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# Transformation Operations



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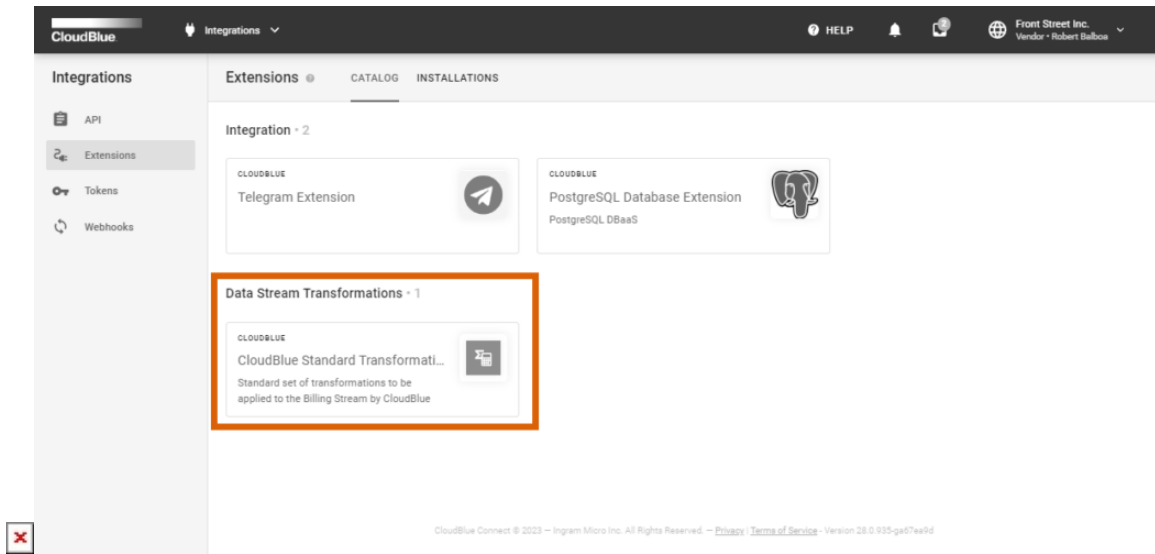
Auto-generated at November 21, 2024



Transformation operations are used to modify or update data that is provided in your streams. The system allows you to create multiple transformations within a single stream that help to define the output for generated batches. Transformation operations for each batch can be performed within the batch details interface.

## Prerequisite

To use transformations, you need to install the *CloudBlue Standard Transformations Library* extension:

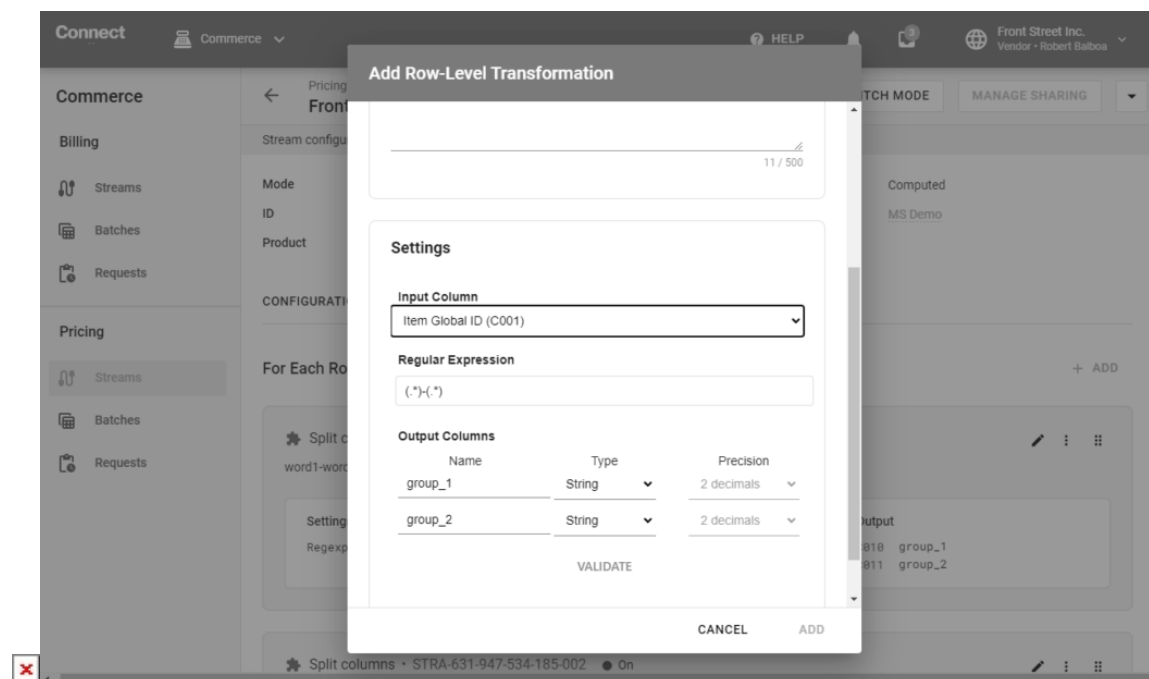
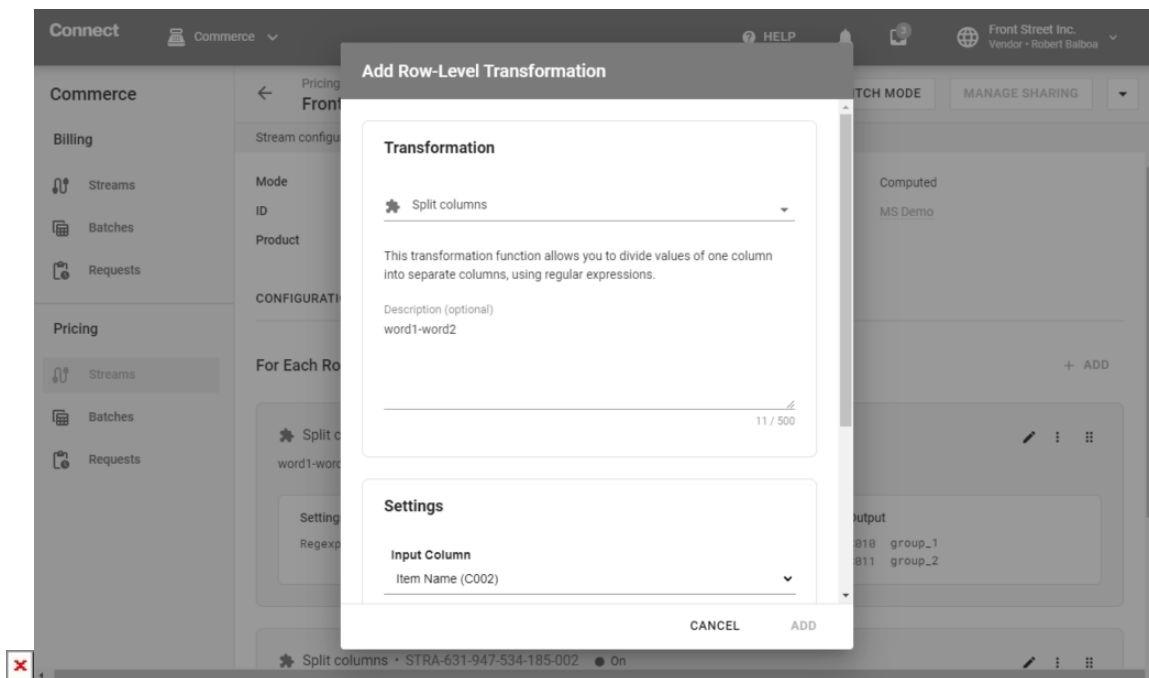


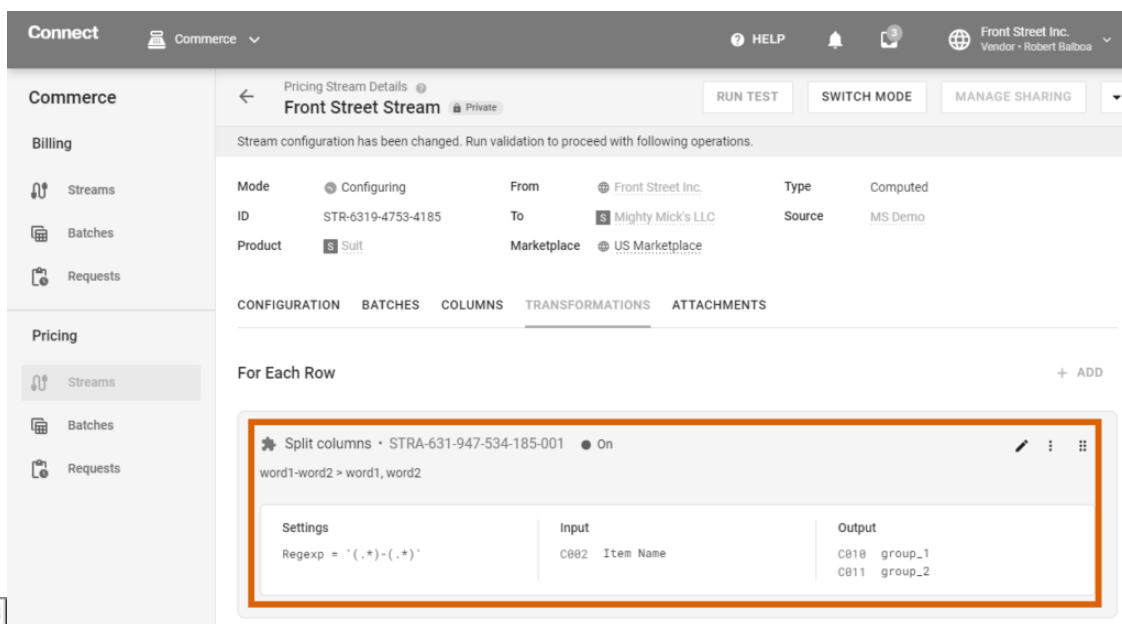
## Transformation Types

### Split columns

This transformation function allows you to divide values of one column into separate columns, using regular expressions.

For example, you can split the **word1-word2** cell value into **word1** and **word2**, using the `(.*)-(.*)` regular expression.

