can include the following Data Integration assets:

- Mapping
- Mapping task
- Synchronization task

You can perform insert, update, and delete operations on a Google Sheets target. You cannot perform upsert operation on a Google Sheets target.

The standard objects are the Sheet Names that are present in the spreadsheet. The Sheet Names are dynamic and fetched automatically during data preview.

You can perform the following task operations on Sheet Names object in Google Sheets Connector:

- Read
- Insert

- Update
- Delete

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

Administration of Google Sheets Connector

Before you use Google Sheets Connector, complete the following prerequisite tasks:

- 1. Create a Google account to access Google Sheets.
- On the Dashboards page of the Google API Console, <u>https://console.developers.google.com/</u>, enable the Google Sheets API for your project. Google Sheets Connector uses the Google APIs to integrate with Google Sheets.

The following image shows the **Dashboard** page where you can enable the APIs:

API	1
	BigQuery API
	Google Cloud Storage JSON API
	Google Cloud SQL
	Google Drive API
	Google Storage Transfer API

 On the Credentials page of the Google API console, click on Create Credentials > OAuth client ID. The following image shows the Credentials page where you can create the credentials for your project:

API A	PI Manager	Credentials
•	ashboard brary	Oredentials OAuth consent screen Domain verification
o• Cr	redentials	
		APIs Credentials
		You need credentials to access APIs. Enable the APIs you plan to use and then create the credentials they require. Depending on the API, you need an API key, a service account, or an OAuth 2.0 client ID. Refer to the API documentation of details.
		Create credentials API key Identifies your project using a simple API key to check quota and access OAuth client ID Requests user consent so your app can access the user's data Service account key Enables server-to-server, app-level authentication using robot accounts
		Help me choose Asks a few questions to help you decide which type of credential to use

- 4. Fill the form on the **OAuth consent screen** tab.
- 5. Click Save.
- 6. Select Application type as Other.

7. Enter the Name.

8. Click Create.

The Client ID and Client Secret appears on the screen. Copy the Client ID and Client secret values.

- 9. In the OAuth 2.0 Client IDs section, download the JSON file corresponding to your OAuth client ID that contains the client_id, project_id, auth_uri, token_uri, auth_provider_x509_cert_url, client_secret, and redirect_uris values.
- Generate the OAuth 2.0 access tokens. You will need to enter these details when you create a Google Sheets connection in Data Integration.

For more information on generating the OAuth 2.0 access tokens, click the following URL: https://developers.google.com/identity/protocols/OAuth2WebServer#obtainingaccesstokens

Generating OAuth 2.0 access tokens

Google Sheets Connector uses OAuth 2.0 protocol to connect to Google Sheets. After you generate the client ID and client secret for your project, generate the OAuth 2.0 access tokens.

Step 1. Generate the authorization code

You must generate the authorization code to gain access to the current site and to generate a valid refresh token.

Perform the following steps to generate the authorization code:

1. Enter the following URL in the Google Chrome browser:

```
https://accounts.google.com/o/oauth2/auth?
access_type=offline&approval_prompt=auto&client_id=<client_id>&response_type=code&scope=h
ttps://www.googleapis.com/auth/spreadsheets&redirect_uri=<redirect_uri>
For example, https://accounts.google.com/o/oauth2/auth?
access_type=offline&approval_prompt=auto&client_id=1234-
abc54dfa6.apps.googleusercontent.com&response_type=code&scope=https://www.googleapis.com/
auth/spreadsheets&redirect_uri=http://localhost
```

- 2. Choose the Google Account for which you want to approve the access request.
- Click Allow to grant the permission to see, edit, create, and delete your spreadsheets in Google Drive. Click Allow to confirm.

