

# Join Window

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In the Join window of the Trifacta® application, you can join your current dataset with another dataset or recipe based upon information that is common to both datasets.

For example, you could join together two sets of regional sales data based upon the product identifiers that they both use to track sales. In the Search panel, enter `join datasets` or select the Join icon from the toolbar.

- A **join** is a standard operation for merging the data from two different datasets. For more information, see *Join Types*.
- You cannot perform joins on columns of Object or Array data type.
- A join operation is different from a union operation. In a **union** operation, data from one or more datasets is appended to the current dataset, assuming that the columns are identical or very similar. For more information, see *Union Page*.

**Tip:** Depending on the types of operations you need to perform, you may need to perform joins earlier or later in your recipe. For more information, see *Optimize Job Processing*.

**NOTE:** Unnest, union, or join transforms may significantly increase the number of rows or columns in your dataset. To prevent overloading the browser's memory, the application may apply a limit function to the results to artificially limit the number of rows displayed in your sample. You can generate a new sample if desired. This limitation is not applied during the job execution.

## Before You Begin

- **Review your record counts.** Before you specify the join, you should review your record counts and the uniqueness of your keys, which should provide an idea of the number of records you may see in the output. Note that the number of output records depends on the type of join and the matches between join keys.
- **Review your join key values.** If there are variations in the values in your join keys, you may end up with duplicate records in your joined dataset. Look for mismatched or missing values in your join keys, and correct if possible.
- **Review the granularity of your data.** If you bring together data at a lower fidelity than the source, you can end up with record matches that are not actually matching data. For example, if your timestamps are down-sampled from milliseconds to seconds as part of the join, you may have "matching" timestamps in seconds that were not matches at the millisecond level in the source data.

## Step 1 - Select Dataset or Recipe

In the Search panel, enter `join datasets`. Then, select the dataset or recipe that you wish to join with your current dataset.

Choose dataset or recipe to join with POS-r01 – 2.txt ✕

Recipes in current flow   **Datasets in current flow**   All datasets

Name	Last Updated	Source	Data																											
POS-r03.txt	Today at 11:05 AM	HDFS																												
POS-r02.txt	Today at 11:05 AM	HDFS																												
POS-r01.txt	Today at 11:05 AM	HDFS																												
REF_CAL.txt	Today at 11:05 AM	HDFS																												
<input checked="" type="checkbox"/> REF_PROD.txt	Today at 11:05 AM	HDFS	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th># ITEM_NBR</th> <th>ABC</th> <th>PRODUCT DESC</th> </tr> </thead> <tbody> <tr><td>491000</td><td></td><td>ACME RICE CRACKERS CHEESE</td></tr> <tr><td>474000</td><td></td><td>ACME RICE CRACKERS SESAME</td></tr> <tr><td>498000</td><td></td><td>ACME RICE CRACKERS ONION</td></tr> <tr><td>555000</td><td></td><td>ACME RICE CRACKERS BBQ</td></tr> <tr><td>562000</td><td></td><td>ACME RICE CRACKERS ORIGINAL</td></tr> <tr><td>352000</td><td></td><td>ACME RICE CRACKERS TERIYAKI</td></tr> <tr><td>528000</td><td></td><td>ACME SODAS UNSALTED</td></tr> <tr><td>522000</td><td></td><td>ACME SODAS SALTED</td></tr> </tbody> </table>	# ITEM_NBR	ABC	PRODUCT DESC	491000		ACME RICE CRACKERS CHEESE	474000		ACME RICE CRACKERS SESAME	498000		ACME RICE CRACKERS ONION	555000		ACME RICE CRACKERS BBQ	562000		ACME RICE CRACKERS ORIGINAL	352000		ACME RICE CRACKERS TERIYAKI	528000		ACME SODAS UNSALTED	522000		ACME SODAS SALTED
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528000		ACME SODAS UNSALTED																												
522000		ACME SODAS SALTED																												

Browse current flow

**Figure: Select dataset or recipe to join**

You can use the Data tab to preview the data in the selected object.

**NOTE:** You must have read access to the object to join it to your dataset.

- Use the Search bar to locate specific objects.
- Click **Accept**.

## Step 2 - Select Join Conditions

In the next step, you specify the type of join and one or more join keys (columns).

Dataset samples
Join - Keys & Conditions ✕

**Join Key**

#	Item_Nbr	#	ITEM_NBR
-	381000		381000
-	325000		325000
-	325000		325000
-	403000		403000
-	449000		449000
-	490000		490000
-	560000		560000
-	573000		573000
-	486000		486000
-	488000		488000
-	490000		490000
-	498000		498000
-	503000		503000
-	530000		530000
-	560000		560000
-	573000		573000
-	325000		325000
-	325000		325000

8,161 Rows in ● 165 Rows in ● 8,161 Rows in Output

Search row values...

**Join type** required

Inner ▼

**Join keys** Add

- # Item\_Nbr
- = (Equal to) Suggested Q
- # ITEM\_NBR 99% match

**Results summary**

Based on current samples

Rows in Current	8161
Rows in Joined-in	165
Rows in Output	8161

Show only:  Included Rows  Excluded Rows

### Figure: Specify join type and join keys

#### Dataset samples:

Mouse over the Dataset samples indicator to see the current samples from the datasets that are part of the join. For more information, see *Samples Panel*.