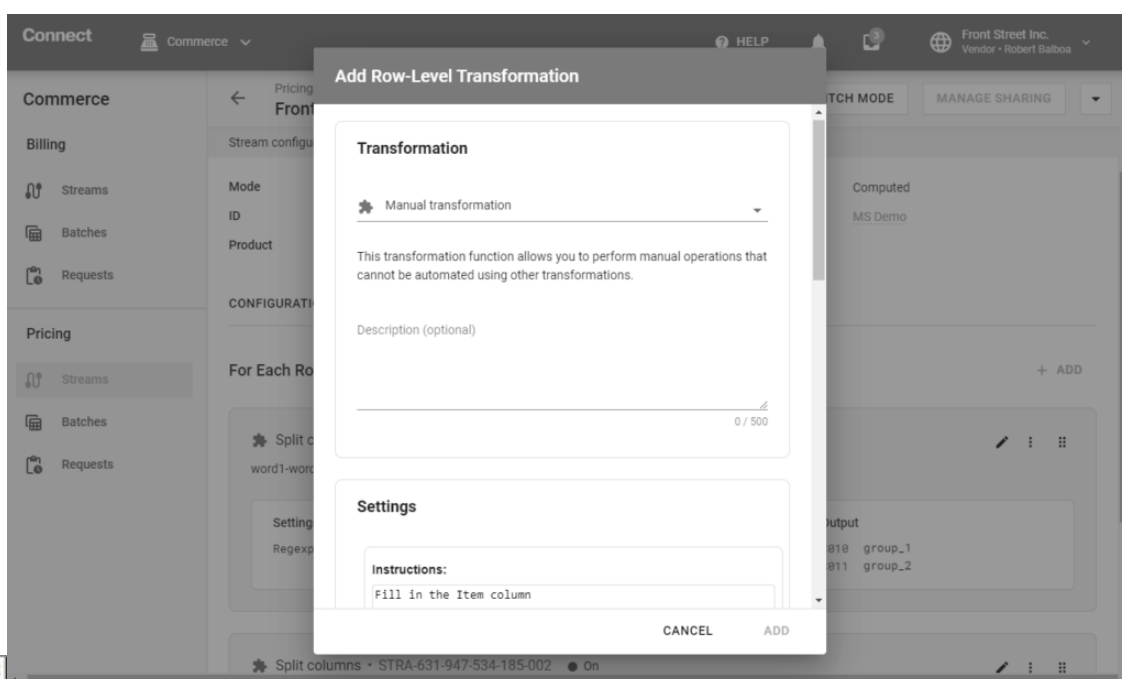


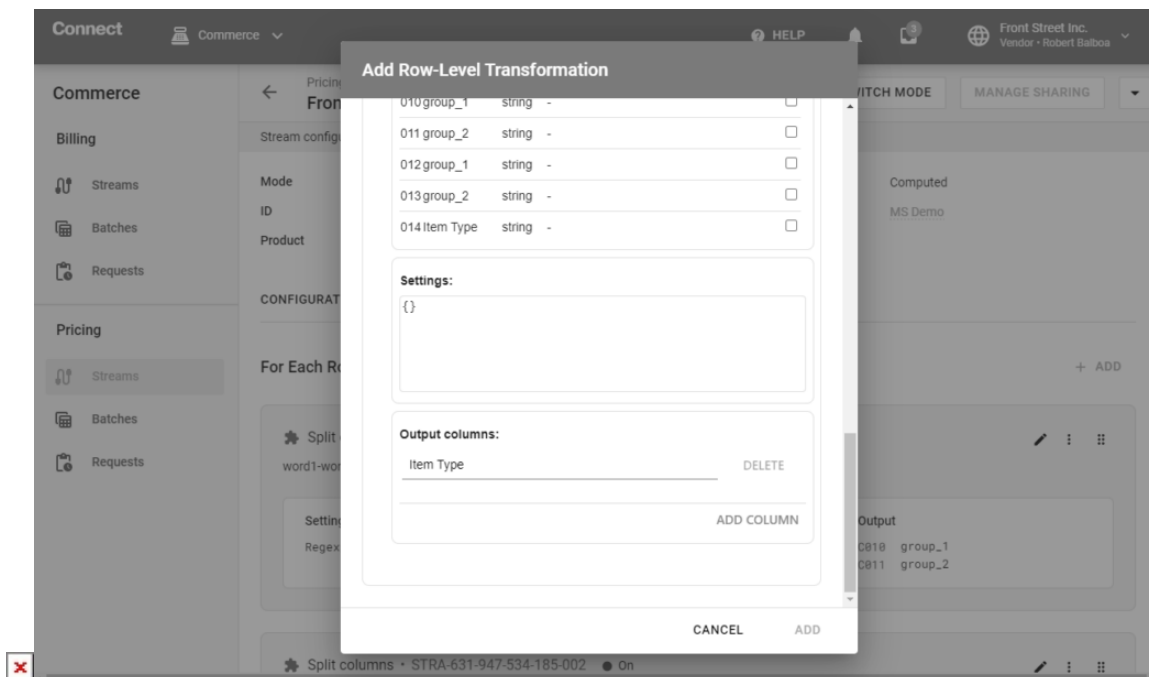
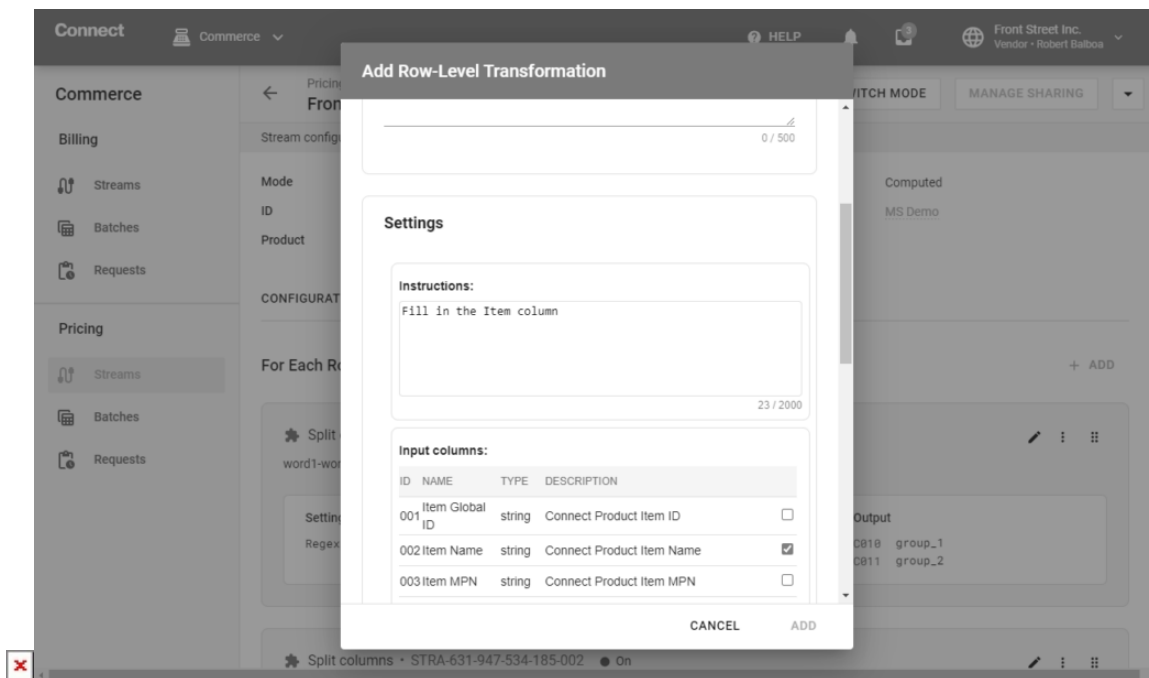


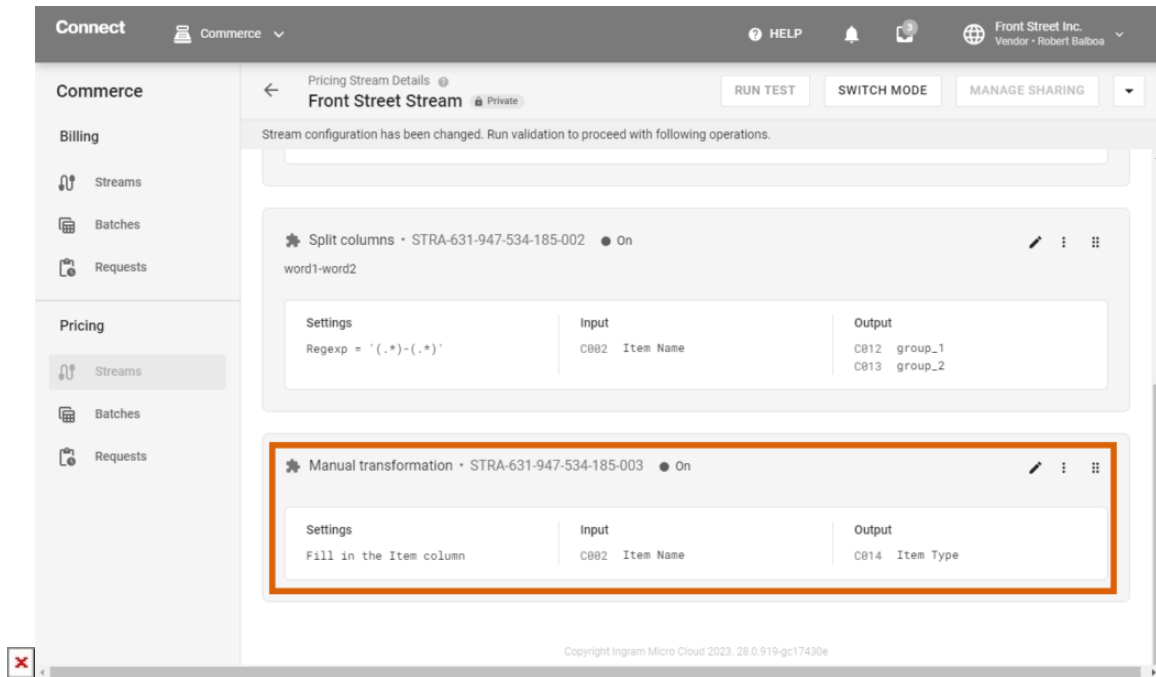
## Manual transformation

This transformation function allows you to perform manual operations that cannot be automated using other transformations.

For example, you can pass **Item name** as an input column and have **Item type** returned as the output column which you will need to fill in manually.



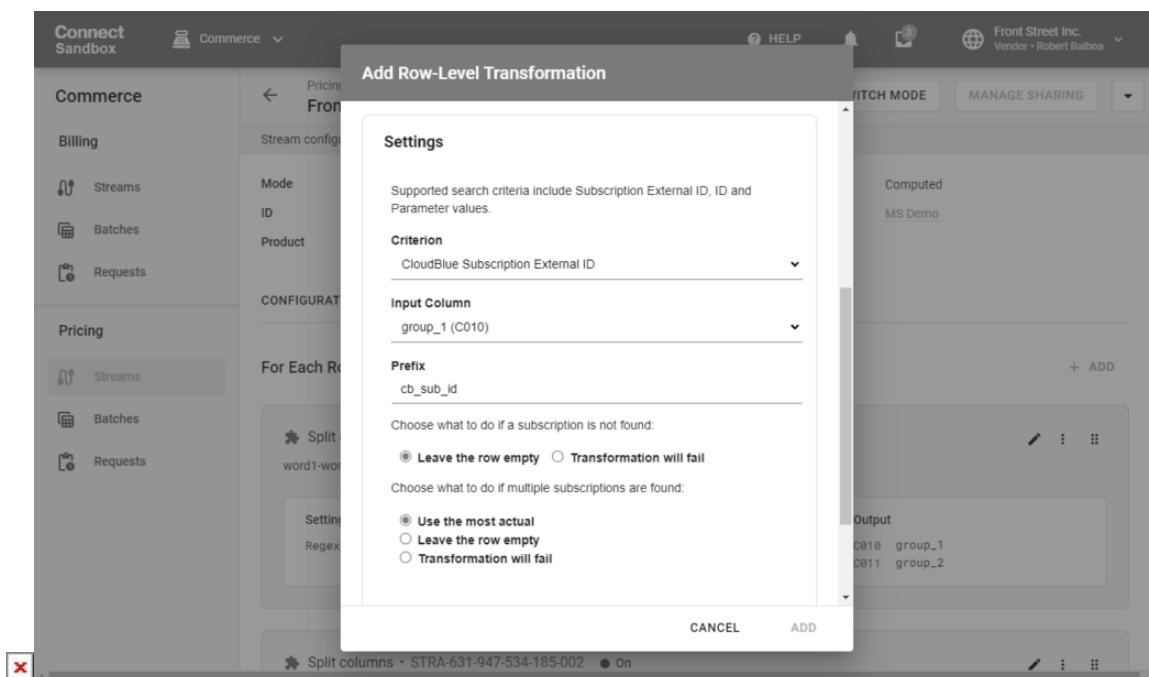
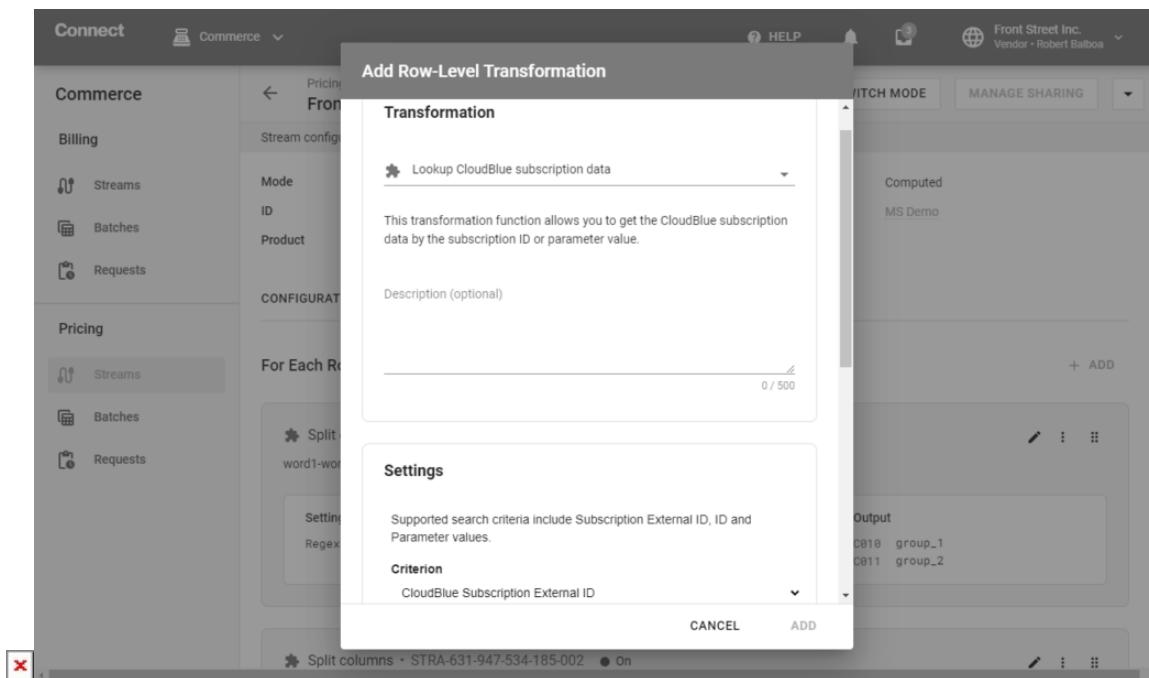


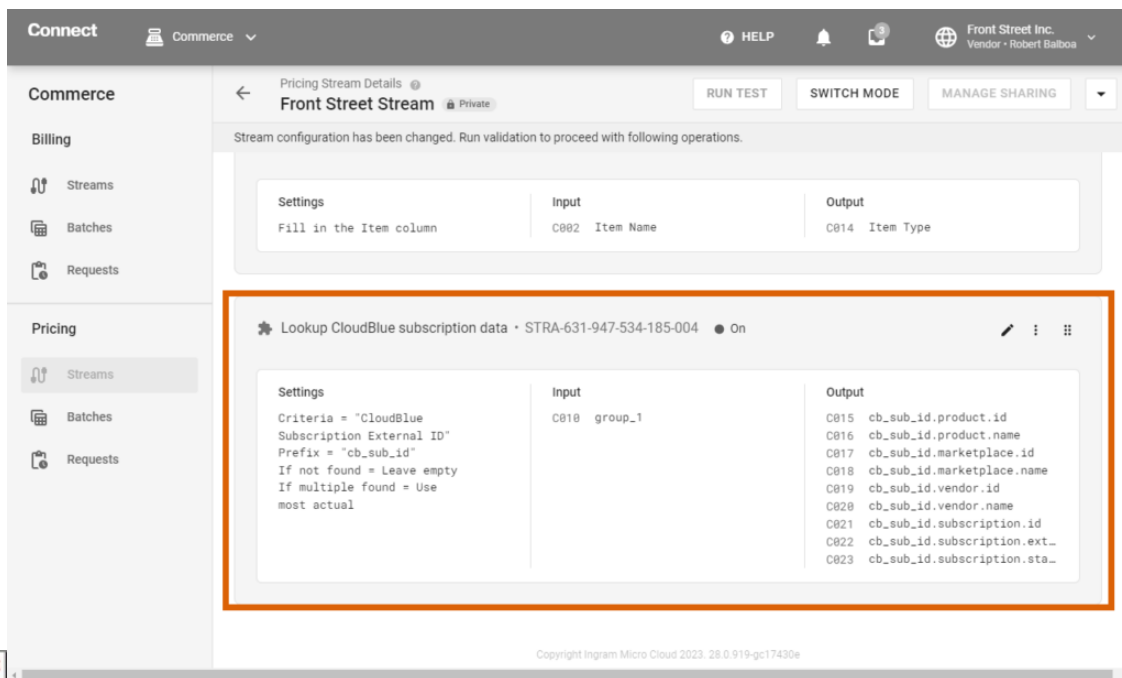


## Lookup CloudBlue subscription data

This transformation function allows you to get an extended Cloudblue subscription data by a subscription ID or parameter value.

