

PRACTICAL 3

Create the cube with suitable dimension and fact tables based on OLAP

Step 1: Creating Data Warehouse

Let us execute our T-SQL Script to create data warehouse with fact tables, dimensions and populate them with appropriate test values.

Download T-SQL script attached with this article for creation of Sales Data Warehouse or download from this article "Create First Data Warehouse" and run it in your SQL Server.

Downloading "Data_WareHouse__SQLScript.zip" from the article <https://www.codeproject.com/Articles/652108/Create-First-Data-Warehouse>

The screenshot shows a web browser window displaying the CodeProject website. The page has an orange header with the CodeProject logo and navigation links. Below the header, there is a sign-in section with fields for email and password, and a "Sign in" button. There is also a "New Membership" section with a "Join" button. At the bottom of the page, there is a cookie consent banner.

Below the browser window, there is a WinRAR window titled "Data_WareHouse__SQLScript.zip - WinRAR (evaluation copy)". The window shows a list of files in the ZIP archive:

Name	Size	Packed	Type	Modified
..			File folder	
Data WareHouse SQLScript.sql	34,296	8,143	Microsoft SQL Ser...	14-09-2013

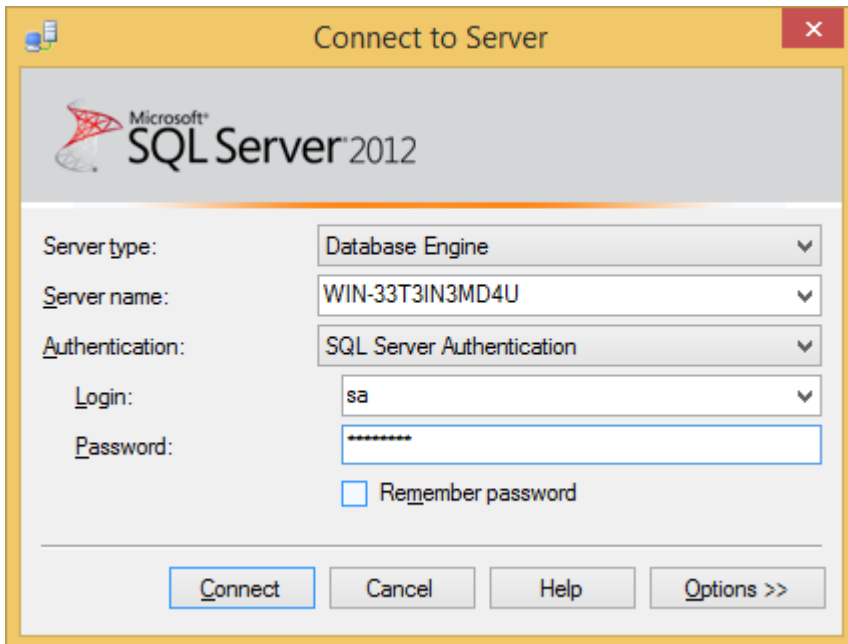
The status bar at the bottom of the WinRAR window shows "Selected 34,296 bytes in 1 file" and "Total 34,296 bytes in 1 file".

After downloading extract file in folder.

Follow the given steps to run the query in SSMS (SQL Server Management Studio).

1. Open SQL Server Management Studio 2012

2. Connect Database Engine



Password for sa : admin123 (as given during installation)

Click Connect.