The redirect URL page includes the authorization code as a query string in the following format:

```
https://<redirect_url>/?code=<authcode>&scope=https://www.googleapis.com/auth/
spreadsheets
The following image shows the authorization code as a query string in the URI:
```

I ne following image snows the authorization code as a query string in the UKI: ← → C S loahost/code-4/vQEX/Oxed/OV464/e333/few/fwu-QQ[on/kg4ds/OS90/kg70539/f2U/GFME8/cogeEntre//www.googleaple.com/auth/pgread/web

4. Copy the authorization code displayed in the URL.

Step 2. Generate the refresh token and access token

Google Sheets Connector uses a authorization code to generate an access token and a refresh token. Google Sheets Connector uses an access token to authorize and access Google Sheets. The access token expires after a period of time. When the access token expires, you can use the refresh token to generate a new access token.

Perform the following steps to generate the refresh token:

1. Enter the following URL in the Postman application: https://accounts.google.com/o/oauth2/token

- 2. Select the **POST** method.
- 3. On the Body tab, select the x-www-form-urlencoded body type.
- 4. On the **Body** tab, add the following key-value pairs:

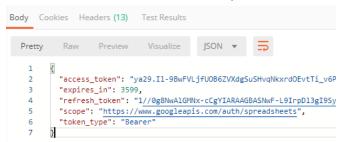
Key	Value
grant_type	Enter authorization_code.
code	Enter the authorization code that you generated in step 1.
client_id	The client_id value present in the JSON file.
client_secret	The client_secret value present in the JSON file.
redirect_uri	The redirect_uri value present in the JSON file. For example, http://localhost.

The following image shows the **Body** tab where you can add the key-value pairs to generate the refresh token:

POST w https://accounts.google.com/o/oauth2/token		Send 🔻	
rams Authorization Headers (9) Body ● Pre-request Script Tests Settings			
none 🖲 form-data 🗕 x-www-form-uriencoded 🔵 raw 🔘 binary 🔘 GraphQL			
KEY	VALUE	DESCRIPTION	
grant_type	authorization_code		
✓ code	<authorization_code></authorization_code>		
✓ client_id	<client_id file="" in="" json="" the="" value=""></client_id>		
Client_secret	<client_secret file="" in="" json="" the="" value=""></client_secret>		
✓ redirect_uri	<redirect_uris file="" in="" json="" the="" value=""></redirect_uris>		
K.		Distance of the second s	

5. Click Send.

The refresh token and access token is generated in the **Response** tab. The following image shows the refresh_token and access_token in the **Response** tab:



Note: Refresh token is generated only when you set the **access_type** parameter to **offline** in the initial request to obtain the authorization code. The **expires_in** field specifies the remaining time period of the access token in seconds.

6. Save the refresh token and access token in a secured location.

Step 3. Refreshing an access token

When the access token expires, you can use the refresh token to generate a new access token.

Perform the following steps to generate the access token:

1. Enter the following URL in the Postman application:

https://accounts.google.com/o/oauth2/token

- 2. Select the **POST** method.
- 3. On the Body tab, select the x-www-form-urlencoded body type.
- 4. On the **Body** tab, add the following key-value pairs:

Key	Value
grant_type	Enter authorization_code.
client_id	The client_id value present in the JSON file.
client_secret	The client_secret value present in the JSON file.
refresh_token	The refresh token that you generated in step 2.

The following image shows the **Body** tab where you can add the key-value pairs to generate a new access token:

POST 👻	OST v https://accounts.google.com/o/oauth2/token			Send	•
Params Auth	arams Authorization Headers (9) Body Pre-request Script Tests Settings				
• none • fo	none 💿 form-data 🔹 x-www-form-urlencoded 💿 raw 💿 binary 💿 GraphQL				
KEY		VALUE	DESCRIPTION		
grant_type		refresh_token			
client_id		<client_id file="" in="" json="" the=""></client_id>			
client_secre		<client_secret file="" in="" json="" the=""></client_secret>			
refresh_tok	n	<refresh_token value=""></refresh_token>			

5. Click Send.

The new access token is generated in the **Response** tab. The following image shows the new access token in the **Response** tab:



Google Sheets connections

Create an Google Sheets connection to access Google Sheets data from Data Integration. You can create a connection on the Connections page or when you create a task. After you create a connection, it becomes available to all users who have access to the organization.