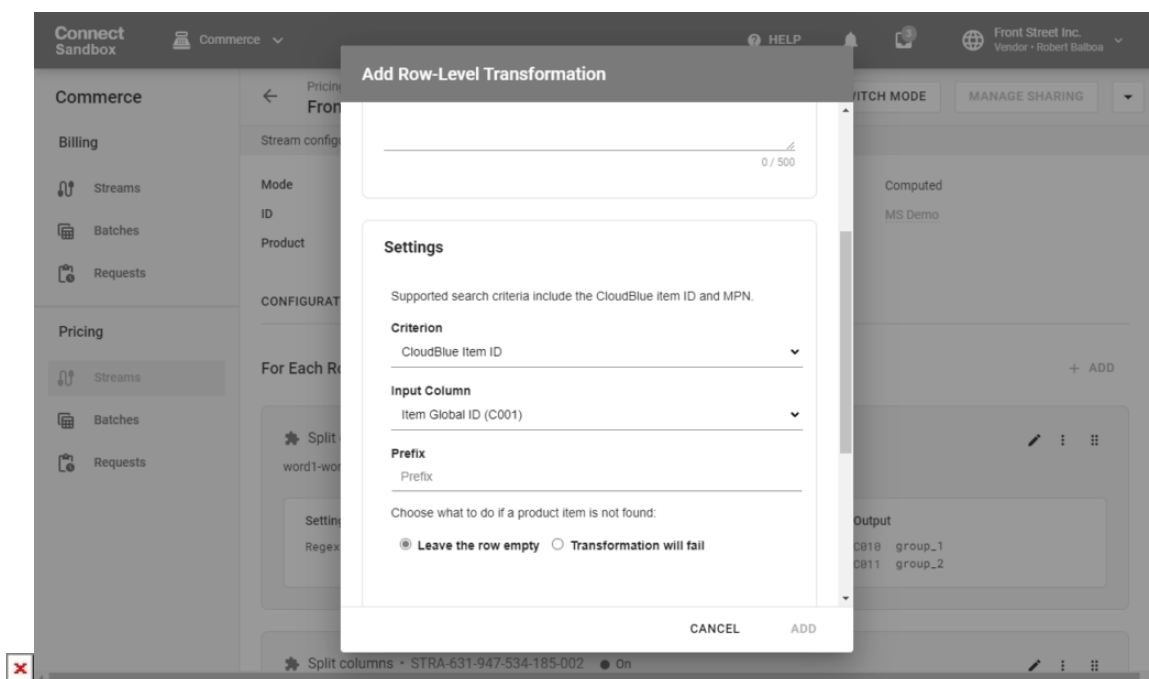
For example, you can pull Product ID and name, Vendor ID and name, Marketplace ID and name, as well as other data by passing the subscription ID or parameter value to the Connect API.



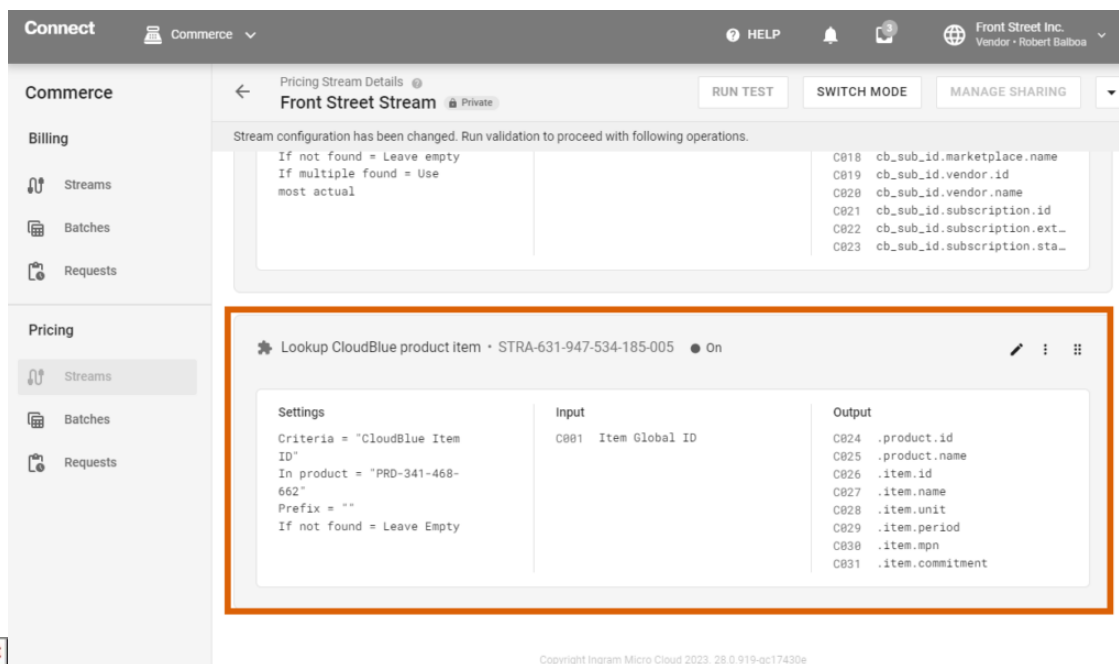
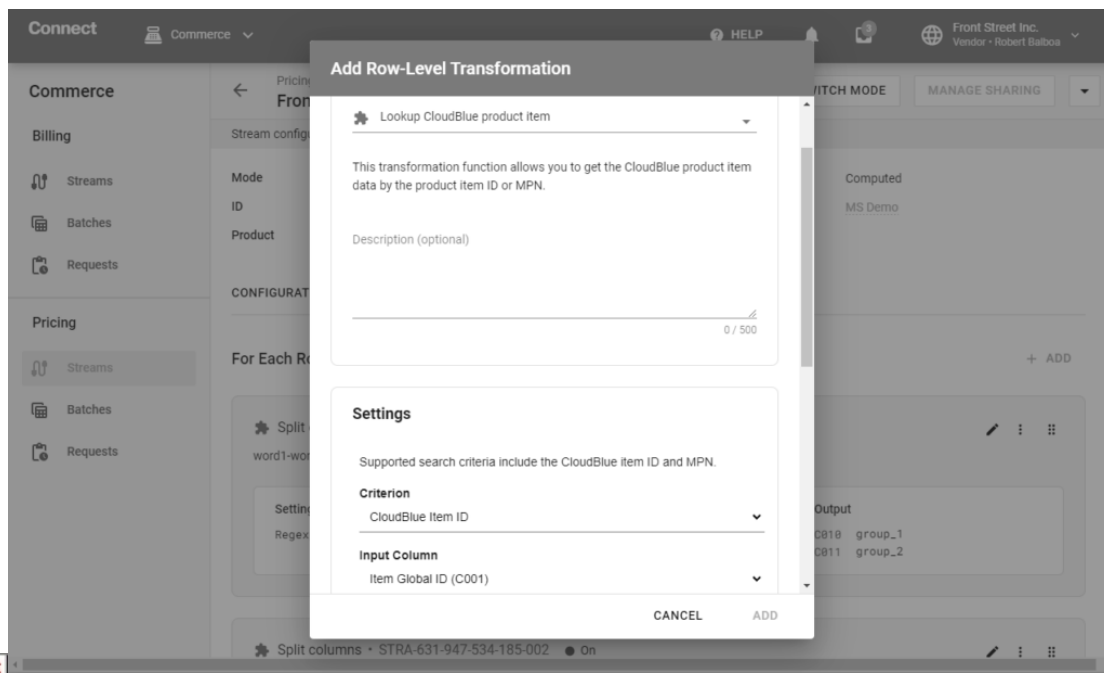


## Lookup CloudBlue product item

This transformation function allows you to get an extended CloudBlue product item data by a product item ID or MPN.







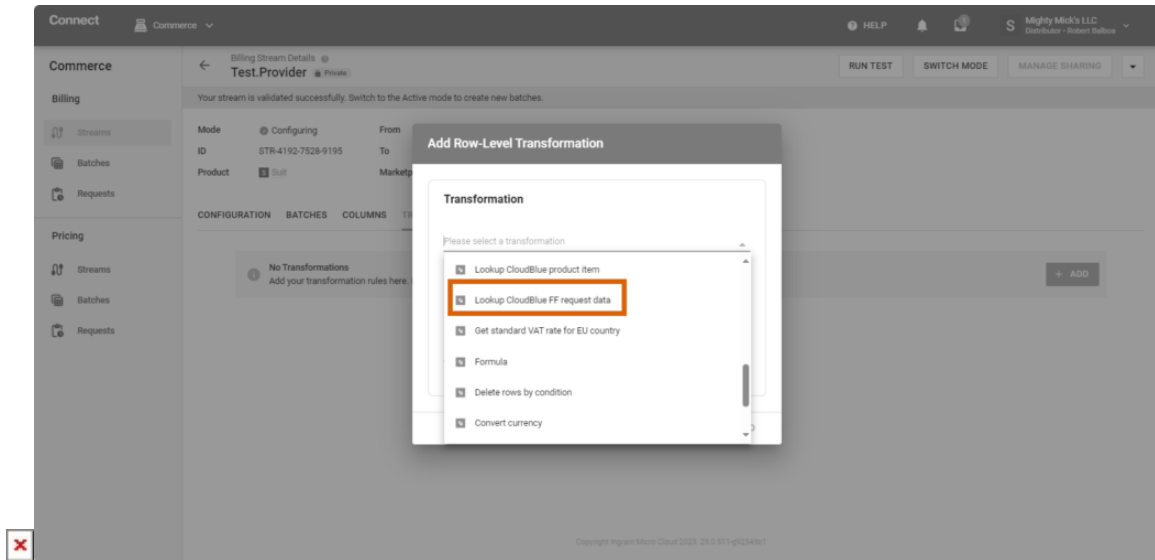
Information

If there is no product linked to your stream, you need to indicate Product ID manually or specify the column from which Product ID must be taken.



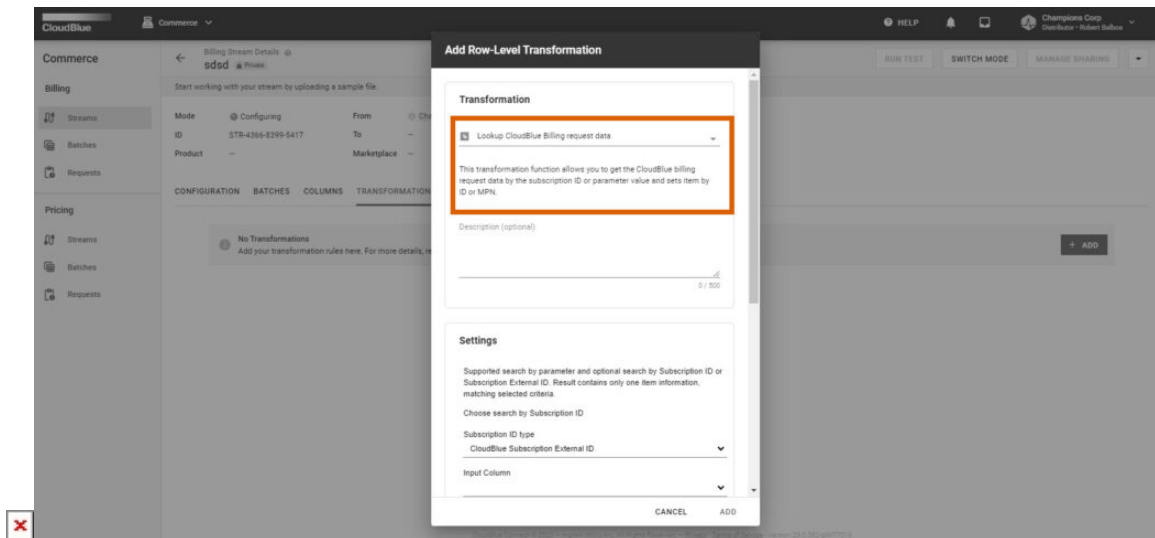
## Lookup CloudBlue fulfillment request data

This transformation function allows you to get the CloudBlue fulfillment request data by the parameter value as a mandatory search criterion and subscription id as an optional one:



