

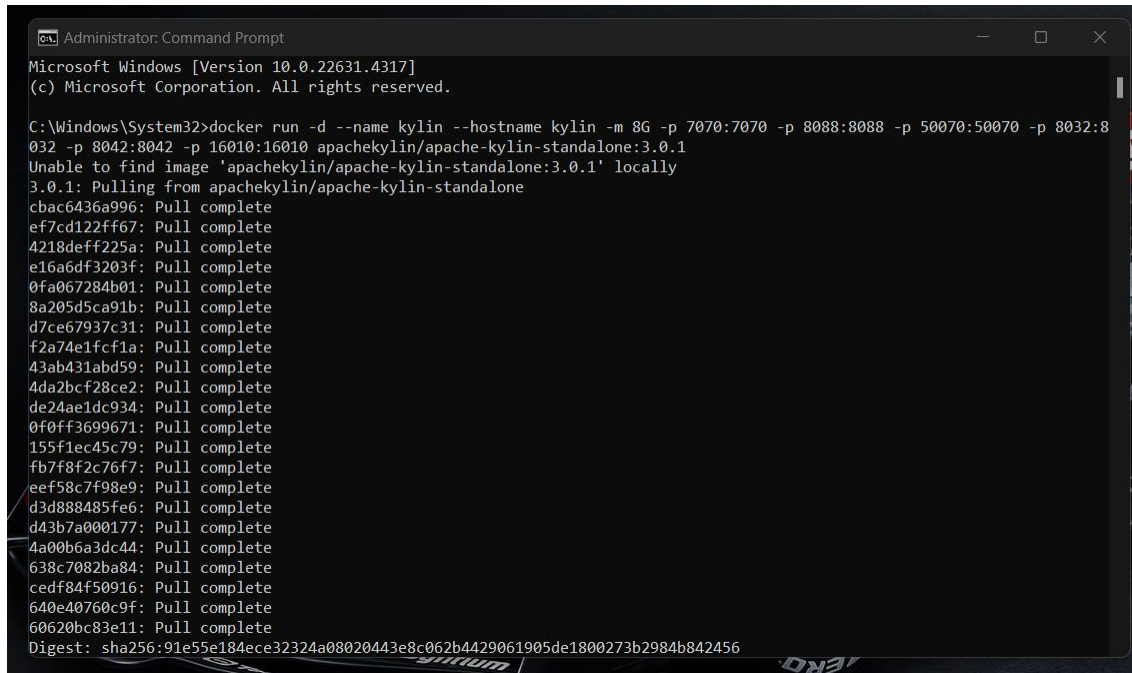
# Dokumentasi Kylin

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# Install kylin from Docker

Install apachekylin 3.1.0  
menggunakan command line,  
apabila image tidak ada di  
local, maka sistem akan  
otomatis melakukan pull kylin  
3.1.0

