

# Demand Forecast | Data Workbench

## INTRODUCTION

- This Hands-on Exercise is a part of **Building A Demand Forecast Skill**.
- This is the first exercise you will perform as part of the course.. The Steps for accessing the sandbox are common across all the exercises.
- You will create a single Workspace as part of the skill-building process.
- All the Hands-on exercises need to be executed in this Workspace.
- The data in some of the Screenshots does not match the instructions and are illustrative; in such cases, you are requested to follow the instructions.
- Use <username> as an identifier of all objects that you create in the Sandbox during the course.

## KEY TAKEAWAY

In this hands-on, you will learn to:

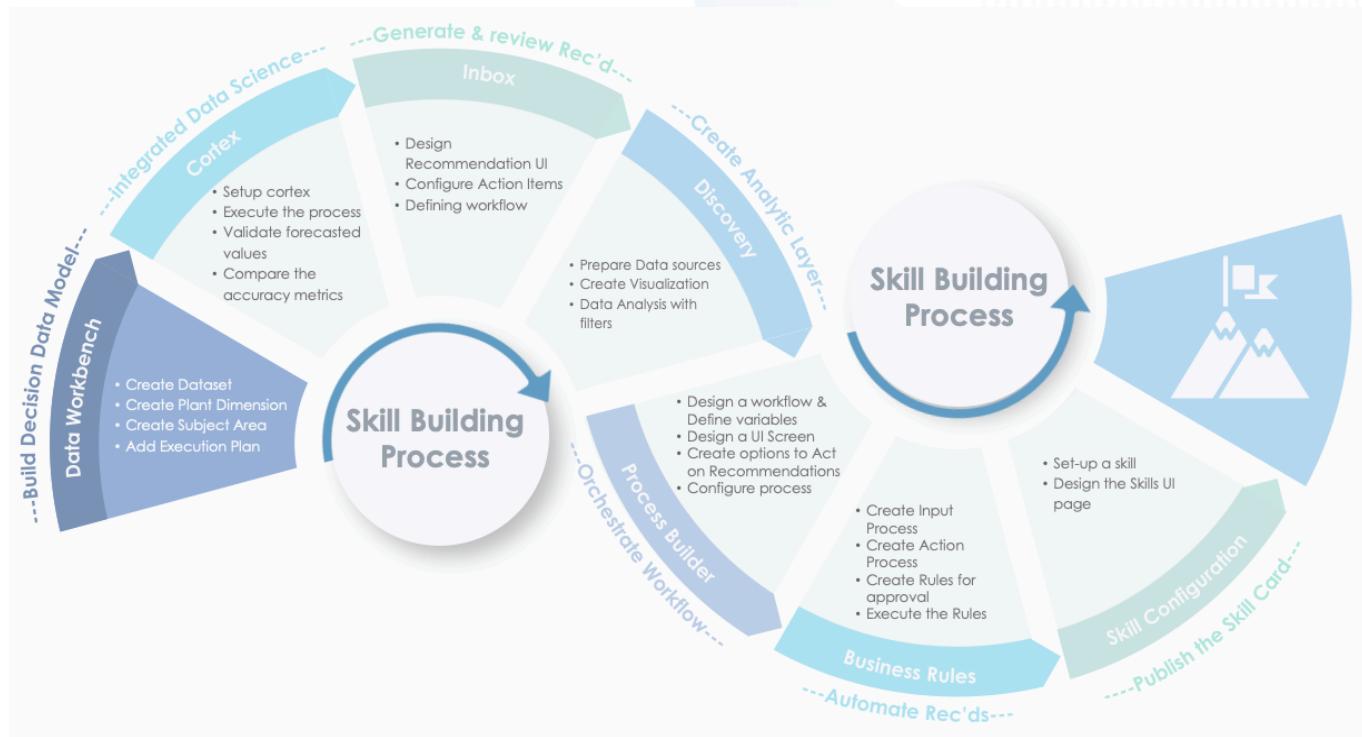
- **Create Dataset:** Extract data from a flat file using the Crawler.
- **Create Plant Dimension:** Create and populate Dimensions using both SQL queries and Insert/Update steps.
- **Create Subject Area:** Construct a Subject Area from scratch and populate it with data from multiple sources using both SQL and Insert/Update methods.
- **Add Execution Plan:** Configure the Execution Plan to orchestrate the process of building the Decision Data Model.
- Monitor job status and review execution history within the Control Room.

## EXPECTED RESULTS

Build a **Sales Order\_<Username>** Subject Area

Sales Orders John										
# Cumulative Confirmed Qty CT_CUMULATIVE_CONFIRMED		# Net Value AMT_NET_VALUE	Sales Orders username FACT_SALES_ORDER_JUSNAME...		Insert Date DW_INSERT_DATE		Update Date DW_UPDATE_DATE		# Sales Order Number DO_SALES_ORDER_NUMBER	# Sales Order Item Number DO_SALES_ORDER_ITEM_NUM
35	875	000029532A0918D5D54A...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	202820	110				
11	275	000065AF2CC6750C1E25...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	152560	20				
45	630	000E2630F6F6F1D603E74...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	97379	130				
45	900	000E4092232A943A8A02...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	100986	20				
45	855	001048E9E131760457F307...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	83433	170				
11	154	00129A6B9C5AA8DFB5AB...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	218492	130				
1	28	0012B025680AC0826E0E...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	109190	200				
1	35	00137E2D1BBAD7A23E622...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	125865	80				
45	540	001451494453F662CF1A...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	213690	220				
1	50	0018A931DD8DB3A707165...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	47681	40				
1	30	001988F817D1D1B1752D5F...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	218832	60				
45	855	001B0B4C84B2892F81917...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	105673	170				
1	26	001F8477889E6D3E85036...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	143094	160				
35	560	002076D9B1D9BE81D58D...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	24383	120				
1	14	0024FAAE194D51D82F069...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	155452	130				
1093	14209	00254F6597901DA2C5C2...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	67687	210				
35	910	00256481C75F65F31C4BF...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	86833	70				
11	187	00259078FAC001BAC24...	2024-12-24 08:10:12.257	2024-12-24 08:10:12.257	214505	30				

## SKILL BUILDING PROCESS



## TYPICAL ERRORS

Data is not populated:

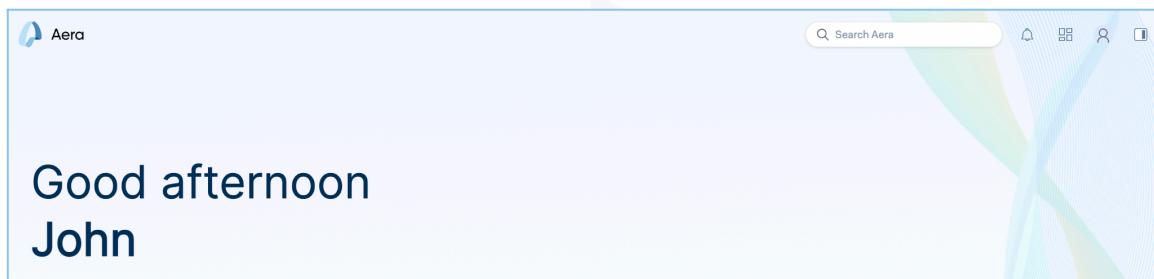
- Please review the length of the columns in your table.
- Ensure the query you write uses the correct physical names of columns.
- View detailed SQL errors to identify and fix issues quickly.
- Ensure you use the specific target table name you created to populate the objects.
- Review selection and mapping of parameters.

## TASKS AND STEPS

### Getting Started with Data Workbench

#### Log in to the Aera Decision Cloud

1. Log in to the Aera sandbox using your credentials. The URL is shared via email with [notifications@aerotechnology.com](mailto:notifications@aerotechnology.com). After a successful login, the Aera Decision Cloud homepage will be displayed.



In this exercise, you will build a Decision Data Model by orchestrating data from the source (on-premise system or cloud) to the destination (Aera Decision Data Model).

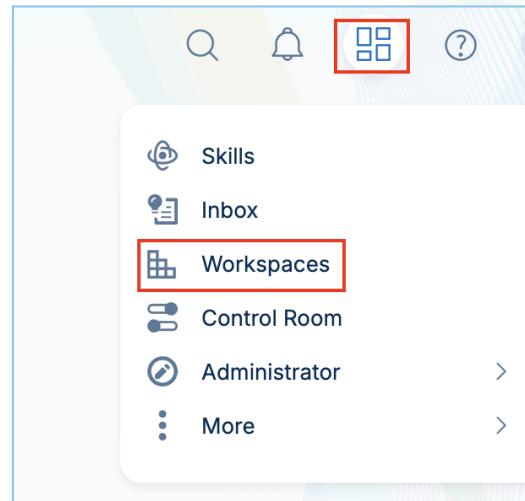
As this is a Sandbox environment and we are not connected to the source system, we will use an already **uploaded flat file** as a data source.

You will perform the following actions to build the Decision Data Model:

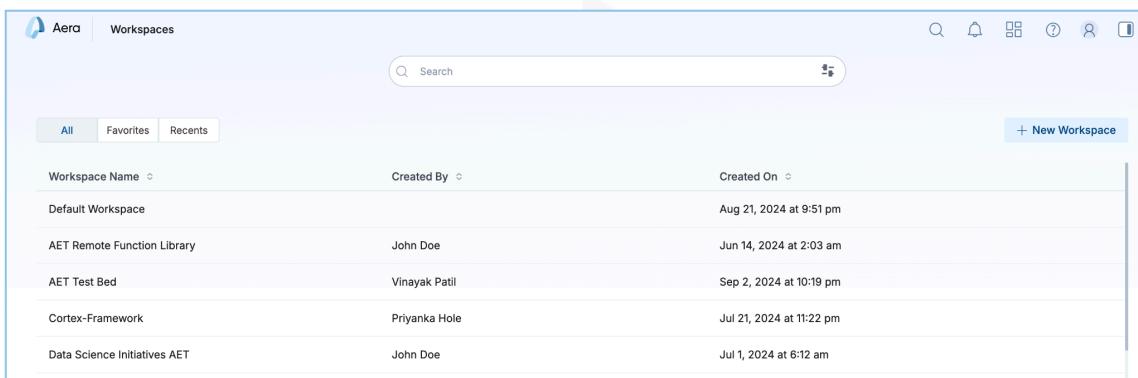
- Set up a Workspace
- Create Dataset
- Create Dimension
- Populate the Dimension
- Create a new Subject Area (Sales Order)
- Populate the Subject Area
- Add an Execution Plan

## Set up a Workspace

1. Click the **Aera Menu** icon on the Aera Decision Cloud home page and then click **Workspaces**.



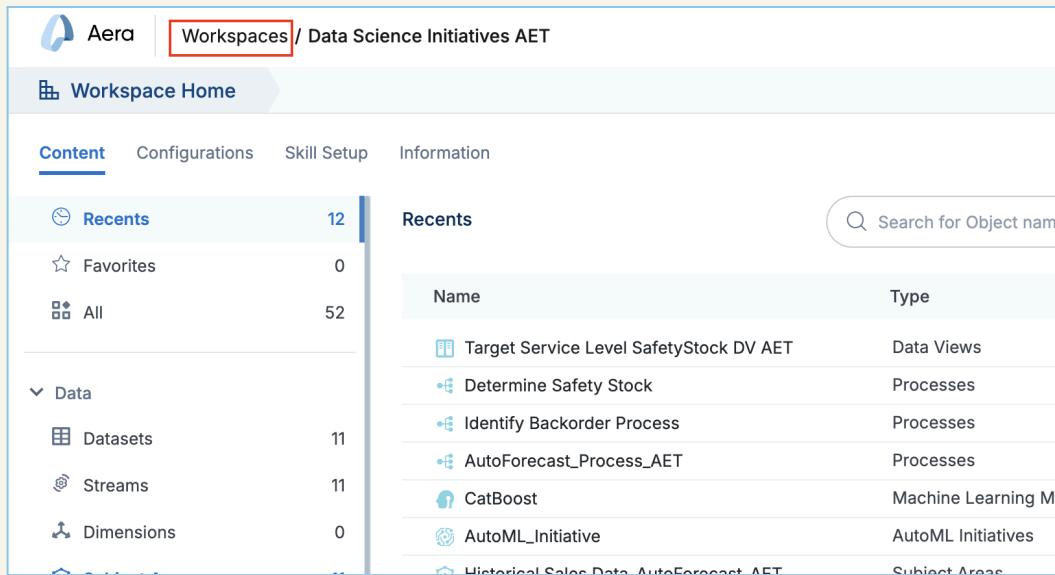
2. After you click on **Workspaces**, you'll be taken to the Workspaces home.



The screenshot shows the Aera Workspaces page. At the top, there is a search bar and a 'New Workspace' button. Below the header, there are tabs for 'All', 'Favorites', and 'Recents'. The main area displays a table of workspaces with columns for Name, Created By, and Created On. The workspaces listed are: Default Workspace, AET Remote Function Library, AET Test Bed, Cortex-Framework, and Data Science Initiatives AET.

Workspace Name	Created By	Created On
Default Workspace		Aug 21, 2024 at 9:51 pm
AET Remote Function Library	John Doe	Jun 14, 2024 at 2:03 am
AET Test Bed	Vinayak Patil	Sep 2, 2024 at 10:19 pm
Cortex-Framework	Priyanka Hole	Jul 21, 2024 at 11:22 pm
Data Science Initiatives AET	John Doe	Jul 1, 2024 at 6:12 am

**Note:** If you're currently in a Workspace, click on Workspaces in the top-left corner to return to the Workspaces home.



The screenshot shows the Aera Workspaces page with the 'Data Science Initiatives AET' workspace selected. The page has a navigation bar with 'Workspaces' highlighted. Below the navigation, there are tabs for 'Content', 'Configurations', 'Skill Setup', and 'Information'. The 'Content' tab is active, showing sections for 'Recents' (12 items), 'Favorites' (0 items), and 'All' (52 items). Under 'Data', there are sections for 'Datasets' (11 items), 'Streams' (11 items), and 'Dimensions' (0 items). To the right, there is a 'Recents' section with a search bar and a table of objects categorized by type. The table includes items like 'Target Service Level SafetyStock DV AET' (Data Views), 'Determine Safety Stock' (Processes), 'Identify Backorder Process' (Processes), 'AutoForecast\_Process\_AET' (Processes), 'CatBoost' (Machine Learning Models), 'AutoML\_Initiative' (AutoML Initiatives), and 'Historical Sales Data\_AutoForecast AET' (Subject Areas).

Name	Type
Target Service Level SafetyStock DV AET	Data Views
Determine Safety Stock	Processes
Identify Backorder Process	Processes
AutoForecast_Process_AET	Processes
CatBoost	Machine Learning Models
AutoML_Initiative	AutoML Initiatives
Historical Sales Data_AutoForecast AET	Subject Areas

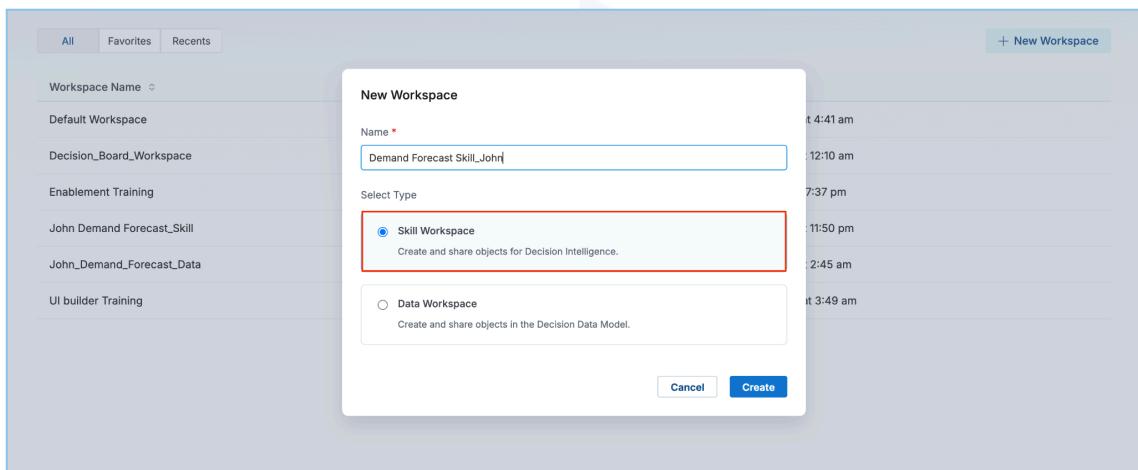
- From the Aera Workspaces page, create a new **Skill**-type Workspace named **Demand Forecast Skill\_<Username>** and click **Create**.

There are three types of Workspaces: Default Workspace, Data Workspace and Skill Workspace.

The **Default Workspace** contains reference or archived objects. It can be used to build test skills and create POCs.

The **Data Workspace** is used to build and organise a single Decision Data Model that represents a Customer's entire business. Here we can build common KPIs, Datasets, Dimensions and Subject Areas that can be reused across different Skills. It is generally a global Workspace.

**Skill Workspaces** are used to build and manage all the objects and configurations related to a particular skill.



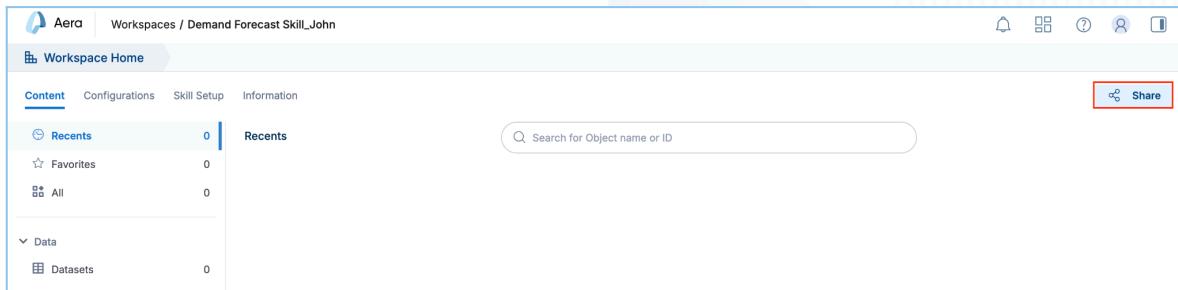
4. Create a new branch named <Month YY> and click **Create**.

5. The newly created Workspace and its branch are now displayed.

Notice there are different categories of objects in the content panel, such as Data, Data Visualization, Data Science and Automation.

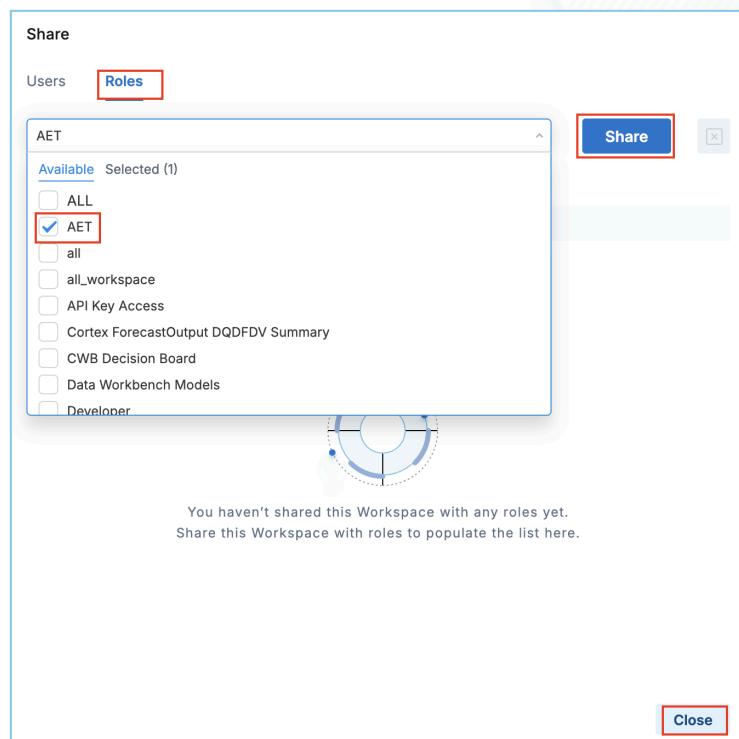
**Note:** After creating your Workspace with the branch, share it with **AET Roles**.

6. Click on the **Share** option to share the Workspace with the Enablement Team. (This will help the Enablement Team to review your Workspace and assist you with troubleshooting).



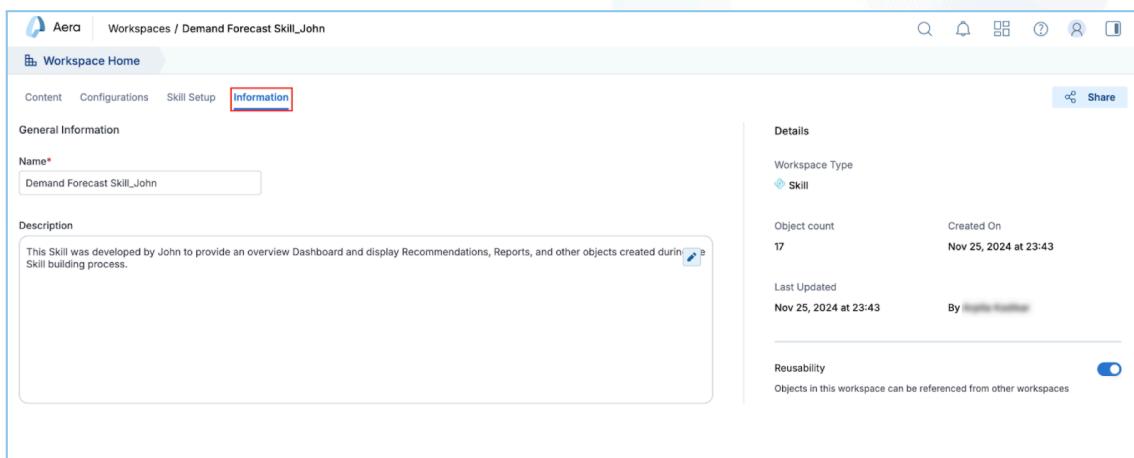
The screenshot shows the Aera Workspaces interface. At the top, there's a navigation bar with the Aera logo, workspace name 'Demand Forecast Skill\_John', and various icons. Below it is a 'Workspace Home' card with tabs for 'Content', 'Configurations', 'Skill Setup', and 'Information'. The 'Content' tab is selected. It displays sections for 'Recents' (0 items), 'Favorites' (0 items), 'All' (0 items), and 'Data' (0 datasets). On the right side, there's a search bar and a prominent red-bordered 'Share' button.

7. On the Share window, navigate to the **Roles** tab and Type or select the **AET** role. Once you've selected the **AET** role, click **Share** and **Close**.



The screenshot shows the 'Share' dialog box. At the top, there are tabs for 'Users' and 'Roles', with 'Roles' being the active tab and highlighted with a red border. Below the tabs is a list titled 'AET' under the heading 'Available Selected (1)'. The 'AET' checkbox is checked and highlighted with a red border. To the right of the list is a large blue 'Share' button, also highlighted with a red border. At the bottom of the dialog, a message says 'You haven't shared this Workspace with any roles yet. Share this Workspace with roles to populate the list here.' and a red-bordered 'Close' button.

8. Click on the **Information tab** to view the essential information for a Workspace.



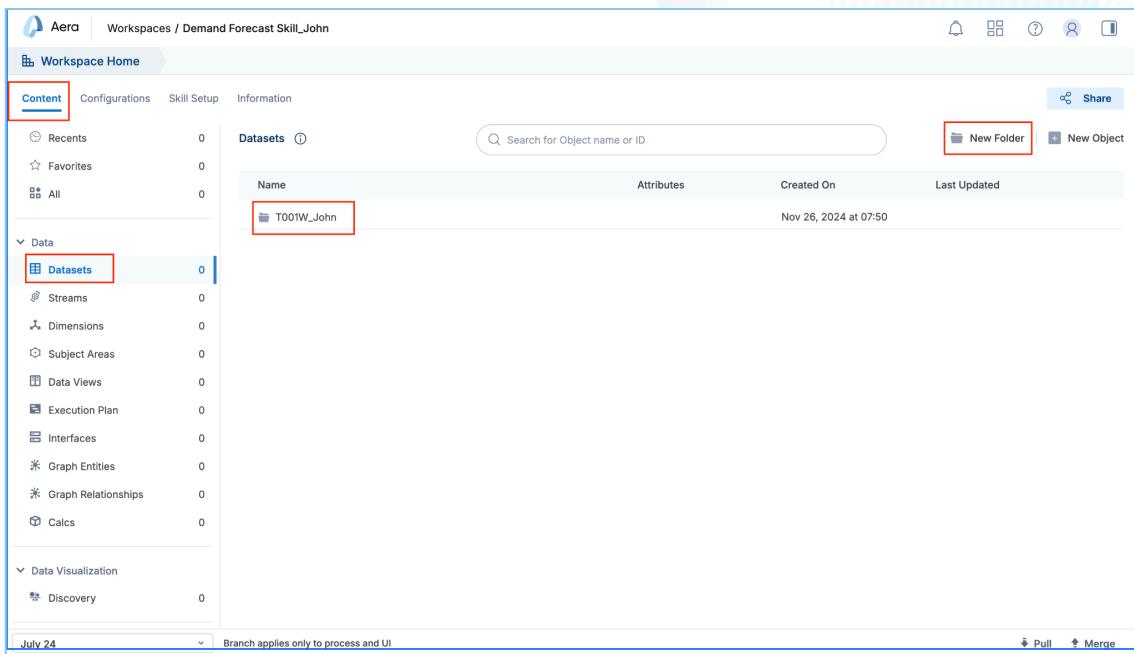
The screenshot shows the Aera Workspaces interface with the 'Information' tab selected. The left panel contains 'General Information' sections for 'Name\*' (set to 'Demand Forecast Skill\_John') and 'Description' (a note about the skill being developed by John). The right panel is titled 'Details' and includes sections for 'Workspace Type' (set to 'Skill'), 'Object count' (17), 'Created On' (Nov 25, 2024 at 23:43), 'Last Updated' (Nov 25, 2024 at 23:43), and 'Reusability' (a toggle switch that is turned off). There's also a note stating 'Objects in this workspace can be referenced from other workspaces'.

The **Information tab** provides important details about your Workspace, such as its name, type, description, the number of objects within, and the last update timestamp. From here, you specify a reusable Workspace attribute.

Once enabled, reusable objects in this Workspace can be reused in other Workspaces.

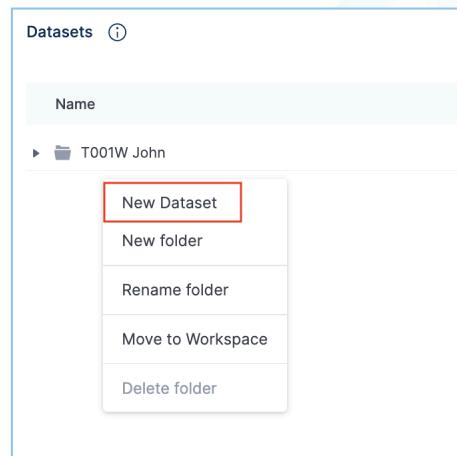
## Define and Configure Data Extraction

1. Navigate to **Datasets** within the Data category on the **Content** tab and click the '**New Folder**'. Name it **T001W<Username>**



The screenshot shows the Aera Data Workbench interface. The top navigation bar includes the Aera logo, workspace name 'Workspaces / Demand Forecast Skill\_John', and various icons for notifications, sharing, and search. Below the navigation is a header with tabs: Content (selected), Configurations, Skill Setup, and Information. The main content area has a sidebar on the left with categories: Recents, Favorites, All, Data (with Datasets selected), Streams, Dimensions, Subject Areas, Data Views, Execution Plan, Interfaces, Graph Entities, Graph Relationships, and Calcs. Under Data Visualization, there is a Discovery section. On the right, there is a 'Datasets' section with a table showing one item: 'Name' (T001W\_John), 'Attributes', 'Created On' (Nov 26, 2024 at 07:50), and 'Last Updated'. A search bar and a 'New Folder' button are also present.