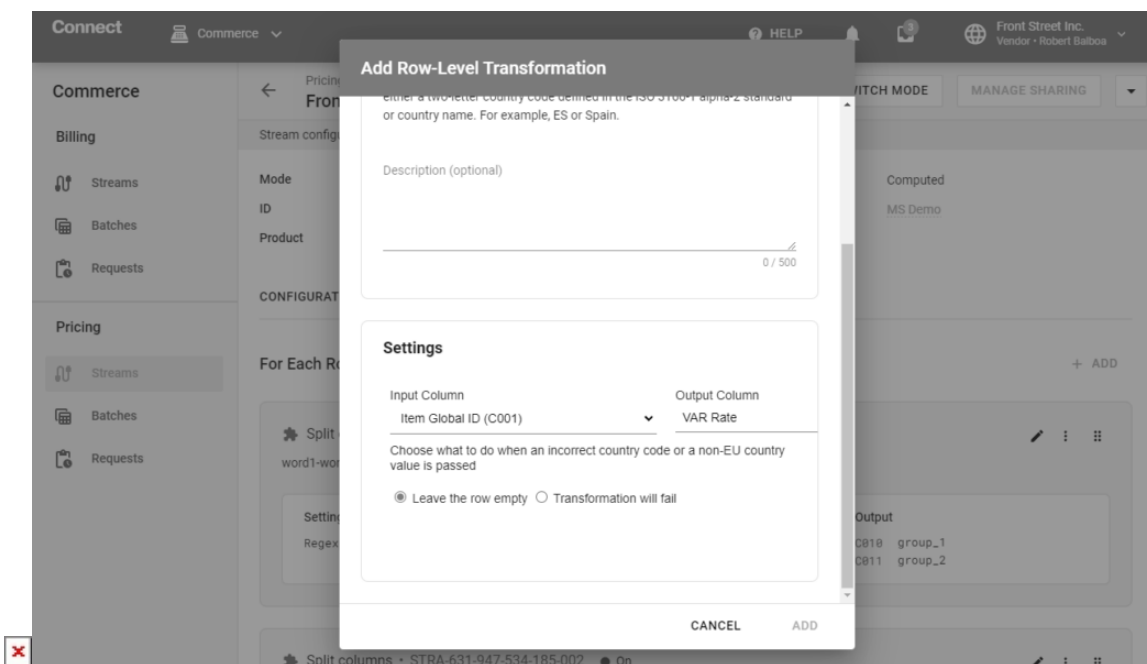
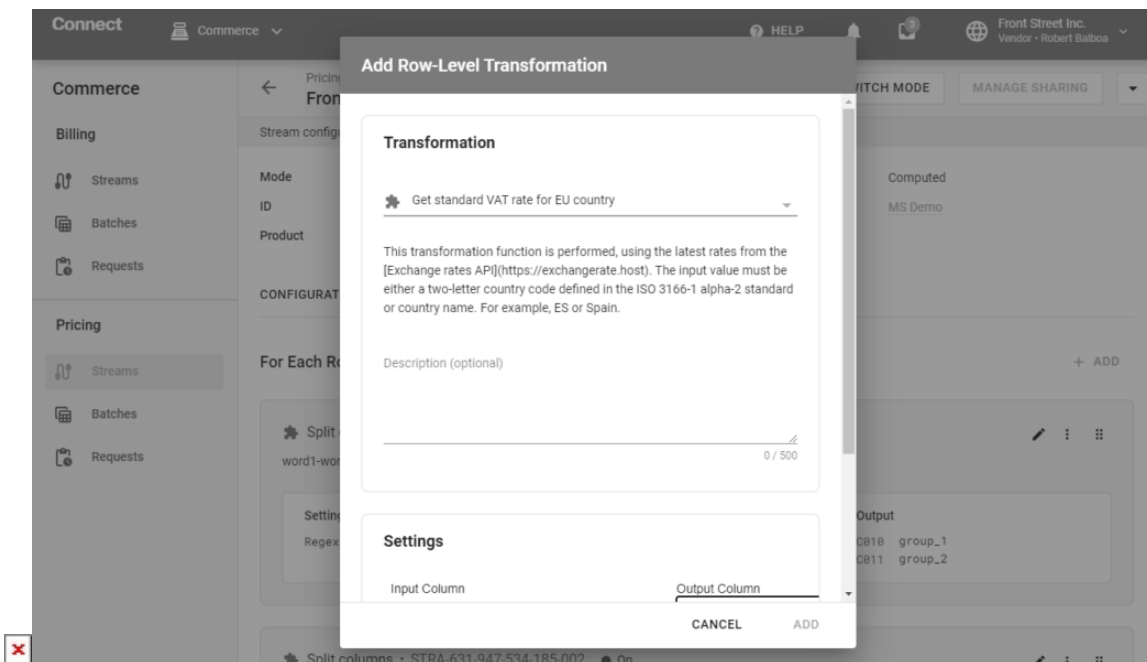
## Lookup CloudBlue billing request data

This transformation function allows you to get the CloudBlue billing request data by the subscription ID or parameter value:



## Get standard VAT rate for EU country

This transformation function is performed using the latest rates from the *LINK* API. The input value must be either a two-letter country code defined in the ISO 3166-1 alpha-2 standard or country name. For example, ES or Spain.





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**Commerce**

**Billing**

- Streams
- Batches
- Requests

**Pricing**

- Streams
- Batches
- Requests

Pricing Stream Details Private RUN TEST SWITCH MODE MANAGE SHARING

Stream configuration has been changed. Run validation to proceed with following operations.

Settings	Input	Output
Criteria = "CloudBlue Item ID"	C001 Item Global ID	C024 .product.id
In product = "PRD-341-468-662"		C025 .product.name
Prefix = ""		C026 .item.id
If not found = Leave Empty		C027 .item.name
		C028 .item.unit
		C029 .item.period
		C030 .item.mpn
		C031 .item.commitment

Get standard VAT rate for EU country • STRA-631-947-534-185-006 On

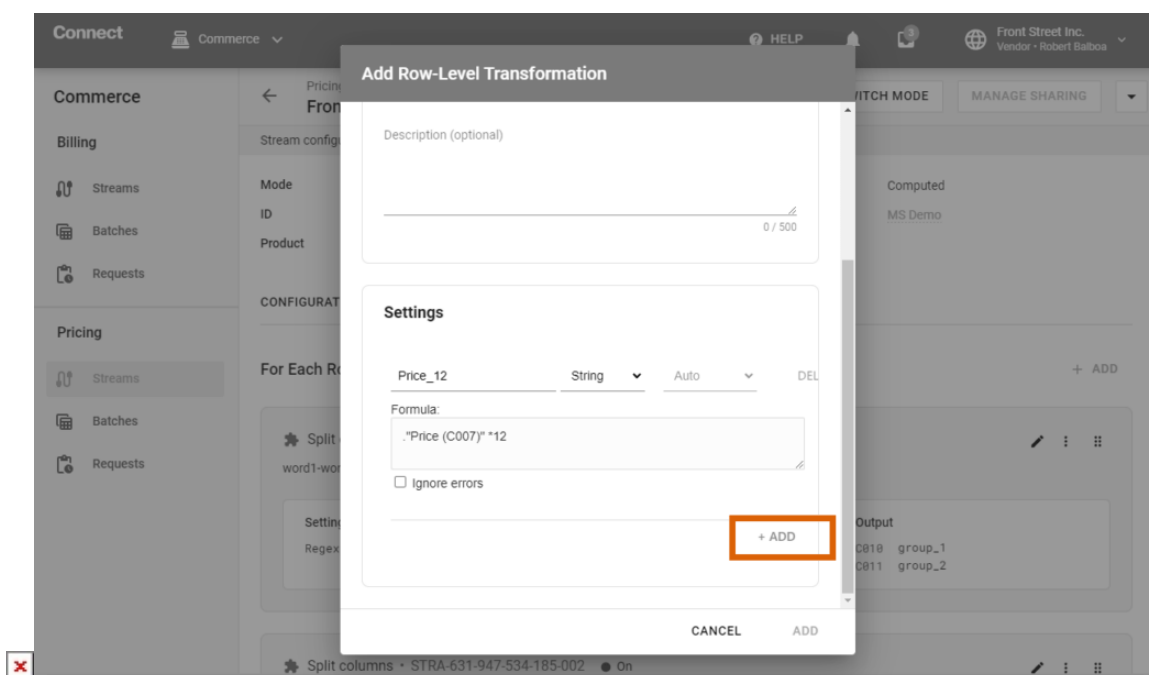
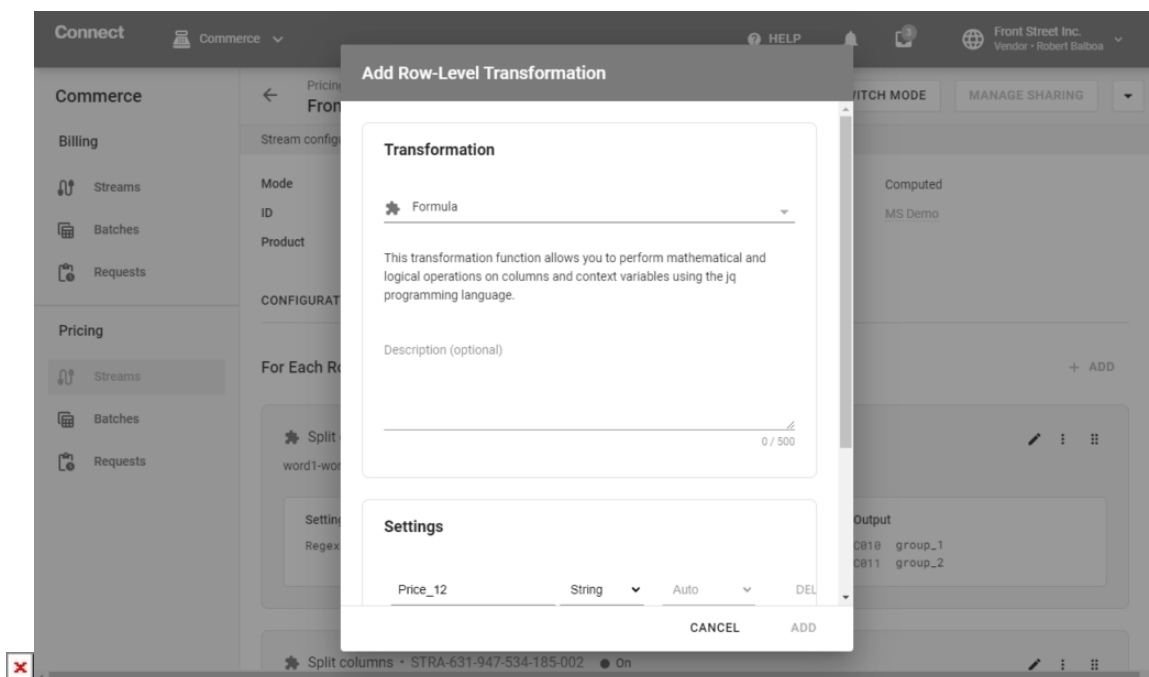
Settings	Input	Output
What to do for non-EU country codes = Leave Empty	C001 Item Global ID	C032 VAR Rate

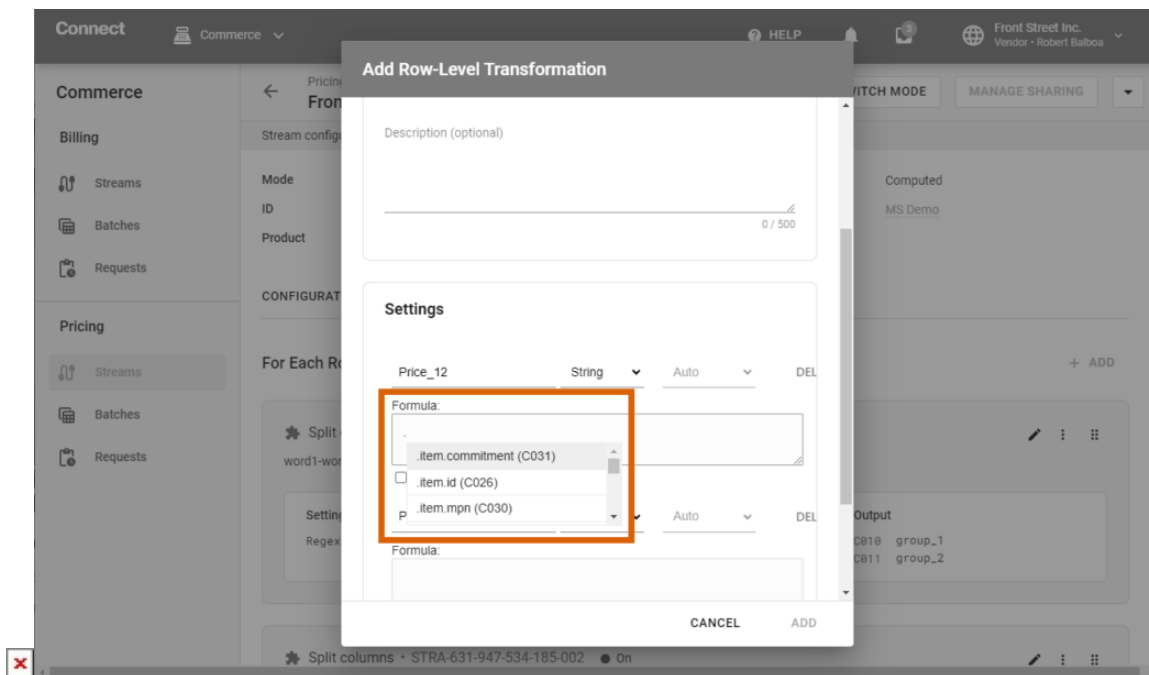
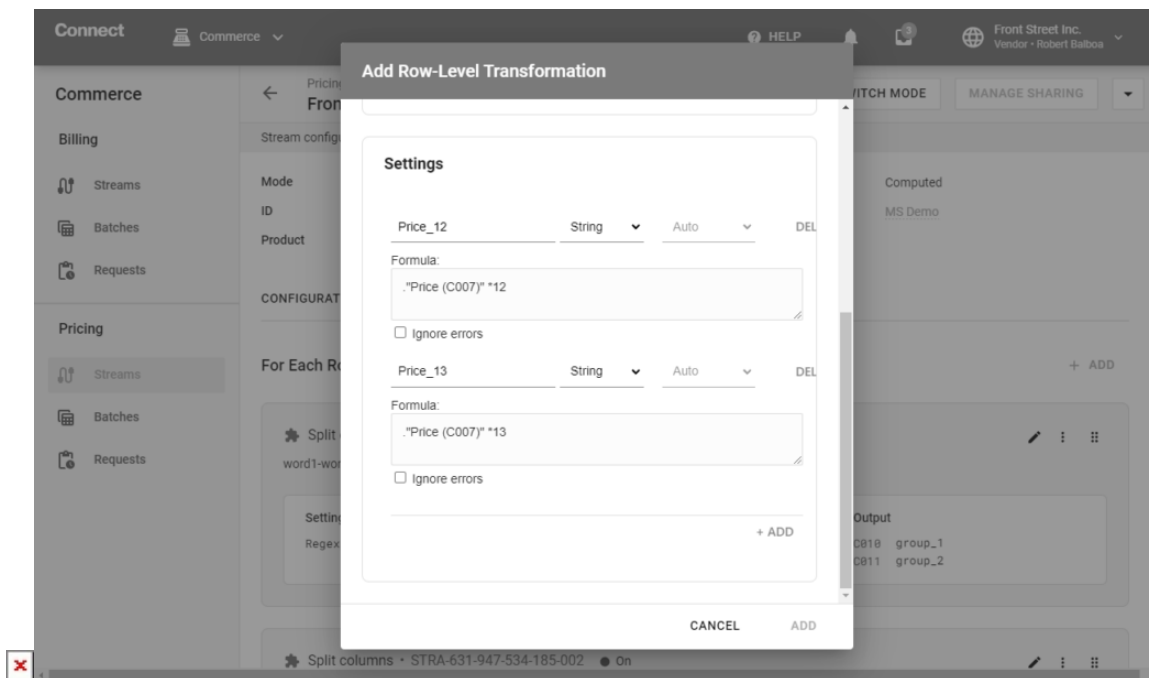
Copyright Ingram Micro Cloud 2023. 28.0.919-gc17430e