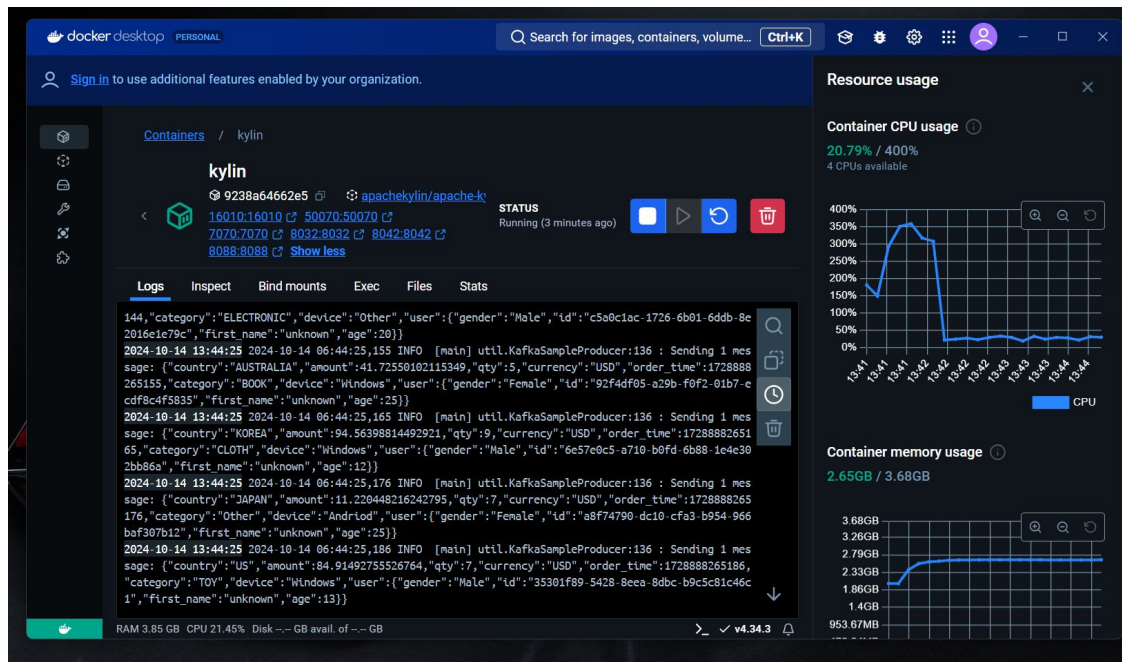


```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.22631.4317]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>docker run -d --name kylin --hostname kylin -m 8G -p 7070:7070 -p 8088:8088 -p 50070:50070 -p 8032:8032 -p 8042:8042 -p 16010:16010 apachekylin/apache-kylin-standalone:3.0.1
Unable to find image 'apachekylin/apache-kylin-standalone:3.0.1' locally
3.0.1: Pulling from apachekylin/apache-kylin-standalone
cbac6436a996: Pull complete
ef7cd122ff67: Pull complete
4218deff225a: Pull complete
e16a6df3203f: Pull complete
0fa067284b01: Pull complete
8a205d5ca91b: Pull complete
d7ce67937c31: Pull complete
f2a74e1fcf1a: Pull complete
43ab431abd59: Pull complete
4da2bcf28ce2: Pull complete
de24ae1dc934: Pull complete
0f0ff3699671: Pull complete
155f1ec45c79: Pull complete
fb7f8f2c76f7: Pull complete
eef58c7f98e9: Pull complete
d3d888485fe6: Pull complete
d43b7a000177: Pull complete
4a00b6a3dc44: Pull complete
638c7082ba84: Pull complete
cedf84f50916: Pull complete
640e40760c9f: Pull complete
60620bc83e11: Pull complete
Digest: sha256:91e55e184ece32324a08020443e8c062b4429061905de1800273b2984b842456
```

# Run kylin container from docker

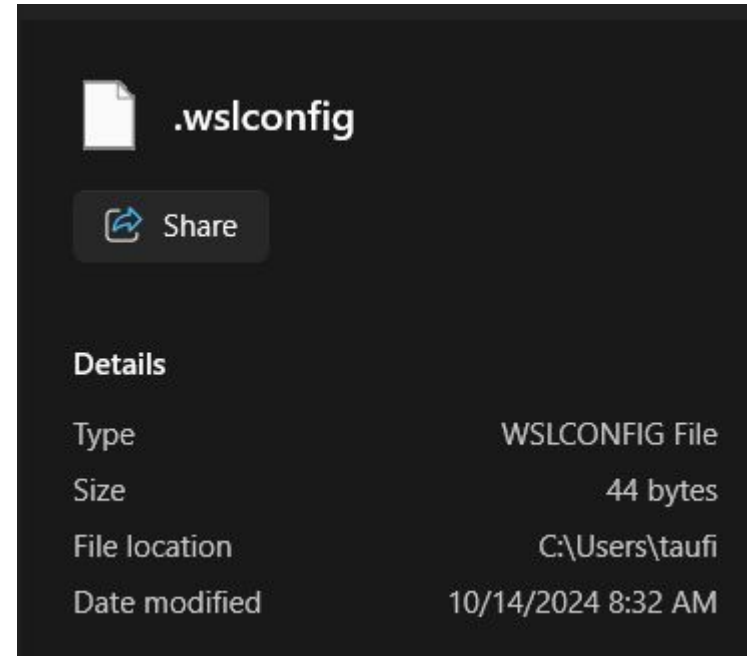
Setelah proses pull selesai,  
maka container kylin sudah  
bisa dijalankan.