2. Next, right-click on the folder to create a dataset, and the Create Dataset page will be displayed.



The screenshot shows a context menu for a folder named 'T001W John'. The menu options are: New Dataset (highlighted with a red box), New folder, Rename folder, Move to Workspace, and Delete folder.

3. Navigate to the "**Source**" tab, type "**T001W**" in the search box to choose the file, and then **select the** columns listed below.

Select the Source you would like to use to create a new Dataset. Want to upload a file instead? [Upload a flat file](#).

Type	Name	Description	Location	Connection Name
SAP	CNV_20100_T001W	CNV backup copy for T001W	CNV_20100	SAP ECC
SAP	DMF_D_T001W	Transferred Sites	DMF_DDIC	SAP ECC
SAP	OIF_O_T001W	Object links - CA Plant (IS-Oil MRN)	OIF	SAP ECC
SAP	OIRBOT001W	Object links - CA Plant (IS-Oil SSR)	OIR_B	SAP ECC
SAP	<b>T001W</b>	Plants/Branches	WFILCORE	SAP ECC
SAP	T001W_EXT	Plants (Company's Own and External)	AIPLOC	SAP ECC
SAP	T001WT	Company code-specific information per withholding tax t...	FQST	SAP ECC
SAP	TASSIGN_MM_T001W	Aux. Table for Status Info SD Maintenance View: Key VK...	MB0C	SAP ECC
SAP	WRMA_T001W	Define plant-dependent parameter for RMA	WRMA_PI	SAP ECC

Page < 1 > of 1 | Showing 20 rows ▾

4. From the **Choose the columns to use** dropdown, deselect **ALL** and select the following columns:  
**ADRNR, BWKEY, LAND1, NAME1, NAME2, ORT01, PSTLZ, VKORG, WERKS.**

Create dataset from: [Source](#) [Existing object](#) [Scratch](#)

< Back Source: T001W Explore and select the columns you would like to use for the new Dataset

ADRNR ADDRESS	BWKEY VALUATION AREA	LAND1 COUNTRY KEY	NAME1 NAME 1
		DE	Werk 0001
0000051234	0003	US	Plant 0003 (is-ht-sw)
0000051235	0005	DE	Hamburg
0000051236	0006	US	New York
0000051237	0007	DE	Werk Hamburg
0000051237	0008	US	New York
0000624326		US	New York
0000624327		DE	München
0000002313	0099	DE	Werk für Customizing-Kurse SCM
0000000245	1000	DE	Vorlage
0000000104	1100	DE	Hamburg
			Werk
			Berlin
			Berlin

Q Search... ▾

All  
 ACHVM  
 Archiving marker  
 ADRNR  
 Address  
 AWSLS  
 Variance Key  
 BEDPL  
 MRP

5. Name the dataset **T001W\_<Username>**, then click **Create**.

Create Dataset

Define the dataset properties

Name	<b>T001W_John</b>
Physical name	<b>T001W_JOHN</b>
Folder	Datasets
Description	
Select the type of dataset	<a href="#">Crawler</a>
	<a href="#">Derived</a>

Create dataset from: [Source](#) [Existing object](#) [Scratch](#)

< Back Source: T001W Explore and select the columns you would like to use for the new Dataset

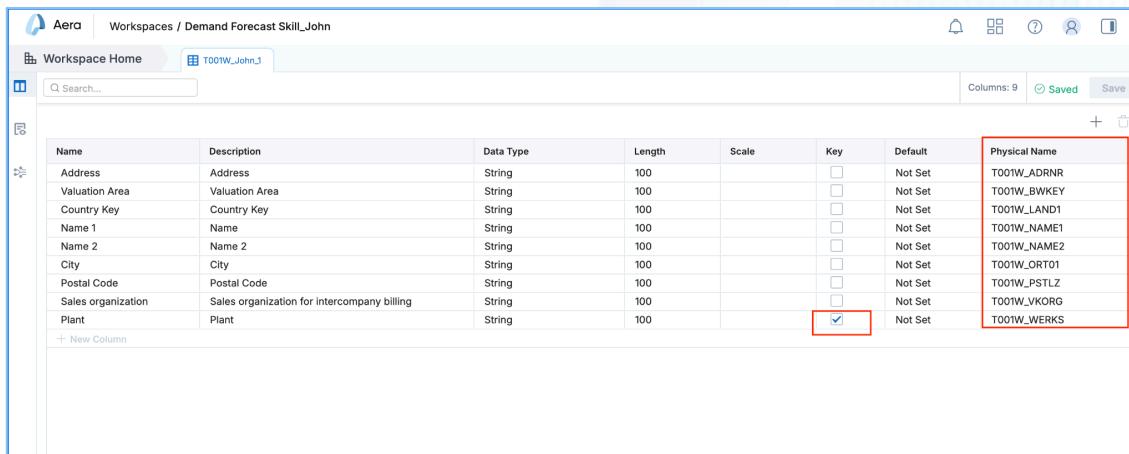
ACHVM ARCHIVING MARKER	ADRNR ADDRESS	AWSLS VARIANCE KEY	BEDPL MRP	BETOL PO TOLERANCE	BWKEV VALUATI
			X	000	
				000	0003
0000051234	000001	X	000	0005	
0000051235	000001	X	000	0006	
0000051236	000001	X	000	0007	
0000051237	000001	X	000	0008	
0000624326			000		
0000624327			000		
0000002313			000	0099	

Apply Clear Choose columns to use ▾

[Cancel](#) [Create](#)

6. Click the **Physical name** column to rename the fields to include the prefix **T001W\_** and select the **Key** Option for the **Plant** field.

The naming convention here identifies the column names with the source file for easy reference. The physical names are then used in the queries constructed later in the exercise.



A screenshot of the Aera Data Workbench interface. The main window shows a table with columns: Name, Description, Data Type, Length, Scale, Key, Default, and Physical Name. The Physical Name column is highlighted with a red border. The table contains the following data:

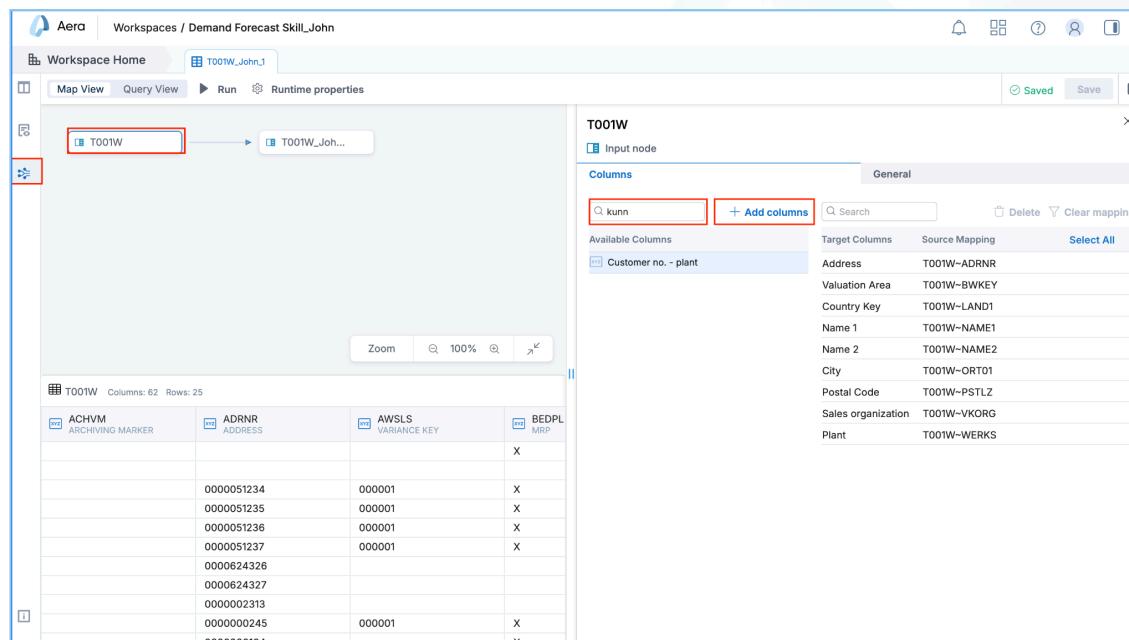
Name	Description	Data Type	Length	Scale	Key	Default	Physical Name
Address	Address	String	100		<input type="checkbox"/>	Not Set	T001W_ADRNR
Valuation Area	Valuation Area	String	100		<input type="checkbox"/>	Not Set	T001W_BWKEY
Country Key	Country Key	String	100		<input type="checkbox"/>	Not Set	T001W_LAND1
Name 1	Name	String	100		<input type="checkbox"/>	Not Set	T001W_NAME1
Name 2	Name 2	String	100		<input type="checkbox"/>	Not Set	T001W_NAME2
City	City	String	100		<input type="checkbox"/>	Not Set	T001W_ORT01
Postal Code	Postal Code	String	100		<input type="checkbox"/>	Not Set	T001W_PSTLZ
Sales organization	Sales organization for intercompany billing	String	100		<input type="checkbox"/>	Not Set	T001W_VKORG
Plant	Plant	String	100		<input checked="" type="checkbox"/>	Not Set	T001W_WERKS

## 7. Click **Save**.

You can now specify one or more columns in a data object as a Natural key. The system uses this information to auto-generate the join conditions when the data object is used.

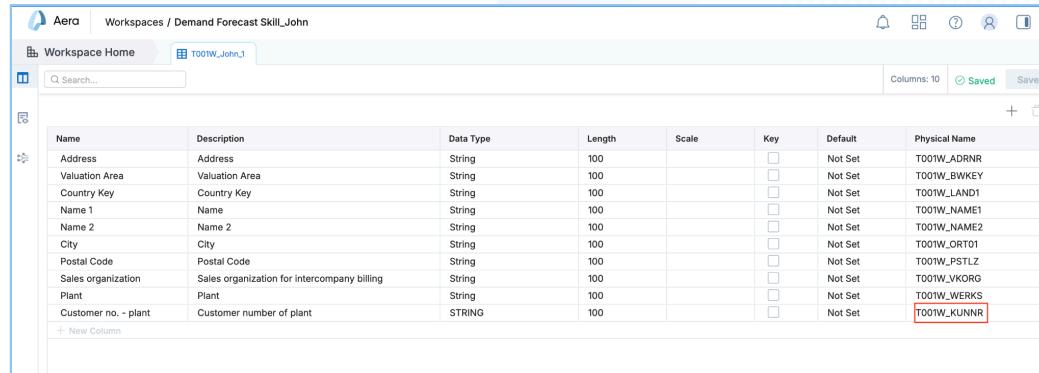
## Modify the Crawler Configuration

1. Click the **Crawler** button to display the **Map view**, allowing you to add additional columns whenever needed.
2. Click the **T001W** Source table, find and select the "**KUNNR**" column, then click "**Add Column**" to include it and click **Save**.



A screenshot of the Aera Data Workbench interface showing the Map View configuration for the T001W source table. The left pane displays a flow diagram with an input node "T001W" connected to a target node "T001W\_Joh...". The right pane shows the "T001W" configuration details. The "Columns" section is open, showing a search bar "Q kunn" and a "Add columns" button. The "Available Columns" list includes "Customer no. - plant". The "Target Columns" list maps the available columns to the target columns: Address (T001W\_ADRNR), Valuation Area (T001W\_BWKEY), Country Key (T001W\_LAND1), Name 1 (T001W\_NAME1), Name 2 (T001W\_NAME2), City (T001W\_ORT01), Postal Code (T001W\_PSTLZ), Sales organization (T001W\_VKORG), and Plant (T001W\_WERKS). The "General" tab is selected.

3. Navigate to the Columns tab, change the column's physical name to **T001W\_KUNNR** and make sure to click "**Save**".

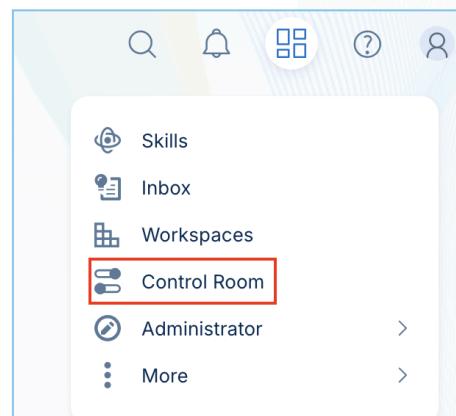


Name	Description	Data Type	Length	Scale	Key	Default	Physical Name
Address	Address	String	100		<input type="checkbox"/>	Not Set	T001W_ADRNR
Valuation Area	Valuation Area	String	100		<input type="checkbox"/>	Not Set	T001W_BVKKEY
Country Key	Country Key	String	100		<input type="checkbox"/>	Not Set	T001W_LAND1
Name 1	Name	String	100		<input type="checkbox"/>	Not Set	T001W_NAME1
Name 2	Name 2	String	100		<input type="checkbox"/>	Not Set	T001W_NAME2
City	City	String	100		<input type="checkbox"/>	Not Set	T001W_ORTO
Postal Code	Postal Code	String	100		<input type="checkbox"/>	Not Set	T001W_PSTLZ
Sales organization	Sales organization for intercompany billing	String	100		<input type="checkbox"/>	Not Set	T001W_VKORG
Plant	Plant	String	100		<input type="checkbox"/>	Not Set	T001W_WERKS
Customer no. - plant	Customer number of plant	STRING	100		<input type="checkbox"/>	Not Set	<b>T001W_KUNNR</b>

## Populate the Dataset

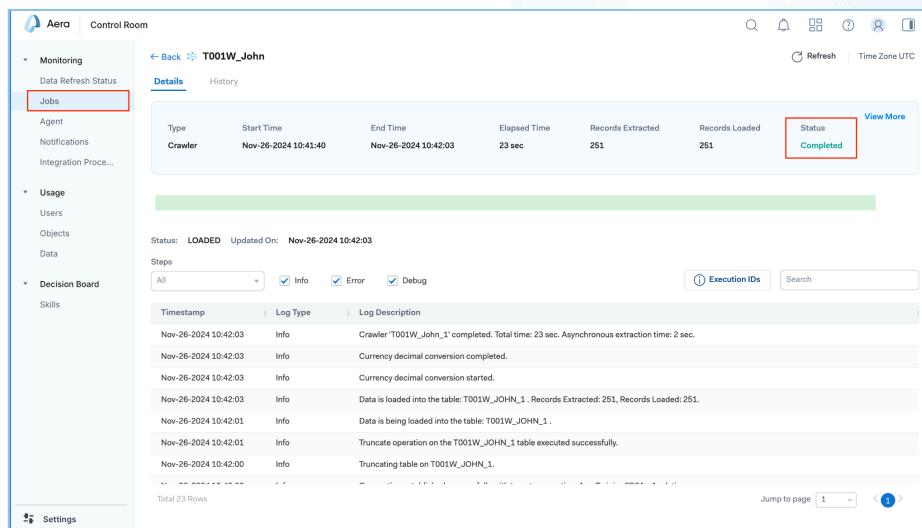
- From the **crawler** tab, click **Run** to populate the Data into your target table.
- From the **Aera Menu**, navigate to **Control Room**, then click on **Jobs** under **Monitoring** in the top left corner

It takes a few minutes to update the status. Try refreshing the console after 5-10 min.



-  Skills
-  Inbox
-  Workspaces
-  **Control Room**
-  Administrator >
-  More >

3. A list of jobs is displayed with their respective status, such as completed, failed, or running.



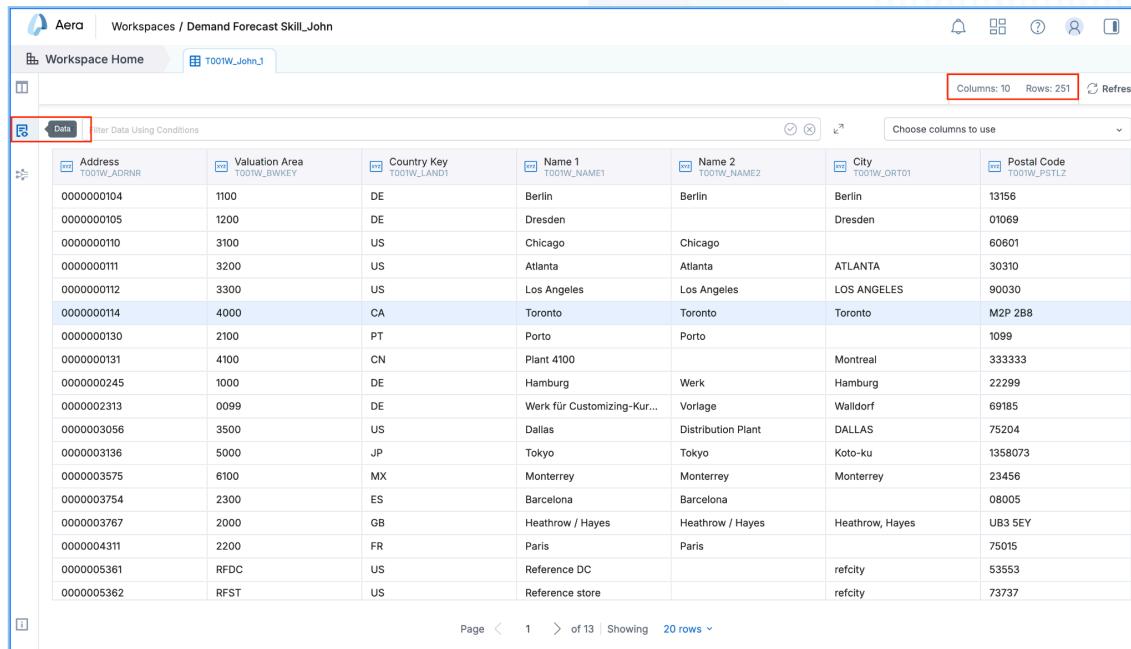
Type	Start Time	End Time	Elapsed Time	Records Extracted	Records Loaded	Status
Crawler	Nov-26-2024 10:41:40	Nov-26-2024 10:42:03	23 sec	251	251	<b>Completed</b>

Status: LOADED Updated On: Nov-26-2024 10:42:03

Steps:

Timestamp	Log Type	Log Description
Nov-26-2024 10:42:03	Info	Crawler T001W_John_1 completed. Total time: 23 sec. Asynchronous extraction time: 2 sec.
Nov-26-2024 10:42:03	Info	Currency decimal conversion completed.
Nov-26-2024 10:42:03	Info	Currency decimal conversion started.
Nov-26-2024 10:42:03	Info	Data is loaded into the table: T001W_JOHN_1. Records Extracted: 251, Records Loaded: 251.
Nov-26-2024 10:42:01	Info	Data is being loaded into the table: T001W_JOHN_1.
Nov-26-2024 10:42:01	Info	Truncate operation on the T001W_JOHN_1 table executed successfully.
Nov-26-2024 10:42:00	Info	Truncating table on T001W_JOHN_1.

4. Once the job is **completed**, navigate to "**Workspaces**" > "**Your Dataset**" and select the "**Data**" tab to examine the populated data. Ensure all required fields are present.



The screenshot shows a data grid titled "Demand Forecast Skill\_John". The columns include Address, Valuation Area, Country Key, Name 1, Name 2, City, and Postal Code. The "Data" tab is selected, indicated by a red box around it. The table contains 20 rows of data, such as Berlin, Dresden, Chicago, Atlanta, Los Angeles, etc.

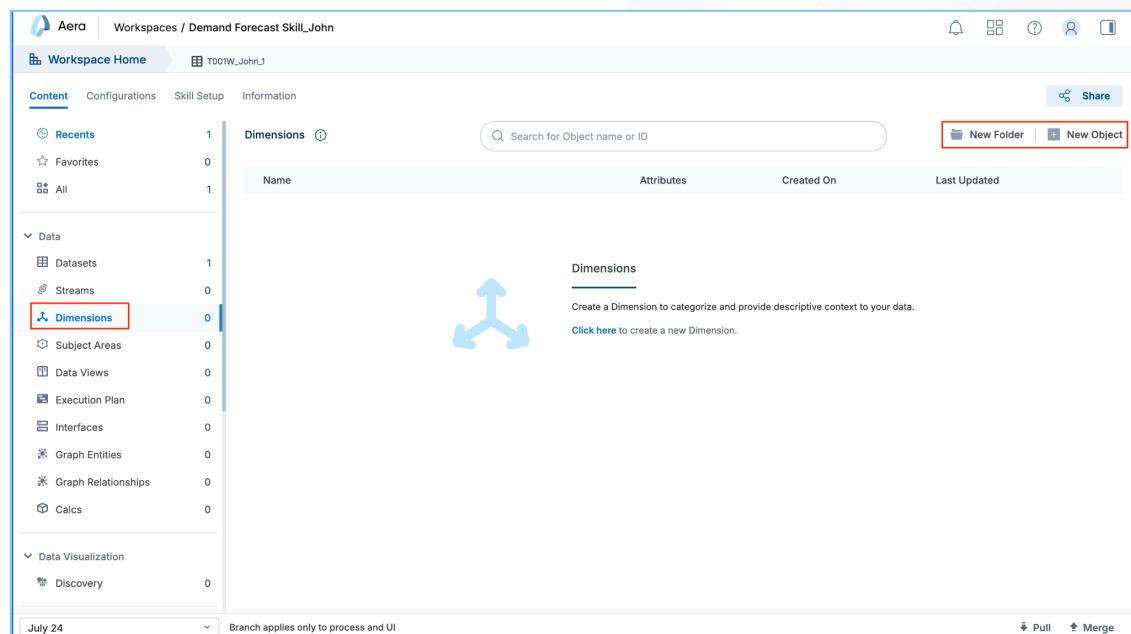
## Create Dimensions

### In this section

A **dimension** in a data model refers to a structure that categorizes and provides context to numerical measures, typically representing business entities like time, product, customer, location, etc.

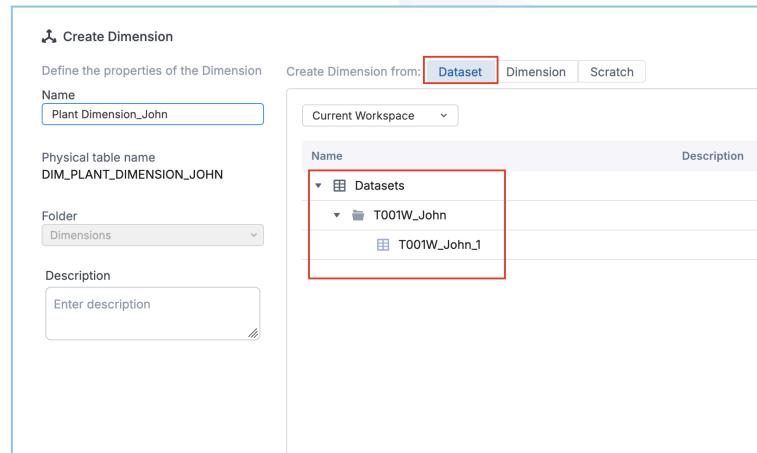
When a dimension is created from a dataset, typically an ERP (Enterprise Resource Planning) system, it contains attributes that allow for more detailed analysis and slicing of the data.

1. Click the "**New Object**" located at the top right to create a **Dimension**.

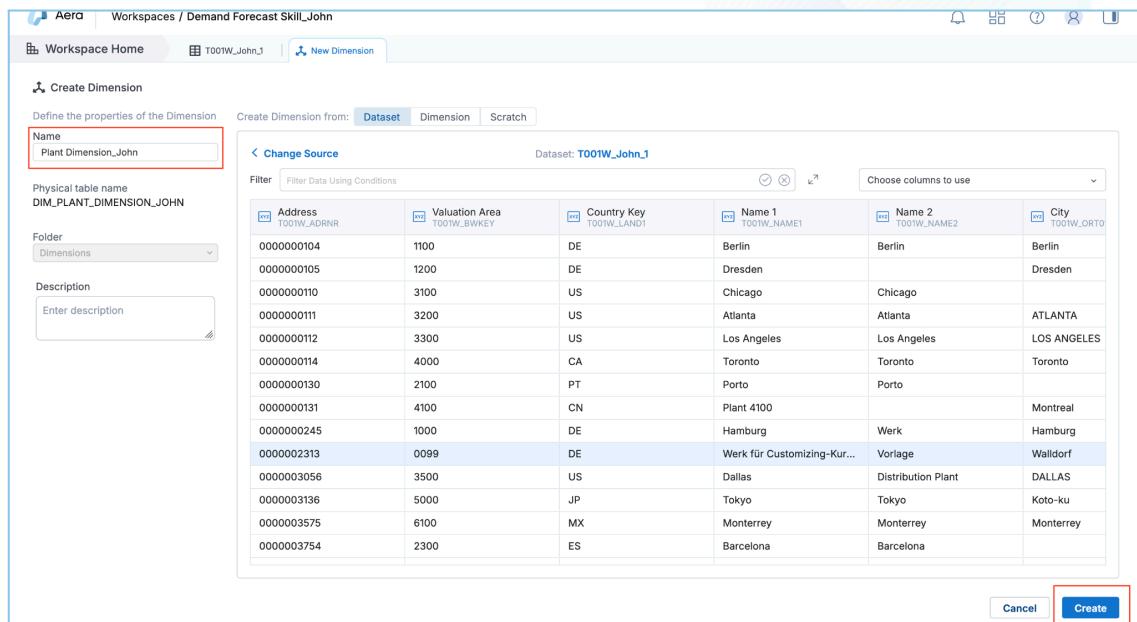


The screenshot shows the "Content" tab in the Aera Workspaces interface. On the left, there's a sidebar with categories like Data, Data Visualization, and Configurations. Under the "Data" category, "Dimensions" is selected and highlighted with a red box. In the main area, there's a table titled "Dimensions" with columns for Name, Attributes, Created On, and Last Updated. At the top right of the main area, there are "New Folder" and "New Object" buttons, with the "New Object" button also highlighted with a red box.