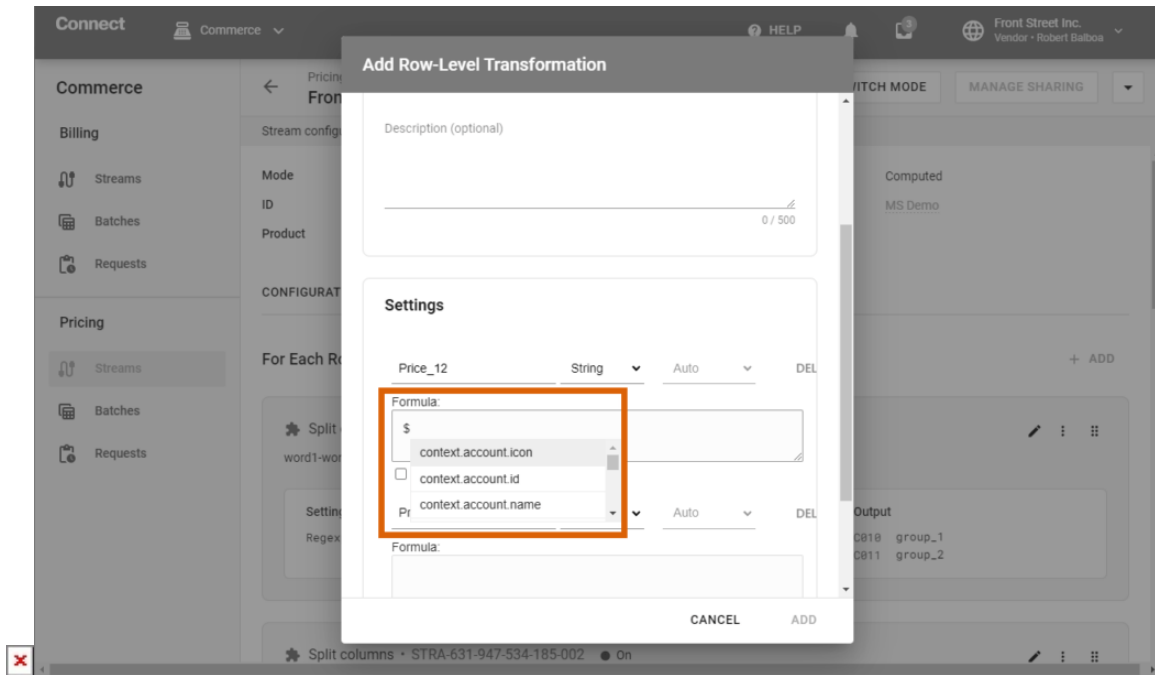
## Formula

This transformation function allows you to perform mathematical and logical operations on columns and context variables using the jq programming language.

You can add several formulas to one transformation rule. For example, first, you may need to get price multiplied by 12 and then price multiplied by 13 – you can make this calculation using two different transformations or add both operations to one transformation.





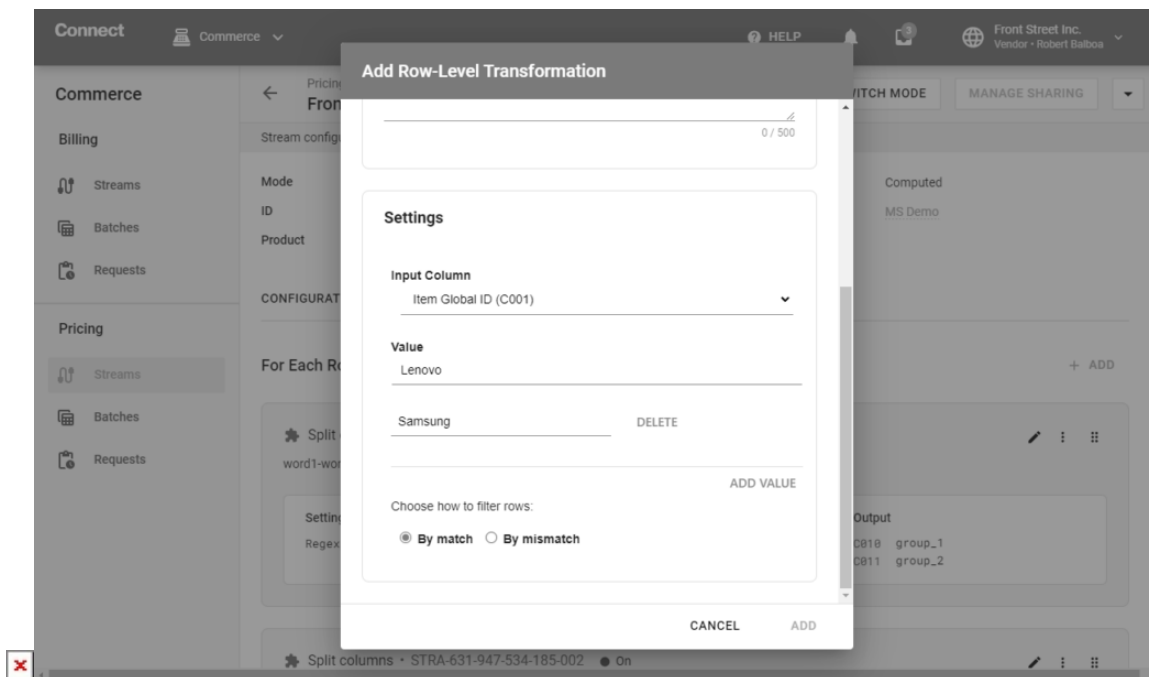
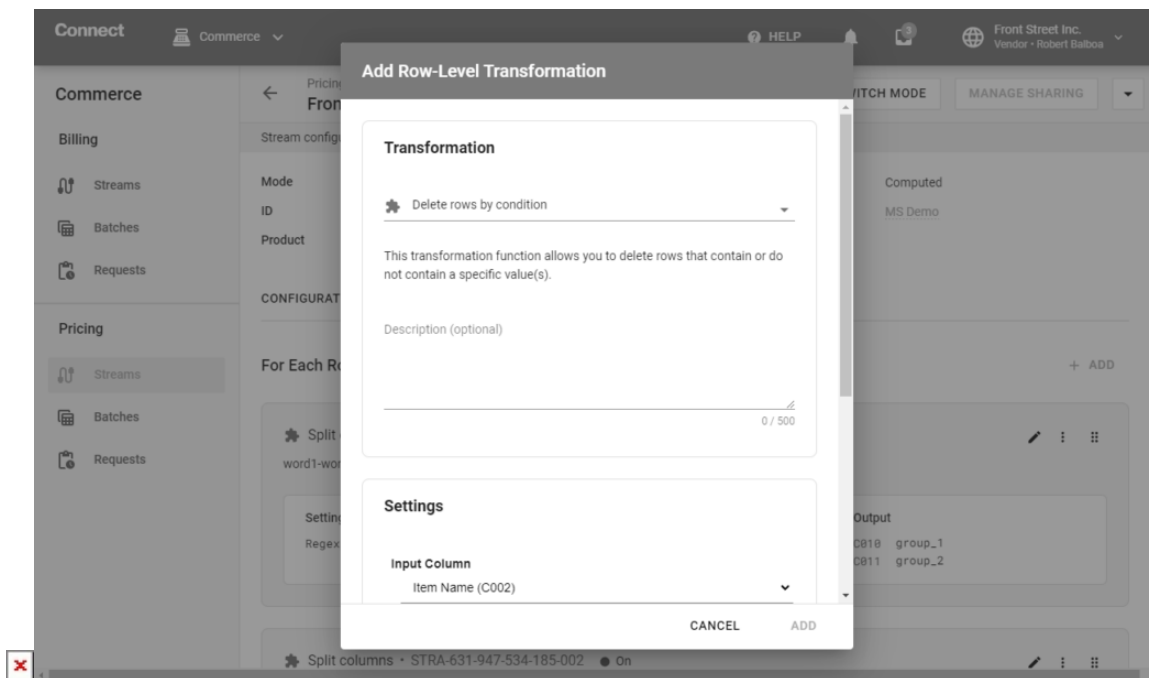


**Information**

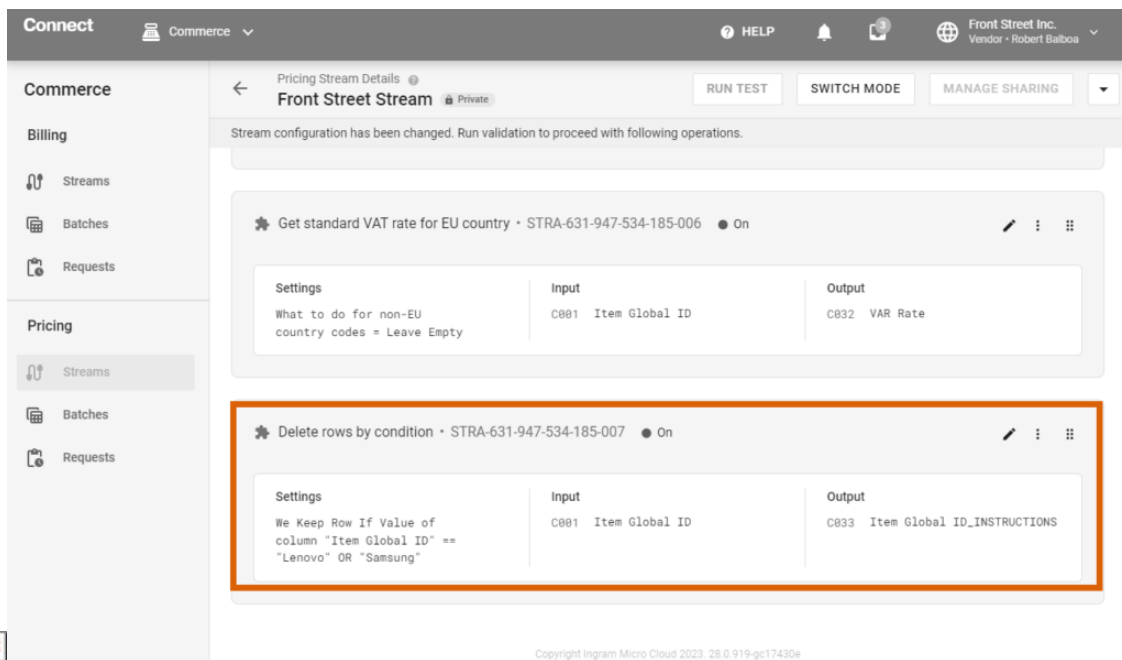
When adding formula-based transformations, you can see the list of suggested columns by typing “.” and the list of context variables by typing the “\$” sign.

**Delete rows by condition**

This transformation function allows you to delete rows that contain or do not contain a specific value or values. Rows can be filtered and removed by a value match or mismatch.