Notes :

Pada laptop/pc dengan sistem operasi windows (11), kita harus membuat file .wslconfig terlebih dahulu untuk menjalankan kylin.

Perhatikan bahwa file yang dibuat harus bertipe WSLCONFIG File, dengan isi seperti pada gambar dibawah.



```
[wsl2]  
kernelCommandLine = vsyscall=emulate
```

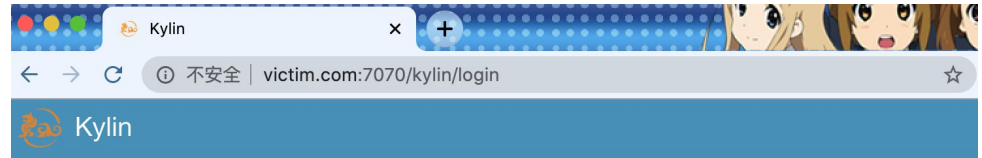
# Login to kylin

Setelah itu, masuk ke port 7070:7070 untuk masuk ke kylin.

Maka akan tampil halaman login kylin, lalu masukan username dan password default, yaitu

Username : ADMIN

Password : KYLIN

A screenshot of the Kylin login form. It features a 'Sign in' header with a green icon. Below it are two input fields: 'Username' and 'Password'. The 'Password' field has a lock icon on the right. At the bottom left is a link 'Login Issue?' and at the bottom right is a blue 'Log In' button with a magnifying glass icon.

# Create new project

Setelah berhasil masuk,  
selanjutnya buat project baru,  
pada project kali ini, projectnya  
bernama “FIF”



The screenshot shows the Apache Kylin web interface. A 'New Project' dialog box is open in the center. The dialog has three main sections: 'Project Name' with a text input field containing 'FIF', 'Project Description' with a text area containing 'Project Description...', and 'Project Config' with a blue '+ Property' button. At the bottom right of the dialog are 'Close' and 'Submit' buttons. The background interface shows a sidebar with 'Tables' and 'No' options, and a main area with 'Results' and 'No Query Result.' text. The footer of the interface includes the Apache Kylin logo and 'Apache Kylin Community' text.

# Load hive table

Setelah membuat project, lakukan load data dengan memilih tab Data Source, kemudian pilih “Load Table From Tree”, dan pilih seluruh tabel yang ada di database default



Load Table Metadata From Tree

Project: FIF

Filter ...

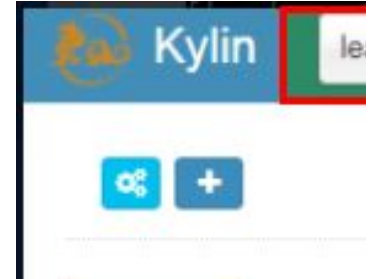
default

default.kylin\_account  
default.kylin\_cal\_dt  
default.kylin\_category\_groupings  
default.kylin\_country  
default.kylin\_sales

☒ Calculate column cardinality

# Create new model

Selanjutnya buat model dengan klik tombol “+”, lalu ketik nama model, pada project ini modelnya “fif\_model”



Model Designer

1 Model Info 2 Data Model 3 Dimensions 4 Measures 5 Settings

Model Name ⓘ \* fif\_model\_2

Description

Next ➔



# Setup data model

Selanjutnya, tambahkan data model, tentukan **fact table** nya, pada project ini adalah **KYLIN\_SALES** , lalu tambahkan juga lookup table, dan set kondisi JOIN dengan fact table ketika menambahkan lookup tabel, contoh disini BUYER\_ID dengan ACCOUNT\_ID