You can use Google Sheets connections in synchronization tasks, mapping tasks, and mappings.

Google Sheets connection properties

When you create a Google Sheets connection, configure the connection properties.

The following table describes the Google Sheets connection properties:

Property	Description
Connection Name	Name of the connection. Each connection name must be unique within the organization. Connection names can contain alphanumeric characters, spaces, and the following special characters: + -, Maximum length is 255 characters.
Description	Description of the connection. Maximum length is 4000 characters.
Туре	Google Sheets
Runtime Environment	Name of the runtime environment where you want to run tasks.
Client Id	Required. The Client ID from Google Developer Console.
Client Secret	Required. The Client Secret from Google Developer Console.
Refresh Token For Sheet	Required. The Refresh Token received after exchanging authorization code for Google Sheets.
Refresh Token For Drive	Optional. The Refresh Token received after exchanging authorization code for Google Drive. This option is required when you enter the spreadsheet name in the Spreadsheet Name field.
Spreadsheet Name	Name of the spreadsheet in Google Sheets.
Spreadsheet Id	ID of the spreadsheet in Google Sheets.

Property	Description
Initial Column Range	Specifies the first column name from a data range in a Google Sheets spreadsheet from where you want to start reading the data.
	For example, specify the Initial Column Range value as Sheet1!C5.
Final Column Range	Specifies the last column name from a data range in a Google Sheets spreadsheet from where you want to stop reading the data.
	For example, specify the Final Column Range value as Sheet1!G20.
Header Present	Select this option to indicate that the sheet contains a header. If you select this option and the sheet does not contain a header, the first row is treated as the header.
Create New	Select this option to create a new spreadsheet in Google Sheets.
Spreadsheet	The Google Sheets Connector creates an empty spreadsheet with the name that you specified in the Spreadsheet Name field.
	Once you test the connection, disable this option. Otherwise, the Google Sheets Connector will create a new spreadsheet with the same name every time.

Synchronization tasks with Google Sheets Connector

You can use Google sheets object as a source in a synchronization task.

You can configure the Google Sheets source properties on the **Source** page of the Synchronization Task wizard.

Property	Description
Connection	Name of the active Google Sheets source connection.
Source Type	Type of the Google Sheets source objects available. You can read data from a single Google Sheets source object. You cannot read data from multiple objects or parameterize the object.
Source Object	Name of the Google Sheets source object.
Display technical names instead of labels	This property is not applicable for Google Sheets Connector because both the technical names and labels are the same for Google.
Display source fields in alphabetical order	Displays source fields in alphabetical order. By default, fields appear in the order returned by the source system.

Google Sheets targets in the synchronization tasks

You can use Google Sheets object as a target in a synchronization task.

The following table describes the Google Sheets target properties:

Property	Description	
Connection	Name of the active Google Sheets target connection that is associated with a dataset.	
Target Object	You can select an existing object from the list or create a target at run time using the Create Target option.	

Property	Description	
Child Object	This property is not applicable for Google Sheets Connector.	
Display technical names instead of labels	This property is not applicable for Google Sheets Connector because both the technical names and labels are the same for Google.	
Display target fields in alphabetical order	Displays target fields in alphabetical order. By default, fields appear in the order returned by the target system.	

Rules and guidelines for synchronization tasks

Consider the following rules and guidelines when you write data to a Google Sheets target:

- To perform an update operation on the target, you need to specify the **Initial Column Range** and **Final Column Range** fields in the Google Sheets connection. If you don't specify the values for these fields, the mapping processes incorrect rows.
- To perform a delete operation on a Google Sheets target, you need to configure a data filter based on the **Range** field in the Google Sheets source. The mapping applies the filter and ensures that the delete operation targets only the specific data.