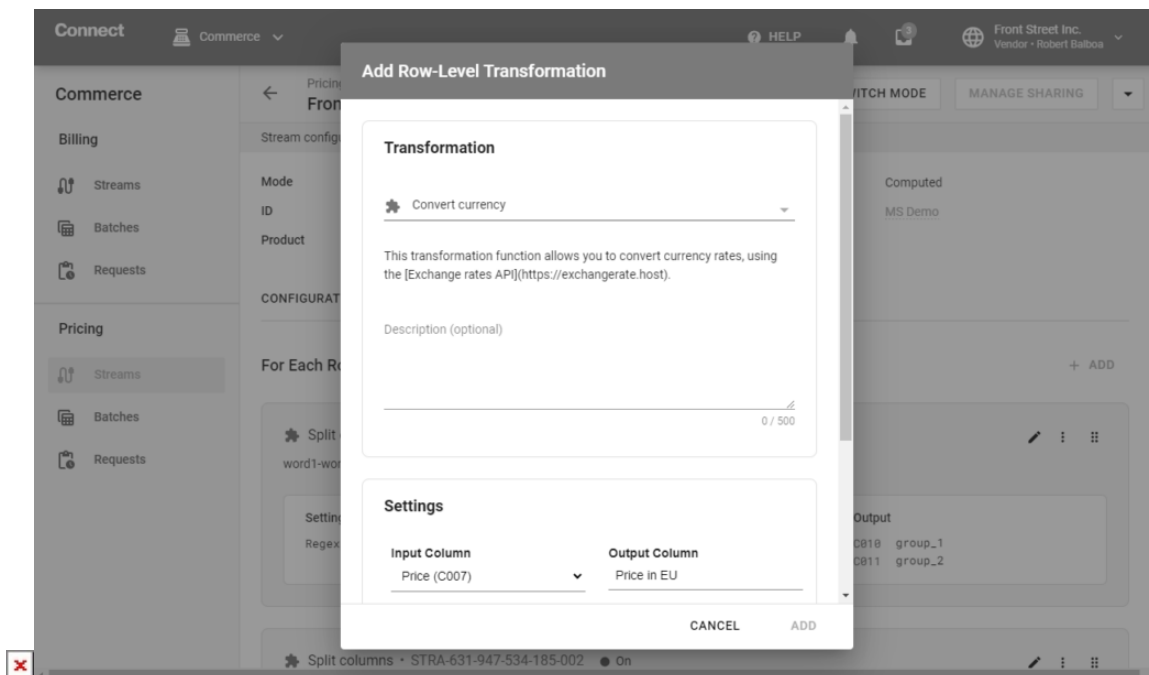


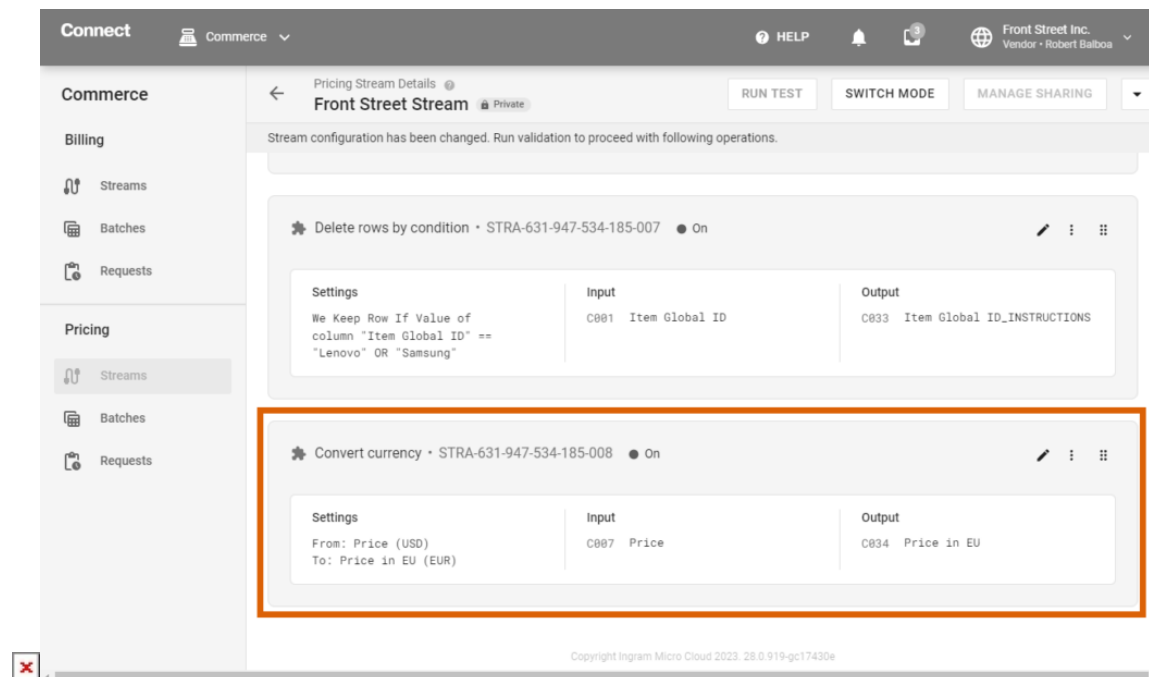
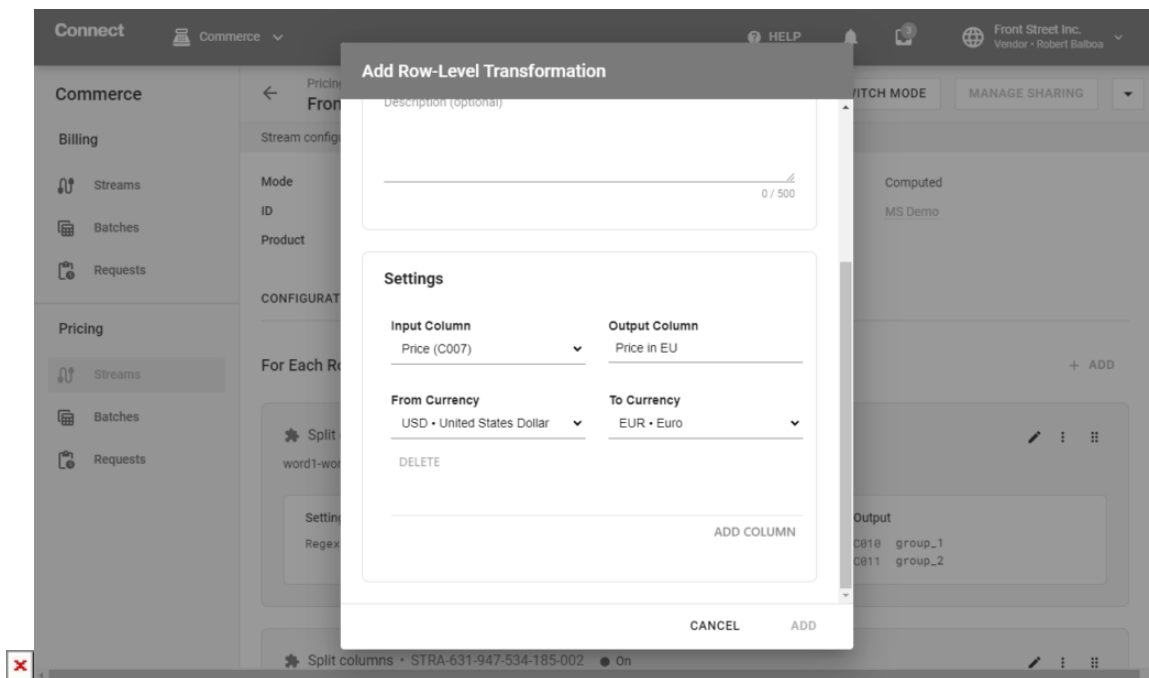




## Convert currency

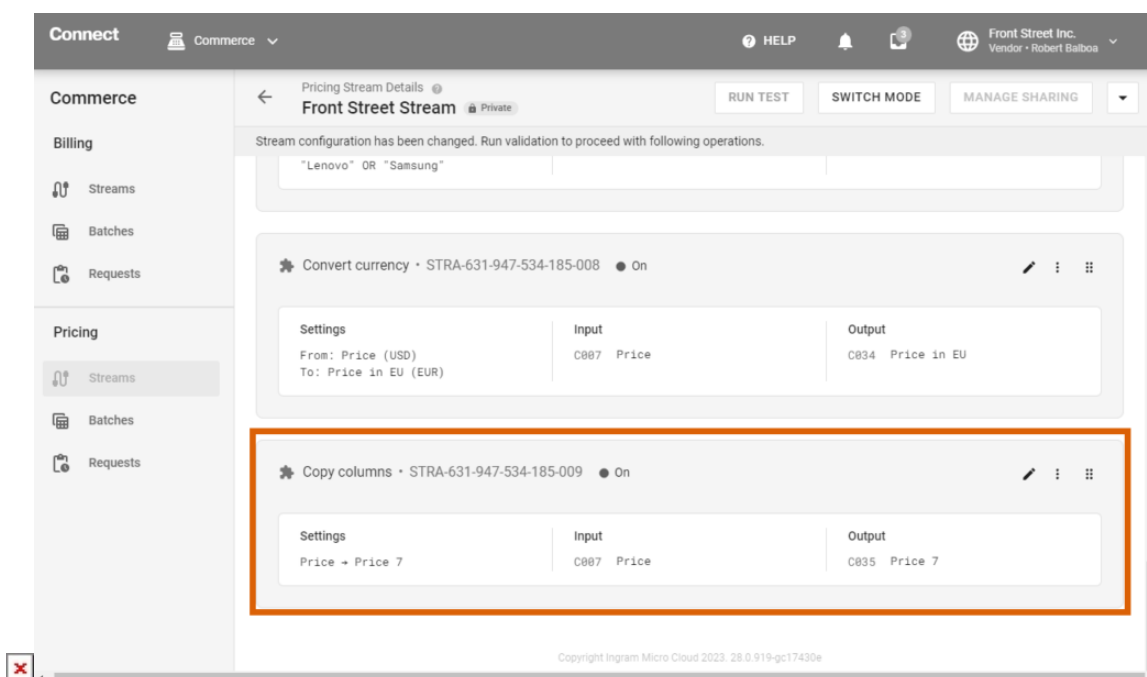
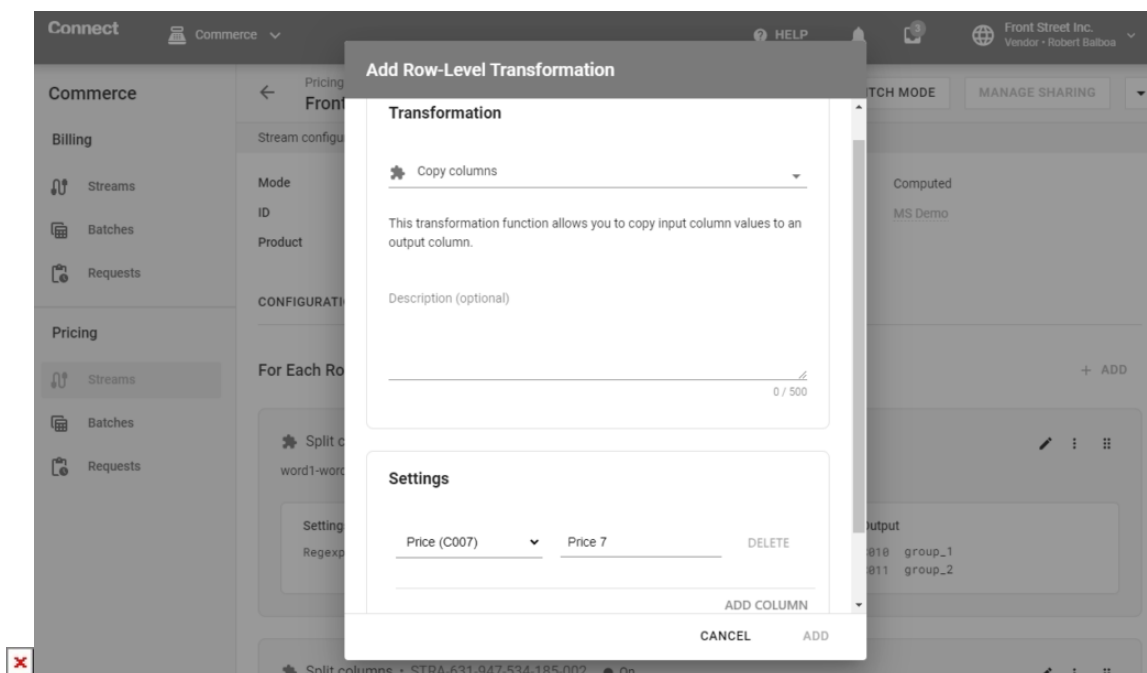
This transformation function allows you to convert currency rates using the [exchangerate.host](https://exchangerate.host) API.





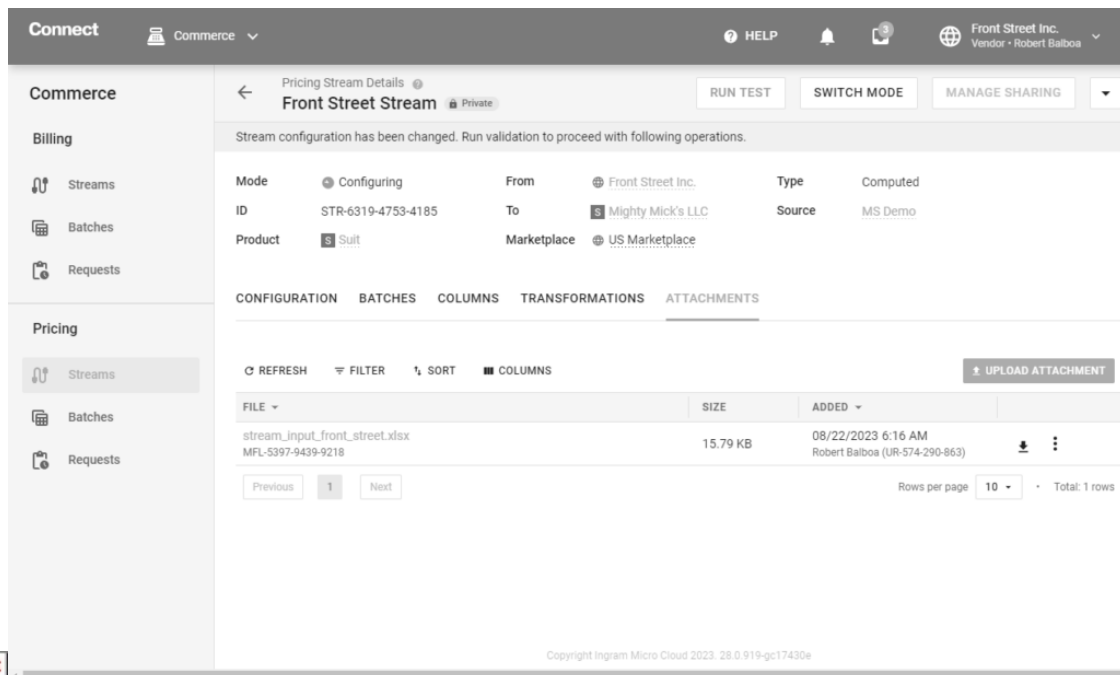
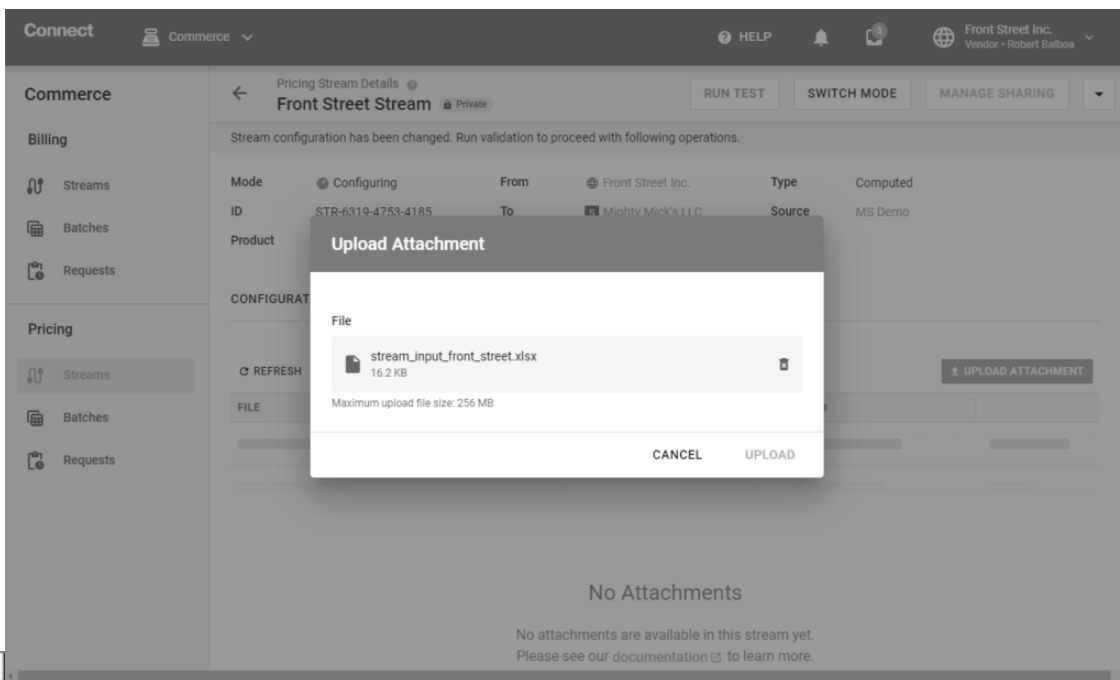
## Copy columns

