

Installation

Ensure you have the following installed

Git

Docker

Docker Compose

Clone the git repository and branch to master with the following commands

```
git clone https://github.com/vinvic4life/kylin4.0.1-dockerfile.git -b master
```

cd into the directory kylin4.0.1-dockerfile

run the build script with

```
./build_standalone_image.sh
```

After build is complete,

Use the following command to start the app

```
docker-compose up -d
```

Allow up to 15 minutes to initialize all components depending on your Hardware specifications

Run the following command to ensure your container is running

```
docker ps
```

Access Kylin Gui with

<http://127.0.0.1:7070/kylin>

MDX Gui

<http://127.0.0.1:7080>

To test connection with Excel using the sample data follow the steps below.

TEST With Sample Data

1. Create Models/Cubes in Kylin

The current docker environment starts with the `learn_kylin` project by default, and generates `kylin_sales_model` and `kylin_sales_cube`.

The screenshot shows the Kylin web interface with the 'learn_kylin' project selected. The 'Cubes' table is displayed with the following data:

Name	Status	Project	Cube Size	Source Records	Last Build Time	Owner	Create Time	Actions	Admins
kylin_sales_cube	DISABLED	learn_kylin	0 KB	0		ADMIN		Action	Action
kylin_streaming_cube	DISABLED	learn_kylin	0 KB	0		ADMIN		Action	Action

Total: 2
Storage: 0 KB

2. Build kylin sales cube.

The screenshot shows the Kylin web interface with the 'learn_kylin' project selected. The 'Cubes' table is displayed with the following data:

Name	Status	Project	Cube Size	Source Records	Last Build Time	Owner	Create Time	Actions	Admins
kylin_sales_cube	READY	learn_kylin	55.80 MB	10,000	2022-03-09 15:14:52 GMT+8	ADMIN		Action	Action
kylin_streaming_cube	DISABLED	learn_kylin	0 KB	0		ADMIN		Action	Action

Total: 2
Storage: 55.80 MB

Create MDX Dataset

At this point, we have completed the preparation work, and then we should start creating MDX dataset.

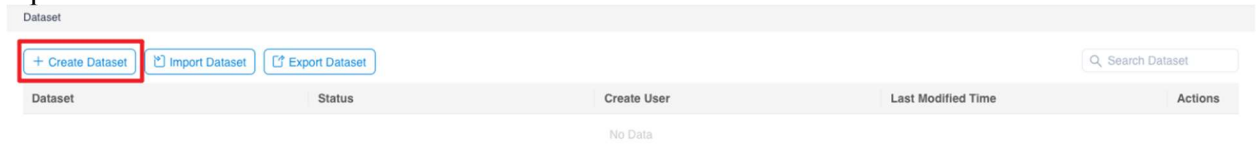
Fill in the basic information

1. Since the Cube in Kylin is created in the project `learn_kylin`, the project name in MDX for Kylin should be `learn_kylin`.

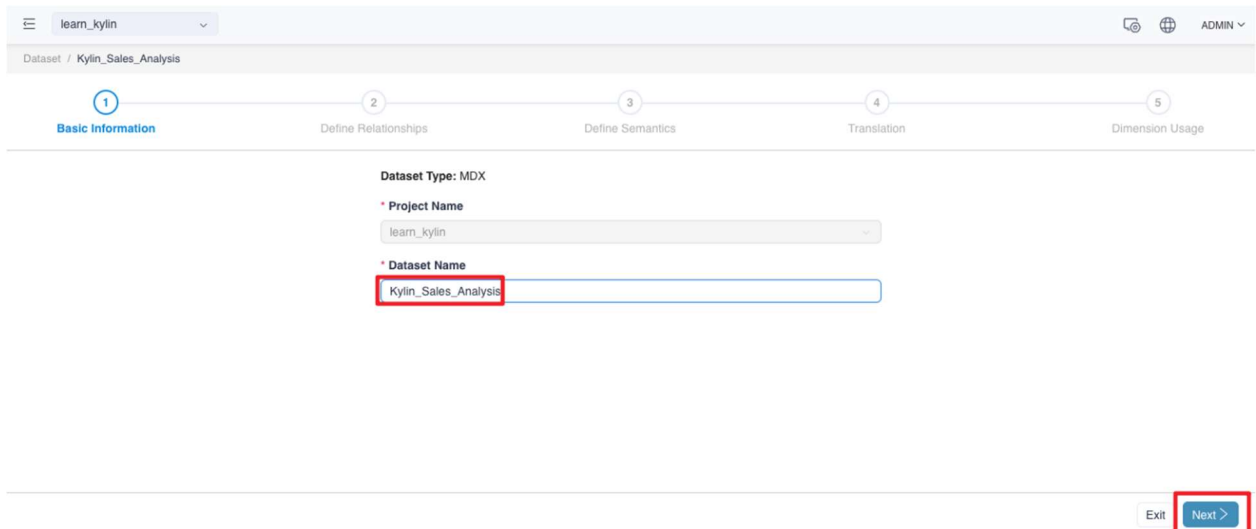
The screenshot shows the Kylin MDX web interface with the 'learn_kylin' project selected. The 'Dataset' table is empty.