Add Lookup Table

KYLIN\_SALES

Inner Join

KYLIN\_ACCOUNT AS KYLIN\_ACCOUNT

☐ Skip snapshot for this lookup table. ⓘ

BUYER\_ID = ACCOUNT\_ID

+ New Join Condition

Cancel OK

Tips

1. Pick up a table joins another table that already exist.
2. Specify join relationship between two tables.
3. Join Type have to be same as will be used in query

# Setup data model

Lalu pada project ini, tambahkan lookup tabel dengan KYLIN\_ACCOUNT dengan KYLIN\_COUNTRY, tambahkan JOIN kondisi ACCOUNT\_COUNTRY dengan COUNTRY

Add Lookup Table

KYLIN\_ACCOUNT

Inner Join

KYLIN\_COUNTRY AS KYLIN\_COUNTRY

☐ Skip snapshot for this lookup table. ⓘ

ACCOUNT\_COUNTRY = COUNTRY

+ New Join Condition

Cancel OK

Tips

1. Pick up a table joins another table that already exist.
2. Specify join relationship between two tables.
3. Join Type have to be same as will be used in query

# Setup data model

Jika telah menentukan fact\_table, dan menambahkan dua lookup tabel, maka akan tampil tampilan overview seperti pada berikut





Model Designer

Model Info 2 Data Model 3 Dimensions 4 Measures 5 Settings

Fact Table \* DEFAULT.KYLIN\_SALES

+ Add Lookup Table

Filter ...

ID	Table Alias	Table Name	Table Kind	Join Type	Join Condition	Actions
1	KYLIN_ACCOUNT	DEFAULT.KYLIN_ACCOUNT	Normal	inner	KYLIN_SALES.BUYER_ID = KYLIN_ACCOUNT.ACCOUNT_ID	 
2	KYLIN_COUNTRY	DEFAULT.KYLIN_COUNTRY	Normal	inner	KYLIN_ACCOUNT.ACCOUNT_COUNTRY = KYLIN_COUNTRY.COUNTRY	 

← Prev Next →

# Setup dimension column

Setelah itu setup dimension column, dengan kolom pilihan seperti yang ada pada gambar BUYER\_ID, ACCOUNT\_ID, ACCOUNT\_COUNTRY, dan COUNTRY

Model Designer

1

2

3

4

5

Model Info

Data Model

Dimensions

Measures

Settings

Select dimension columns

ID	Table Alias	Columns
1	KYLIN_SALES	BUYER_ID
2	KYLIN_ACCOUNT	ACCOUNT_ID ACCOUNT_COUNTRY
3	KYLIN_COUNTRY	COUNTRY

Prev

Next

# Setup measures column

Selanjutnya, menentukan measure column dari tabel KYLIN\_SALES, maka pilihlah PRICE

Model Designer

Model Info Data Model Dimensions Measures Settings

Select measure columns

ID	Table Alias	Columns
1	KYLIN_SALES	PRICE X

← Prev Next →

# Setup measures column

Berikutnya ada settingan partisi, jika ingin melakukan partisi, dan juga berikan filter where, pada project ini “price>0”

Model Designer

✓

✓

✓

✓

5

Model InfoData ModelDimensionsMeasuresSettings

Partition

Partition Date Column ⓘ

--Select Partition Table--

--Select Partition Column--

Date Format

yyyy-MM-dd

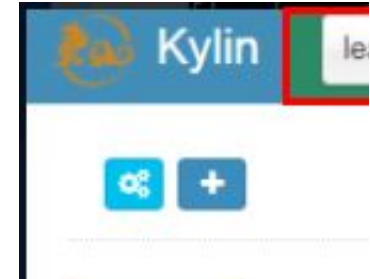
Filter ⓘ

WHERE

Please input WHERE clause without typing 'WHERE'