2. Select the Dataset **T001W\_<Username>** and provide a name **Plant Dimension <username>**



3. Once the records are displayed, click **Create**. The Plant dimension table opens in a new tab.



Address (T001W_ADHNR)	Valuation Area (T001W_BWKEY)	Country Key (T001W_LAND1)	Name 1 (T001W_NAME1)	Name 2 (T001W_NAME2)	City (T001W_ORTO)
00000000104	1100	DE	Berlin	Berlin	Berlin
00000000105	1200	DE	Dresden		Dresden
00000000110	3100	US	Chicago	Chicago	
00000000111	3200	US	Atlanta	Atlanta	ATLANTA
00000000112	3300	US	Los Angeles	Los Angeles	LOS ANGELES
00000000114	4000	CA	Toronto	Toronto	Toronto
00000000130	2100	PT	Porto		
00000000131	4100	CN	Plant 4100		Montreal
00000000245	1000	DE	Hamburg	Werk	Hamburg
00000002313	0099	DE	Werk für Customizing-Kur...	Vorlage	Walldorf
0000003056	3500	US	Dallas	Distribution Plant	DALLAS
0000003136	5000	JP	Tokyo	Koto-ku	
0000003575	6100	MX	Monterrey	Monterrey	Monterrey
0000003754	2300	ES	Barcelona	Barcelona	

4. Update the **Physical names** of the columns as shown below.

**T001W\_WERKS -> PLANT**

**T001W\_NAME1 -> PLANT\_NAME**

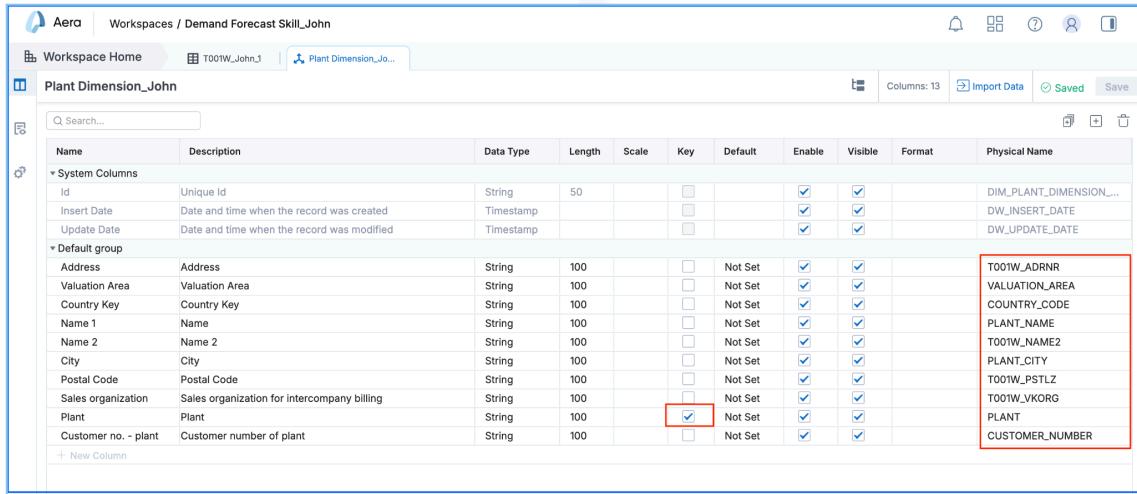
**T001W\_ORT01 -> PLANT\_CITY**

**T001W\_KUNNR -> CUSTOMER\_NUMBER**

**T001W\_LAND1 -> COUNTRY\_CODE**

**T001W\_BWKEY -> VALUATION\_AREA**

6. Enable the **Key** option for **PLANT** and click **Save**



Name	Description	Data Type	Length	Scale	Key	Default	Enable	Visible	Format	Physical Name
<b>System Columns</b>										
Id	Unique Id	String	50			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DIM_PLANT_DIMENSION_...
Insert Date	Date and time when the record was created	Timestamp				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DW_INSERT_DATE
Update Date	Date and time when the record was modified	Timestamp				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DW_UPDATE_DATE
<b>Default group</b>										
Address	Address	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_ADRNR
Valuation Area	Valuation Area	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		VALUATION_AREA
Country Key	Country Key	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		COUNTRY_CODE
Name 1	Name	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT_NAME
Name 2	Name 2	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_NAME2
City	City	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT_CITY
Postal Code	Postal Code	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_PSTLZ
Sales organization	Sales organization for intercompany billing	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_VKORG
Plant	Plant	String	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT
Customer no. - plant	Customer number of plant	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		CUSTOMER_NUMBER

## Add Stream to Populate Dimension

Streams are a component in the platform that defines and executes the data processing steps and populates the data in the Decision Data Model.

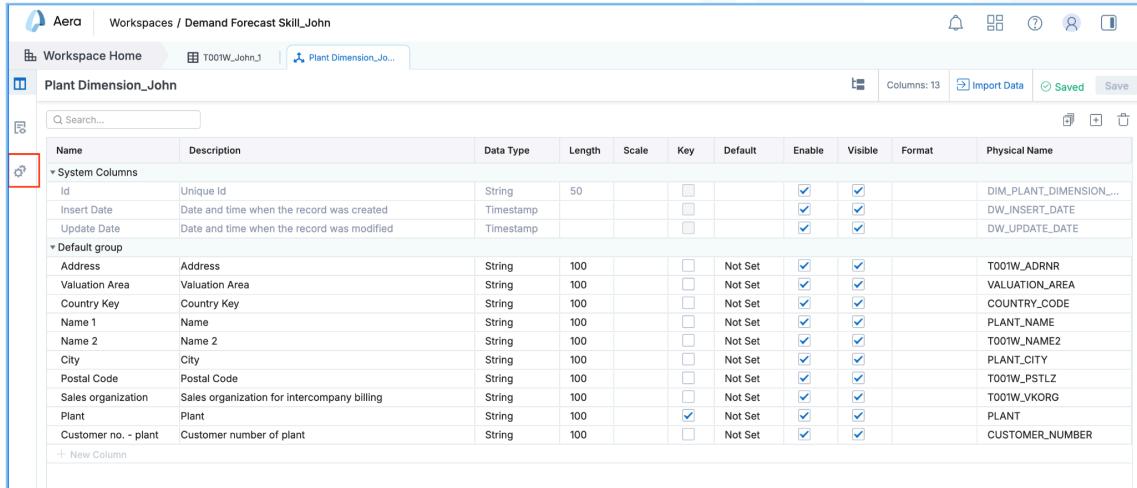
Streams support SQL queries, Formula steps and predefined Functions.

There are two ways of adding the Stream.

1. Click the + icon beside the Streams tab on the Workspace home.
2. Create Stream from the execution tab of the Dimensions window.

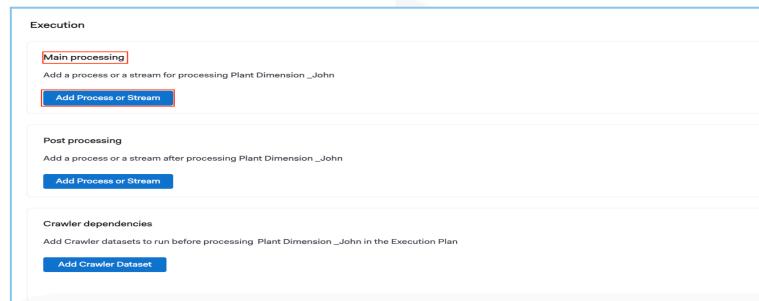
We will use the second method.

1. Click the **Executions** tab on the Plant Dimensions window.

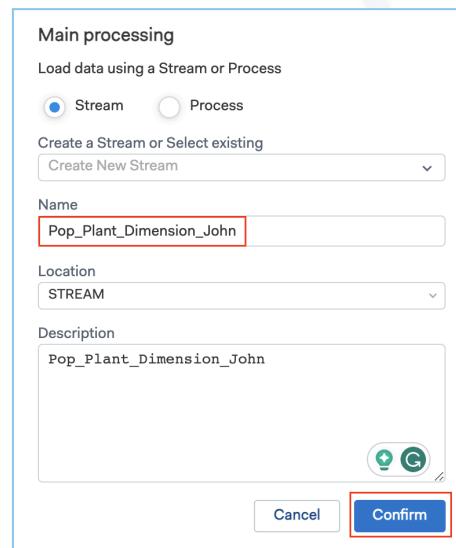


Name	Description	Data Type	Length	Scale	Key	Default	Enable	Visible	Format	Physical Name
<b>System Columns</b>										
Id	Unique Id	String	50		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DIM_PLANT_DIMENSION_...
Insert Date	Date and time when the record was created	Timestamp			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DW_INSERT_DATE
Update Date	Date and time when the record was modified	Timestamp			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DW_UPDATE_DATE
<b>Default group</b>										
Address	Address	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_ADRNR
Valuation Area	Valuation Area	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		VALUATION_AREA
Country Key	Country Key	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		COUNTRY_CODE
Name 1	Name	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT_NAME
Name 2	Name 2	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_NAME2
City	City	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT_CITY
Postal Code	Postal Code	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_PSTLZ
Sales organization	Sales organization for intercompany billing	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_VKORG
Plant	Plant	String	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT
Customer no. - plant	Customer number of plant	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		CUSTOMER_NUMBER

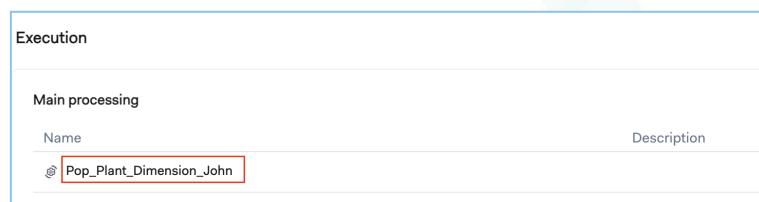
2. To add a process or stream, click on "Add Process or Stream" in the Main Processing section.



- To load the data, select a **Stream** from the dropdown, choose "**Create New Stream**," name it "**Pop\_Plant\_Dimension\_<Username>**," and click "**Confirm**."



- The Stream gets added, click on the Stream, **Pop\_Plant\_Dimension\_<Username>**



- A new tab is where we define the Stream steps to populate the Dimension.

We can populate the Dimension by either using the **SQL Step** or by using the **Insert/Update** formula steps.

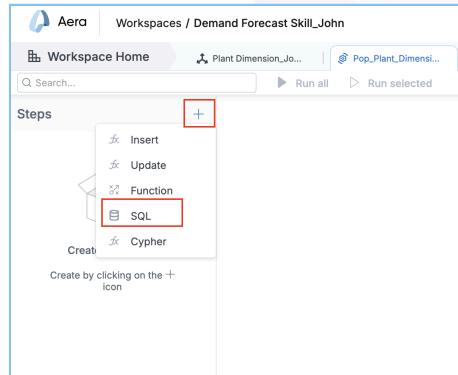
When using SQL queries to populate a Dimension or Subject Area, you have direct access to the underlying database and can leverage SQL's full power and flexibility. This approach is generally preferred for complex data transformations.

Insert/Update steps provide a more visual and streamlined approach to populating a Subject Area. This method is generally suitable for simpler data-loading scenarios where complex SQL queries are not required.

We will first populate the Dimension using SQL queries and later populate one more Dimension using Insert/Update Steps.

## Populate Dimension Using SQL

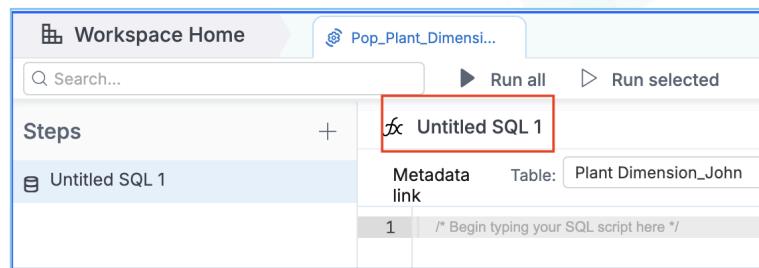
- On the Stream Steps tab, click the "+" icon and select **SQL**.



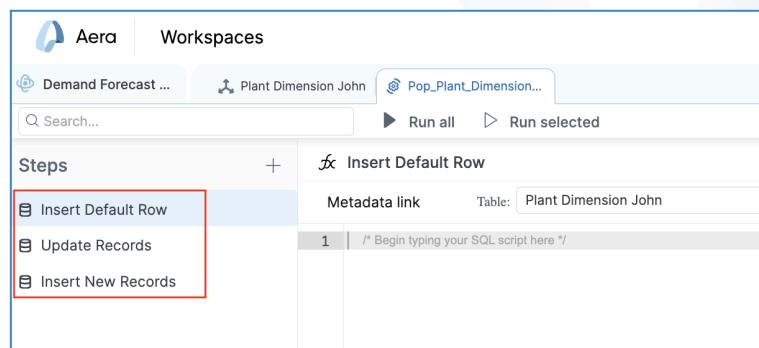
You will create three individual steps for each significant operation:

- Insert Default Row:** We add a default row consisting of a 40-digit hash value that serves as the Dimension ID and timestamps, and we set the other fields to 'Not Set'. This step ensures that the Dimension table is not empty and we don't get a NULL table whenever a Join is performed on this Dimension.
- Update Records:** This Step checks whether any records have changed since the last import. If so, we will update the records to reflect the new entries.
- Insert New Records:** This Step is used to insert any new records that previously did not exist

- Rename the step as **Insert Default Row**.



- Add two more **SQL** steps, name them **Update Records**, and **insert new records**.



Read the query and understand the purpose of each query before you run the steps.

4. Click the first step, **Insert Default Row**, and copy-paste the below query in the right panel.

5. To find the names of your tables, navigate to the "**Plant Dimension\_<Username>**" and "**T001W <Username>**" tabs, then click the "**About**" option (identified by an "i" icon).

Workspace Home Plant Dimension\_John

### Object information

**General information**

Name \*  
Plant Dimension\_John

Description

edit

**Object type**  
Dimension

**Object ID**  
copy

**Created**  
Apr 17, 2024 at 04:19 By John mulay

**Updated**  
Nov 28, 2024 at 17:52 By Arpita Kadikar

**Sharing**  
This object is **Non-reusable**.  
Set to reusable

**Additional information**

**Dimension Source**  
None

**Limited Access**  
No

**Target table name**  
DIM\_PLANT\_DIM\_JOHN\_DOE

**Main processing**

6. In the streams tab, click "**Update Records**" in the second step and paste the following query.

```
UPDATE your_dimension_table dp
SET COUNTRY_CODE = ifnull(T001W_LAND1, 'Not Set'),
    dp.dw_update_date = current_timestamp
from your_dataset_table mk, your_dimension_table dp
WHERE mk.T001W_WERKS = dp.PLANT
and COUNTRY_CODE <> ifnull(T001W_LAND1, 'Not Set');

UPDATE your_dimension_table dp
SET PLANT_NAME = ifnull(T001W_NAME1, 'Not Set'),
    dp.dw_update_date = current_timestamp
from your_dataset_table mk, your_dimension_table dp
WHERE mk.T001W_WERKS = dp.PLANT
```

```

and PLANT_NAME <> ifnull(T001W_NAME1, 'Not Set');

UPDATE your_dimension_table dp
SET PLANT_CITY = ifnull(T001W_ORT01, 'Not Set'),
    dp.dw_update_date = current_timestamp
from your_dataset_table mk, your_dimension_table dp
WHERE mk.T001W_WERKS = dp.PLANT
and PLANT_CITY <> ifnull(T001W_ORT01, 'Not Set');

UPDATE your_dimension_table dp
SET CUSTOMER_NUMBER = ifnull(T001W_KUNNR, 0),
    dp.dw_update_date = current_timestamp
from your_dataset_table mk, your_dimension_table dp
WHERE mk.T001W_WERKS = dp.PLANT
and CUSTOMER_NUMBER <> ifnull(T001W_KUNNR, 0);

UPDATE your_dimension_table dp
SET COUNTRY_CODE = ifnull(T001W_LAND1, 'Not Set'),
    dp.dw_update_date = current_timestamp
from your_dataset_table mk, your_dimension_table dp
WHERE mk.T001W_WERKS = dp.PLANT
and COUNTRY_CODE <> ifnull(T001W_LAND1, 'Not Set');

UPDATE your_dimension_table dp
SET VALUATION_AREA = ifnull(T001W_BWKEY, 'Not Set'),
    dp.dw_update_date = current_timestamp
from your_dataset_table mk, your_dimension_table dp
WHERE mk.T001W_WERKS = dp.PLANT
and VALUATION_AREA <> ifnull(T001W_BWKEY, 'Not Set');

```

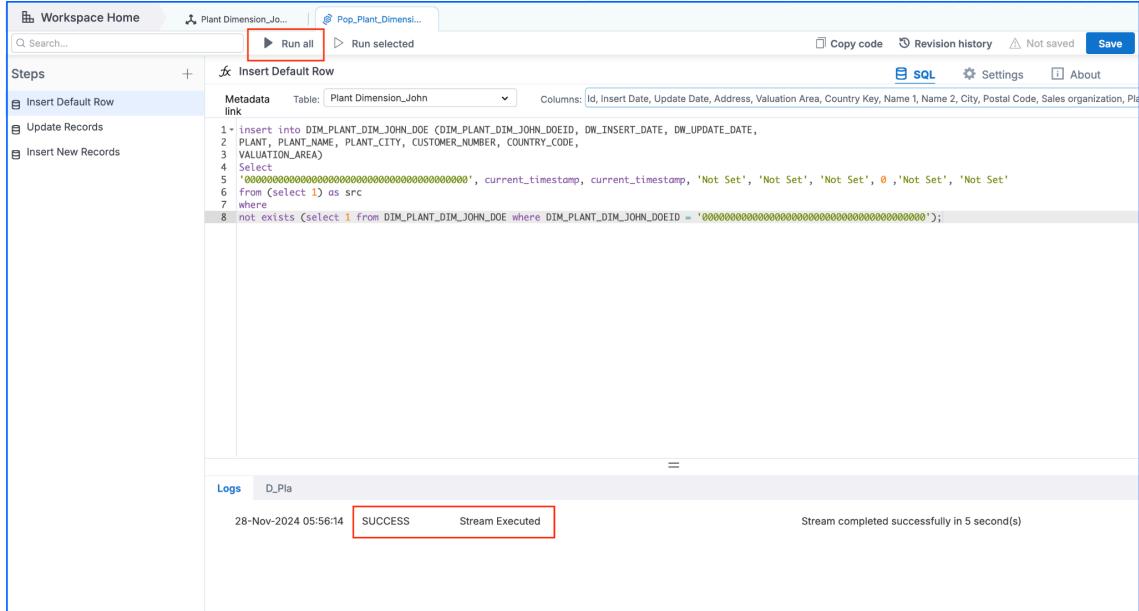
8. Click the third step, **insert new records**, and copy and paste the query below.

```

insert into your_dimension_table (your_dimension_tableID, DW_INSERT_DATE, DW_UPDATE_DATE,
PLANT, PLANT_NAME, PLANT_CITY, CUSTOMER_NUMBER, COUNTRY_CODE, VALUATION_AREA)
SELECT distinct
        ifnull(CAST(UPPER(HASH_SHA1(UPPER(IFNULL(T001W_WERKS, ' ') || '|^'| ||
        'SAP ECC EURO'))) AS VARCHAR(40)), '00000000000000000000000000000000') as ID,
        current_timestamp as DW_INSERT_DATE,
        current_timestamp as DW_UPDATE_DATE,
        ifnull(T001W_WERKS,'Not Set') as PLANT,
        ifnull(T001W_NAME1,'Not Set') as PLANT_NAME,
        ifnull(T001W_ORT01,'Not Set') as PLANT_CITY,
        ifnull(T001W_KUNNR,0) as CUSTOMER_NUMBER,
        ifnull(T001W_LAND1,'Not Set') as COUNTRY_CODE,
        ifnull(T001W_BWKEY,'Not Set') as VALUATION_AREA
FROM your_dataset_table T001W
where not exists (
select 1 from your_dimension_table a where a.PLANT = T001W.T001W_WERKS);

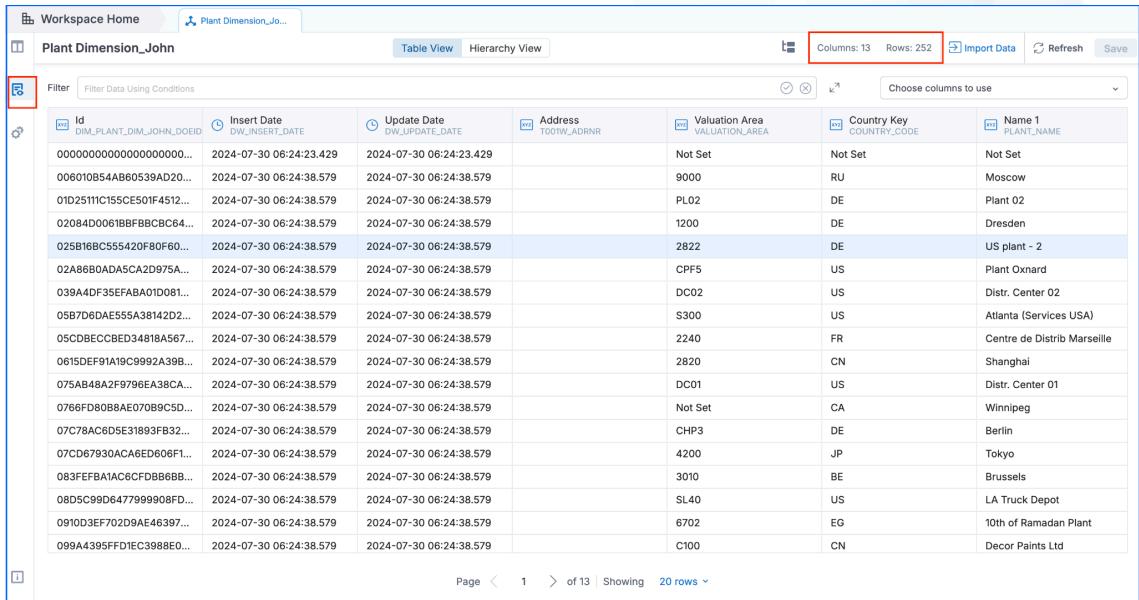
```

9. Click "**Save**" and then "**Run All**" to execute all three steps simultaneously; when the execution is successful, the status will display "**Completed.**"



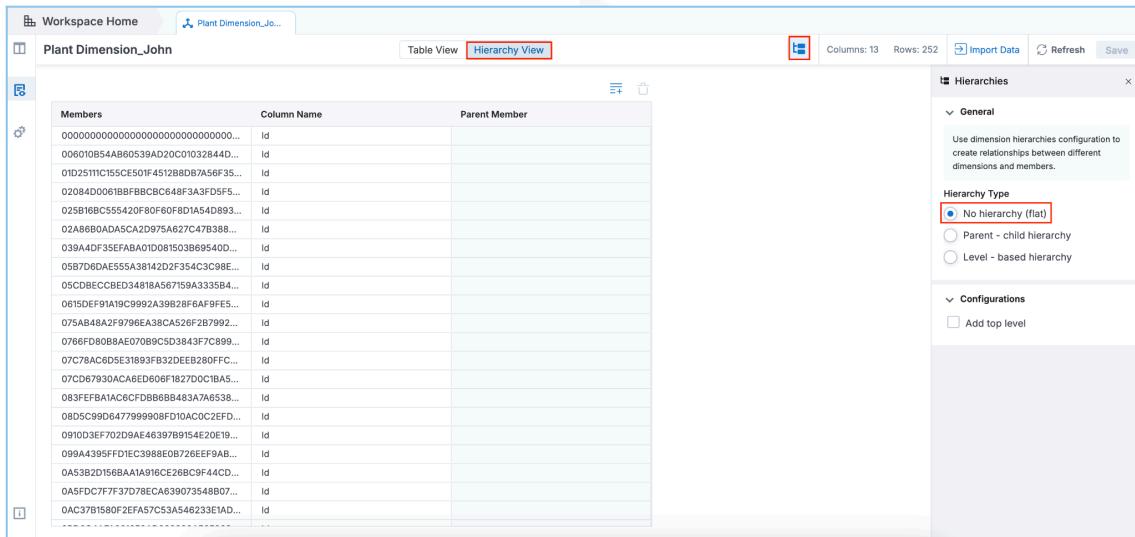
The screenshot shows the Aera Data Workbench interface. In the top right corner, there is a red box around the "Run all" button. Below the toolbar, there's a section titled "Steps" with three items: "Insert Default Row", "Update Records", and "Insert New Records". Under "Insert Default Row", there is a code editor window containing SQL code. At the bottom of the screen, there is a log window showing a single entry: "28-Nov-2024 05:56:14 SUCCESS Stream Executed". To the right of the log, it says "Stream completed successfully in 5 second(s)".

10. Go to the Dimension, **Plant Dimension\_<Username>** and check the data populated by default under the **Table view** of the data tab with the column names you specified in the above steps.



The screenshot shows the Aera Data Workbench interface with the "Table View" tab selected for the "Plant Dimension\_John" dimension. A red box highlights the "Table View" tab. The main area displays a table with 13 columns and 252 rows. The columns are labeled: Id, DIM\_PLANT\_DIM\_JOHN\_DOEID, Insert Date, DW\_INSERT\_DATE, Update Date, DW\_UPDATE\_DATE, Address, T001W\_ADRNR, Valuation Area, VALUATION\_AREA, Country Key, COUNTRY\_CODE, and Name 1, PLANT\_NAME. The table contains various data entries corresponding to the rows. At the bottom of the table, there is a page navigation bar showing "Page < 1 > of 13 | Showing 20 rows".

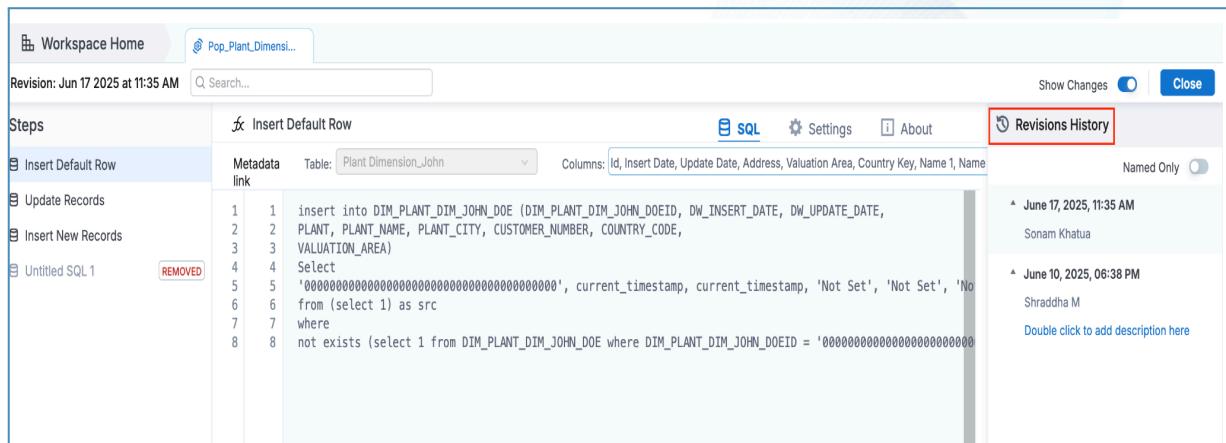
11. Additionally, you can view the data in the **Hierarchy View** tab. By default, all dimensions created are treated as flat dimensions, meaning all the members are treated as being on the same level without any parent-child relationships or inherent hierarchy.



The screenshot shows the Aera Data Workbench interface. The main area displays a table titled "Plant Dimension\_John" with three columns: "Members", "Column Name", and "Parent Member". The "Hierarchy View" tab is selected. On the right side, there is a sidebar titled "Hierarchies" which contains sections for "General" (instructions on using dimension hierarchies), "Hierarchy Type" (radio buttons for "No hierarchy (flat)", "Parent - child hierarchy", and "Level - based hierarchy", with "No hierarchy (flat)" selected), and "Configurations" (checkbox for "Add top level").