Dataset	Status	Create User	Last Modified Time	Actions
No Data				

2. Open the **Dataset** menu and click the **+ Create Dataset** button.



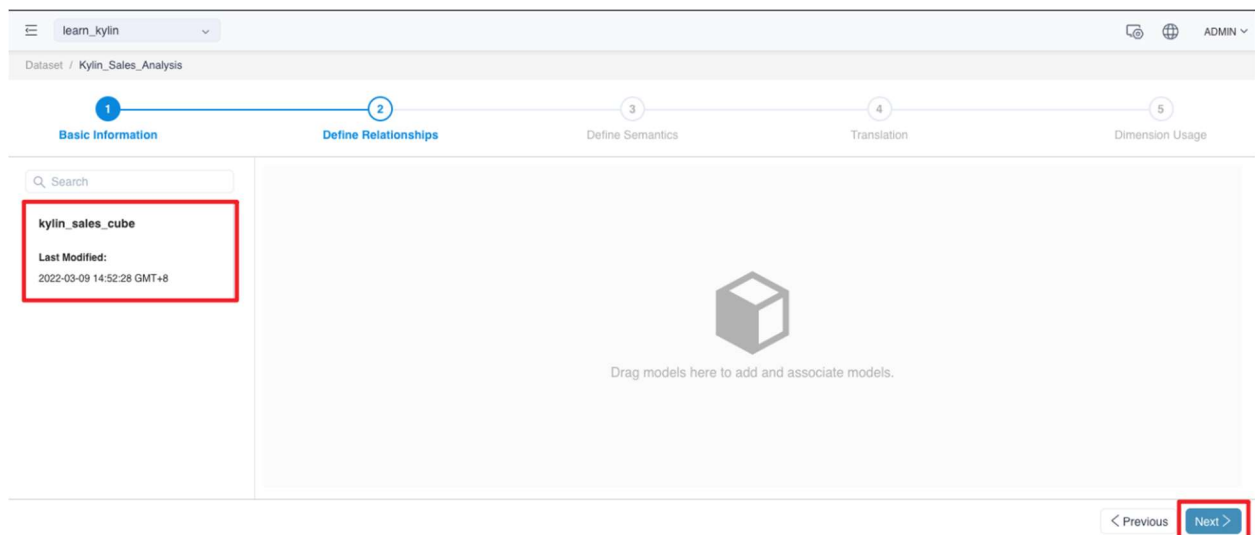
3. Click to start creating a dataset.
Fill in the dataset Name with ***Kylin_Sales_Analysis***.
Click **Next** button when done.



Define Relationships

This analysis will simply analyze whether there is a relationship between the data about Kylin_Sales.

Drag `kylin_sales_cube` to the right pane. Click the **Next** button when done.