3. Open New Query editor

4. Copy paste Scripts given below in various steps in new query editor window one by one

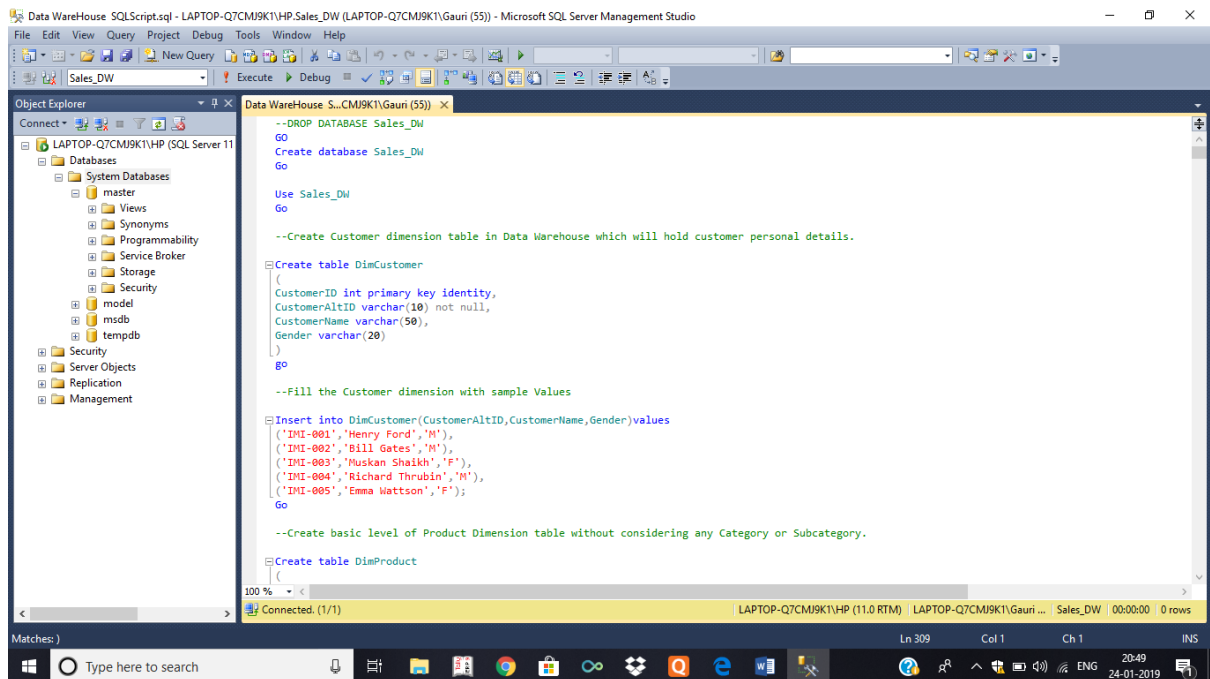
5. To run the given SQL Script, press F5

6. It will create and populate "Sales_DW" database on your SQL Server

OR

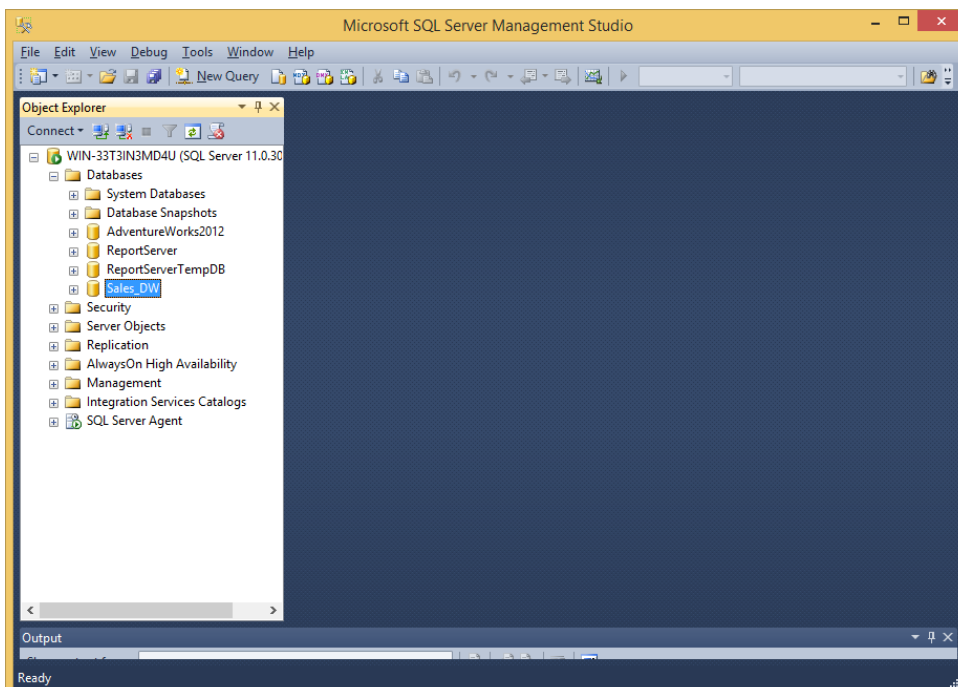
1. Go to the extracted sql file and double click on it.