12. To see all revisions of your stream and choose an earlier version, go back to the stream

**Pop\_Plant\_Dimension\_<Username>** and click **Revision History**.



The screenshot shows the "Revisions History" section of the Aera Data Workbench. It lists several revisions for the "Pop\_Plant\_Dimension" stream, each with a timestamp, author, and a "Double click to add description here" link. The revisions are:

- June 17, 2025, 11:35 AM by Sonam Khatta
- June 10, 2025, 06:38 PM by Shraddha M

The interface also shows the "Steps" panel with various steps like "Insert Default Row", "Update Records", and "Insert New Records", each with its own SQL code and status (e.g., "REMOVED").

**Note:** You can quickly compare Stream revisions to identify changes at each step. You can select two revisions and view the differences at both the stream and step levels.

## Populate Dimension Using Insert/Update Formula

In this section, you will create a New Dimension and populate it using the Insert and Update Steps. We will use three steps similar to those we did earlier for populating the Dimension using the SQL Steps.

The steps for creating a Dimension remain the same. Please refer to the above steps when creating a new dimension.

### Create a New Dimension

1. Create a new dimension, "**New Dim\_<Username>**," using the **T001W\_<Username>** dataset.

**Create Dimension**

Define the properties of the Dimension

Name: **New Dim John** (highlighted with a red box)

Create Dimension from: **Dataset** (highlighted with a red box)   **Scratch**

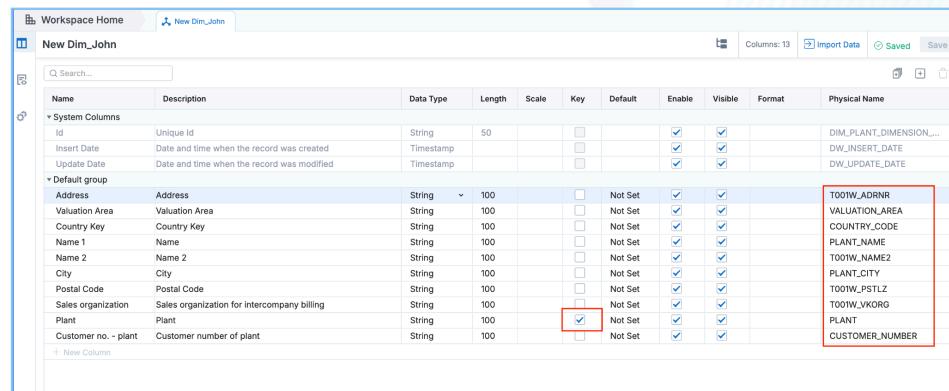
Physical table name: **DIM\_NEW\_DIM\_JOHN**

Folder: **Dimensions**

Current Workspace: **Current Workspace** (highlighted with a red box)

Name: **T001W\_John** (highlighted with a red box)

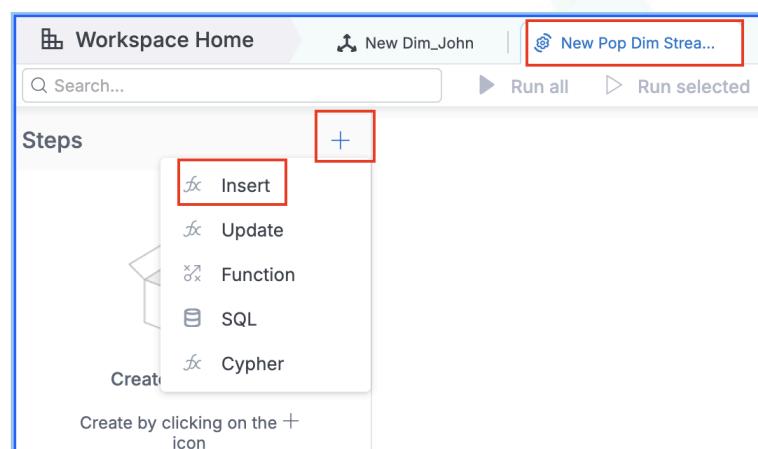
2. Rename the columns as done previously, then enable the **Key** option for **PLANT** and click **Save**.



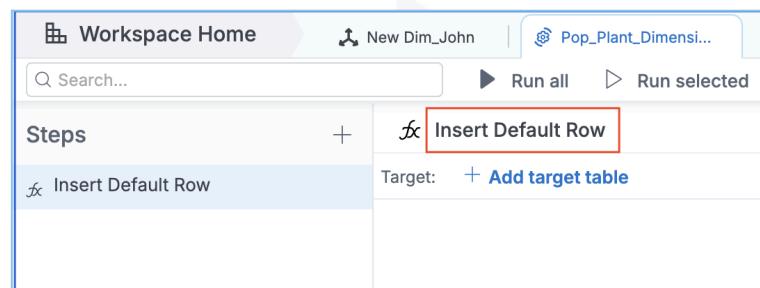
Name	Description	Data Type	Length	Scale	Key	Default	Enable	Visible	Format	Physical Name
<b>Id</b>	Unique Id	String	50		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DIM_PLANT_DIMENSION....
<b>Insert Date</b>	Date and time when the record was created	Timestamp			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DW_INSERT_DATE
<b>Update Date</b>	Date and time when the record was modified	Timestamp			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DW_UPDATE_DATE
<b>Address</b>	Address	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_ADDRNR
<b>Valuation Area</b>	Valuation Area	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		VALUATION_AREA
<b>Country Key</b>	Country Key	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		COUNTRY_CODE
<b>Name 1</b>	Name	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT_NAME
<b>Name 2</b>	Name 2	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_NAME2
<b>City</b>	City	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT_CITY
<b>Postal Code</b>	Postal Code	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_PSTLZ
<b>Sales organization</b>	Sales organization for intercompany billing	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		T001W_VKORG
<b>Plant</b>	Plant	String	100		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		PLANT
<b>Customer no. - plant</b>	Customer number of plant	String	100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		CUSTOMER_NUMBER

## Create a New Stream to Populate the New Dimension

1. Follow the earlier steps and **create a New Stream** to populate the Dimension. Provide the name – **New Pop Dim Stream <Username>**
2. Open the stream and click on the **+** icon, and select **Insert Step**.

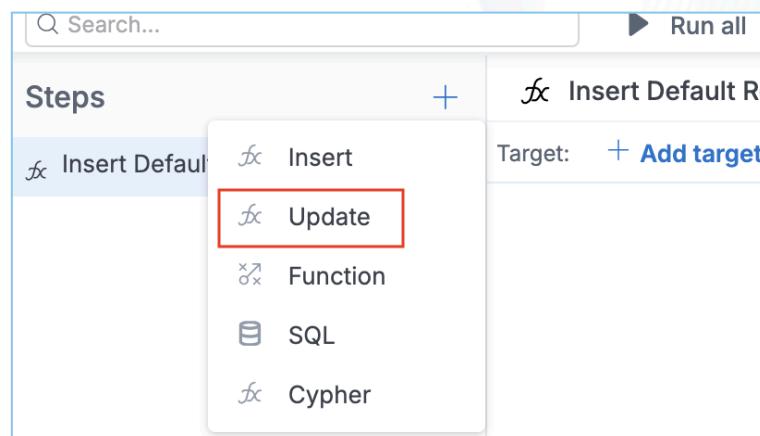


3. Rename the step as **Insert Default Row**.



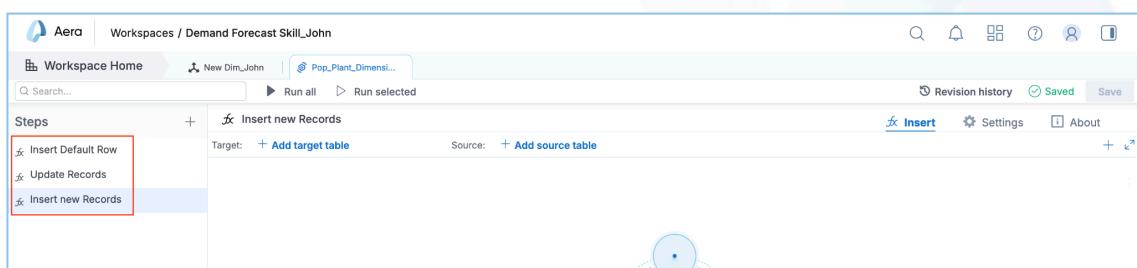
The screenshot shows the 'Workspace Home' interface. In the 'Steps' section, the 'Insert Default Row' step is selected and highlighted with a red box. To its right, the 'Target' field shows '+ Add target table'. The top navigation bar includes a search bar, 'Run all', and 'Run selected' buttons.

4. Next, add an **Update step** and rename the step as **Update Records**.



The screenshot shows the 'Steps' section with the 'Insert Default Row' step selected. A dropdown menu is open next to it, showing options: 'Insert', 'Update' (which is highlighted with a red box), 'Function', 'SQL', and 'Cypher'. The 'Target' field shows '+ Add target'.

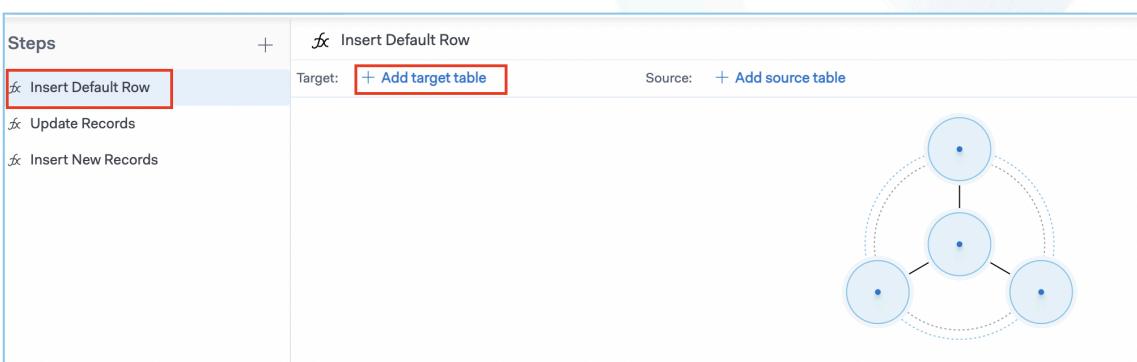
5. Add and name a new **Insert Step** as "**Insert New Records**," then **save** the Stream.



The screenshot shows the 'Steps' section with three steps listed: 'Insert Default Row', 'Update Records', and 'Insert new Records'. The 'Insert new Records' step is currently selected. The 'Target' field shows '+ Add target table' and the 'Source' field shows '+ Add source table'. The top navigation bar includes a search bar, 'Run all', and 'Run selected' buttons, along with revision history, save, settings, and about links.

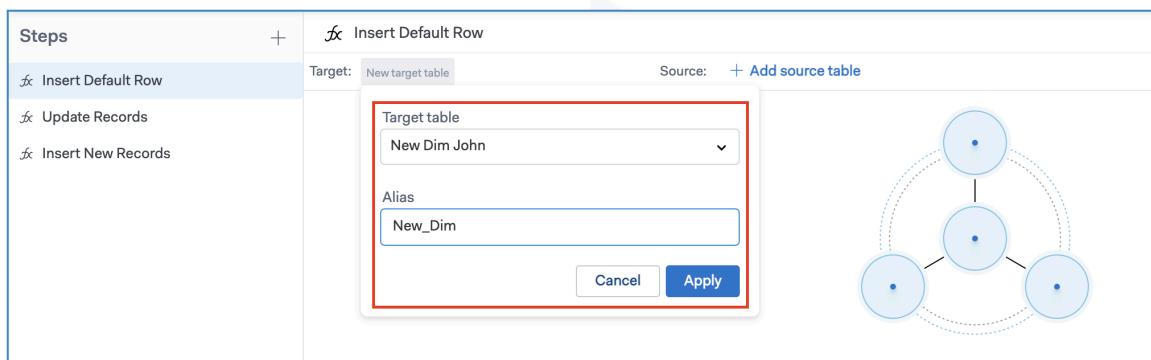
## Insert Step

1. Navigate to the initial step, **Insert Default Row**, and select "Add Target Table."



The screenshot shows the 'Steps' section with the 'Insert Default Row' step selected. The 'Target' field shows '+ Add target table' with a red box around it. The 'Source' field shows '+ Add source table'. A circular diagram in the bottom right corner illustrates a data flow or connection between components.

2. Select the **New Dim <Username>** from the dropdown and change the Alias to **New\_Dim**. Click **Apply**



- Next, click "**Add Target Columns**," choose "**Select All**" from the new window, and then click "**Add Selected**".

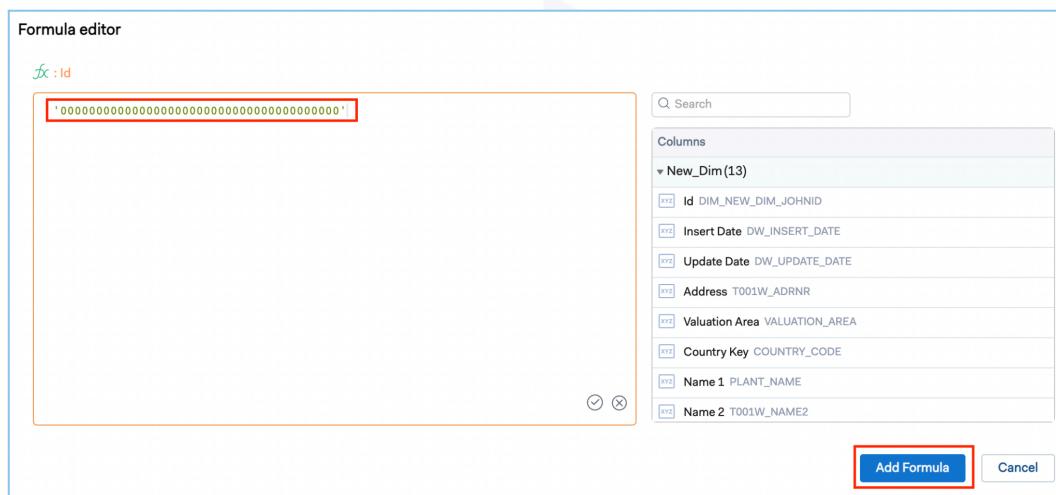
In this step, we insert a default row. Therefore, you will add the default values manually.

In the Formula Editor, every constant value defined should be enclosed within '**Single Quotes**' and should NOT be validated.

- Click on the **Formula** option for the **ID** column and then click on **Expand** Icon.

- Provide a 40 Digit Default value for **ID** column **00000000000000000000000000000000**.

The ID field usually consists of a 40-digit hash value generated from a unique grain.

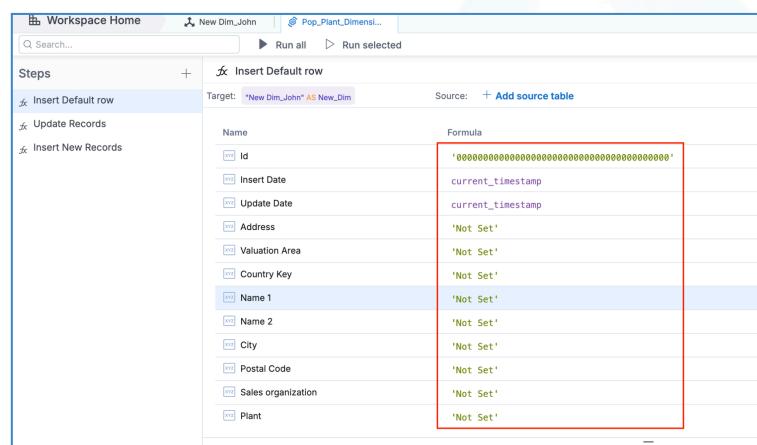


6. Click **Add Formula**. Here, we do not validate the formula as we are setting default constant values.
7. Similarly, manually enter the default values for all the remaining columns, as shown below, then click **Save**.

```

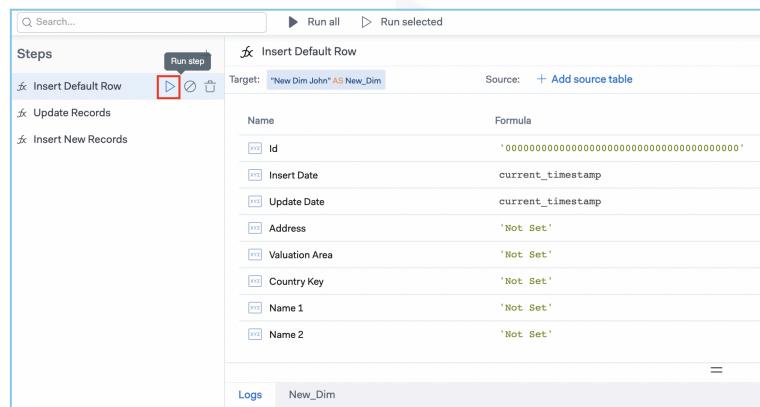
Insert Date -> current_timestamp
Update Date -> current_timestamp
Address -> 'Not Set'
Valuation Area -> 'Not Set'
Name 2 -> 'Not Set'
Name 1 -> 'Not Set'
City -> 'Not Set'
Country Key -> 'Not Set'
Postal Code -> 'Not Set'
Sales Organization -> 'Not Set'
Plant -> 'Not Set'
Customer no -> '0'

```



Name	Formula
Id	'00000000000000000000000000000000'
Insert Date	current_timestamp
Update Date	current_timestamp
Address	'Not Set'
Valuation Area	'Not Set'
Country Key	'Not Set'
Name 1	'Not Set'
Name 2	'Not Set'
City	'Not Set'
Postal Code	'Not Set'
Sales organization	'Not Set'
Plant	'Not Set'

9. Hover the cursor over the **Insert Default Row** step and click on **Run Step**.



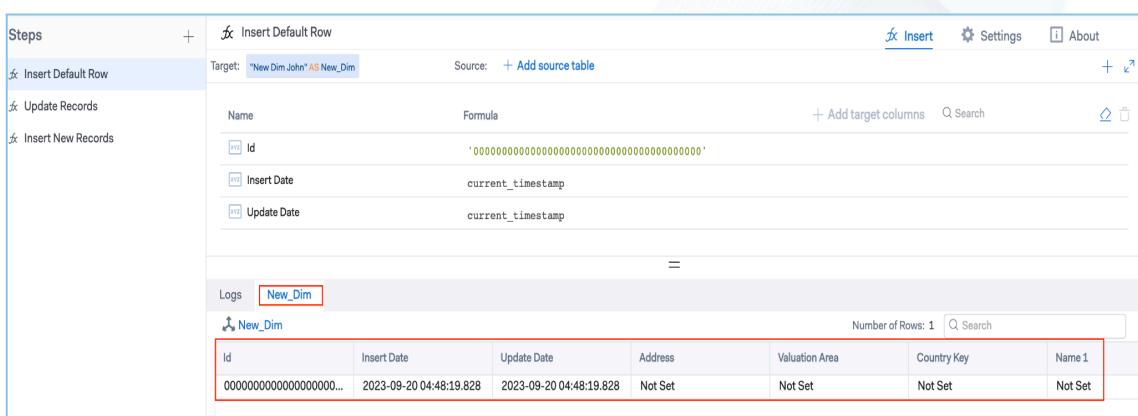
The screenshot shows the 'Insert Default Row' step configuration. The target is set to 'New Dim John' AS New\_Dim. The table has columns for Name and Formula. The 'Id' column has a formula '000'. The 'Insert Date' and 'Update Date' columns have formulas 'current\_timestamp'. The 'Address', 'Valuation Area', 'Country Key', 'Name 1', and 'Name 2' columns all have the value 'Not Set'.

11. Make Sure the Step has run successfully.



The logs show a successful execution of the 'Step "Insert Default Row" Executed' at 20-Sep-2023 04:48:19. The status is 'SUCCESS' and the message is 'Step "Insert Default Row" Executed'. The stream completed successfully in 0 second(s).

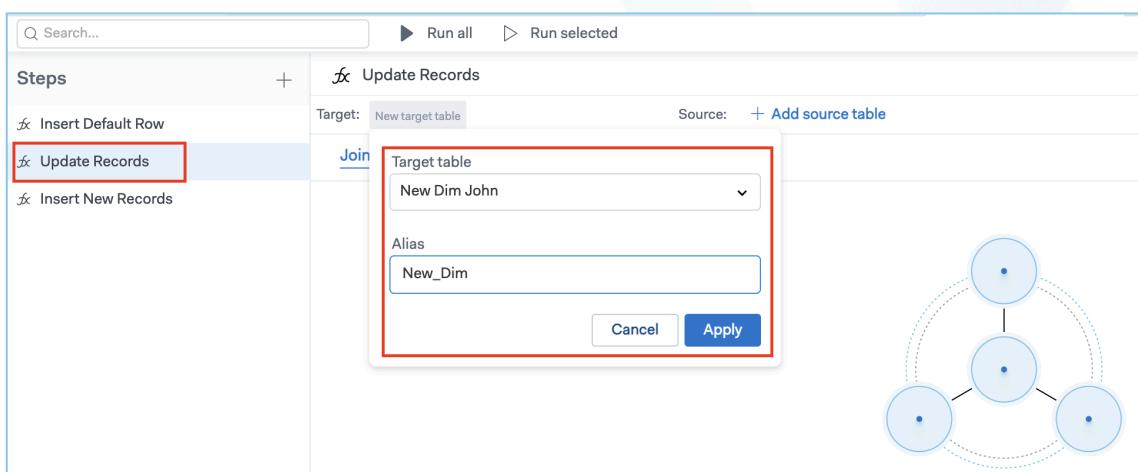
12. Click on the **New\_Dim** tab to see the default row added.



The screenshot shows the 'Logs' tab with a red box around the 'New\_Dim' tab. Below it, the 'New\_Dim' table is displayed with one row: Id (000), Insert Date (2023-09-20 04:48:19.828), Update Date (2023-09-20 04:48:19.828), Address (Not Set), Valuation Area (Not Set), Country Key (Not Set), and Name 1 (Not Set).

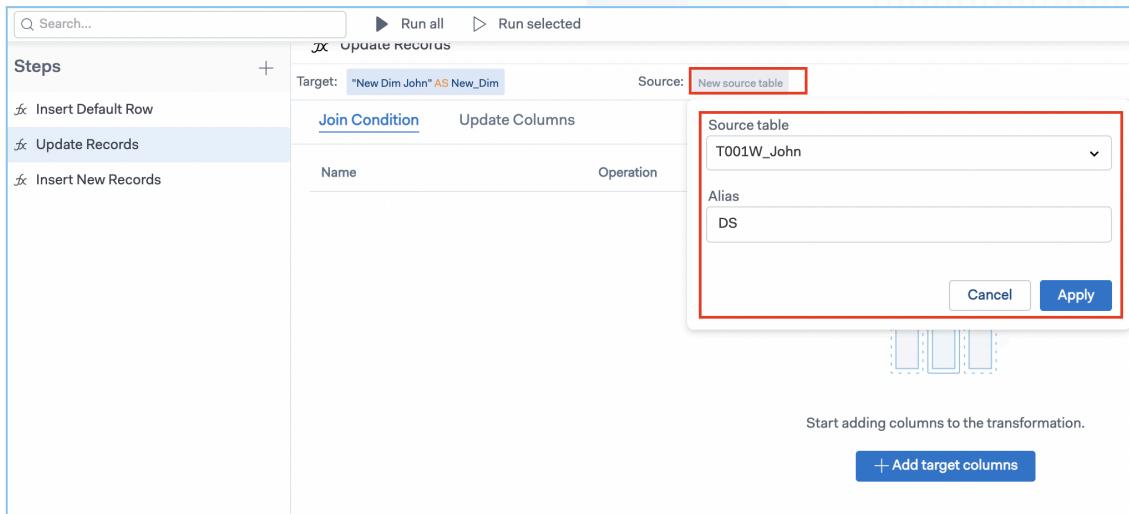
## Update Step

1. Click the **Update Records** step, add the target table **New Dim <Username>**, and set the Alias to **New\_Dim**.



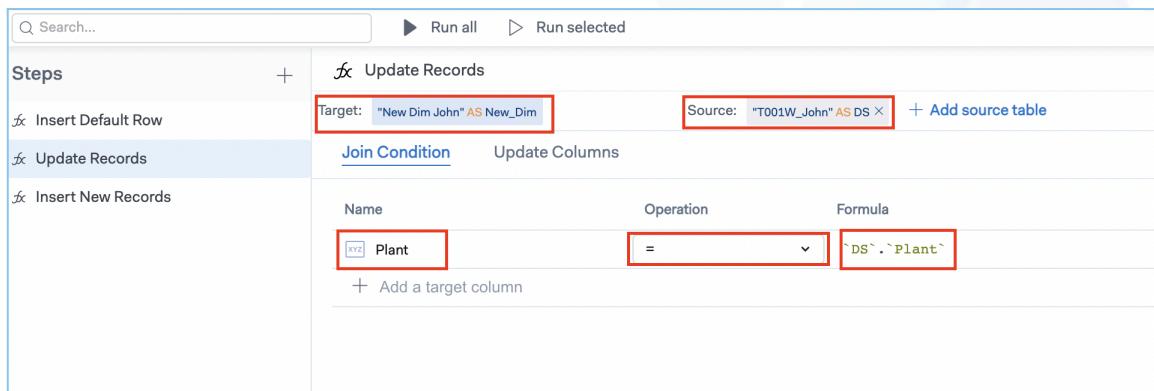
The screenshot shows the 'Update Records' step configuration. The target is set to 'New target table' and the source is 'Add source table'. A modal dialog is open for 'Target table' with 'New Dim John' selected and 'Alias' set to 'New\_Dim'. There is also a circular dependency diagram in the bottom right corner.

2. Next, click on **Add source table**. In the pop-up, select the source as **T001W\_<Username>** and change Alias to **DS**.



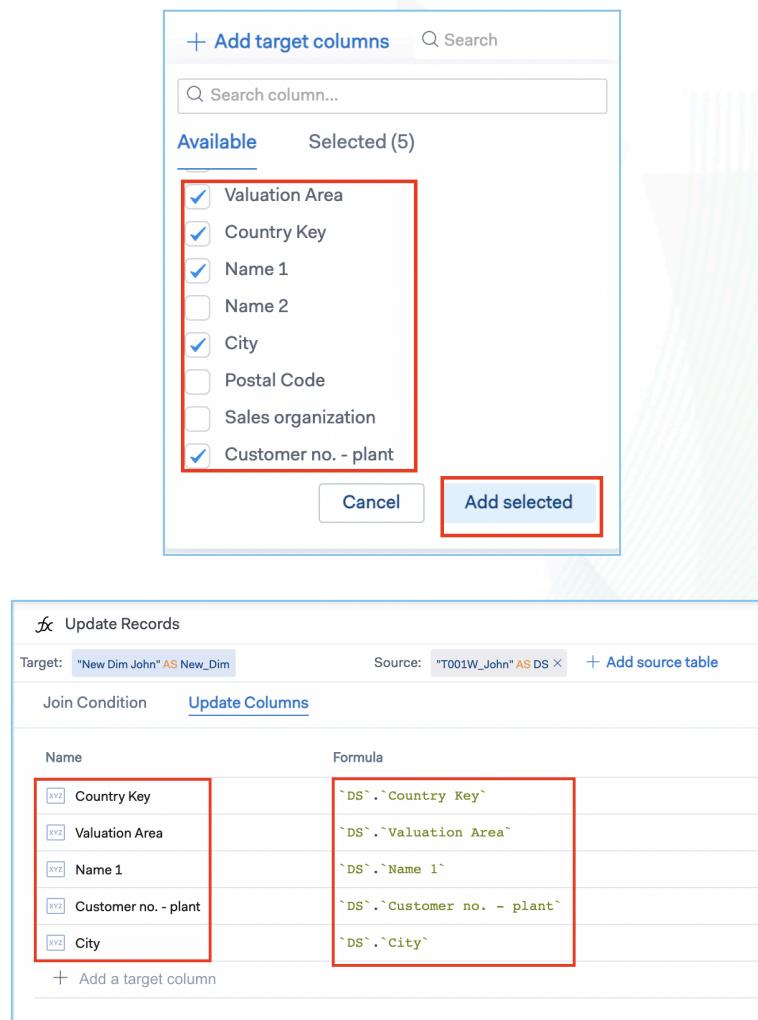
You will see that a Join condition is already recommended based on the **Natural Keys** you selected earlier while creating the Dataset and the Dimension. You had enabled the Key option for the **Plant** Field.