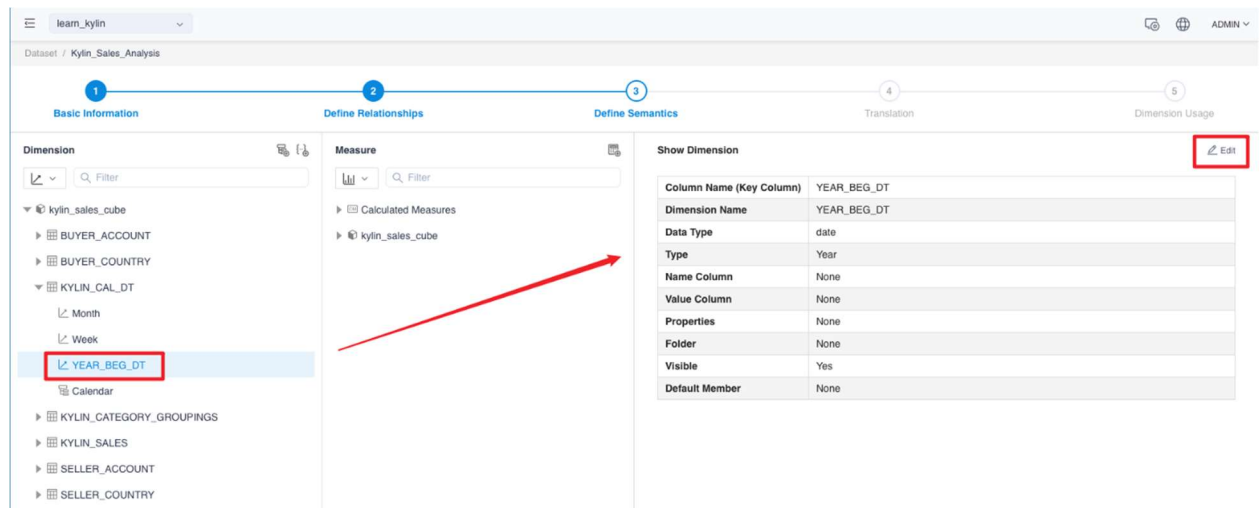


Modify dimension name and measure name

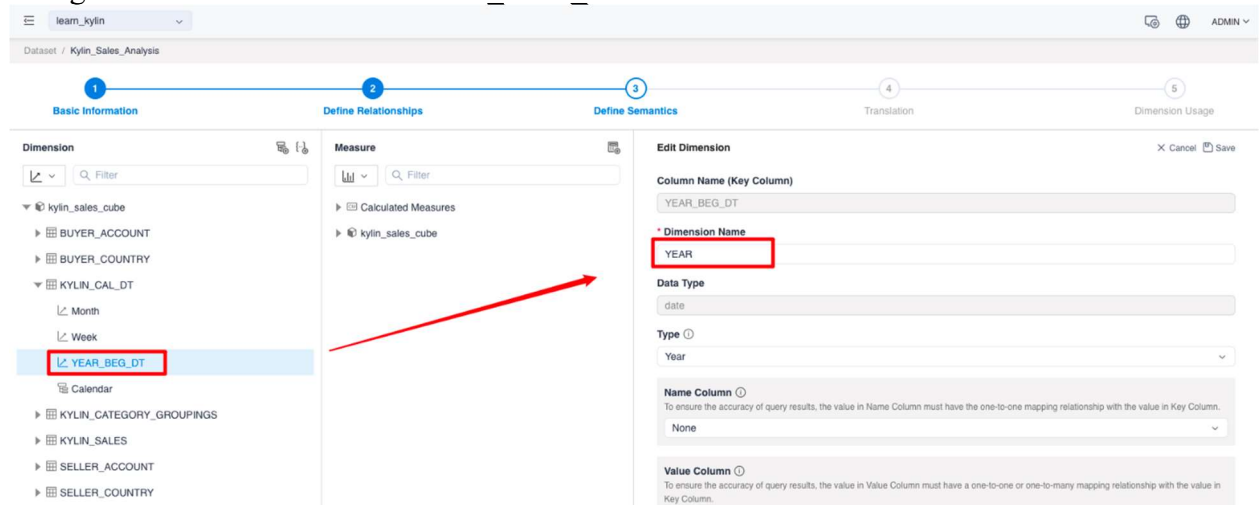
To increase readability, we can change the names of dimensions and measures.

Modify the dimension name

1. Click on the **Dimension Name** on the left side of the Define Semantics page to display the dimension details.



2. On the Display Dimension Details page, click the **Edit** button to go to the edit page to change dimension name from **YEAR_BEG_DT** to **YEAR**.