# Create new cube

Selanjutnya buat cube dengan klik tombol “+”, lalu ketik nama model, pada project ini modelnya “fif\_cube\_taufik”



Cube Designer

1 2 3 4 5 6 7

Cube Info Dimensions Measures Refresh Setting Advanced Setting Configuration Overwrites Overview

Model Name \* fif\_model

Cube Name ⓘ \* fif\_cube\_taufik

Notification Email List Comma Separated

Notification Events ⓘ ERROR × DISCARDED × SUCCEED ×

Description

# Add dimension

Step selanjutnya, tambahkan dimension, dimension dari lookup tabel, dapat berupa Normal dan Derived, pada project ini kita menggunakan normal. Derived dimension means that the column can be derived from the primary key of the dimension table.

Auto Generate Dimensions ⓘ This is a helper for you to batch generate dimensions.

Visit [derived column](#) for more about derived column.

KYLIN\_SALES [FactTable]

<input checked="" type="checkbox"/> Select All	Name	Columns
<input checked="" type="checkbox"/>	<input type="text" value="BUYER_ID"/>	BUYER_ID

KYLIN\_ACCOUNT [LookupTable]

<input checked="" type="checkbox"/> Select All	Name	Columns	
<input checked="" type="checkbox"/>	<input type="text" value="ACCOUNT_ID"/>	ACCOUNT_ID	<input checked="" type="radio"/> Normal <input type="radio"/> Derived
<input checked="" type="checkbox"/>	<input type="text" value="ACCOUNT_COUNTRY"/>	ACCOUNT_COUNTRY	<input checked="" type="radio"/> Normal <input type="radio"/> Derived

KYLIN\_COUNTRY [LookupTable]

<input checked="" type="checkbox"/> Select All	Name	Columns	
<input checked="" type="checkbox"/>	<input type="text" value="COUNTRY"/>	COUNTRY	<input checked="" type="radio"/> Normal <input type="radio"/> Derived

Cancel

OK



# Add dimension









Setelah melakukan setup dimension, maka akan tampil overview seperti berikut berisi informasi dimension type dan column

Cube Designer

Progress bar: 1. Cube Info (checked), 2. Dimensions (checked), 3. Measures, 4. Refresh Setting, 5. Advanced Setting, 6. Configuration Overwrites, 7. Overview

Add Dimensions



Filter ...

ID	Name	Table Alias	Type	Column	Actions
1	BUYER_ID	KYLIN_SALES	normal	BUYER_ID	 
2	ACCOUNT_ID	KYLIN_ACCOUNT	normal	ACCOUNT_ID	 
3	ACCOUNT_COUNTRY	KYLIN_ACCOUNT	normal	ACCOUNT_COUNTRY	 
4	COUNTRY	KYLIN_COUNTRY	normal	COUNTRY	 

← Prev Next →

# Add measures

Kylin secara otomatis akan membuat metric COUNT secara default, selain itu untuk keperluan projek ini, kita perlu menambahkan SUM untuk melihat total\_price

Name	Expression	Parameters	Return Type	Actions
_COUNT_	COUNT	Value:1, Type:constant	bigint	 

Edit Measure

Name

sum\_price

Expression ⓘ

SUM

Param Type

column

Param Value ⓘ

KYLIN\_SALES.PRICE

☐ Also Show Dimensions


Return Type

DECIMAL(19,4)

OK

Cancel

← Prev

Next → 





# Add measures

Jika sudah di save maka akan tampil metric apa saja yang sudah ada seperti pada gambar berikut.

Cube Designer

Progress bar: 1. Cube Info (checked), 2. Dimensions (checked), 3. Measures (active), 4. Refresh Setting, 5. Advanced Setting, 6. Configuration Overwrites, 7. Overview

Bulk Add Measures

Name	Expression	Parameters	Return Type	Actions
_COUNT_	COUNT	Value:1, Type:constant	bigint	 
total_price	SUM	Value:KYLIN_SALES.PRICE, Type:column	decimal(19,4)	 

+ Measure

← Prev Next →

# Cube data refresh

Setelah menambahkan measure, maka pada tab Refresh setting kita bisa melakukan setting threshold untuk automatic merge, dan minimum waktu untuk data retention (Retention Threshold).