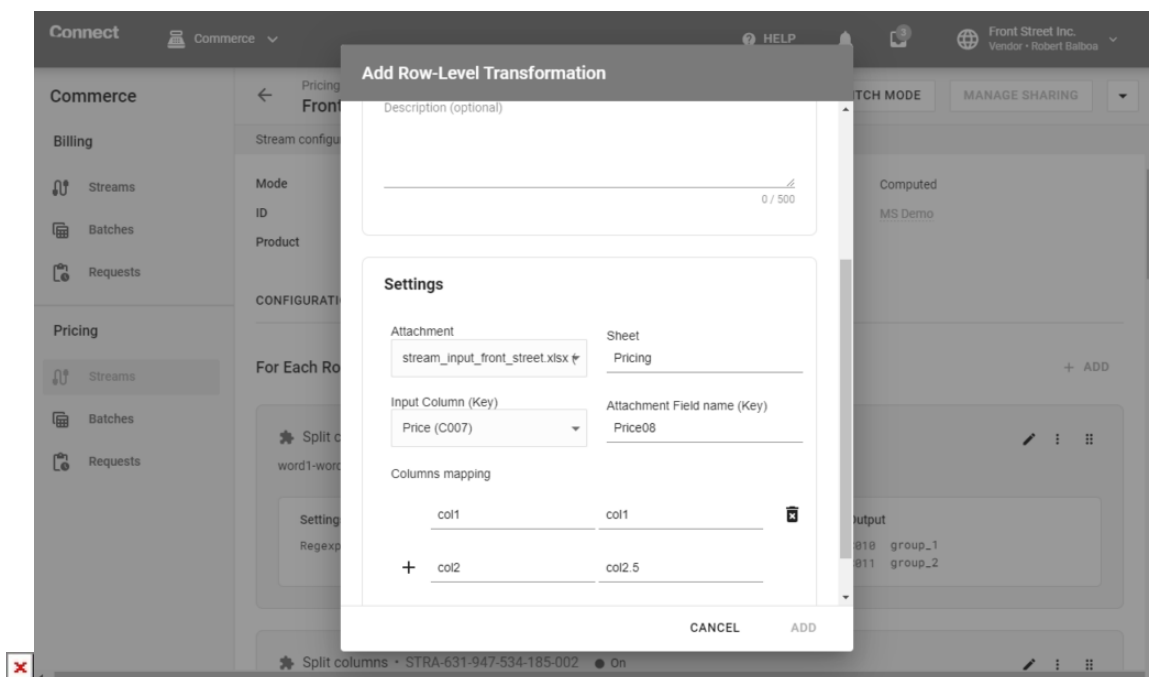
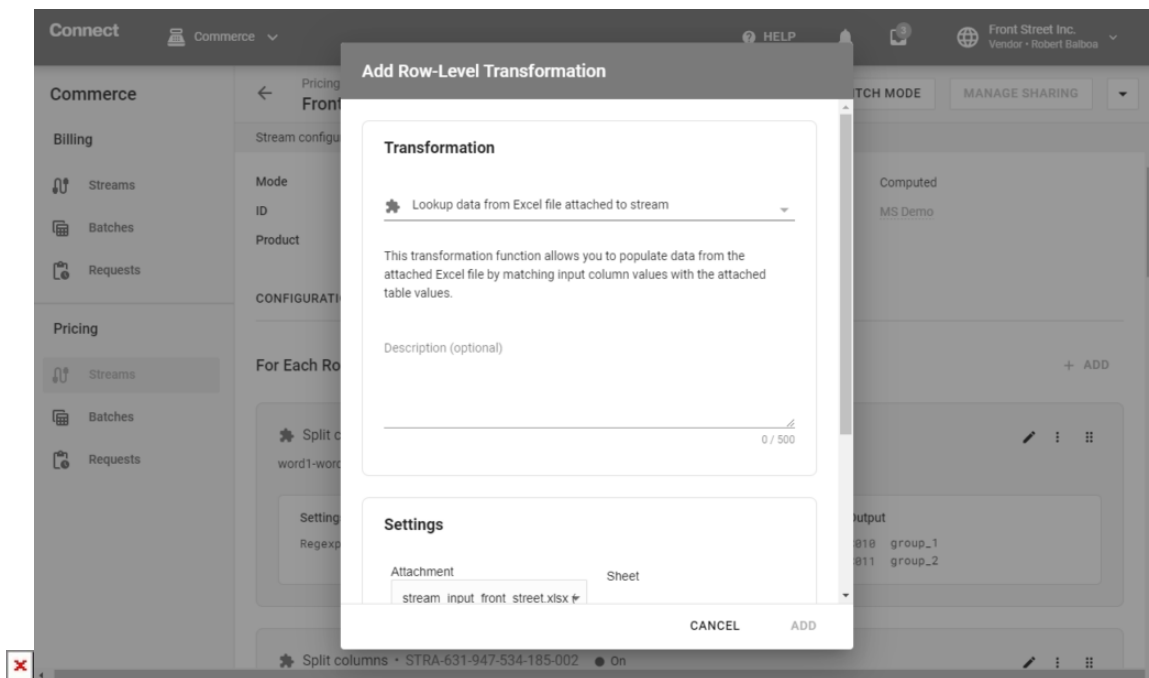
This transformation function allows you to copy input column values to an output column. You can use it to rename a column, for example, or create a copy of column values for another purpose.

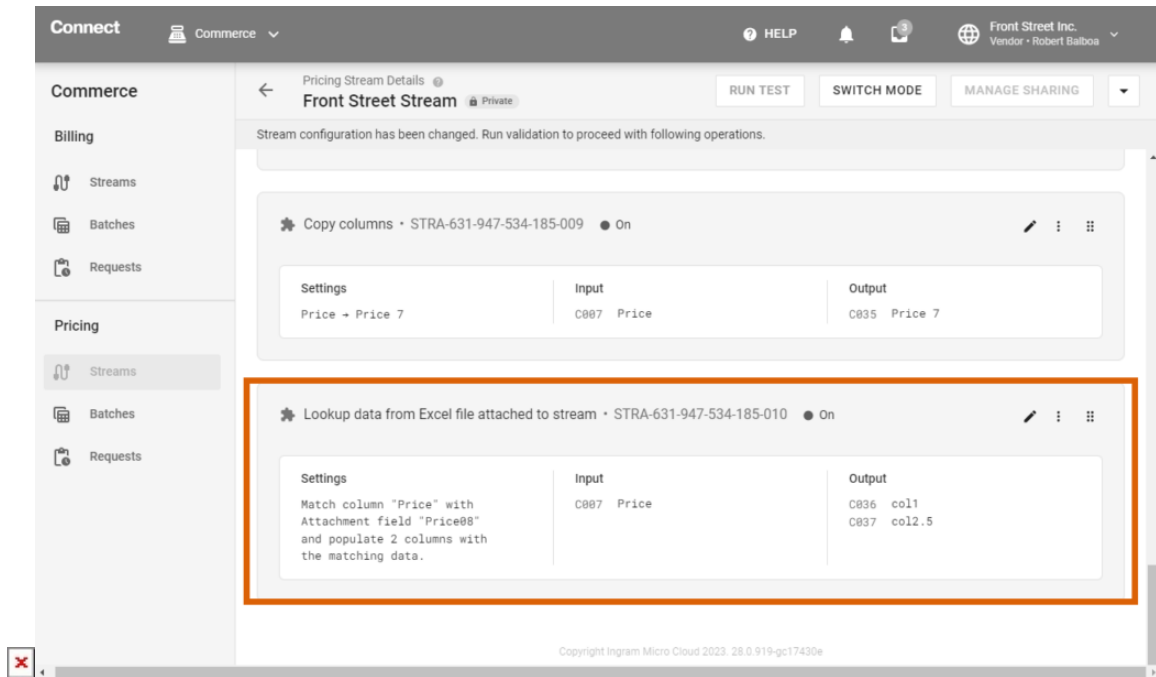


## Lookup data from Excel file attached to stream

This transformation function allows you to populate data from the attached Excel file by matching column values between input and attached tables.





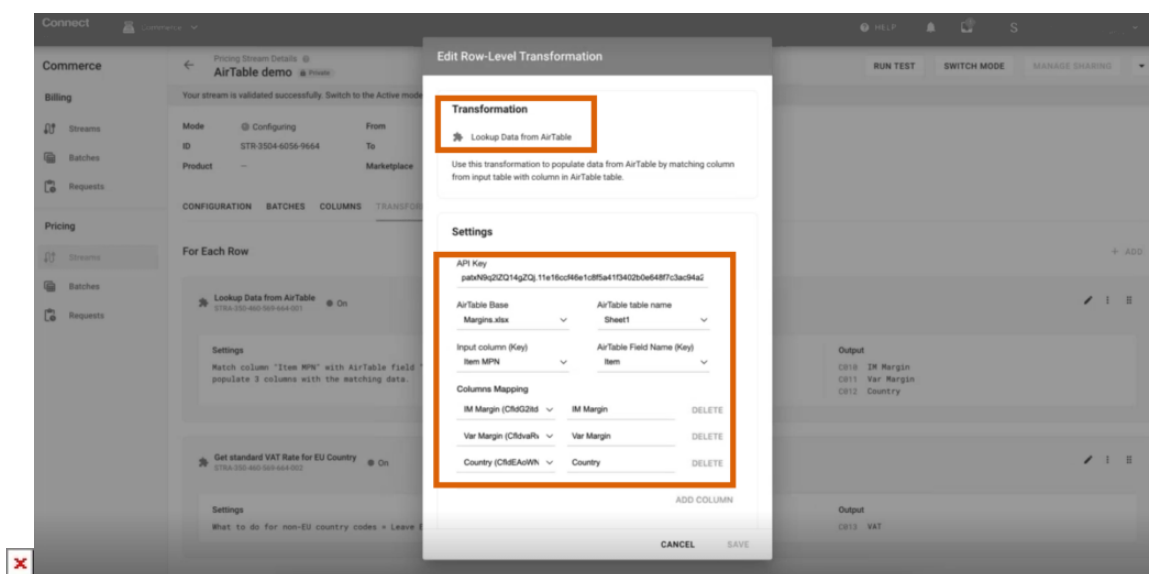
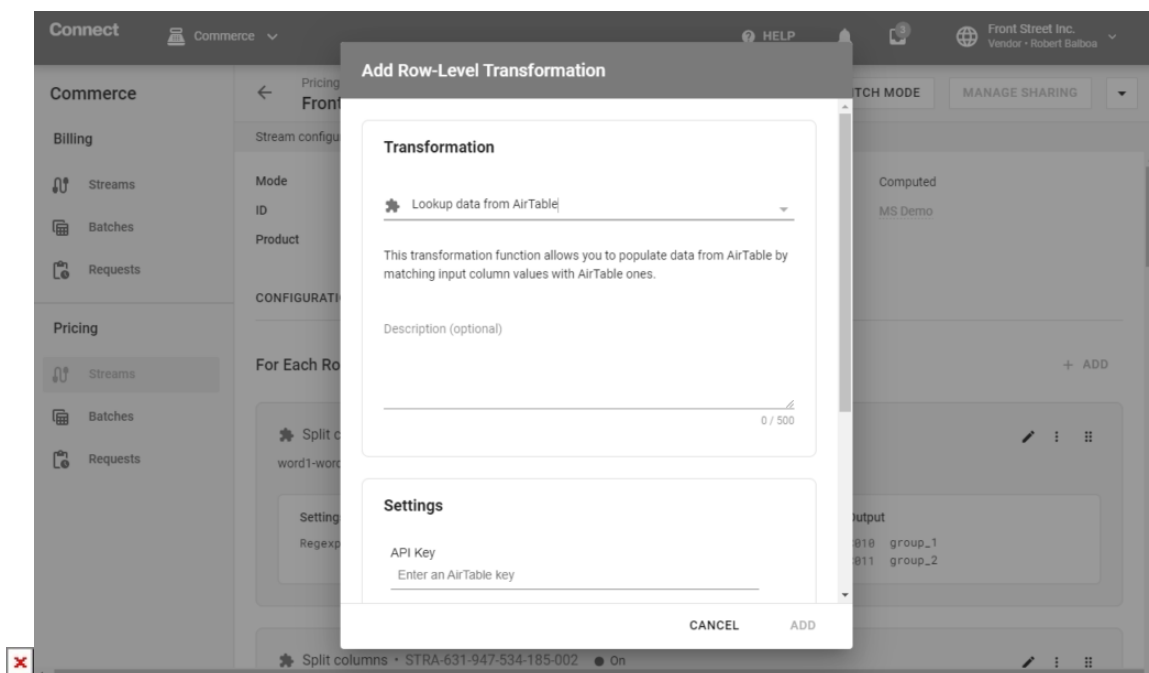


## Lookup data from AirTable

This transformation function allows you to populate data from AirTable by matching input column values with AirTable table values.