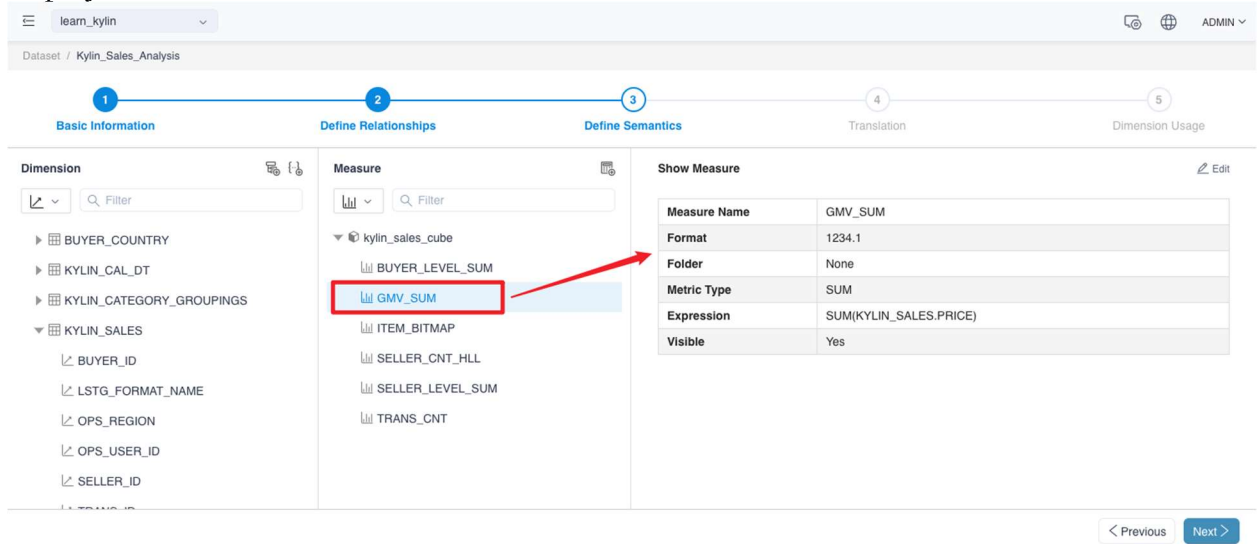


3. On the same way, we could change the dimension name by the following table:

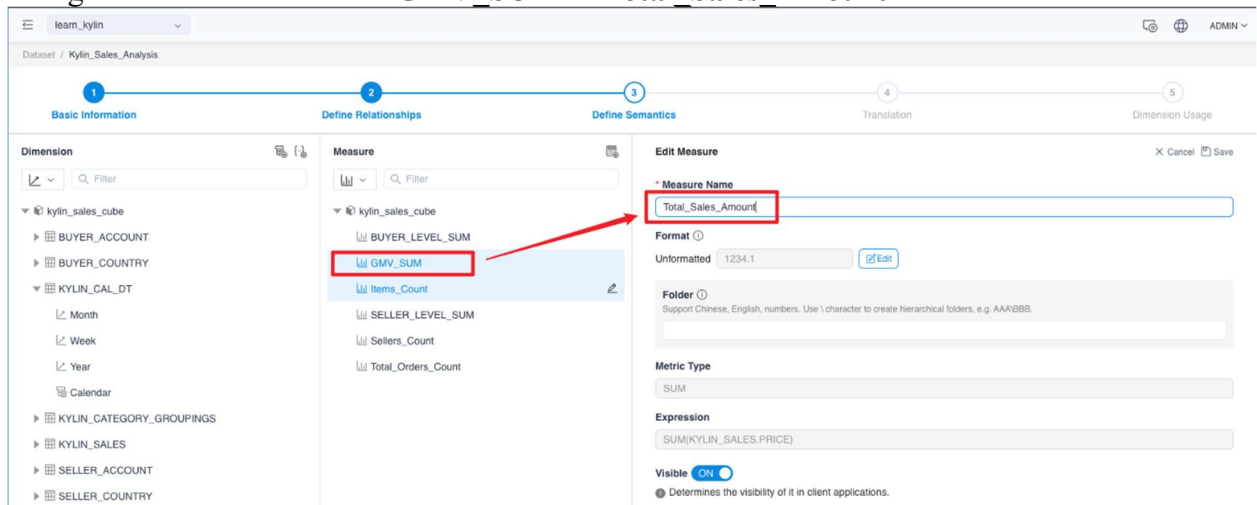
Cube Name	Table Name	Original Name	Changed Name
kylin_sales_cube	KYLIN_CAL_DT	YEAR_BEG_DT	Year
kylin_sales_cube	KYLIN_CAL_DT	MONTH_BEG_DT	Month
kylin_sales_cube	KYLIN_CAL_DT	WEEK_BEG_DT	Week

Modify the measure name

1. Similarly, click on the **measure name** on the left side of the definition semantics page to display the metric details.



2. On the Display Metrics Details page, click the **Edit** button to go to the Edit page to change dimension name from **GMV_SUM** to **Total_Sales_Amount**.



3. On the same way, we could change the measure name according to the table below:

Cube Name	Original Name	Changed Name
kylin_sales_cube	TRANS_CNT	Total_Orders_Count
kylin_sales_cube	SELLER_CNT_HLL	Sellers_Count
kylin_sales_cube	ITEM_BITMAP	Items_Count
kylin_sales_cube	GMV_SUM	Total_Sales_Amount

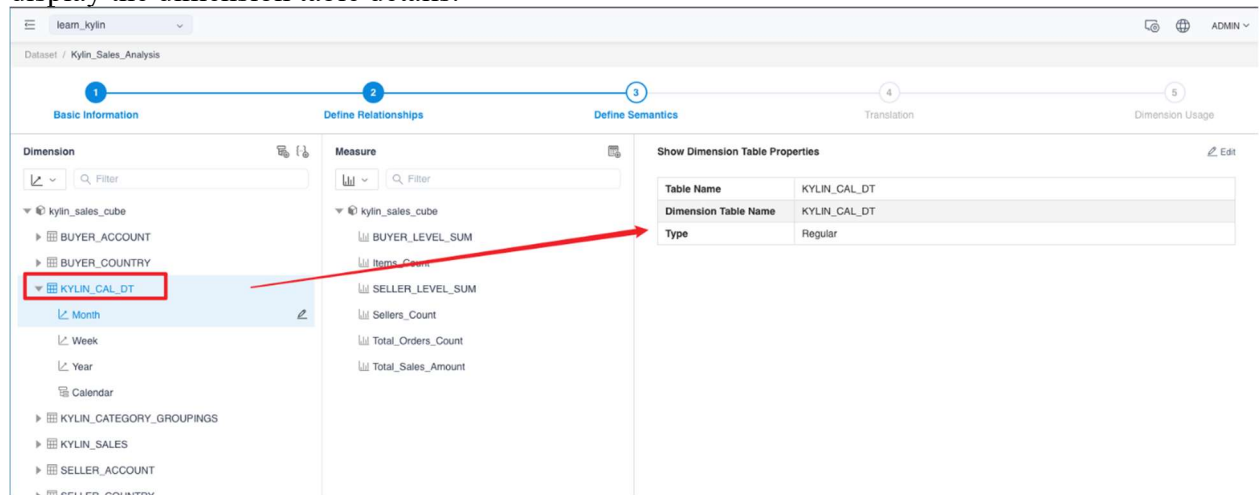
Modify dimension table attributes and dimension attributes