This is just a recommendation for a Join clause. You can change it based on your business requirements. In this exercise, we will use the same join clause.



Name	Operation	Formula
Plant	=	<code>^DS^.^Plant^</code>

3. Next, click on the **Update columns** tab and then click **Add target columns**.
4. Select the **5 fields** we would like to update in our Plant Dimension whenever the source file changes, and then click **Add Selected**.



The screenshot shows two windows from the Aera Data Workbench interface.

**Top Window: Add target columns**

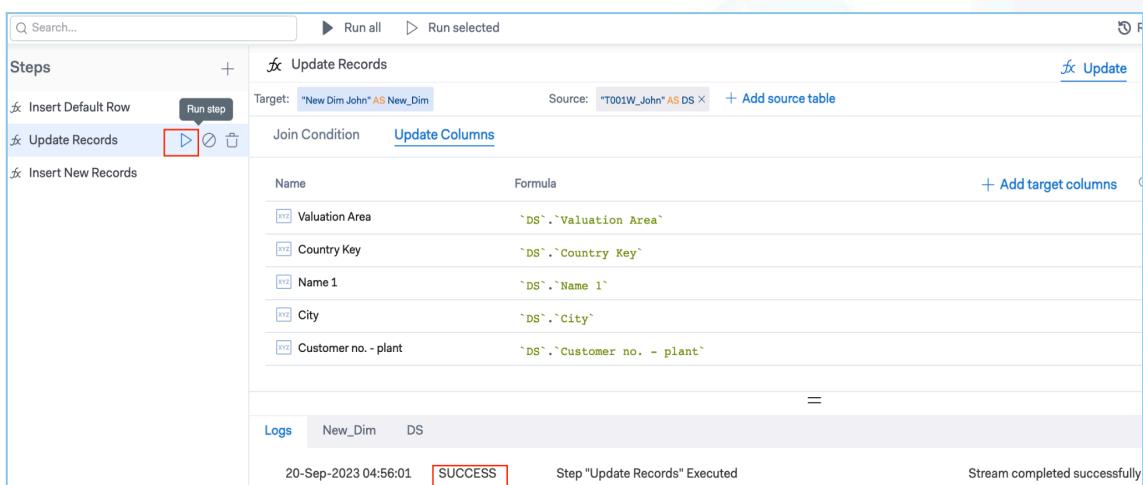
- Header: + Add target columns, Search...
- Available: Valuation Area, Country Key, Name 1, Name 2, City, Postal Code, Sales organization, Customer no. - plant
- Selected (5): Valuation Area, Country Key, Name 1, City, Customer no. - plant
- Buttons: Cancel, Add selected

**Bottom Window: Update Records**

- Header: fx Update Records
- Target: "New Dim John" AS New\_Dim
- Source: "T001W\_John" AS DS
- Join Condition: Update Columns
- Table:
 

Name	Formula
Country Key	`DS`.'Country Key'
Valuation Area	`DS`.'Valuation Area'
Name 1	`DS`.'Name 1'
Customer no. - plant	`DS`.'Customer no. - plant'
City	`DS`.'City'
- Buttons: + Add a target column, fx Update

## 5. Click Save and run the **Update Records** Step.



The screenshot shows the main Aera Data Workbench interface with the following details:

- Steps:** Insert Default Row, fx Update Records, fx Insert New Records.
- fx Update Records Step Configuration:**
  - Run step button (highlighted with a red box)
  - Target: "New Dim John" AS New\_Dim
  - Source: "T001W\_John" AS DS
  - Join Condition: Update Columns
  - Table:
 

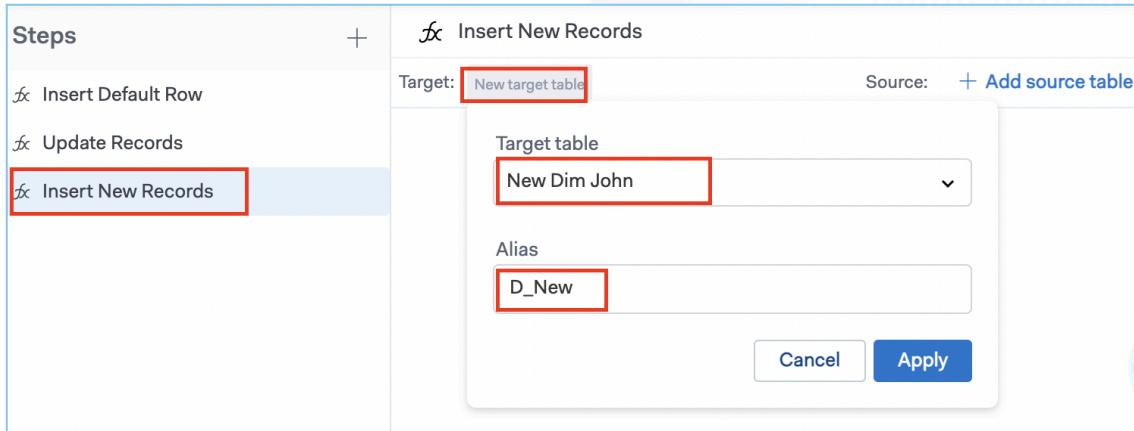
Name	Formula
Valuation Area	`DS`.'Valuation Area'
Country Key	`DS`.'Country Key'
Name 1	`DS`.'Name 1'
City	`DS`.'City'
Customer no. - plant	`DS`.'Customer no. - plant'
  - Buttons: + Add target columns, fx Update
- Logs:**
  - Logs tab: 20-Sep-2023 04:56:01, SUCCESS, Step "Update Records" Executed
  - New\_Dim tab: Stream completed successfully

This **Update step** will update the above-mentioned columns in the New Dimension table only if corresponding changes are made to the source file. In this exercise, we have only added a single default row so far.

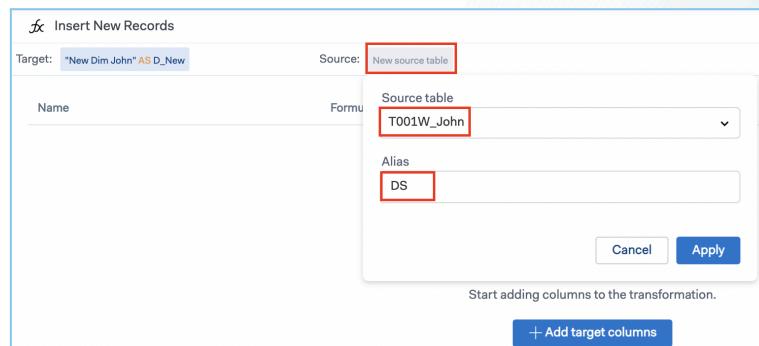
Next, we will add new records to this New Dimension table.

## Insert New Records

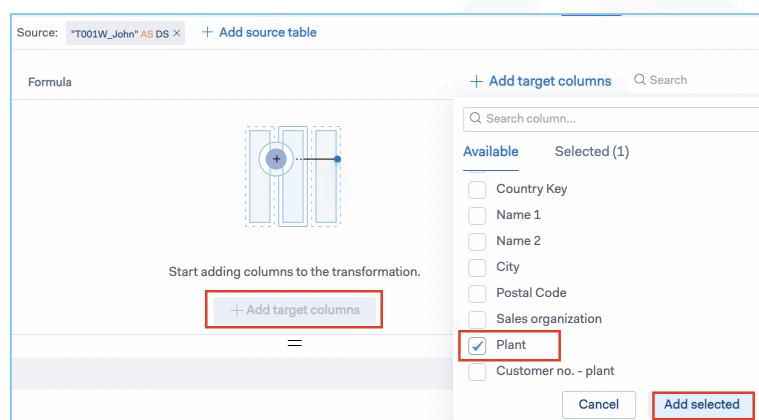
- Follow the same step as outlined in the Update Records step and set the Alias as **D\_New**.



- Now add the source table by selecting the dataset **T001W\_<Username>** and setting the Alias to **DS**, then click **Apply**.



- Click on **Add target columns**, select only the **Plant** field and click on **Add selected**.



When creating a Plant Dimension, you would first need to create distinct plant entries and then populate the rest of the fields corresponding to these distinct Plant entries.

- Next, click on **Add target columns** again, select **All**, and click **Add Selected**.

**Insert New Records**

Target: "New Dim John" AS D\_New      Source: "T001W\_John" AS DS X      + Add source table

Name	Formula
XYZ Plant	`DS`.'Plant'
+ Add a target column	

+ Add target columns      Q Search

Available      Selected (12)

- All
- Id
- Insert Date
- Update Date
- Address
- Valuation Area
- Country Key
- Name 1

Logs      D\_New      DS      Cancel      Add selected

**Insert New Records**

Target: "New Dim John" AS D\_New      Source: "T001W\_John" AS DS X      + Add source table

Name	Formula
XYZ Plant	`DS`.'Plant'
XYZ Id	
XYZ Insert Date	
XYZ Update Date	
XYZ Address	`DS`.'Address'
XYZ Valuation Area	`DS`.'Valuation Area'
XYZ Country Key	`DS`.'Country Key'

The target columns are auto-mapped to the source columns wherever a match is found. For any new columns in the Dimension that do not have a corresponding match in the source table, the values are to be provided manually, or a formula needs to be added to derive one.

5. Next, click on the formula option next to the Id field and then click on **Expand**.

**Insert New Records**

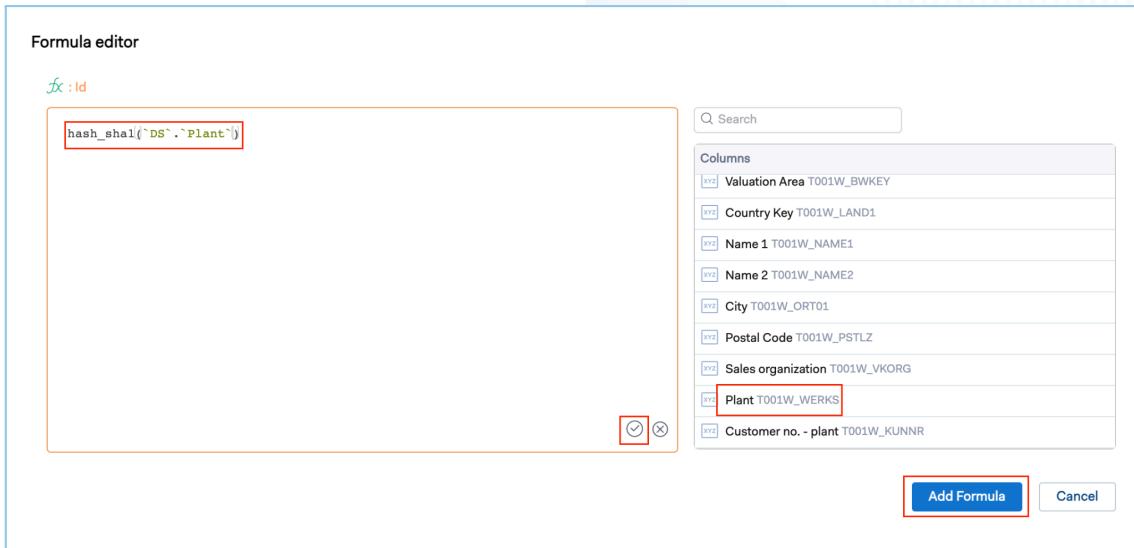
Target: "New Dim\_John" AS D\_New      Source: "T001W\_John" AS DS X      + Add source table

Name	Formula
XYZ Plant	`DS`.'Plant'
XYZ Id	
XYZ Insert Date	
XYZ Update Date	
XYZ Address	`DS`.'Address'
XYZ Valuation Area	`DS`.'Valuation Area'
XYZ Country Key	`DS`.'Country Key'
XYZ Name 1	`DS`.'Name 1'

+ Add target columns      Q Search        

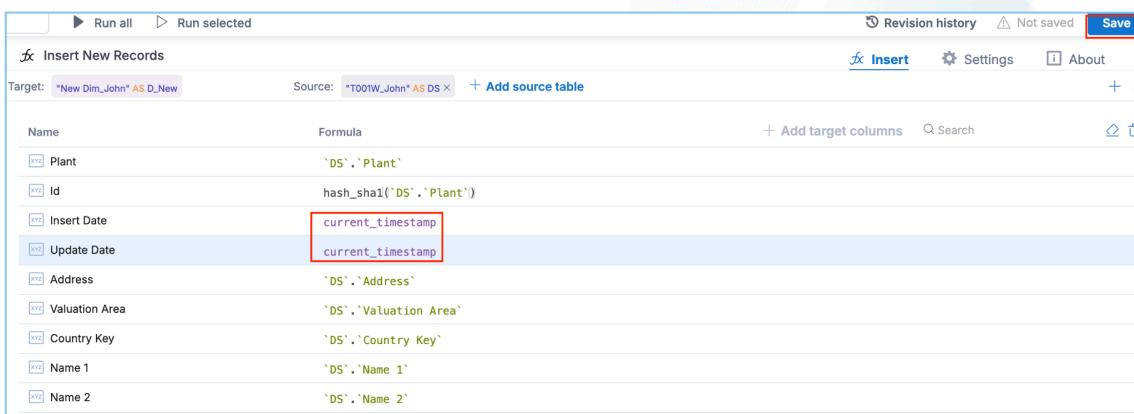
**Expand**

6. Add the formula `hash\_sha1(`DS`.`Plant`)` in the ID field to create unique 40-digit Plant IDs, selecting the **Plant** field from the **DS** table.



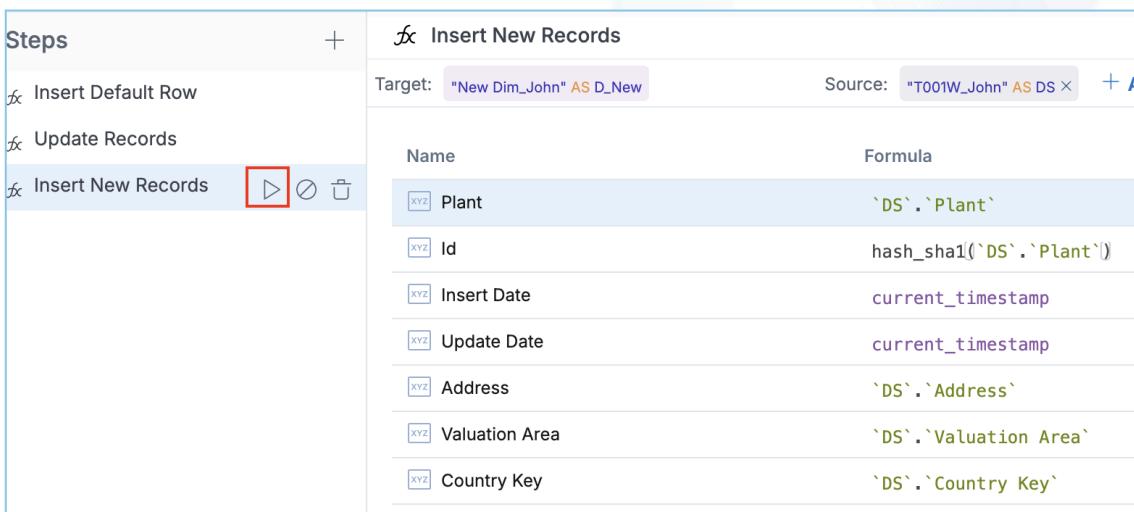
The screenshot shows the 'Formula editor' window. In the main area, there is a text input field containing the formula `hash_sha1(`DS`.`Plant`)`. This formula is highlighted with a red box. Below the input field are two buttons: a checkmark icon and a close/cancel icon. To the right of the input field is a sidebar titled 'Columns' which lists various fields from the 'DS' table, including Valuation Area, Country Key, Name 1, Name 2, City, Postal Code, Sales organization, Plant, and Customer no. - plant. The 'Plant' field is also highlighted with a red box. At the bottom right of the editor are two buttons: 'Add Formula' (highlighted with a red box) and 'Cancel'.

7. Click the check mark to validate the formula, then click **Add Formula**.  
8. Next, add the formula **current\_timestamp** for the **Insert Date** and the **Update Date** fields as shown.



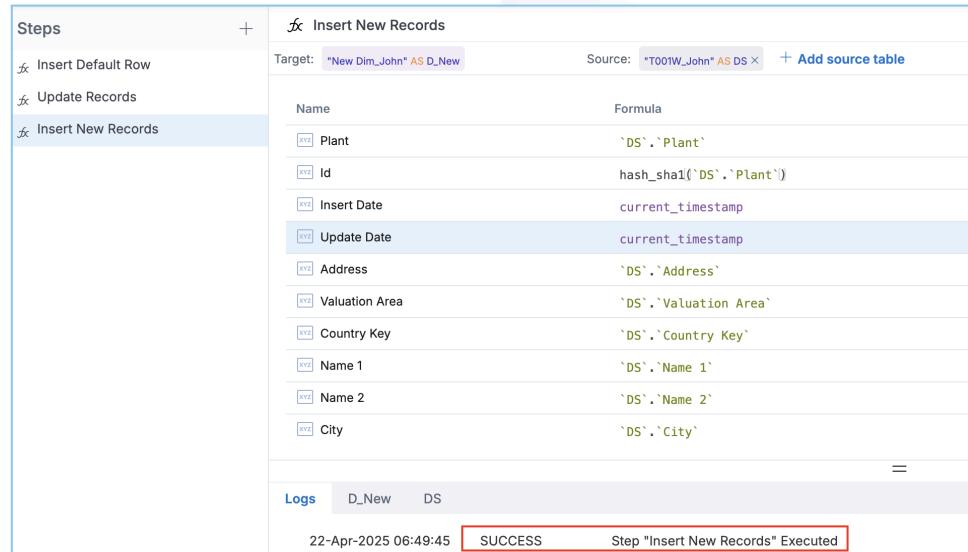
The screenshot shows the 'Insert New Records' step configuration. It lists several columns with their corresponding formulas. The 'Insert Date' and 'Update Date' columns both have the formula `current_timestamp`, which is highlighted with a red box. Other columns include 'Plant' (formula: `'DS'.`Plant``), 'Id' (formula: `hash_sha1(`DS`.`Plant`)`), 'Address' (formula: `'DS'.`Address``), 'Valuation Area' (formula: `'DS'.`Valuation Area``), 'Country Key' (formula: `'DS'.`Country Key``), 'Name 1' (formula: `'DS'.`Name 1``), and 'Name 2' (formula: `'DS'.`Name 2``). The top right corner of the interface has a 'Save' button highlighted with a red box.

9. Ensure the **Plant** field is the first column, click **Save**, and run the **Insert New Records** step.



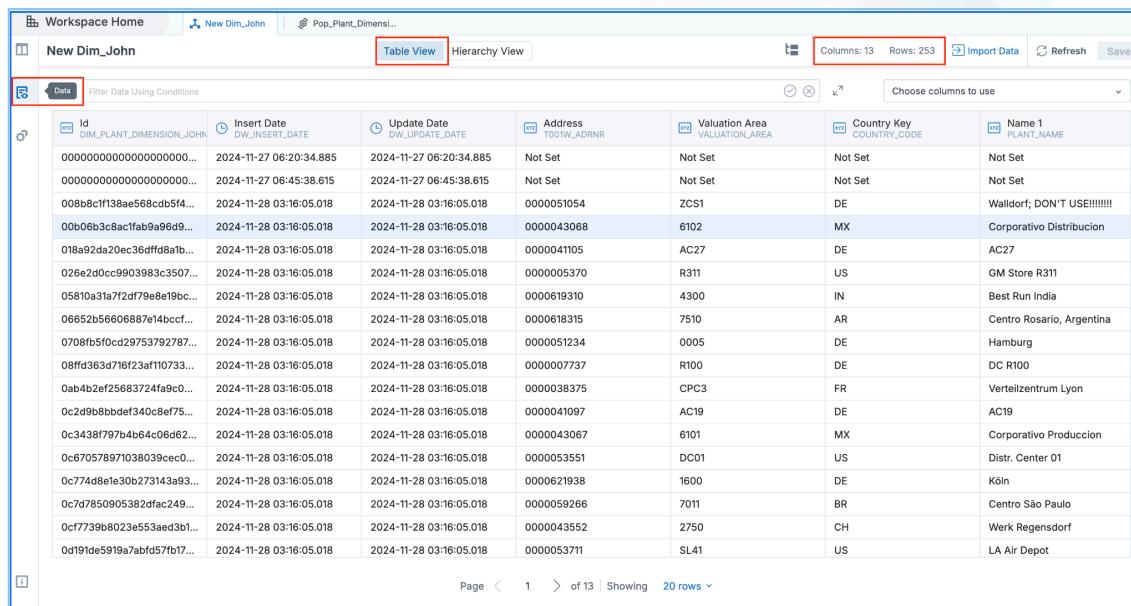
The screenshot shows the 'Insert New Records' step in the workflow. The 'Steps' list on the left includes 'Insert Default Row', 'Update Records', and 'Insert New Records' (which is currently selected and highlighted with a red box). The main area shows the 'Insert New Records' configuration. It has a 'Target' of "New Dim\_John" AS D\_New and a 'Source' of "T001W\_John" AS DS. The 'Formula' column for the 'Insert Date' and 'Update Date' fields both contain the formula `current_timestamp`, which is highlighted with a red box. The other columns in the formula table are 'Plant' (formula: `'DS'.`Plant``), 'Id' (formula: `hash_sha1(`DS`.`Plant`)`), 'Address' (formula: `'DS'.`Address``), 'Valuation Area' (formula: `'DS'.`Valuation Area``), and 'Country Key' (formula: `'DS'.`Country Key``).

10. The Step gets completed successfully.



Steps	Insert New Records																							
<input checked="" type="checkbox"/> Insert Default Row	Target: "New Dim_John" AS D_New	Source: "T001W_John" AS DS <a href="#">+ Add source table</a>																						
<input checked="" type="checkbox"/> Update Records																								
<input checked="" type="checkbox"/> Insert New Records	<table border="1"> <thead> <tr> <th>Name</th> <th>Formula</th> </tr> </thead> <tbody> <tr> <td>Plant</td> <td>'DS'.`Plant`</td> </tr> <tr> <td>Id</td> <td>hash_sha1(`DS`.`Plant`)</td> </tr> <tr> <td>Insert Date</td> <td>current_timestamp</td> </tr> <tr> <td>Update Date</td> <td>current_timestamp</td> </tr> <tr> <td>Address</td> <td>'DS'.`Address`</td> </tr> <tr> <td>Valuation Area</td> <td>'DS'.`Valuation Area`</td> </tr> <tr> <td>Country Key</td> <td>'DS'.`Country Key`</td> </tr> <tr> <td>Name 1</td> <td>'DS'.`Name 1`</td> </tr> <tr> <td>Name 2</td> <td>'DS'.`Name 2`</td> </tr> <tr> <td>City</td> <td>'DS'.`City`</td> </tr> </tbody> </table>		Name	Formula	Plant	'DS'.`Plant`	Id	hash_sha1(`DS`.`Plant`)	Insert Date	current_timestamp	Update Date	current_timestamp	Address	'DS'.`Address`	Valuation Area	'DS'.`Valuation Area`	Country Key	'DS'.`Country Key`	Name 1	'DS'.`Name 1`	Name 2	'DS'.`Name 2`	City	'DS'.`City`
Name	Formula																							
Plant	'DS'.`Plant`																							
Id	hash_sha1(`DS`.`Plant`)																							
Insert Date	current_timestamp																							
Update Date	current_timestamp																							
Address	'DS'.`Address`																							
Valuation Area	'DS'.`Valuation Area`																							
Country Key	'DS'.`Country Key`																							
Name 1	'DS'.`Name 1`																							
Name 2	'DS'.`Name 2`																							
City	'DS'.`City`																							
	Logs	D_New DS																						
	22-Apr-2025 06:49:45 <span style="border: 1px solid red; padding: 2px;">SUCCESS</span> Step "Insert New Records" Executed																							

11. You can review the Data populated by going to your Dimension **New Dim <Username>** and clicking on the **Table view** under the **Data Tab**.