You can store data in a central place using the **AirTable** cloud service and share this data between multiple streams and Marketplaces.

To add this transformation rule, you need to upload your Excel file to **AirTable**, create a token in **Personal access tokens** of the **Developers** hub, and when creating a new row-level transformation, choose **Lookup data from AirTable** in the drop-down list:



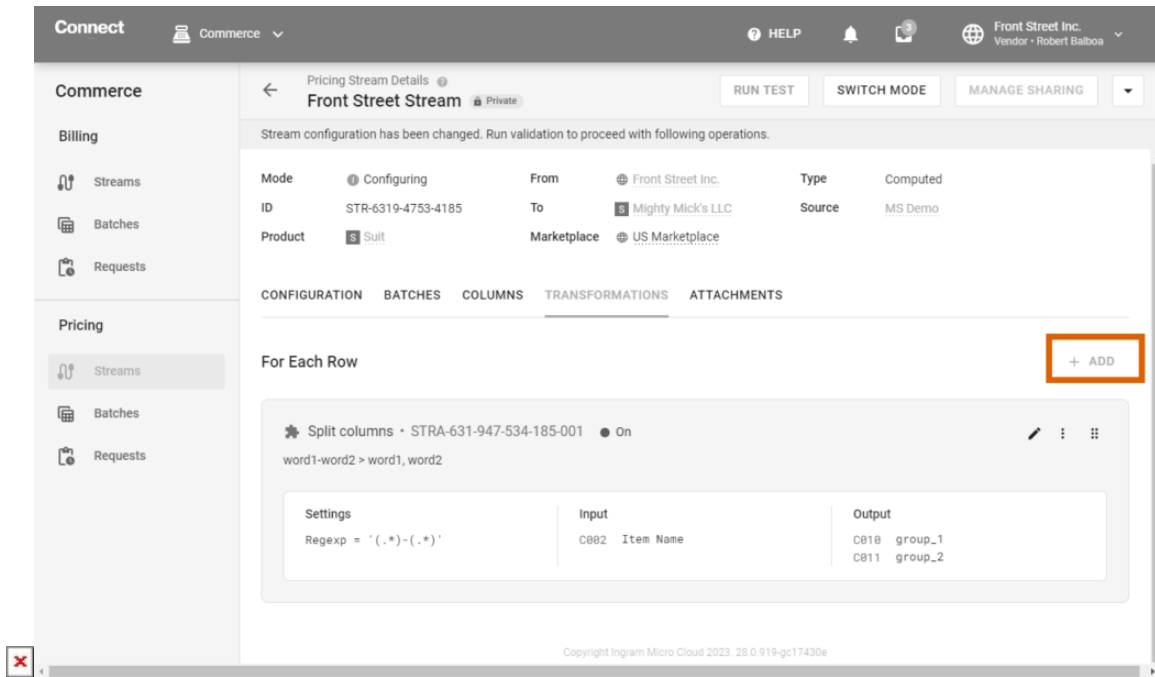
You then need to insert the copied token into API key and map columns and sheets between your stream Excel file and the Airtable one.

## Defining Transformation Rules

Transformation rules can be applied to your data streams in order to define the expected output for associated batches.



The system allows you to define transformation rules for your streams in the following way:



Access the **Transformation** tab from the corresponding *Stream Details* screen. Click the **Add** button to create a new transformation rule.

Next, select transformation type by using the corresponding field in the drop-down list, fill in all mandatory fields, and click **Save**. You can add more transformation rules by clicking on the **Add** button above your rule on the right side.

Once your transformation rules are defined successfully, continue with your stream configuration or publication as described in the Commerce User Interface article.

## Transformation Requests

You can update transformation data for your batch using transformation requests. Go to the Commerce module and choose **Requests** in the left navigation menu, then click the link of the transformation request you need to update. In **Requests**, you can perform the following operations:



CloudBlue Commerce

### Transformation Requests

Default REFRESH FILTER SORT COLUMNS SEARCH Rows per page 10 Total: 128 rows

REQUEST	PRODUCT	STREAM	BATCH	TRANSFORMATION	MARKETPLACE	ASSIGNEE	STATUS
STT-YYYY-MM-1234-1234-005 21/08/2023 03:00	Dropbox_Business PRD-594-246-497	Raw Billing Data BST-2807-9382-3206	27/07/2022-26/07/2022 BB-YYYY-MM-DD-7337-5556	Copy Columns from th... TR 2834-3006	France MP-63989	Conrad Wolff Sr. USR-6519-2889	Scheduled
STT-YYYY-MM-4321-4321-005 21/08/2023 08:00	Microsoft Office_ PRD-128-538-281	Raw Billing Data BST-2807-9382-3206	14/07/2022-16/07/2022 BB-YYYY-MM-DD-4571-1117	Split by Delimiter TR 8225-3148	Germany MP-19560	Brad Corwin USR-1100-6948	Failed
STT-YYYY-MM-1234-1234-004 21/08/2023 10:00	Dropbox_Business PRD-594-246-497	Lacinia et fringilla BST-2801-6770-6389	10/07/2022-10/07/2022 BB-YYYY-MM-DD-9536-7512	Copy Columns from th... TR 2494-3084	Italy MP-51453	Linda Kulas DVM USR-4904-7553	Pending
STT-YYYY-MM-1234-1234-003 21/08/2023 11:00	Dropbox_Business PRD-594-246-497	Aliquam vehicula eget BST-5066-3911-6370	17/07/2022-05/08/2022 BB-YYYY-MM-DD-9823-5776	Enrich Billing Stream... TR 1548-9871	Norway MP-49088	Heidi Veum USR-1535-9063	Completed
STT-YYYY-MM-4321-4321-004 21/08/2023 13:00	Microsoft Office_ PRD-128-538-281	Nec cursus imperdiet BST-1407-7770-7462	16/07/2022-18/07/2022 BB-YYYY-MM-DD-7996-4800	Split by Delimiter TR 8149-2270	United States MP-73107	Mr. Anita Moen USR-1486-5234	Completed
STT-YYYY-MM-4321-4321-003 21/08/2023 19:00	Microsoft Office_ PRD-128-538-281	Pulvinar ultricies turpis BST-2020-3976-1202	23/07/2022-03/08/2022 BB-YYYY-MM-DD-8690-6208	Copy System Column TR 6531-3660	United Kingdom MP-70857	Heidi Stokes USR-1586-1784	Completed
STT-YYYY-MM-4321-4321-002 21/08/2023 21:00	Microsoft Office_ PRD-128-538-281	Proin massa nam BST-8480-8880-6279	11/07/2022-26/07/2022 BB-YYYY-MM-DD-5175-5460	Split by Delimiter TR 4271-3280	Russian Federation MP-67734	Arlene Fay USR-4005-3830	Completed
STT-YYYY-MM-4321-4321-001 21/08/2023 23:00	Microsoft Office_ PRD-128-538-281	Sit elementum lectus BST-9109-4300-8847	21/07/2022-28/07/2022 BB-YYYY-MM-DD-6598-1542	Enrich Billing Stream... TR 2382-6153	Canada MP-37251	Harriet Harvey IV USR-9236-2156	Completed
STT-YYYY-MM-1234-1234-002 21/08/2023 23:00	Dropbox_Business PRD-594-246-497	Dui netus faucibus BST-1288-9203-2737	12/07/2022-06/08/2022 BB-YYYY-MM-DD-5454-2389	Copy System Column TR 6123-7176	Spain MP-97531	Alyssa Rowe USR-1960-8260	Completed
STT-YYYY-MM-1234-1234-001 21/08/2023 23:00	Dropbox_Business PRD-594-246-497	Voluptat, sit lorem BST-4088-7236-1215	06/08/2022-08/08/2022 BB-YYYY-MM-DD-9737-9251	Enrich Billing Stream... TR 3087-7782	Kazakhstan MP-79246	Diane Runolfsdottir USR-3508-4490	Completed

Previous 1 2 3 13 Next Go to page: Rows per page 10 Total: 128 rows

CloudBlue Commerce

### Transformation Request Details

STT-YYYY-MM-1234-1234-005

**General**

Status: Pending

Product: Dropbox

Stream: Raw Billing Data

Batch: 27/07/2022-26/07/2022

Marketplace: France

Assignee: John Doe

Created: 1/6/21, 1:27 PM  
Christian Mann

Updated: 1/6/21, 1:55 PM  
John Doe

**Processing** UPLOAD OUTPUT

Input: 24042022-24052022-input.xlsx

37.1 Kb 10 100  
Size Columns Rows

Output Data: Waiting for Input Data File begin processed

**Attachments** UPLOAD

FILE	DESCRIPTION	UPLOADED	SIZE
example-file.xlsx STTA-2457-2637	Molestie turpis eget euismod eleifend. Natus scelerisque u...	17/12/2019 17:18 Lance Dean	2 Mb
my-new-attachment.xlsx STTA-9776-1351	-	17/12/2019 15:56 Troy Root	2 Mb

Copy Columns from the Source Stream

CloudBlue Commerce

### Transformation Request Details

STT-YYYY-MM-1234-1234-005

**General**

Status: Pending

Product: Dropbox

Stream: Raw Billing Data

Batch: 27/07/2022-26/07/2022

Marketplace: France

Assignee: John Doe

Created: 1/6/21, 1:27 PM  
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Input: 24042022-24052022-input.xlsx

37.1 Kb 10 100  
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**Attachments** UPLOAD

FILE	DESCRIPTION	UPLOADED	SIZE
example-file.xlsx STTA-2457-2637	Molestie turpis eget euismod eleifend. Natus scelerisque u...	17/12/2019 17:18 Lance Dean	2 Mb
my-new-attachment.xlsx STTA-9776-1351	-	17/12/2019 15:56 Troy Root	2 Mb

Copy Columns from the Source Stream

- Upload the required output data for your transformation by using the corresponding **Upload Output** button. The system



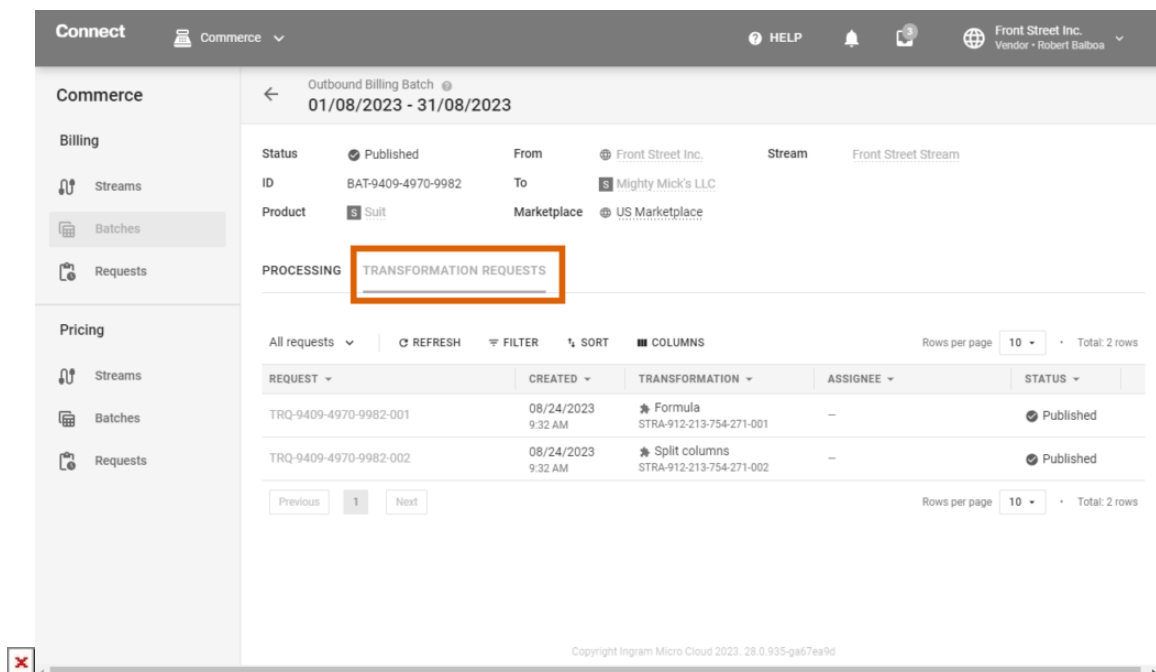
allows previewing both input and output data.

- Switch the *assignee* for the transformation operation by clicking the pencil icon and changing the assignee of the request.
- Abort your transformation request, using the arrow (▼) icon at the top-right corner of the screen and clicking **Fail request**.

Filling out all transformation data is required to successfully complete and publish your batches. Continue with your batch configuration or publication as described in the Commerce User Interface article.

## Batch Details Transformation

You can also work with transformation rules by accessing the **Transformation requests** tab of a selected batch:



This provides interface that is similar to the transformation data management introduced within the transformation requests.