In order to calculate time intelligence functions such as YTD, MTD, and QTD, it is necessary to adjust the attributes of the related dimension tables and dimensions. We need to change the

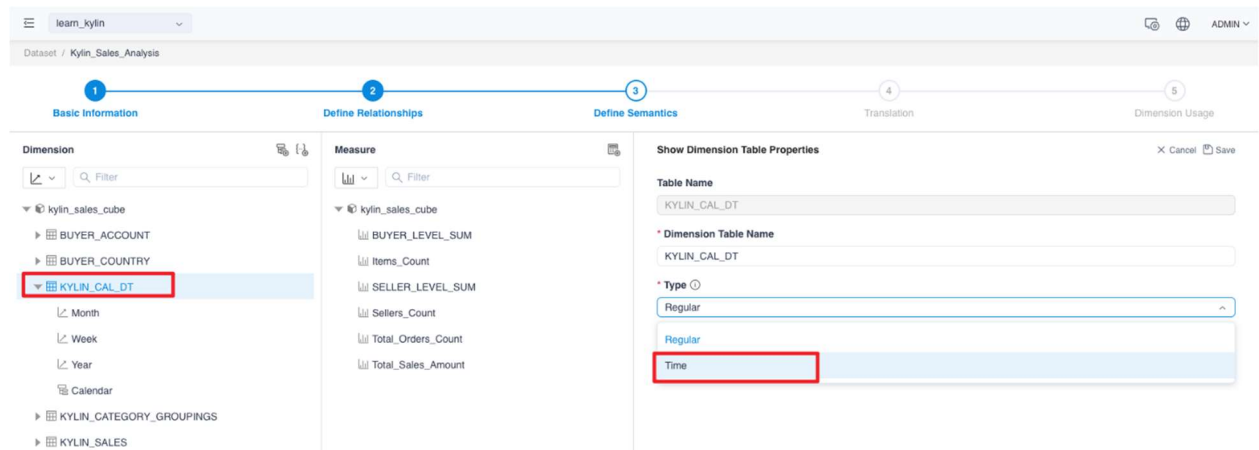
dimension table property to a time type, and the dimension attributes of year, season and month to year, season and month respectively.

1. Modify dimension table properties

Click on the **Dimension Table Name** on the left side of the Define Semantic page to display the dimension table details.

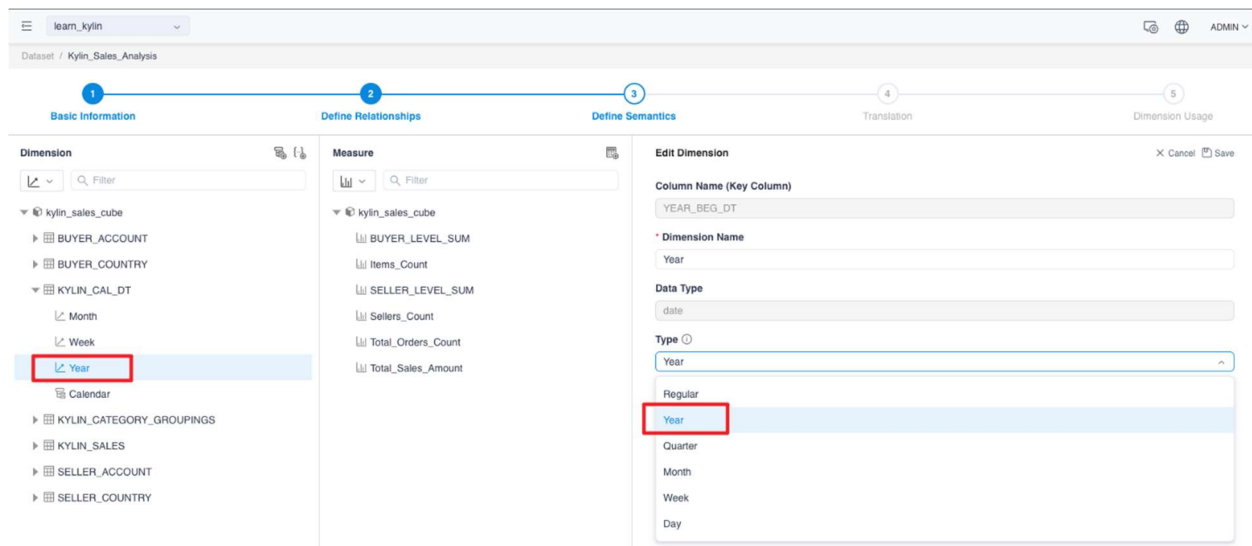


On the Show Dimension Table Properties page, click the **Edit** button to go to the edit page, where the dimension table properties are changed from regular to time.