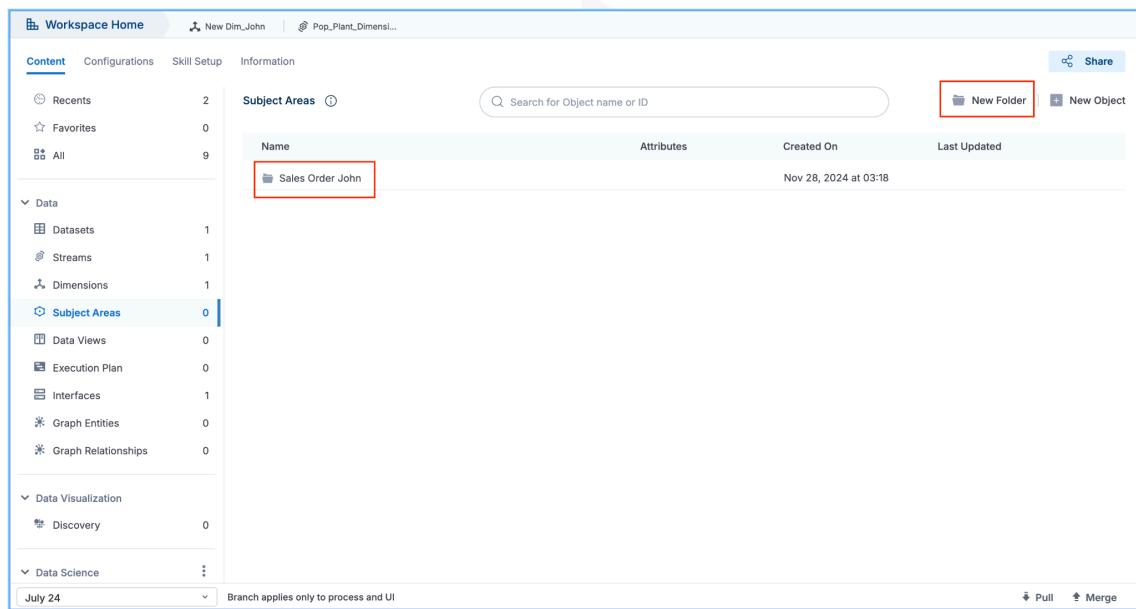


New Dim_John						
Table View						
Data						
Id	Insert Date DW_INSERT_DATE	Update Date DW_UPDATE_DATE	Address T001W_ADDRNR	Valuation Area VALUATION_AREA	Country Key COUNTRY_CODE	Name 1 PLANT_NAME
00000000000000000000...	2024-11-27 06:20:34.885	2024-11-27 06:20:34.885	Not Set	Not Set	Not Set	Not Set
00000000000000000000...	2024-11-27 06:45:38.615	2024-11-27 06:45:38.615	Not Set	Not Set	Not Set	Not Set
008b8c1318aa568c0b5f4...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000051054	ZCS1	DE	Walldorf; DON'T USE!!!!!!
00b00b3c8ac1fab9a96d9...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000043068	6102	MX	Corporativo Distribucion
018a92da20ec36dff8a1b...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000041105	AC27	DE	AC27
026e2d0cc9903983c3507...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000005370	R311	US	GM Store R311
05810a31a72df79e8e1b9c...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	00000619310	4300	IN	Best Run India
06652b56606887e14bccf...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	00000618315	7510	AR	Centro Rosario, Argentina
0708fb5f0cd29753792787...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000051234	0005	DE	Hamburg
08ffd363d716f23af110733...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000007737	R100	DE	DC R100
0ab4b2ef25683724fa9c0...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000038375	CPC3	FR	Verteilzentrum Lyon
0cd9bb8bbdef340c8ef75...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000041097	AC19	DE	AC19
0c3438f797b4b64c06d62...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000043067	6101	MX	Corporativo Produccion
0c670578971038039cec0...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000053551	DC01	US	Distr. Center 01
0c774d8e1e300273143a93...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	00000621938	1600	DE	Köln
0c7d7850905382dfac249...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000059266	7011	BR	Centro São Paulo
0cf7739b8023e553aed3b1...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000043552	2750	CH	Werk Regensdorf
0d191de5919a7abfd57fb17...	2024-11-28 03:16:05.018	2024-11-28 03:16:05.018	0000053711	SL41	US	LA Air Depot

12. Close all the open tabs and go to the **Workspace home**.

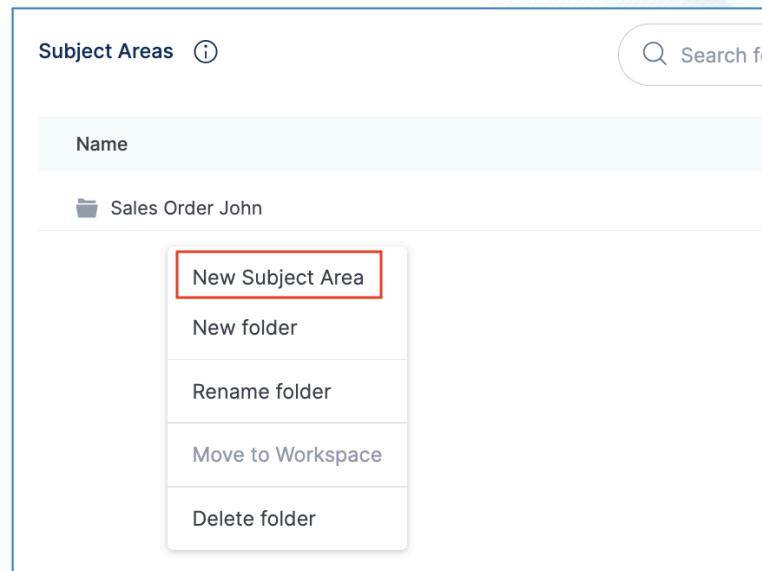
## Create Subject Area

1. Navigate to the **Subject Areas** section under **Content** and tap the '**New Folder**' icon to create a new folder.
2. Provide the name **Sales Order <Username>**.



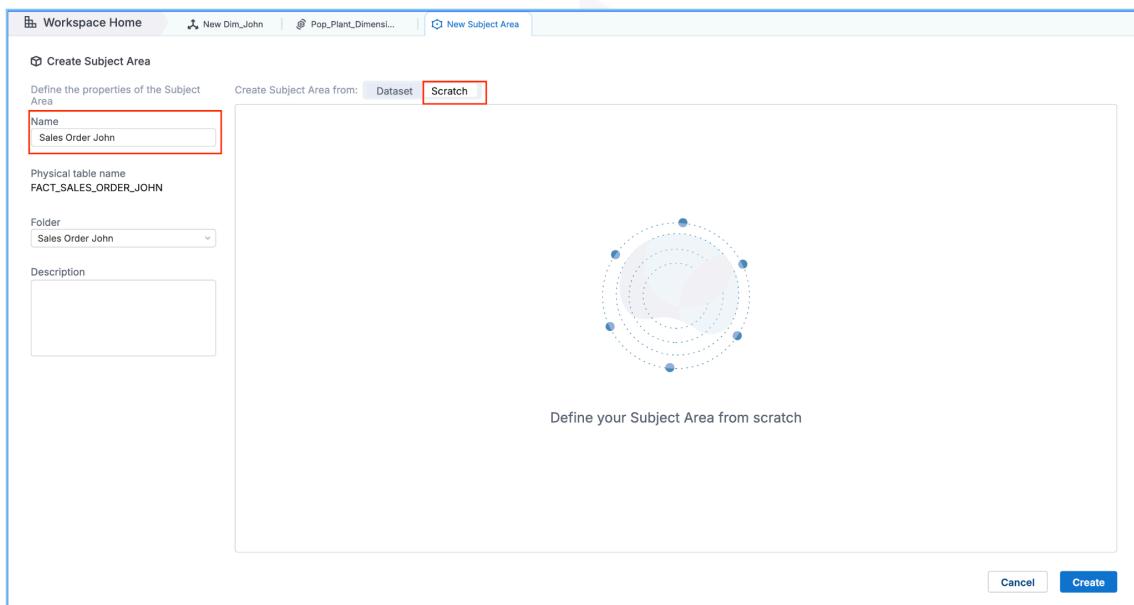
The screenshot shows the Aera Data Workbench interface. On the left, there's a sidebar with categories like Content, Data, Data Visualization, and Data Science. Under Content, 'Subject Areas' is selected and highlighted with a blue border. In the main area, there's a table titled 'Subject Areas' with one item: 'Sales Order John'. This item is also highlighted with a red box. At the top right of the main area, there are buttons for 'Share', 'New Folder' (which is also highlighted with a red box), and 'New Object'.

3. Next, right-click the folder to create a **Subject Area**.



The screenshot shows a context menu for the 'Sales Order John' folder. The menu items are: 'New Subject Area' (highlighted with a red box), 'New folder', 'Rename folder', 'Move to Workspace', and 'Delete folder'.

4. In the new window, enter "**Sales Order <Username>**" as the name for the Subject Area, navigate to the **Scratch** tab, and click "**Create**."



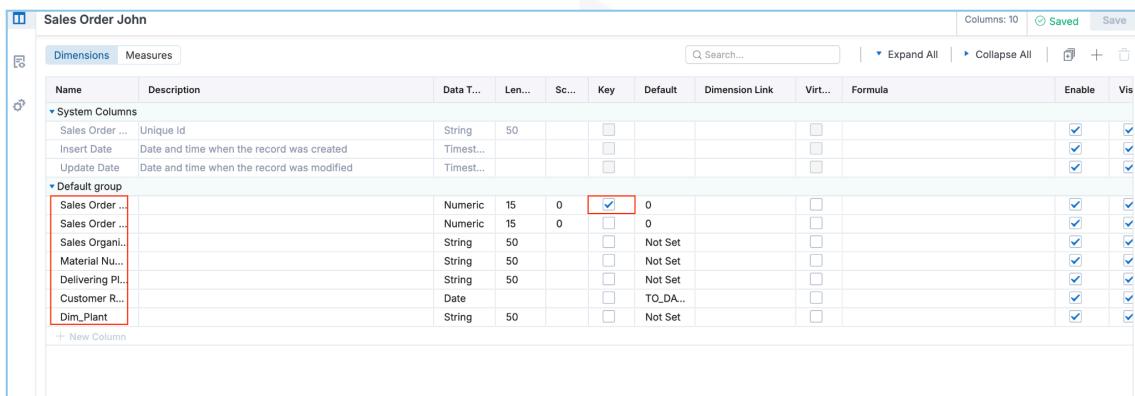
5. The subject area opens in a new tab and contains default system columns in the Dimension tab.

Dimensions Measures											Columns: 3		Save
Name	Description	Data T...	Len...	Sc...	Key	Default	Dimension Link	Virt...	Formula		Enable	Vis	
Sales Order ...	Unique Id	String	50								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Insert Date	Date and time when the record was created	Timestamp									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Update Date	Date and time when the record was modified	Timestamp									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Default group</b>													
<a href="#">+ New Column</a>													

6. Add the following columns as **Dimension** in the **Default group** by clicking on the **+ New Column**

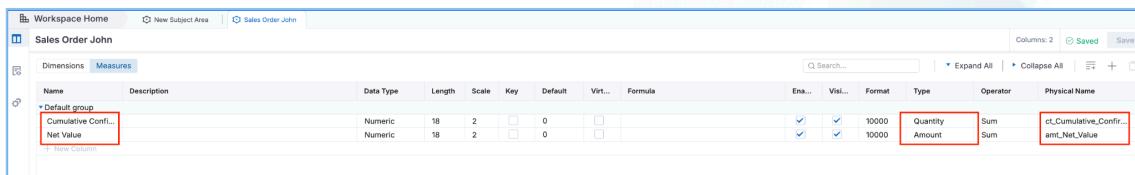
Column Name	Data Type	Length	Physical name
Sales Order Number	Numeric	15	dd_Sales_Order_Number
Sales Order Item Number	Numeric	15	dd_Sales_Order_Item_Number
Sales Organization	String	50	dd_Sales_Organization
Material Number	String	50	dd_Material_Number
Delivering Plant	String	50	dd_Delivering_Plant
Customer Requested Date	Date		dd_Customer_Requested_Date
Dim_Plant	String	50	dd_Dim_Plant

5. Enable the **Key** option for **Sales Order Number** and click **Save**.



6. Add the following columns as **Measures** and click **Save**.

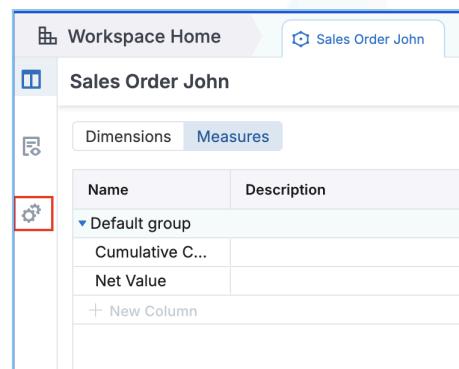
Column Name	Data Type	Length	Operator	Physical name	Type
Cumulative Confirmed Qty UoM	Numeric	18	Sum	CT_CUMULATIVE_CONFIR MED_QTY_UOM	Quantity
Net Value	Numeric	18	Sum	AMT_NET_VALUE	Amount



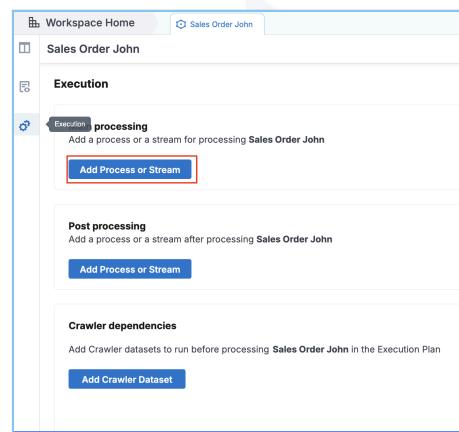
## Add Stream to Populate Subject Area

### Populate Subject Area using SQL Step

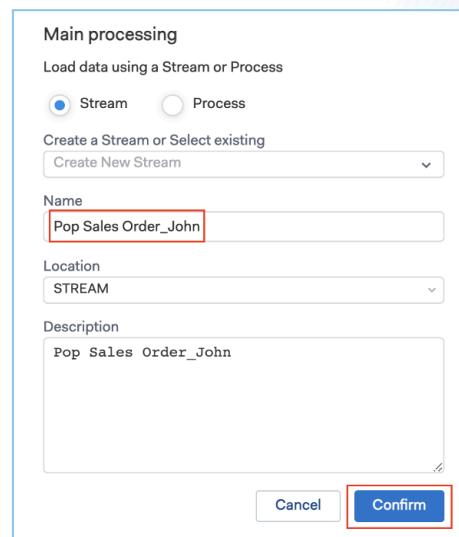
1. Click the Executions tab on the **Sales Order <Username>** window.



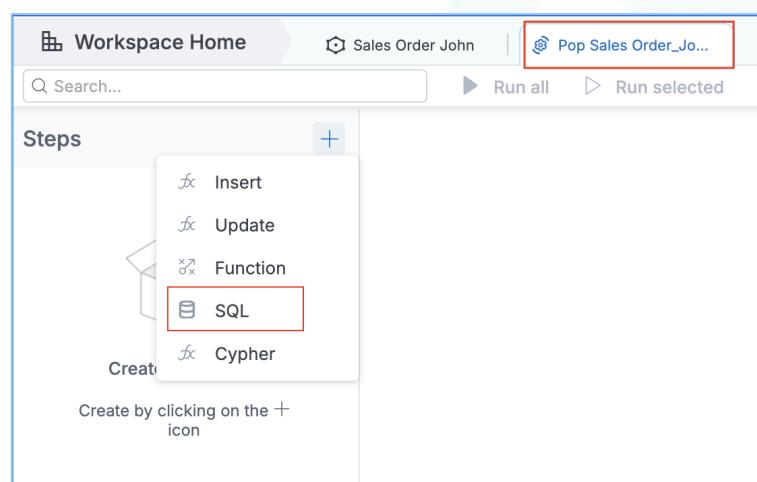
2. Click the **Add Process or Stream** in the Main Processing section.



3. To load the data, select a **Stream** from the dropdown, choose "**Create New Stream**," name it "**Pop Sales Order\_<Username>**," and click "**Confirm**."



4. On the new **Pop Sales Order\_<Username>** tab, click the **+** icon and select **SQL**.

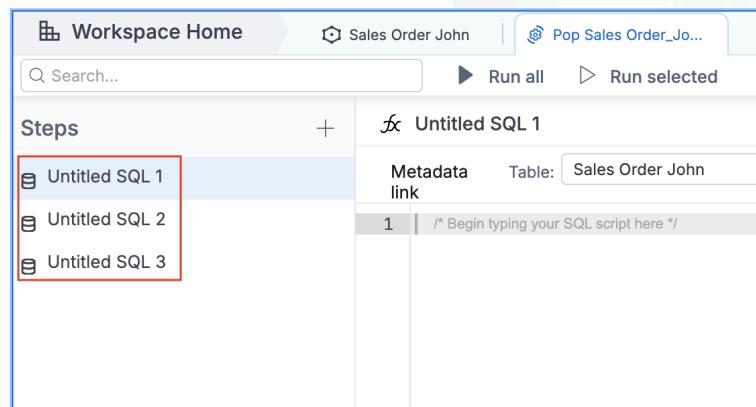


Create three individual SQL steps for each significant operation:

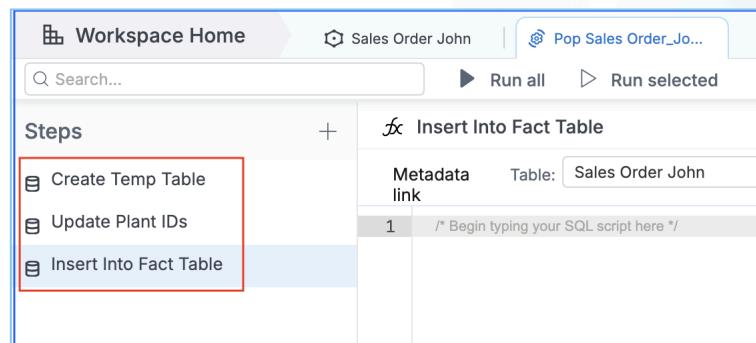
- **Create Temp table:** we create a temporary table and populate it with required fields

from VBAK – Sales Header data and VBAP- Sales Item data for every matching Sales order no for a given period.

- **Update Plant IDs:** In this step, we link and update the Plant IDs of our Subject Area with those of an external Dimension Plant Demo wherever the Plant code matches.
- **Insert into Fact table:** Once all the New records are inserted and updated, we move the data from the temporary table to the Fact Table or Subject Area.



6. Double-click to rename it as "**Create Temp Table**," "**Update Plant IDs**," and "**Insert into Fact Table**," respectively.



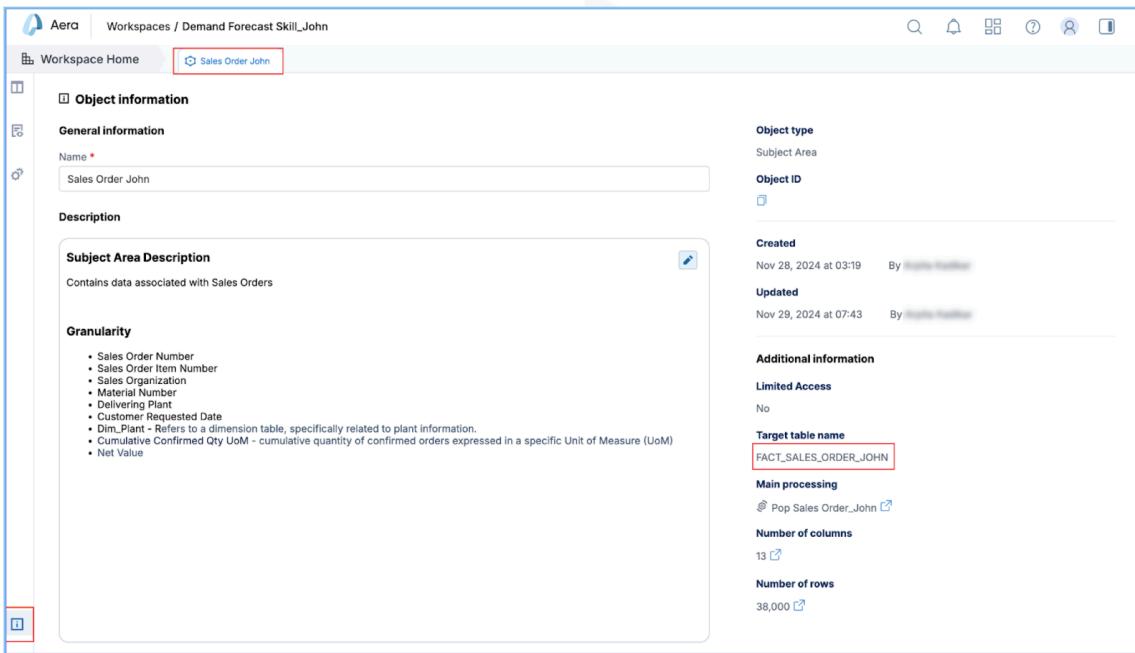
7. Click the "**Create Temp Table**" step, then copy and paste the query into the right panel.

```

DROP TABLE IF EXISTS TMP_your_subjarea_table;
CREATE TABLE TMP_your_subjarea_table LIKE your_subjarea_table;
MERGE INTO TMP_your_subjarea_table f
USING (select distinct
ifnull(CAST( UPPER( HASH_SHA1( UPPER( TRIM( LEADING '0' FROM IFNULL(VBAK_VBELN, ' ')) || '|^'| || IFNULL(VBAP_POSNR,' ') || '|^'| || 'SAP ECC EURO' ))) AS VARCHAR(40) ),
'000000000000000000000000000000000000000000000000') as ID,
current_timestamp as DW_INSERT_DATE,
current_timestamp as DW_UPDATE_DATE,
ifnull(VBAK_VBELN,0) as dd_Sales_Order_Number,
ifnull(VBAP_POSNR,0) as dd_Sales_Order_Item_Number,
ifnull(VBAK_VKORG, 'Not Set') as dd_Sales_Organization,
ifnull(VBAK_VTWEG, 'Not Set') as dd_Distribution_Channel,
ifnull(VBAP_MATNR, 'Not Set') as dd_Material_Number,

```

8. Replace the above-highlighted text in red with the Subject Area table name.
  9. To find the names of your tables, navigate to the "**Sales Order <username>**" and "**T001W\_<Username>**" tabs, then click the "**About**" option (identified by an "**I**" icon).



A description is mandatory to render the subject areas “Gen AI” ready. So that the AI Agents understand the context

10. Similarly, add the following query for the **Update Plant IDs** step.

```
update TMP_your_subjarea_table f_s
set f_s.DD_dim_Plant = d.dim_plant_demo
from TMP_your_subjarea_table f_s
inner join DIM_PLANT_DEMO d
on f_s.DD_DELIVERING_PLANT = d.plant_code;
```

11. Similarly, add the below query for the **Insert into Fact Table** step and **Save** the Stream.

```
truncate table your_subjarea_table;
insert into your_subjarea_table
(your_subjarea_tableID,
DW_INSERT_DATE,
DW_UPDATE_DATE,
DD_SALES_ORDER_NUMBER,
DD_SALES_ORDER_ITEM_NUMBER,
DD_SALES_ORGANIZATION,
DD_MATERIAL_NUMBER,
DD_DELIVERING_PLANT,
DD_CUSTOMER_REQUESTED_DATE,
CT_CUMULATIVE_CONFIRMED_QTY_UOM,
AMT_NET_VALUE,
DD_DIM_PLANT)
select b.your_subjarea_tableID,
b.DW_INSERT_DATE,
b.DW_UPDATE_DATE,
b.DD_SALES_ORDER_NUMBER,
```

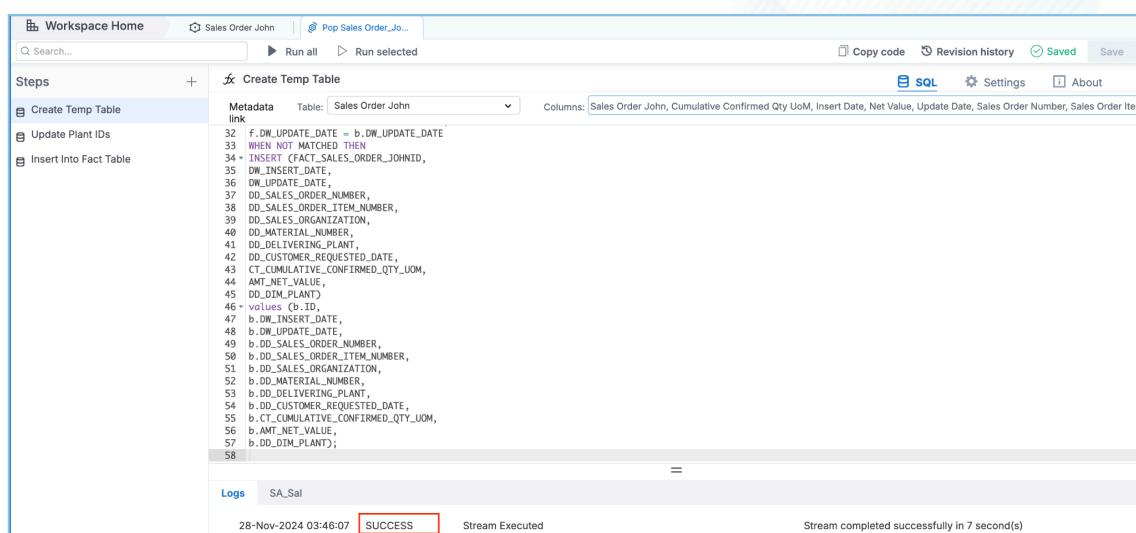
```

b.DD_SALES_ORDER_ITEM_NUMBER,
b.DD_SALES_ORGANIZATION,
b.DD_MATERIAL_NUMBER,
b.DD_DELIVERING_PLANT,
b.DD_CUSTOMER_REQUESTED_DATE,
b.CT_CUMULATIVE_CONFIRMED_QTY_UOM,
b.AMT_NET_VALUE,
b.DD_DIM_PLANT
from TMP_your_subjarea_table b;

DROP TABLE IF EXISTS TMP_your_subjarea_table;

```

12. Click "Run All" to execute all steps at once, changing the Stream status to **SUCCESS** upon completion.



The screenshot shows the Aera Data Workbench interface. In the center, there is a code editor window titled 'Create Temp Table' with the following SQL script:

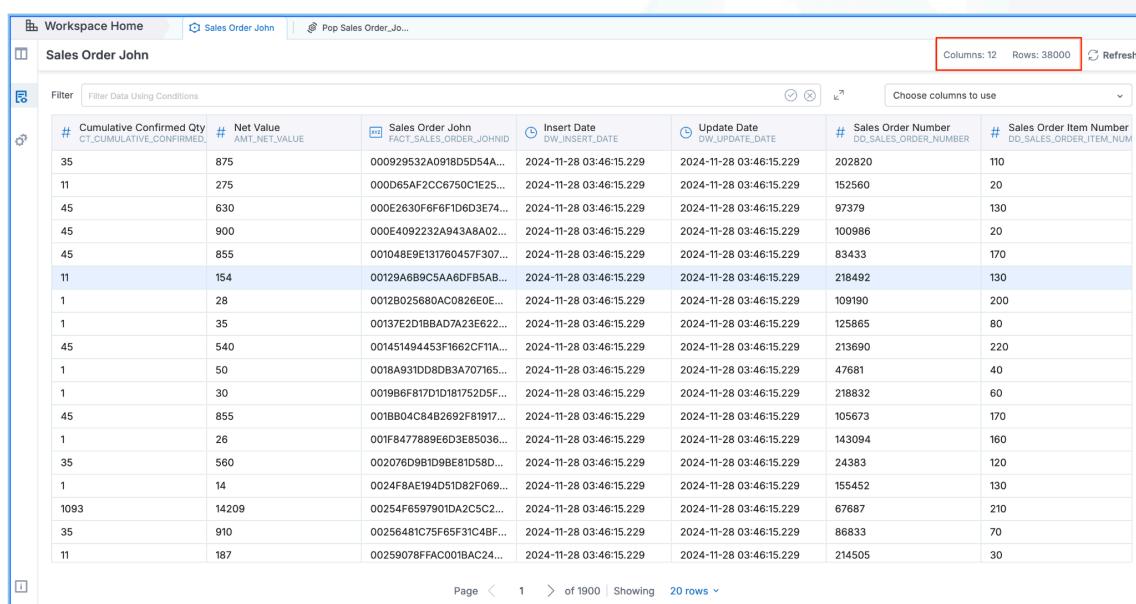
```

f.DW_UPDATE_DATE = b.DW_UPDATE_DATE
WHEN NOT MATCHED THEN
  INSERT (FACT_SALES_ORDER_JOHNID,
  DW_INSERT_DATE,
  DW_UPDATE_DATE,
  DD_SALES_ORDER_NUMBER,
  DD_SALES_ORDER_ITEM_NUMBER,
  DD_SALES_ORGANIZATION,
  DD_MATERIAL_NUMBER,
  DD_DELIVERING_PLANT,
  DD_CUSTOMER_REQUESTED_DATE,
  CT_CUMULATIVE_CONFIRMED_QTY_UOM,
  AMT_NET_VALUE,
  DD_DIM_PLANT)
VALUES (C.ID,
  b.DW_INSERT_DATE,
  b.DW_UPDATE_DATE,
  b.DD_SALES_ORDER_NUMBER,
  b.DD_SALES_ORDER_ITEM_NUMBER,
  b.DD_SALES_ORGANIZATION,
  b.DD_MATERIAL_NUMBER,
  b.DD_DELIVERING_PLANT,
  b.DD_CUSTOMER_REQUESTED_DATE,
  b.CT_CUMULATIVE_CONFIRMED_QTY_UOM,
  b.AMT_NET_VALUE,
  b.DD_DIM_PLANT);

```

Below the code editor, the status bar indicates 'Stream completed successfully in 7 second(s)'. The status bar also shows '28-Nov-2024 03:46:07' and 'SUCCESS'.