Pada project ini menggunakan setup default karena sudah sesuai dengan requirement

Cube Designer

Progress: 1. Cube Info (✓) 2. Dimensions (✓) 3. Measures (✓) 4. Refresh Setting (4) 5. Advanced Setting (5) 6. Configuration Overwrites (6) 7. Overview (7)

Auto Merge Thresholds ⓘ

7 days -

28 days -

New Thresholds +

Volatile Range ⓘ

0

Retention Threshold ⓘ

0

Partition Start Date

← Prev Next →

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# Advanced setting

Berikutnya untuk melanjutkan ke advanced setting. Di sini kita dapat mengatur grup agregasi, RowKeys, Cube Engine, dll. Pada project kali ini, saya menggunakan engine Spark untuk menjalankan cube.

Select Dimension...

Import cuboids from file:  No file chosen

**Cube Engine ⓘ**

Engine Type :

Cube Designer

Progress: 1. Cube Info, 2. Dimensions, 3. Measures, 4. Refresh Setting, 5. Advanced Setting, 6. Configuration Overwrites, 7. Overview

### Aggregation Groups

Visit [aggregation group](#) for more about aggregation group.

ID	Aggregation Groups	Max Dimension Combination: <input type="text" value="0"/>
1	<p><b>Includes</b></p> <div>KYLIN_SALES.BUYER_ID × KYLIN_ACCOUNT.ACCOUNT_ID × KYLIN_ACCOUNT.ACCOUNT_COUNTRY × KYLIN_COUNTRY.COUNTRY ×</div> <p><b>Mandatory Dimensions</b></p> <div>Select Column...</div> <p><b>Hierarchy Dimensions</b></p> <div><input type="button" value="New Hierarchy"/></div> <p><b>Joint Dimensions</b></p> <div><input type="button" value="New Joint"/></div>	

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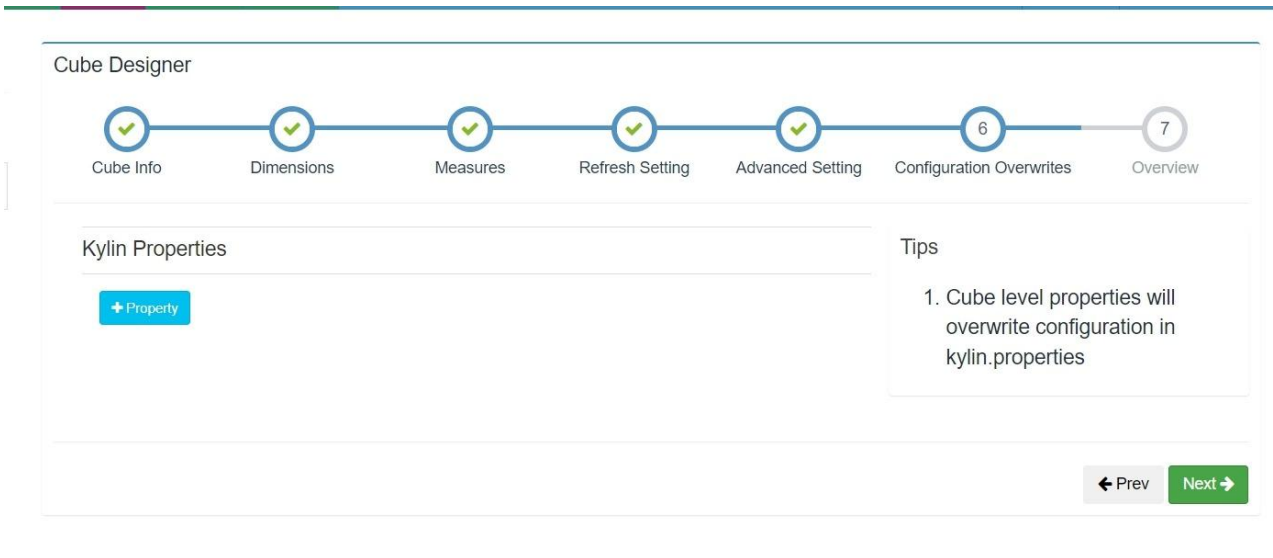
### Rowkeys ⓘ

in's position on HBase rowkey is critical for performance. You can drag and drop to adjust the sequence. In short, put filtering dimension