2. Modify dimension attributes

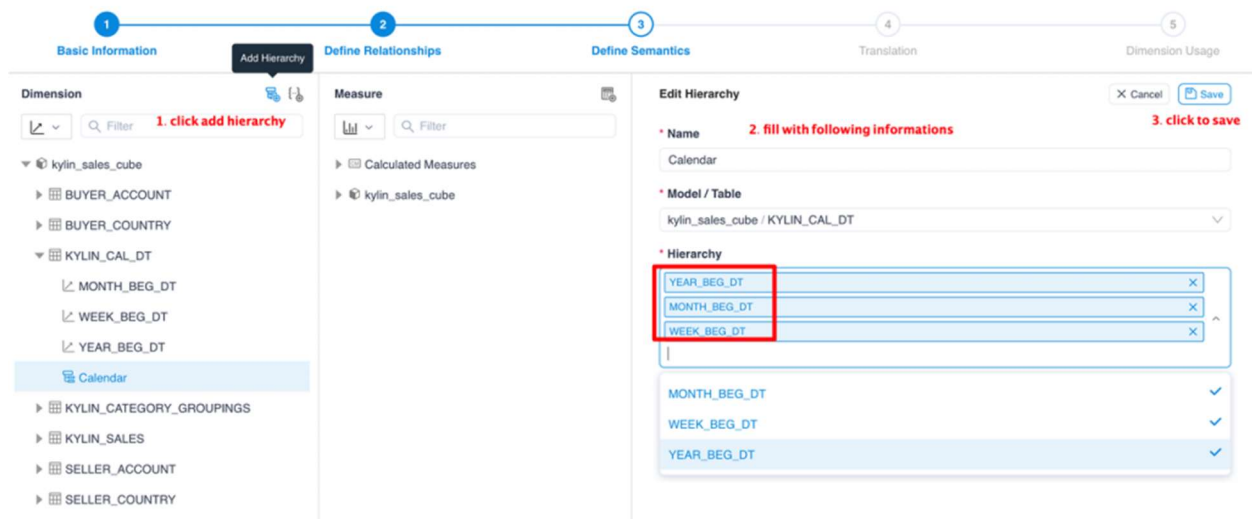
According to the method described above, you can change the properties of the edit dimension property page. Here you need to change the properties of the dimension year, quarter and month to year, season and month, and week.



Create Hierarchies

For time dimensions, such as the year, month, day, and other dimensions with a hierarchical structure, we generally establish a hierarchy for analysis.

Click the **Add Hierarchy** button to add a hierarchy. Here, due to the needs of the analysis, create a hierarchy called a Calendar, Dimensions in the hierarchy need to be selected in order of concept, for example, year, month, and week.



Create Calculated Measures

Add a calculated measure by clicking the **Add Calculated Measure** button.

The screenshot shows the Kylin Data Warehouse interface with the 'Add Calculated Measure' dialog box open. The dialog box has a title bar 'Add Calculated Measure' and a 'Save' button. It contains the following fields and sections:

- Calculated Measure Name:** A text input field containing 'Sales_YTD'.
- Format:** A dropdown menu set to 'Unformatted' with a value of '1234.1' and an 'Edit' button.
- Measure Group:** A dropdown menu set to 'Calculated Measure'.
- Folder:** A text input field with a placeholder 'Support Chinese, English, numbers. Use \ character to create hierarchical folders, e.g. AAA\BBB.'
- Expression:** A text area containing the MDX expression:

```
1 SUM(
2   YTD(
3     [KYLIN_CAL_DT].[Calendar-Hierarchy].CurrentMember
4   ),
5   [Measures].[Total_Orders_Count]
6 )
```
- Non-empty behavior:** A dropdown menu with a default value of 'If one or more measures are specified in this property, and all the measures are empty, the calculated measure will be directly regarded as empty. If this property is left empty, calculations must be performed to determine whether the calculated measure is empty.'
- Visible:** A toggle switch set to 'ON'.

At the bottom of the dialog box, there is a note: 'A valid, MDX expression as supported by the underlying backend. Example: [Measures].[Discount Amount] * 1.5'. At the bottom right of the interface, there are 'Previous' and 'Next' buttons.