#### Join type:

From the drop-down, select the type of join to apply.

#### Join keys:

In the above image, the platform has determined that the item number (`Item_Nbr`) field of Region 1 data and the item number (`ITEM_NBR`) field from `REF_PROD` should be used as the keys for performing the join.

- To make changes to the two join keys, mouse over the specified keys:
  - To remove the two columns as join keys, click the X icon.
  - To edit the keys to use and other key options, click the Pencil icon. See below.
  - To add more join keys, click **Add**.

**NOTE:** Be careful applying multiple join keys. Depending on the join type, this type of join can greatly expand the size of the generated data.

#### Edit keys:

By default, matches between join keys are performed on a strict, case-sensitive matching between key values in the selected columns. In some cases, it may be useful to loosen the conditions under which matches are found. The following options are applied to the join key columns in both sources to attempt to find matches. After the join is executed, no data in either column is changed based on these selections.

Option	Description
fuzzy match	<p>Use a fuzzy matching algorithm for key value matching.</p> <p><b>Tip:</b> Use this option to perform fuzzy join matching of primary keys between datasets.</p> <p><b>NOTE:</b> Fuzzy joins can only be applied to String data types. Other data types cannot be fuzzy-matched using the algorithm.</p> <p>Fuzzy matching uses the doublemetaphone algorithm for matching strings (keys). Both primary encodings of each key value must match. See <i>DOUBLEMETAPHONEEQUALS Function</i>.</p>
Ignore case	Ignore case differences between the join key values for matching purposes.
Ignore special characters	Ignore all characters that are not alphanumeric, accented Latin characters, or whitespace, prior to testing for a match.
Ignore whitespace	Ignore all whitespace characters, including spaces, tabs, carriage returns, and newlines.

#### Summary:

You can use these metrics to identify the likelihood of accurate matching between the join keys and the row count generated in the output.

Click **Next**.

### Step 3 - Select Output Columns

From the selected datasets, you can specify the columns to include in the output.

The screenshot displays the 'Join - Output Columns' configuration window. The central 'Join Output Preview' section shows a table with columns: #, Item\_Nbr, #, ITEM\_NBR1, #, Store\_Nbr, #, WM\_Week, Daily, #, Whse\_Nbr. Above the table are histograms for each column. On the right, the 'Columns' panel lists available columns with checkboxes and source indicators. At the bottom, a summary shows '8,161 Rows in Current', '165 Rows in Joined-In', and '8,161 Rows in Output'.

**Figure: Select output columns**

#### Select columns:

Review the list of available columns, which are displayed for both sources.

- Use the search panel to search for specific columns.
- To include all columns:
  - Click the All, Current, or Join-In tabs.
  - Click the checkbox at the top of the list.

#### Advanced options

##### Name prefixes

You can apply prefixes to column names in the joined dataset, which can be helpful for tracking the source of a column in complex datasets. For example, you may wish to prepend each column from a dataset called, salesRegion01 with the prefix: sR01.

- **Name prefix for columns in Current data:** Enter a prefix to apply to the names of columns sourced from your current dataset that appear in the joined output.
- **Name prefix for columns in Joined-in data:** Enter a prefix to apply to the names of columns sourced from the joined-in dataset that appear in the joined output.

## Dynamically updating Joins

After you have joined in another set of data, subsequent changes to that data can be automatically reflected in the output of the join:

- **Include all columns from Current data:** Dynamic updates always include the latest data from your current dataset.
- **Include all columns from Joined-In data:** Dynamic updates always include the latest data from the dataset that you are joining in.

**NOTE:** After you add your join to the recipe, if the data grid is empty, then the keys that you specified in the join may not have a match in the currently selected sample. You should revisit the keys used in your join. If the join still generates an empty grid on the current sample, you should collect a new sample. See *Samples Panel*.

**Tip:** If you must freeze the data in the dataset that you are joining in, you should create a copy of the dataset as a snapshot and join in the copy. See *Dataset Details Page*.

To join in the copy, edit the join and change the source that is being joined. See *Fix Dependency Issues*.

Click **Save and Continue**.

After you have selected your columns and any advanced settings, click **Review**.

## Step 4 - Review Join

Review the join that you have specified. To modify any aspect of it, click the appropriate **Edit** link.

The screenshot displays the 'Join - Edit Step' interface. At the top, there is a search bar for row values. Below it, a 'Join Output Preview' section shows a data grid with columns: #, Item\_Nbr, ITEM\_NBR1, Store\_Nbr, WM\_Week, Daily, and Whse\_Nbr. The grid contains 165 rows of data. To the right of the grid, there are configuration options for the join: 'Joined-in data' (REF\_PROD.txt), 'Join type' (Inner), and 'Join keys' (Item\_Nbr = (Equal to) ITEM\_NBR). Below these, 'Output columns (30)' are listed, including 16 columns from the current dataset and 14 from the joined-in dataset. A 'Save to Recipe' button is located at the bottom right of the configuration panel.

**Figure: Review join**

To add the specified join to your recipe, click **Add to Recipe**.