Mappings and mapping tasks with Google Sheets Connector

Use the Data Integration Mapping Designer to create a mapping. When you create a mapping, you configure a source or target to represent an Google Sheets object.

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

Google Sheets sources in mappings and mapping tasks

To read data from Google Sheets, configure a Google Sheets object as the Source transformation in a mapping or mapping task.

Specify the name and description of the Google Sheets source. Configure the source, query options, and advanced properties for the source object.

Property	Description	
Connection	Name of the active Google Sheets source connection.	
Source Type	Type of the Google Sheets source objects available. You can read data from a single Google Sheets source object or parameterize the object.	
Object	Name of the Google Sheets source object based on the source type selected.	
Filter	Configure a simple filter or an advanced filter to remove rows at the source. You can improve efficiency by filtering early in the data flow.	
	A simple filter includes a field name, operator, and value. Use an advanced filter to define a more complex filter condition, which can include multiple conditions using the AND or OR logical operators.	

The following table describes the source properties that you can configure for a Google Sheets source:

You can set the tracing level in the advanced properties session to determine the amount of details that logs contain.

The following table describes the tracing levels that you can configure:

Property	Description	
Terse	The Secure Agent logs initialization information, error messages, and notification of rejected data.	
Normal	The Secure Agent logs initialization and status information, errors encountered, and skipped rows due to transformation row errors. Summarizes session results, but not at the level of individual rows.	
Verbose Initialization	In addition to normal tracing, the Secure Agent logs additional initialization details, names of index and data files used, and detailed transformation statistics.	
Verbose Data	In addition to verbose initialization tracing, the Secure Agent logs each row that passes into the mapping. Also notes where the Secure Agent truncates string data to fit the precision of a column and provides detailed transformation statistics.	
	When you configure the tracing level to verbose data, the Secure Agent writes row data for all rows in a block when it processes a transformation.	

Google Sheets targets in mappings and mapping tasks

To write data to a Google Sheets target, configure a Google Sheets object as the Target transformation in a mapping or mapping task.

Specify the name and description of Google Sheets target. Configure the target and advanced properties for the target object.

The following table describes the target properties that you can configure for a Google Sheets target:

Property	Description	
Connection	Name of the active Google Sheets connection that is associated with a dataset.	
Target Type	Type of the Google Sheets target objects available.	
	You can write data to a single Google Sheets target object. You cannot write data to multiple objects or parameterize the object.	
Object	Name of the Google Sheets target object based on the target type selected.	
Operation	You can select one the following operations: - Insert - Update - Delete - Data Driven	

The following table describes the advanced properties that you can configure for a Google Sheets target:

Property	Description
Success File Directory	Not applicable for Google Sheets Connector.
Error File Directory	Not applicable for Google Sheets Connector.
Forward Rejected Rows	Not applicable for Google Sheets Connector.

Rules and guidelines for mapping and mapping tasks

Consider the following rules and guidelines when you write data to a Google Sheets target:

- To perform an update operation on the target, you need to specify the Initial Column Range and Final Column Range fields in the Google Sheets connection. If you don't specify the values for these fields, the mapping processes incorrect rows.
- To perform a delete operation on a Google Sheets target, you need to configure a data filter based on the **Range** field in the Google Sheets source. The mapping applies the filter and ensures that the delete operation targets only the specific data.

APPENDIX A

Data type reference

Data Integration uses the following data types in mappings, synchronization tasks, and mapping tasks with Google Sheets:

Google Sheets native data types

Google Sheets 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 the Secure Agent uses to move data across platforms. Transformation data types appear in all transformations in a mapping.

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.

Google Sheets and transformation data types

The following table describes the data types that Data Integration supports for Google Sheets sources and targets:

Google Sheets Data Type	Transformation Data Type	Range and Description for the Transformation Data Type
STRING	String	1 to 104,857,600 characters

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