14. Click the Data tab of the **Sales Order Username** to review the populated data.

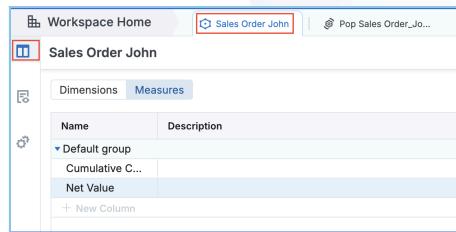


The screenshot shows the Aera Data Workbench interface with the 'Sales Order John' table selected. The table has 12 columns and 38,000 rows. The columns are:

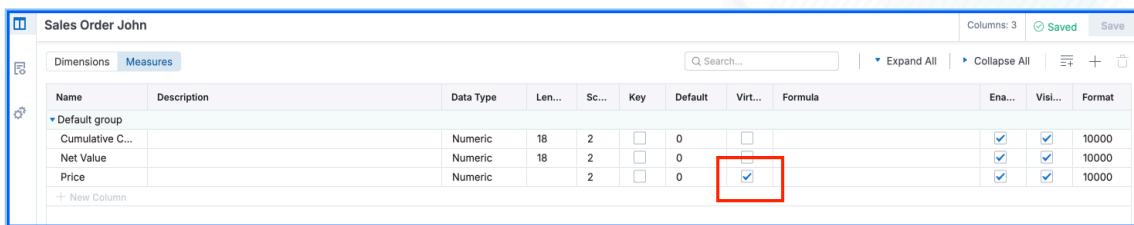
#	Cumulative Confirmed Qty CT_CUMULATIVE_CONFIRMED	# Net Value AMT_NET_VALUE	FACT_SALES_ORDER_JOHNID	Insert Date DW_INSERT_DATE	Update Date DW_UPDATE_DATE	# Sales Order Number DD_SALES_ORDER_NUMBER	# Sales Order Item Number DD_SALES_ORDER_ITEM_NUM
35	875	000929532A0918D5D54A...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	202820	110	
11	275	000D65A2CC6750C1E25...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	152560	20	
45	630	000E2630F6F6F1D6D3E74...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	97379	130	
45	900	000E4092232A943ABA02...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	100986	20	
45	855	001048E9131760457F307...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	83433	170	
11	154	00129A6B9C5AA6DFB5A...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	218492	130	
1	28	001B2025680AC0826E0...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	109190	200	
1	35	00137E2D1BBAD7A23E622...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	125865	80	
45	540	001451494453F1662CF11A...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	213690	220	
1	50	0018A931DD8DB3A707165...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	47681	40	
1	30	0019B6F817D1D181752D5F...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	218832	60	
45	855	001B1B04C84B2692F81917...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	105673	170	
1	26	001F8477889E6D3E85036...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	143094	160	
35	560	0020760981D9B8E81D58D...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	24383	120	
1	14	0024F8AE194D51D82F068...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	155452	130	
1083	14209	00254F6597901DA2C5C2...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	67687	210	
35	910	00256481C75F65F31CBF...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	86833	70	
11	187	00259078FFAC001BAC24...	2024-11-28 03:46:15.229	2024-11-28 03:46:15.229	214505	30	

## Add a Virtual Measure

1. Navigate to the subject area **Sales Order <username>** and click **Measures**.

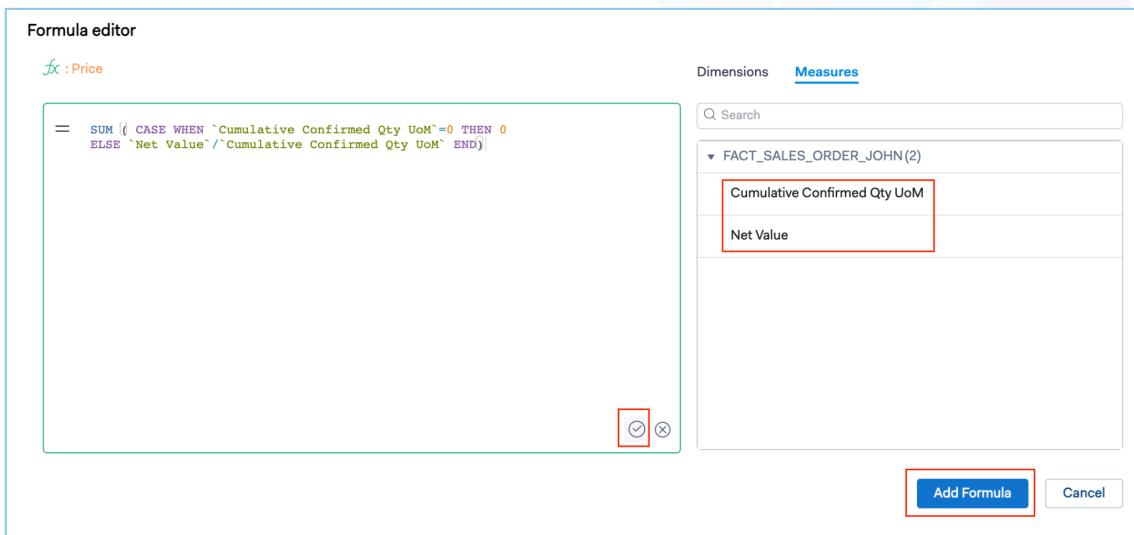


2. Add a new column named **Price** and select it as a virtual column to enable the formula field. Open the formula window by clicking the ||| icon.

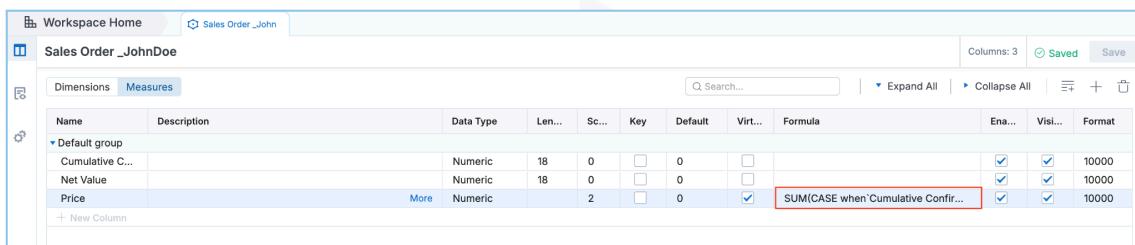


3. Enter the provided formula in the new formula window, validate it, and click **Add Formula**.

```
SUM(CASE WHEN `Cumulative Confirmed Qty UoM` = 0 THEN 0
ELSE `Net Value` / `Cumulative Confirmed Qty UoM` END)
```

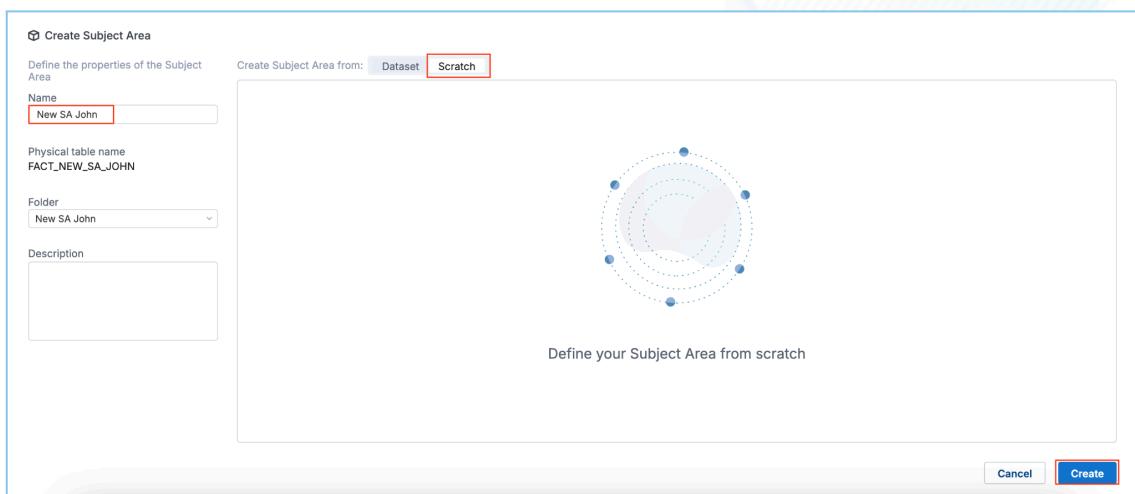


5. The formula is added as shown and saved. The Virtual Measure calculates and appears only during run time.

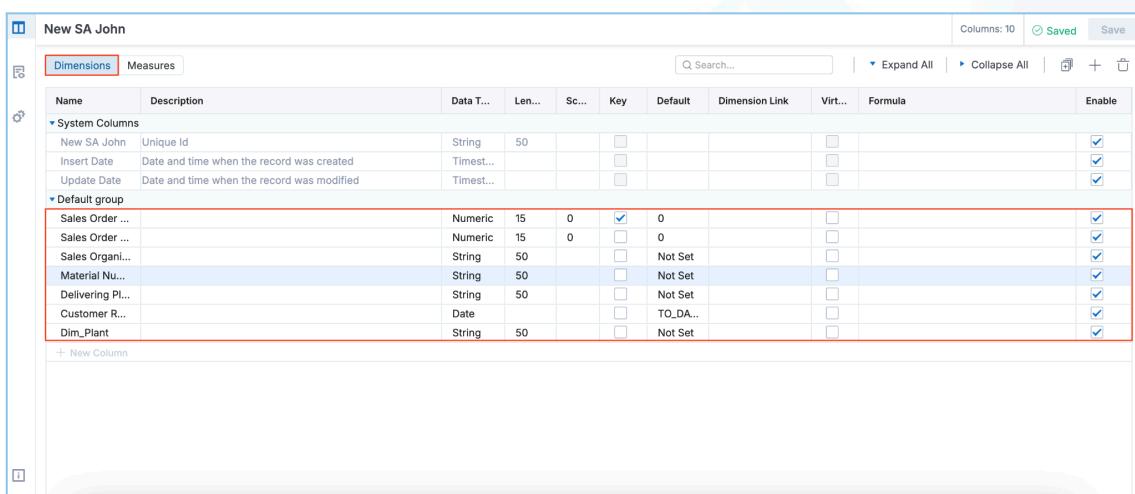
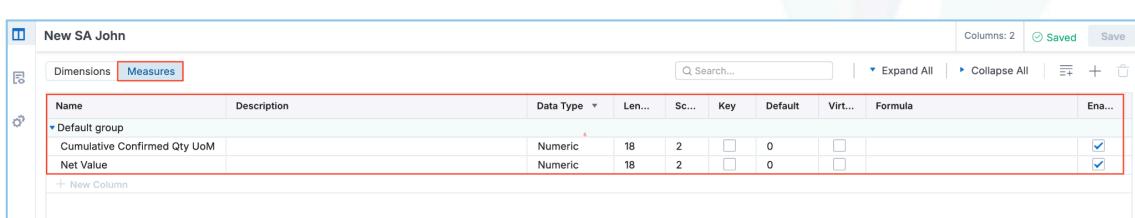


## Create a New Subject Area and Populate using the Insert/Update step.

- Follow the same steps outlined in the '**Create Subject Area**' to create a new folder named "**New SA <Username>**" and a subject area titled "**New SA <Username>**" with the same Dimensions and Measures as created above.



- Enable the **Key** option for **Sales Order Number**.

3. Add a Stream to the Main Processing as done earlier and name it **New Pop SA Stream <Username>**.

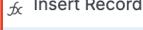
Main processing

Name	Description
 New Pop SA Stream John	

4. Open the Stream, add the insert step '**Insert Records**' and update step '**Update Plant Ids.**'

Workspace Home    New SA\_John    New Pop SA Strea...

Search...    Run all    Run selected

Steps	+    fx Insert Records	fx Update Plant Ids
	 Insert Records	Target: + Add target table
	 Update Plant Ids	Join Condition    Update Columns

We will use only two steps to populate the New Subject Area.

In the **first step**, we will populate the Subject Area fields by joining data from VBAK and VBAP datasets. These two datasets have already been created and are available. These datasets were also used as part of the data population using SQL.

In the **Second Step**, we will link and update the Plant IDs as we did earlier.

## Insert Records

1. Click on the **Insert Records** Step and **Add target table**.

Workspace Home    New\_Sa    New Pop SA Strea...

Search...    Run all    Run selected

Steps	+    fx Insert Records
 Insert Records	Target: + Add target table
 Update Plant IDs	

2. Select the **New SA <Username>** from the dropdown and change the Alias to **SA** and click **Apply**.

**fx Insert Records**

Target: New target table

Source: + Add s

**Target table**  
New SA John

**Alias**  
SA

Cancel Apply

3. Click "Add Source Table," select "Reusable" from the drop-down, and navigate to the **VBAK\_CSV1** dataset.

Source: New source table

Form

**Source table**  
Select an object

Current Workspace Reusable

+ Enablement Training

Datasets

Enablement Master Dataset VBAK\_CSV1

VBAP\_CSV1

Dimensions

Subject areas

System

Dimensions

4. Set the Alias as **DS\_vbak** and click **Apply**.

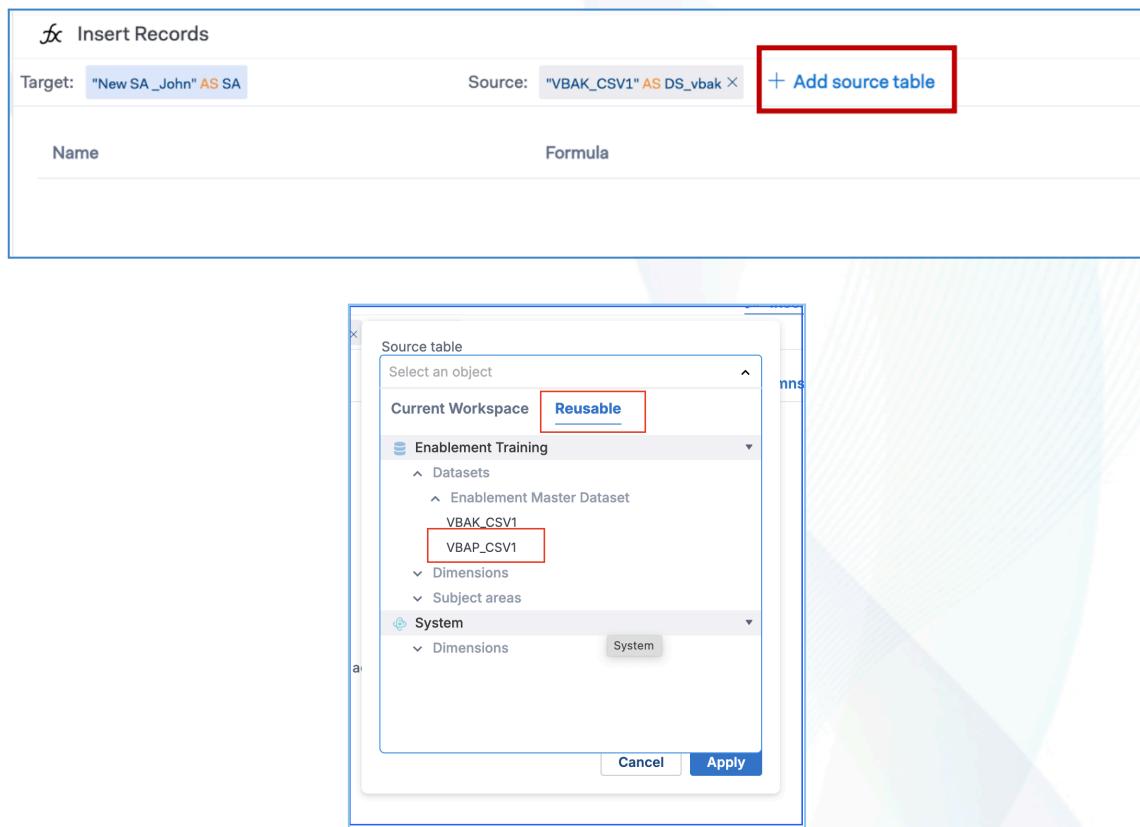
Source: New source table

**Source table**  
VBAK\_CSV1

**Alias**  
DS\_vbak

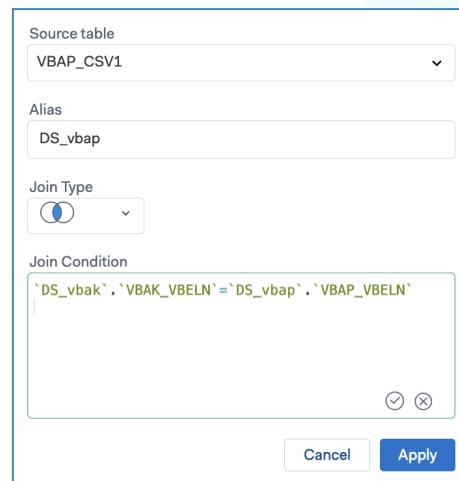
Cancel Apply

5. Select "**Add source table**" again, and choose the **VBAP\_CCSV1** dataset from the drop-down.



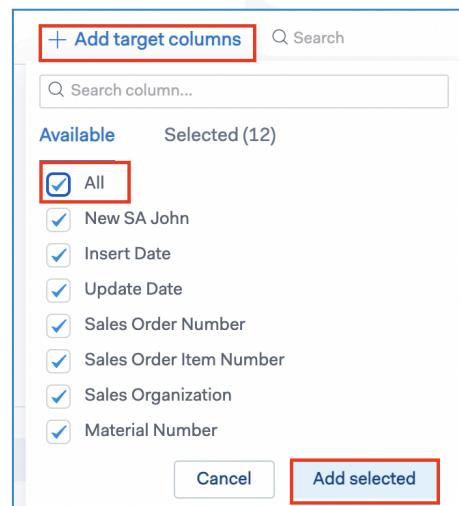
6. Set alias **DS\_vbak**, use **Inner Join** with the condition

``DS_vbak`.`VBAK_VBELN` = `DS_vbak`.`VBAP_VBELN``, validate, then click **Apply**.

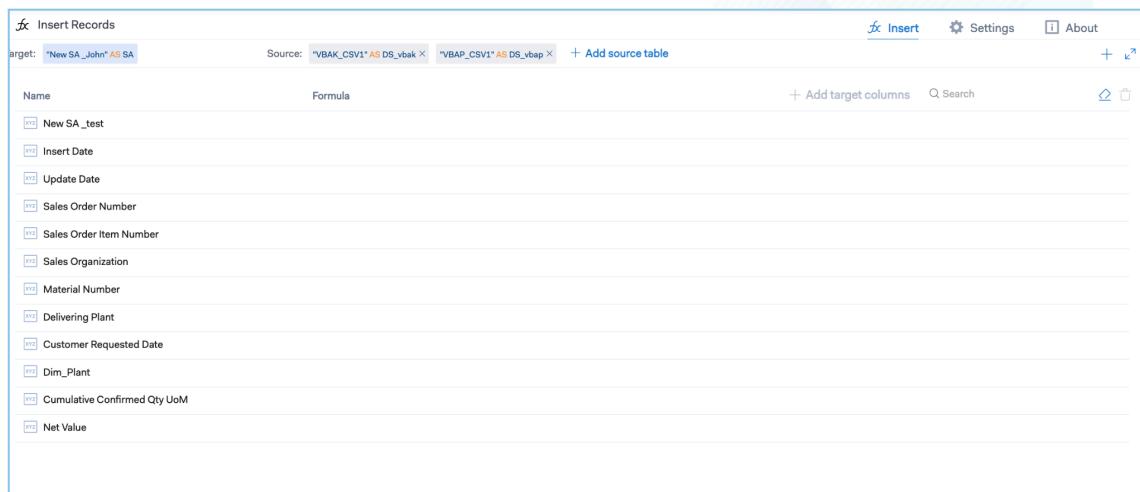


We will bring all the fields from the Sales Header and Sales Item dataset for all the matching Sales Order Numbers.

10. Click **Add target columns**, select **ALL**, and click **Add Selected**

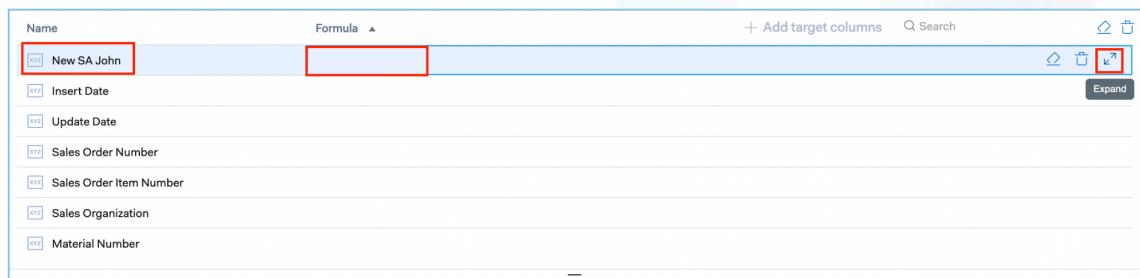


11. We see all the target columns have been added.



## Map Target columns to Source columns

1. Click on the **formula** option next to the **New SA John** field and then click on **Expand** to add the formula.



2. Enter the below formula:

**hash\_sha1(``DS\_vbap``.``VBAP\_POSNR`` || ``DS\_vbak``.``VBAK\_VBELN``))** then **Validate** and **Add Formula**.

Formula editor

*fx* : New SA John

hash\_shal(``DS\_vbap``.`VBAP\_POSNR` || ``DS\_vbak``.`VBAK\_VBELN`))

**Columns**

- SA(12)
- DS\_vbak(7)
- ▼ DS\_vbap(8)
  - VBAP\_VBELN
  - VBAP\_POSNR
  - VBAP\_MATNR
  - VBAP\_WERKS
  - VBAP\_VSTEL
  - VBAP\_KBMENG

In the field **New SA, John** acts as a unique **ID**. We are creating a 40-digit hash value by combining **Sales Order No** and **Sales Order Item No**

3. Similarly, add the formula for the remaining fields as given below:

SI No.	Target Column	Formula
1	Insert Date	current_timestamp
2	Update Date	current_timestamp
3	Sales Order Number	`DS_vbak`.`VBAK_VBELN`
4	Sales Order Item Number	`DS_vbap`.`VBAP_POSNR`
5	Sales Organization	`DS_vbak`.`VBAK_VKORG`
6	Material Number	`DS_vbap`.`VBAP_MATNR`
7	Delivering Plant	`DS_vbap`.`VBAP_WERKS`
8	Customer Requested Date	`DS_vbak`.`VBAK_VDATU`
9	Dim_Plant	'Not Set'
10	Cumulative Confirmed Qty UoM	`DS_vbap`.`VBAP_KBMENG`
11	Net Value	`DS_vbap`.`VBAP_NETWR`

**Insert Records**

Target: `"New SA_John" AS SA`      Source: `"VBAK_CSV1" AS DS_vbak` `"VBAP_CSV1" AS DS_vbap` `+ Add source table`

Name	Formula	+ Add target columns	Q Search
<code>New SA_test</code>	<code>hash_sha1(`DS_vbap`.`VBAP_POSNR`    `DS_vbak`.`VBAK_VBELN`)</code>		
<code>Insert Date</code>	<code>current_timestamp</code>		
<code>Update Date</code>	<code>current_timestamp</code>		
<code>Sales Order Number</code>	<code>'DS_vbak'.`VBAK_VBELN`</code>		
<code>Sales Order Item Number</code>	<code>'DS_vbap'.`VBAP_POSNR`</code>		
<code>Sales Organization</code>	<code>'DS_vbak'.`VBAK_VKORG`</code>		
<code>Material Number</code>	<code>'DS_vbap'.`VBAP_MATNR`</code>		
<code>Delivering Plant</code>	<code>'DS_vbap'.`VBAP_WERKS`</code>		
<code>Customer Requested Date</code>	<code>'DS_vbak'.`VBAK_VDATU`</code>		
<code>Dim_Plant</code>	<code>'Not Set'</code>		
<code>Cumulative Confirmed Qty UoM</code>	<code>'DS_vbap'.`VBAP_KBMENG`</code>		
<code>Net Value</code>	<code>'DS_vbap'.`VBAP_NETWR`</code>		

5. Click **Save** and **Run** the Step, then check the **data** under the **New SA Username's** Data tab after successful execution.

**Workspace Home** `New_Sa` `New Pop SA Strea...`

**New\_Sa**

Filter `Filter Data Using Conditions` Columns: 12 Rows: 38000 Refresh

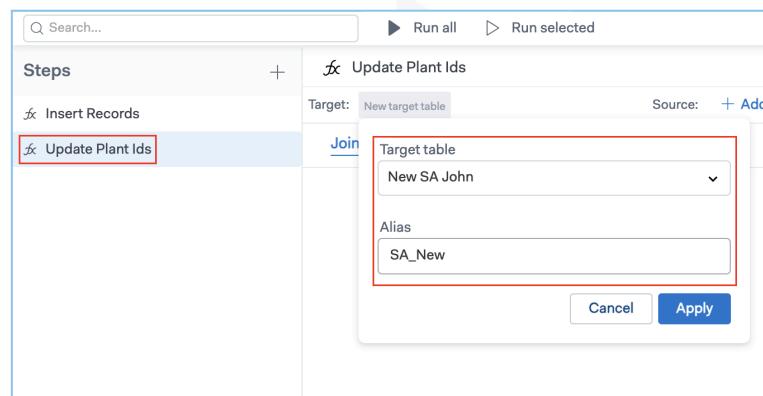
#	Cumulative Confirmed Qty <code>CT_CUMULATIVE_CONFIRMED</code>	#	Net Value <code>AMT_NET_VALUE</code>	<code>New_Sa_FACTLINE_SAID</code>	<code>Insert Date DW_INSERT_DATE</code>	<code>Update Date DW_UPDATE_DATE</code>	#	Sales Order Number <code>DO_SALES_ORDER_NUMBER</code>	#	Sales Order Item Number <code>DO_SALES_ORDER_ITEM_NUM</code>
1	27		00035ab51c0218426fe73...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	139946	150			
35	700		000581498a8887cd39ee8...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	27714	20			
10	270		000a09b3d8641da4f4033a...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	147465	150			
1	22		000d773e5a3d7c61512ad...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	37460	30			
5	115		001ab75f0e14ea4d46bd8...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	198212	100			
1	12		001262e19328b843be4e5...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	75462	220			
11	220		00134b6dd9a726b8172f...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	150236	20			
35	455		00158bd88cbf2e75407b3f...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	194288	210			
11	385		00163fc21345e3a1222e37...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	35258	80			
1	50		00168b299793b157f169...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	63371	40			
1	19		00183d38234c574ee3882...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	76562	170			
10	220		00197eda82d7755ec1c735...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	99375	10			
112	1456		00199eacb681cd129cecf...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	112237	210			
10	270		001c7e70bb6e19831becd4...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	117284	150			
1	30		001d76adfb82d34f1bf14e0...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	18550	60			
1	23		001e2efefede72b3da5f59d...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	84891	230			
1	25		001ec7eb6dc0e102b96c0...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	60834	50			
1	30		002005f9c5507b4c19e8d...	2024-11-28 11:22:01.501	2024-11-28 11:22:01.501	169029	60			

Page < 1 > of 1900 Showing 20 rows

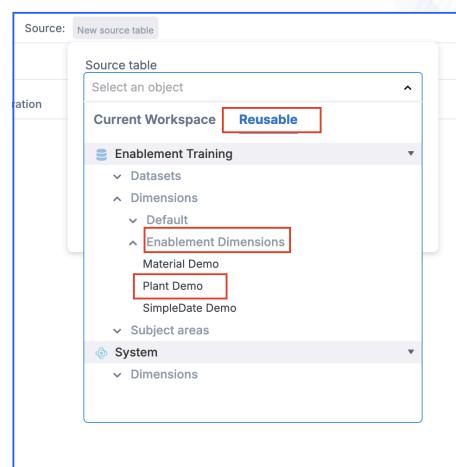
6. Also, notice that the **Dim\_Plant** field has '**Not Set**' as the value. We will update them in the next step.