MDX Expression

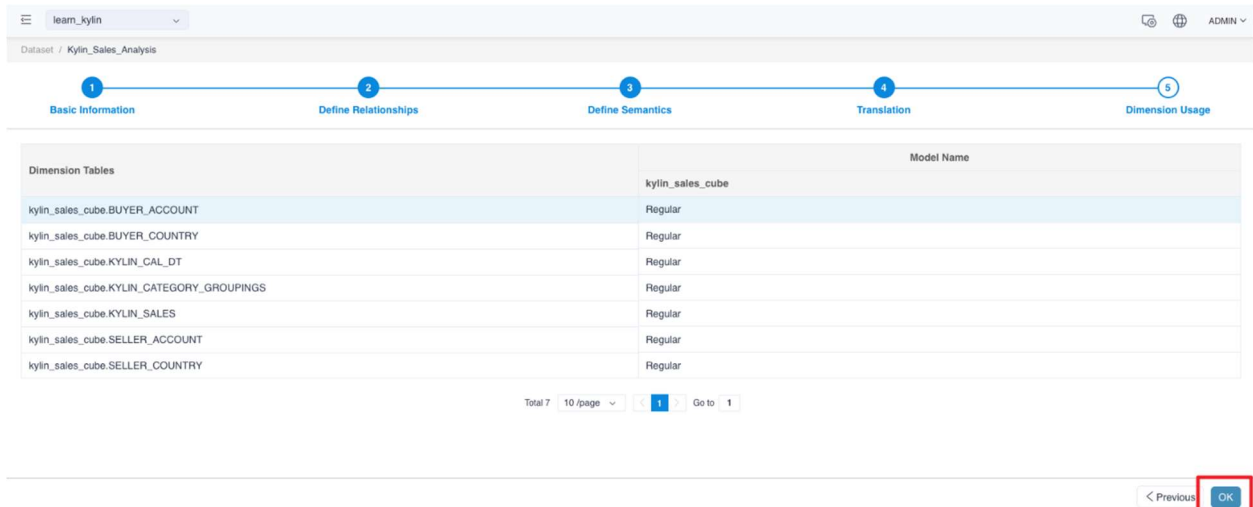
`SUM(YTD([DATE_DIM].[calendar-Hierarchy].CurrentMember),[Measures].[Sales_Qty])`

Edit Dimension Usage

Since Kylin does not support complex many-to-many relationships, so there is no special definition here.

Save and Create

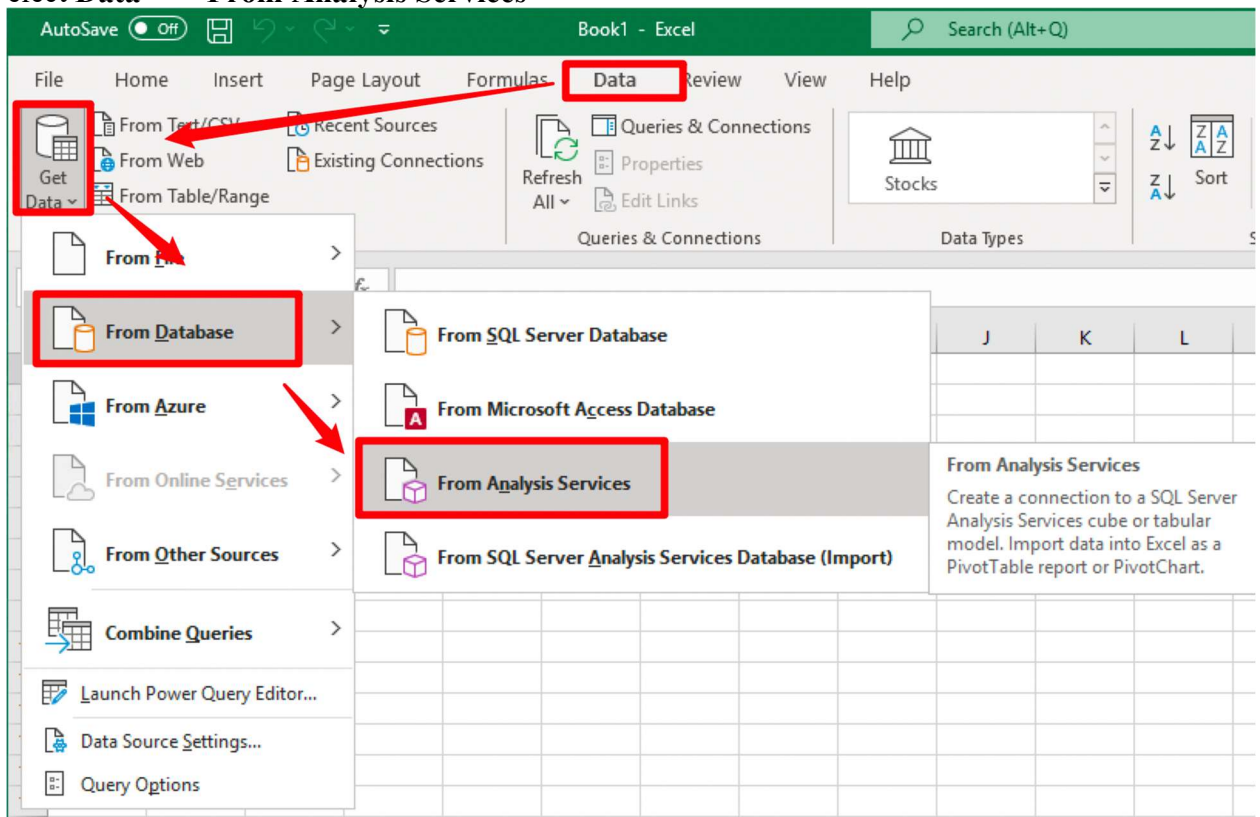
Now that you have completed the main work of creating a data set in this tutorial, click the **OK** button.



Analysis in Excel

We have completed the definition of the data set, and now we can connect to Excel for analysis.