	Encoding	Length	Shard By
SALES.BUYER_ID	dict	Column...	false by default
ACCOUNT.ACCOUNT_ID	dict	Column...	false by default
ACCOUNT.ACCOUNT_COUNTRY	dict	Column...	false by default
COUNTRY.COUNTRY	dict	Column...	false by default

# Configuration overwrites

Pada tab ini, kita bisa mengubah konfigurasi cube-level, For configuration items, please refer to: <http://kylin.apache.org/docs/install/configuration.html>.



The screenshot shows the 'Cube Designer' interface with a progress bar at the top. The progress bar has seven steps: 'Cube Info', 'Dimensions', 'Measures', 'Refresh Setting', 'Advanced Setting', 'Configuration Overwrites' (the current step, highlighted with a blue circle and number 6), and 'Overview' (numbered 7). Below the progress bar, the 'Configuration Overwrites' section is active. It contains a 'Kylin Properties' area with a '+ Property' button. To the right of this area is a 'Tips' box with the text: '1. Cube level properties will overwrite configuration in kylin.properties'. At the bottom right of the interface are two buttons: '← Prev' and 'Next →'.

# Overview

Terakhir, pada tab overview, akan tampil informasi sebelum kita membuat cube, yang berisi **Model Name**, **Cube Name**, **Fact Table**, dan informasi lainnya seperti di gambar

Cube Designer

✓

Cube Info

✓

Dimensions

✓

Measures

✓

Refresh Setting

✓

Advanced Setting

✓

Configuration Overwrites

7

Overview

Model Name

fif\_model\_taufik

Cube Name

fif\_cube\_taufik

Fact Table

DEFAULT.KYLIN\_SALES

Lookup Table

2

Dimensions

4

Measures

2

Description

← Prev

Save

# Build cube and Monitor

Selanjutnya, jika cube sudah terbuat, maka build cube yang sudah dibuat dengan menekan dropdown Action, lalu build cube yang dipilih.

Selanjutnya kita bisa melihat proses build cube pada halaman monitor seperti gambar dibawah, dan tunggu hingga proses build selesai.

The screenshot displays the Apache Kylin Monitor interface. At the top, there is a search bar labeled "Search by name". Below it is a table with columns: Status, Cube Size, Source Records, Last Build Time, Owner, Create Time, Actions, and Admins. The first row shows a job with Status "READY", Cube Size "0.00 KB", Source Records "0", Last Build Time "2018-07-12 14:42:08 GMT+8", Owner "ADMIN", and Create Time "2018-07-12 13:30:05 GMT+8".

Below the table is a navigation bar with tabs: Kylin, FIF, Insight, Model, Monitor (selected), and System. There are also links for Help and Welcome, ADMIN.

The main content area shows a list of jobs under the "Jobs" tab. The "Slow Queries" sub-tab is selected. A filter bar shows "Cube Name: Filter ..." and "Jobs in: LAST ONE DAY". There are checkboxes for job status: NEW(0), PENDING(1), RUNNING(0), STOPPED(0), FINISHED(0), ERROR(0), and DISCARDED(0). A table lists jobs with columns: Job Name, Cube, Progress, Last Modified Time, Duration, and Actions. The first job is "BUILD CUBE - fit\_cube\_taufik - 20120101000000\_20141231235500 - UTC 2024-10-14 06:57:40" with Cube "fit\_cube\_taufik", Progress "0%", Last Modified Time "2024-10-14 06:57:41 UTC", Duration "0.00 mins", and an Action button.