## Update Plant Ids

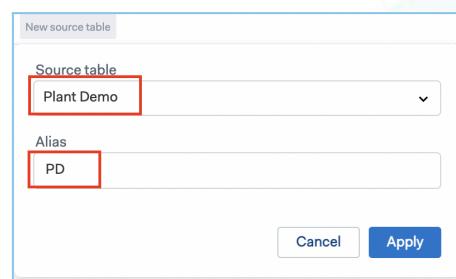
1. Follow the same step as outlined in the Insert Records step and set the Alias as **SA\_New**.



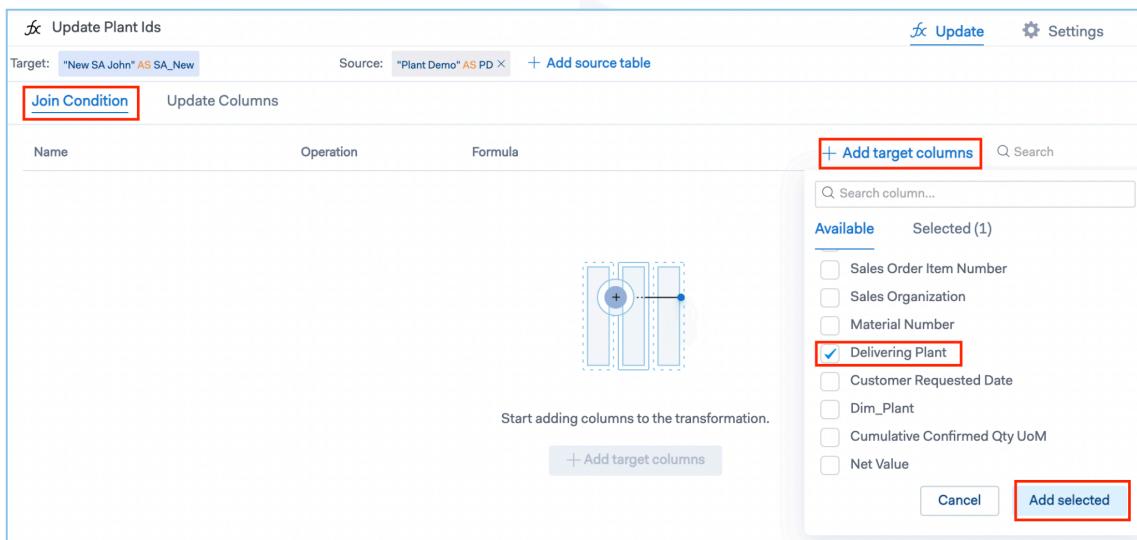
- Click **Add Source Table**, select "Reusable" from the drop-down, and navigate to the **Plant Demo** dimension.



- Set Alias as **PD** and click **Apply**.



- Under the **Join Condition** tab, click on **Add target columns**, and select **Delivering Plant** and click on **Add Selected**.



**Update Plant Ids**

Target: "New SA John" AS SA\_New      Source: "Plant Demo" AS PD [+ Add source table](#)

**Join Condition**      [Update Columns](#)

Name	Operation	Formula
	=	<code>^PD^.`Plant Code`</code>

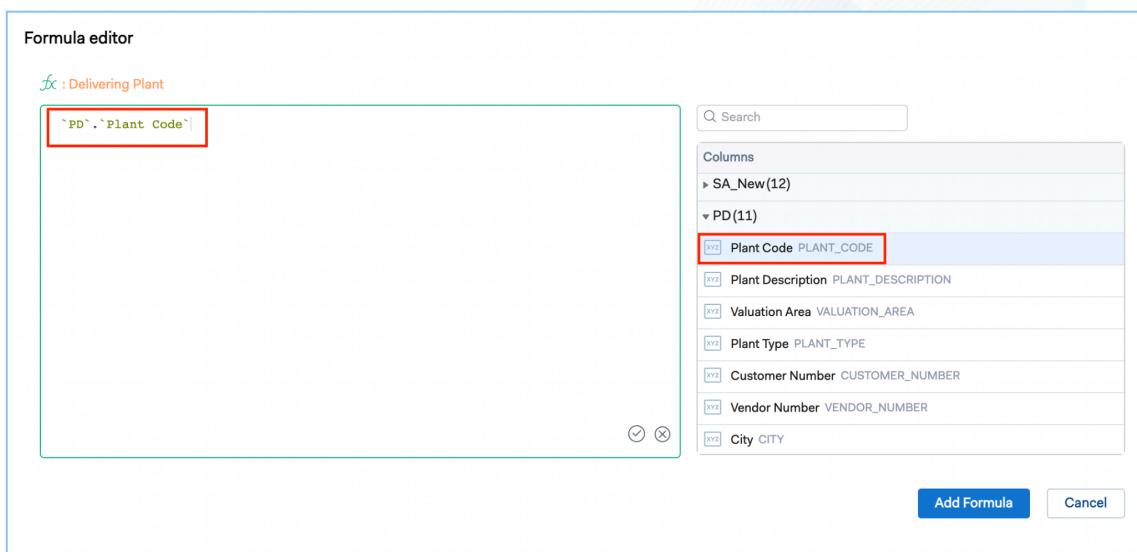
+ Add target columns      Q Search

**Available**      **Selected (1)**

- Sales Order Item Number
- Sales Organization
- Material Number
- Delivering Plant
- Customer Requested Date
- Dim\_Plant
- Cumulative Confirmed Qty UoM
- Net Value

[Cancel](#)      [Add selected](#)

5. Choose the Operation = and provide the formula as shown below and click **Save**.



**Formula editor**

`fx : Delivering Plant`

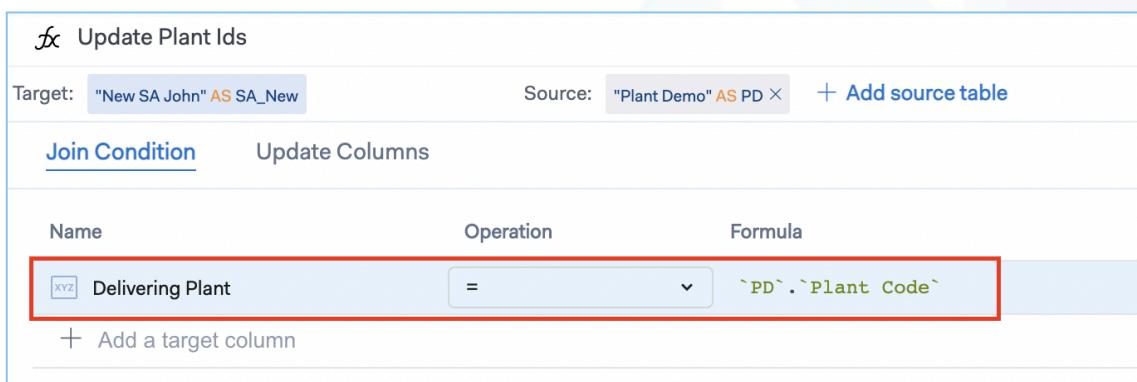
`^PD^.`Plant Code``

Q Search

**Columns**

- ▶ SA\_New(12)
- ▼ PD (11)
  - `xyz` Plant Code **PLANT\_CODE**
  - `xyz` Plant Description **PLANT\_DESCRIPTION**
  - `xyz` Valuation Area **VALUATION\_AREA**
  - `xyz` Plant Type **PLANT\_TYPE**
  - `xyz` Customer Number **CUSTOMER\_NUMBER**
  - `xyz` Vendor Number **VENDOR\_NUMBER**
  - `xyz` City **CITY**

[Add Formula](#)      [Cancel](#)



**Update Plant Ids**

Target: "New SA John" AS SA\_New      Source: "Plant Demo" AS PD [+ Add source table](#)

**Join Condition**      [Update Columns](#)

Name	Operation	Formula
Delivering Plant	=	<code>^PD^.`Plant Code`</code>

+ Add a target column

6. Navigate to the **Update Columns** tab and enter the **target column** and **formula** as shown below.

**fx Update Plant Ids**

Target: "New SA John" AS SA\_New      Source: "Plant Demo" AS PD X      + Add source table

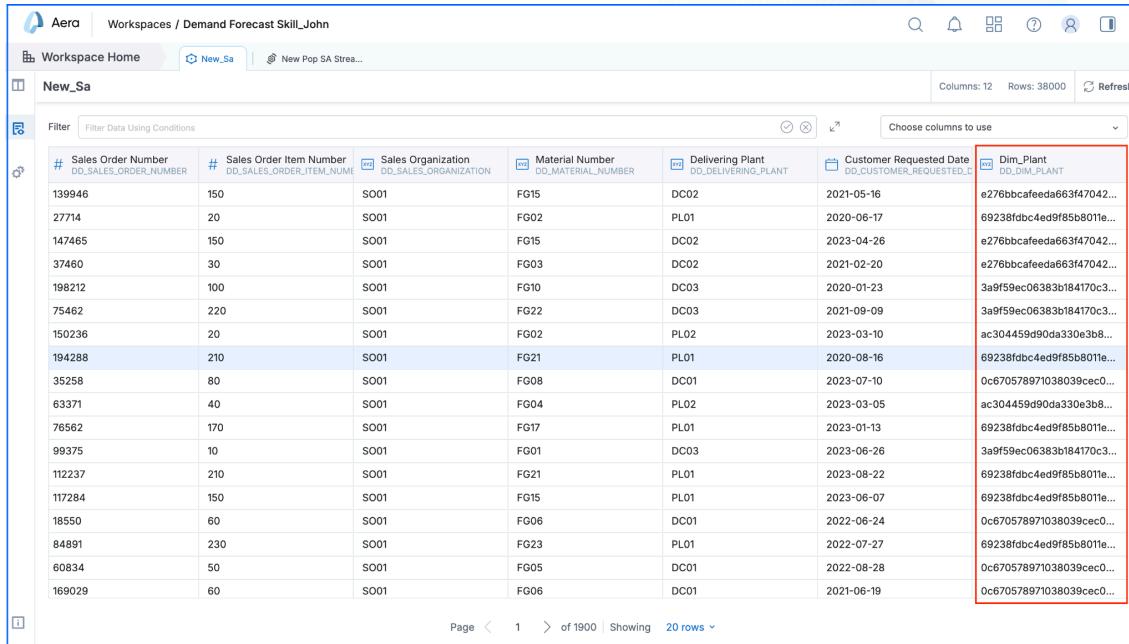
Join Condition      **Update Columns**

Name	Formula
Dim_Plant	`PD` . `DIM_plant_demoID`

+ Add a target column

For all the matching **Delivering Plants**, we will update the **Plant IDs** by mapping them to the **Plant IDs** from the external Dimension **Plant Demo**

7. Click **Save** and **Run** the step.
8. After completing the step, go to the **New SA Username** Subject Area's Data tab, click Refresh, and check the updated **Dim\_Plant** IDs.



The screenshot shows the Aera Data Workbench interface with the following details:

- Workspace:** Workspaces / Demand Forecast Skill\_John
- Subject Area:** New\_Sa
- Table:** Sales Order (DD\_SALES\_ORDER)
- Columns:** # Sales Order Number, # Sales Order Item Number, Sales Organization, Material Number, Delivering Plant, Customer Requested Date, Dim\_Plant
- Data:** A list of sales orders with their respective item numbers, organization, material numbers, delivering plants, and customer requested dates. The last column, Dim\_Plant, contains long alphanumeric strings representing plant identifiers.
- Filter:** Filter Data Using Conditions
- Page:** Page 1 of 1900, Showing 20 rows

9. You have the Subject Area populated using both **SQL** and the **Insert/Update** Steps

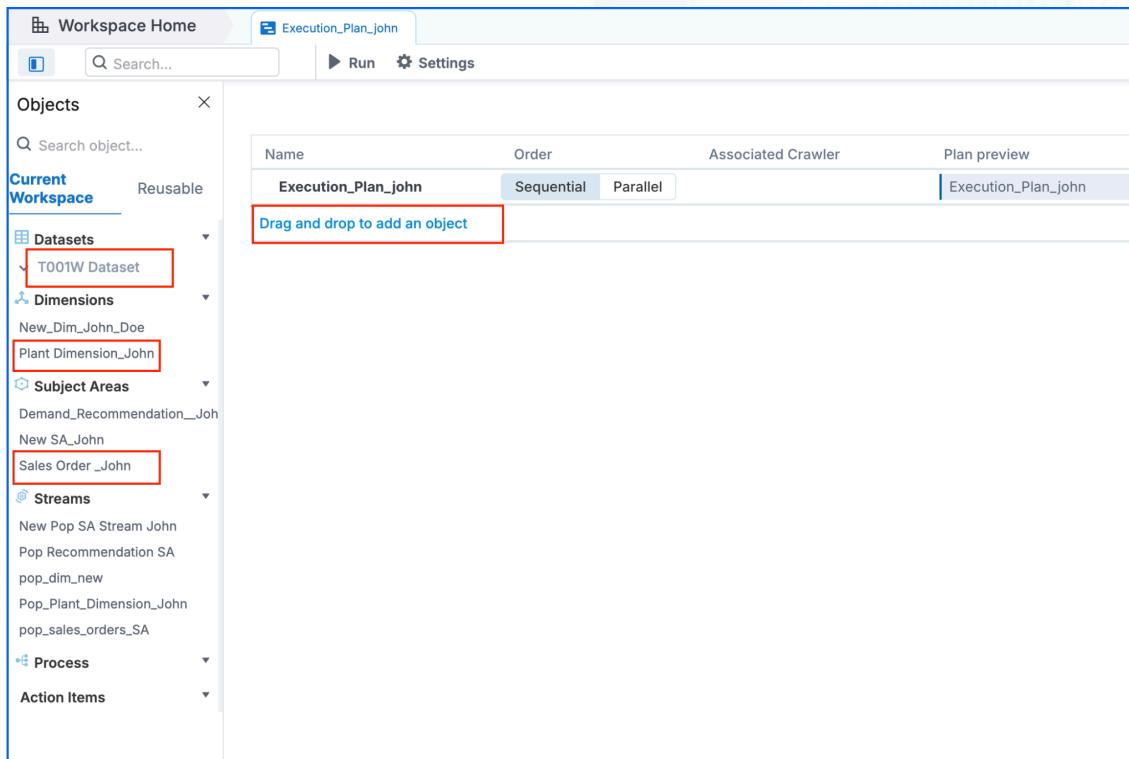
## Add an Execution Plan

Transactions are updated regularly in the source system and need to be refreshed/updated in Aera DDM. This is done by configuring an Execution plan and adding it to a scheduler.

Create a new Execution Plan and add the objects that need to be executed in the below order:

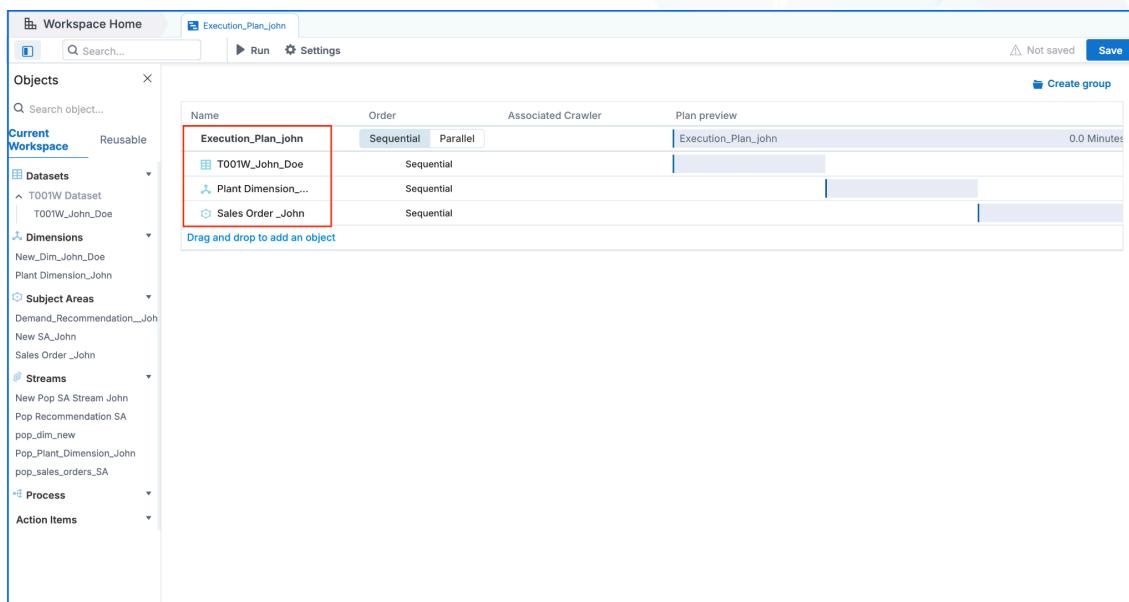
- Dataset
- Dimension
- Subject Area

1. Navigate to the **Execution Plan** section under **Content** and tap the '+' icon to create a new Execution Plan and provide the name as **Execution Plan <username>**.
2. Drag and drop your **Dataset**, **Dimension**, and **Subject Area** as shown.



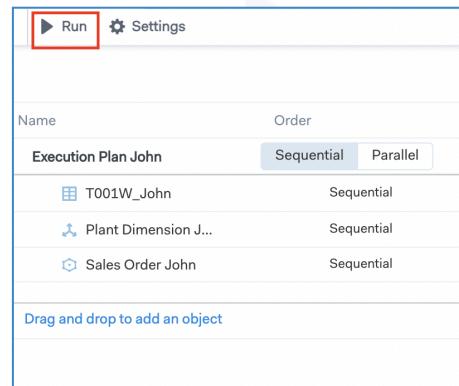
Name	Order	Associated Crawler	Plan preview
Execution_Plan_john	Sequential	Execution_Plan_john	Execution_Plan_john

**Drag and drop to add an object**

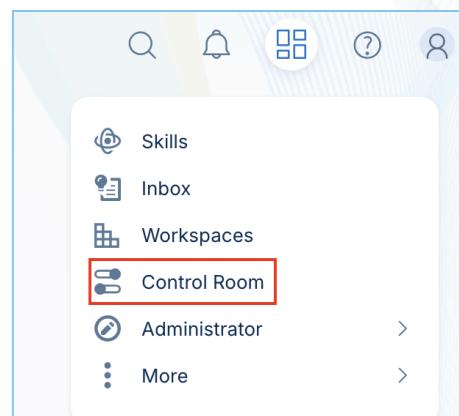


Name	Order	Associated Crawler	Plan preview
Execution_Plan_john	Sequential	Execution_Plan_john	0.0 Minutes
T001W_John_Doe	Sequential		
Plant Dimension_John	Sequential		
Sales Order_John	Sequential		

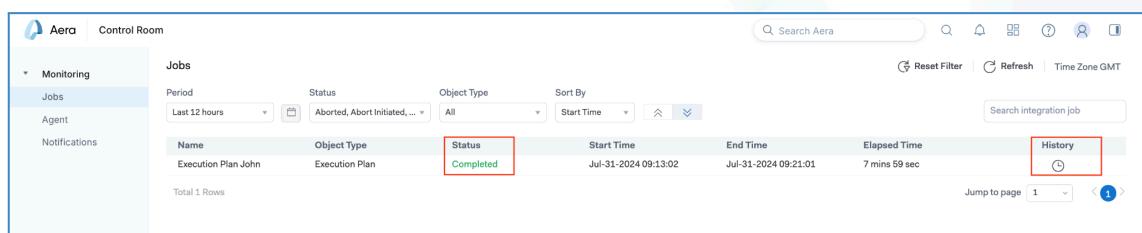
3. Ensure **sequential** order, **save** the execution plan, and click "**Run**."



4. You can monitor the progress of your execution plan by navigating to the **Monitoring**.
5. From the **Aera Menu**, navigate to **Control Room**, then click on **Monitoring** in the top left corner, and finally go to Jobs.

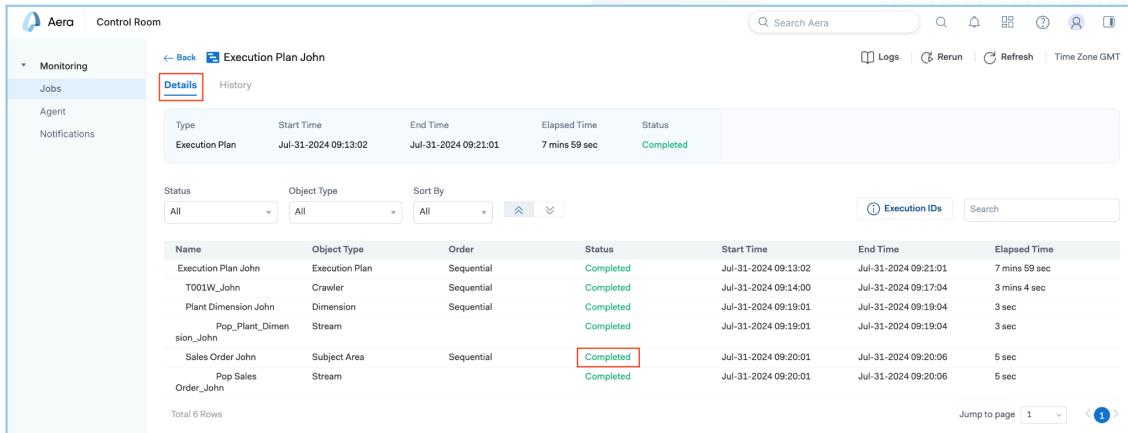


6. You can see the status of the Execution Plan in the **Jobs**. The execution plan will take a few minutes to complete. Refresh at regular intervals to see the progress.



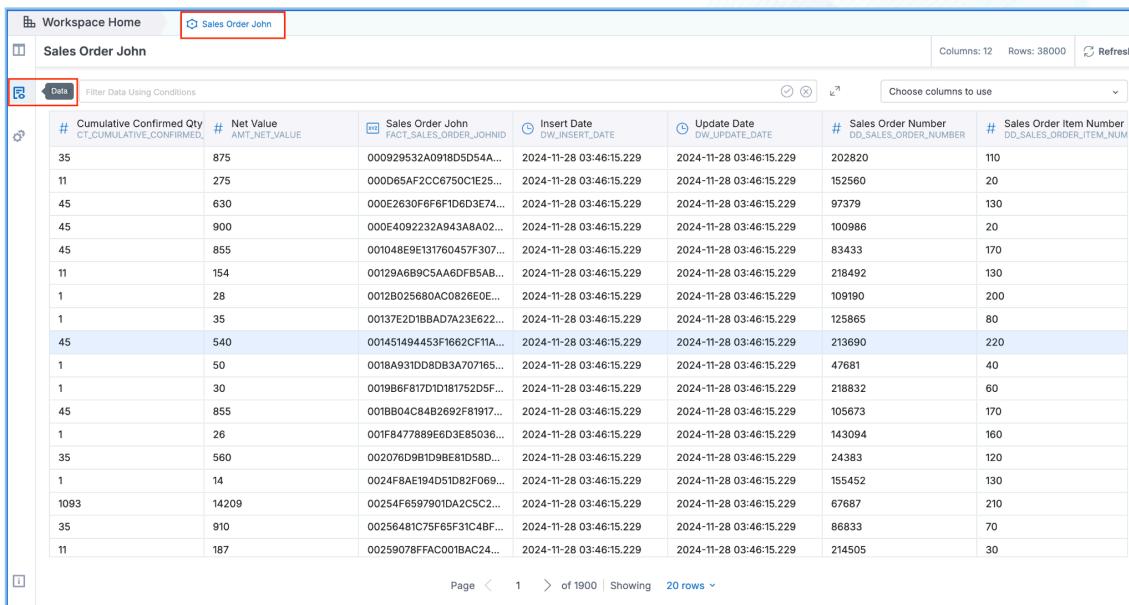
Name	Object Type	Status	Start Time	End Time	Elapsed Time	History
Execution Plan John	Execution Plan	Completed	Jul-31-2024 09:13:02	Jul-31-2024 09:21:01	7 mins 59 sec	

7. Once the Execution Plan's status is displayed as **Completed**, click on **History** to view its history.  
Then, go to **Details** to obtain detailed information about your Execution Plan.



Name	Object Type	Order	Status	Start Time	End Time	Elapsed Time
Execution Plan John	Execution Plan	Sequential	Completed	Jul-31-2024 09:13:02	Jul-31-2024 09:21:01	7 mins 59 sec
T001W_John	Crawler	Sequential	Completed	Jul-31-2024 09:14:00	Jul-31-2024 09:17:04	3 mins 4 sec
Plant Dimension John	Dimension	Sequential	Completed	Jul-31-2024 09:19:01	Jul-31-2024 09:19:04	3 sec
Pop_Plant_Dimension_John	Stream		Completed	Jul-31-2024 09:19:01	Jul-31-2024 09:19:04	3 sec
Sales Order John	Subject Area	Sequential	Completed	Jul-31-2024 09:20:01	Jul-31-2024 09:20:06	5 sec
Pop Sales Order John	Stream		Completed	Jul-31-2024 09:20:01	Jul-31-2024 09:20:06	5 sec

8. The successful execution confirms the population of your Subject Area.



## SUMMARY

In this hands-on exercise, you have:

- Successful setup of a Dataset ("T001W\_<Username>") containing relevant plant data.
- Creation of two Dimensions ("Plant Dimension\_<Username>", "New Dim\_<Username>") representing plant-related information.
- Configure and populate two Subject Areas ("Sales Order\_<Username>", "New SA\_<Username>") capturing sales order data linked to plant dimensions.
- Configuration and successful run of an Execution Plan to automate the data loading and refresh process.

**Note:** This exercise is limited to creating and populating subject areas.

In the upcoming modules, the subject area and dimensions will be created here, but they will use a pre-created Subject Area and Dimensions.