1. elect **Data** —> **From Analysis Services**

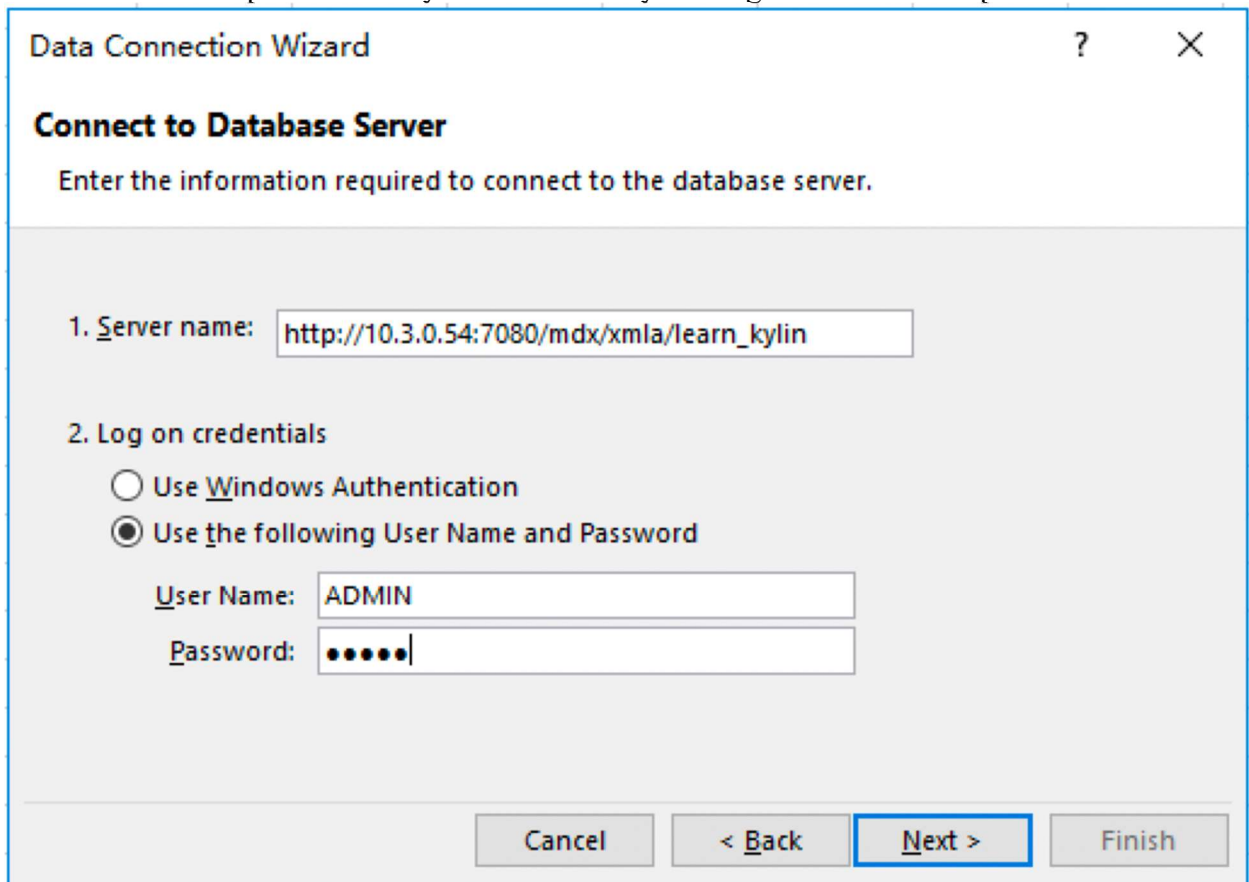


2. Next you need to fill in the address information of MDX for Kylin in the **Server Name** column. The sample is as follows:

`http://{host}:{port}/mdx/xmla/{project}`

The default port of MDX for Kylin is 7080.

The username and password are your MDX for Kylin's login username and password.



The image shows a 'Data Connection Wizard' dialog box with a title bar containing a question mark and a close button. The main heading is 'Connect to Database Server', followed by the instruction 'Enter the information required to connect to the database server.' The first step, '1. Server name:', has a text box containing 'http://10.3.0.54:7080/mdx/xmla/learn_kylin'. The second step, '2. Log on credentials', has two radio button options: 'Use Windows Authentication' (unselected) and 'Use the following User Name and Password' (selected). Below the selected option are two text boxes: 'User Name:' containing 'ADMIN' and 'Password:' containing six dots. At the bottom, there are four buttons: 'Cancel', '< Back', 'Next >' (highlighted with a blue border), and 'Finish'.

Data Connection Wizard ? X

Connect to Database Server

Enter the information required to connect to the database server.

1. Server name: http://10.3.0.54:7080/mdx/xmla/learn_kylin

2. Log on credentials

☐ Use Windows Authentication

☒ Use the following User Name and Password

User Name: ADMIN

Password: ●●●●●●

Cancel < Back Next > Finish