On the right side, there is a "Detail Information" panel for the selected job. It shows: Job Name, Job ID, Project Name, Status (PENDING), Built By, Duration, and MapReduce Waiting time.

At the bottom, there is a "Start" button and a footer with "Apache Kylin | Apache Kylin Community" and a job name "#1 Size Name: Create Intermediate Flat Hive Table".



# Insights dan Query

Jika build cube sudah selesai, kita bisa melihatnya pada halaman insights, dan melakukan query untuk mendapatkan insights yang kita inginkan, pada project ini kita akan melihat Country, dan SUM(total dari harga) dan memvisualisasikannya menggunakan bar chart dan pie chart.

New Query

Saved Queries

Query History

1

2

3

4

5

6

```
SELECT KYLIN_COUNTRY.COUNTRY, SUM(KYLIN_SALES.PRICE) AS TOTAL_PRICE
FROM KYLIN_SALES
JOIN KYLIN_ACCOUNT ON KYLIN_SALES.BUYER_ID = KYLIN_ACCOUNT.ACCOUNT_ID
JOIN KYLIN_COUNTRY ON KYLIN_ACCOUNT.ACCOUNT_COUNTRY = KYLIN_COUNTRY.COUNTRY
GROUP BY KYLIN_COUNTRY.COUNTRY
ORDER BY TOTAL_PRICE;
```

Tips: Ctrl+Shift+Space or Alt+Space(Windows), Command+Option+Space(Mac) to list keywords in query box.

Project: 

FIF

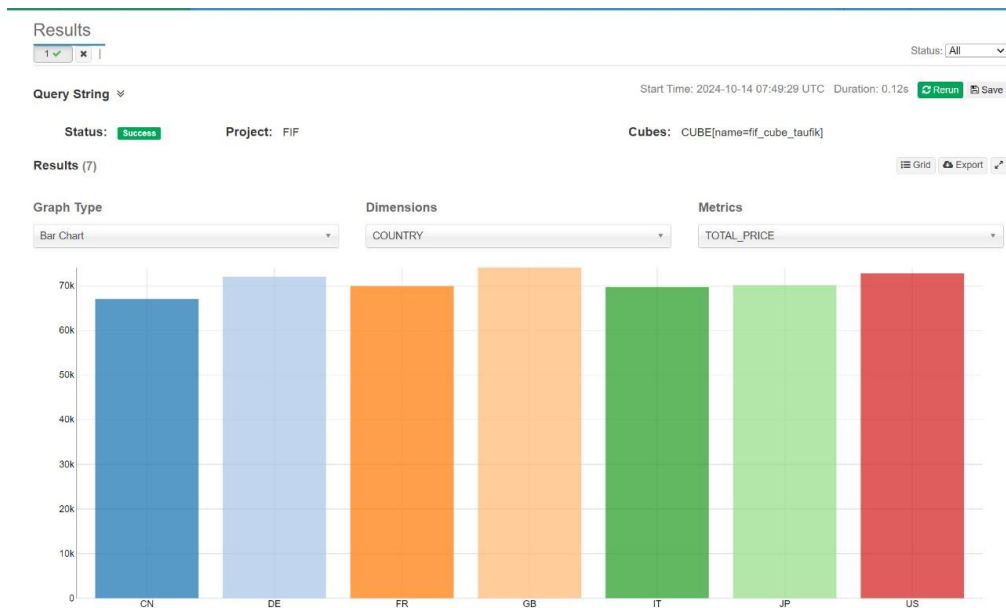
☒ LIMIT 

50000

Submit

# Bar Charts Insights

Dari query yang sudah dilakukan, kita dapat lihat visualisasinya dengan bar chart, dari query tersebut, kita melakukan GROUP berdasarkan Country dan ORDER berdasarkan Alphabet (A-Z)



# Pie Charts Insights

Dari cube yang kita buat kita juga dapat melihat insightnya menggunakan Pie Chart.