2. New Sql Query Editor will be opened containing Sales_DW Database.



3. Click on execute or press F5 by selecting query one by one or directly click on Execute.

4. After completing execution save and close SQL Server Management studio & Reopen to see Sales_DW in Databases Tab.

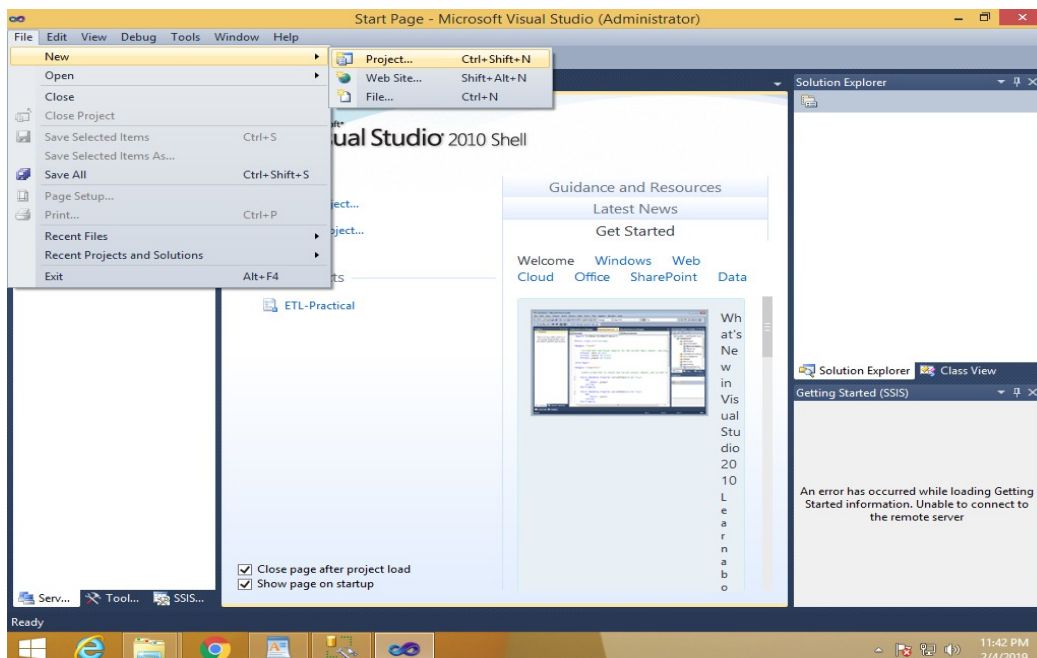


Step 2: Start SSDT environment and create New Data Source

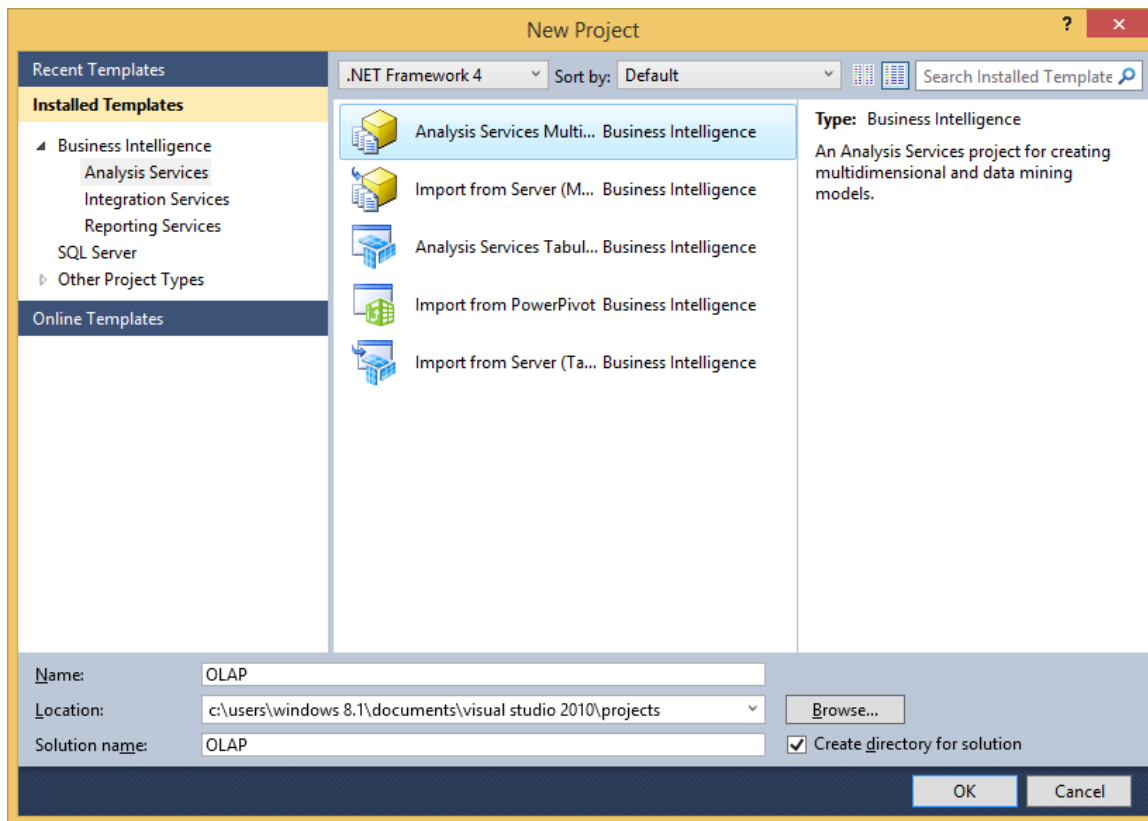
Go to Sql Server Data Tools --> Right click and run as administrator



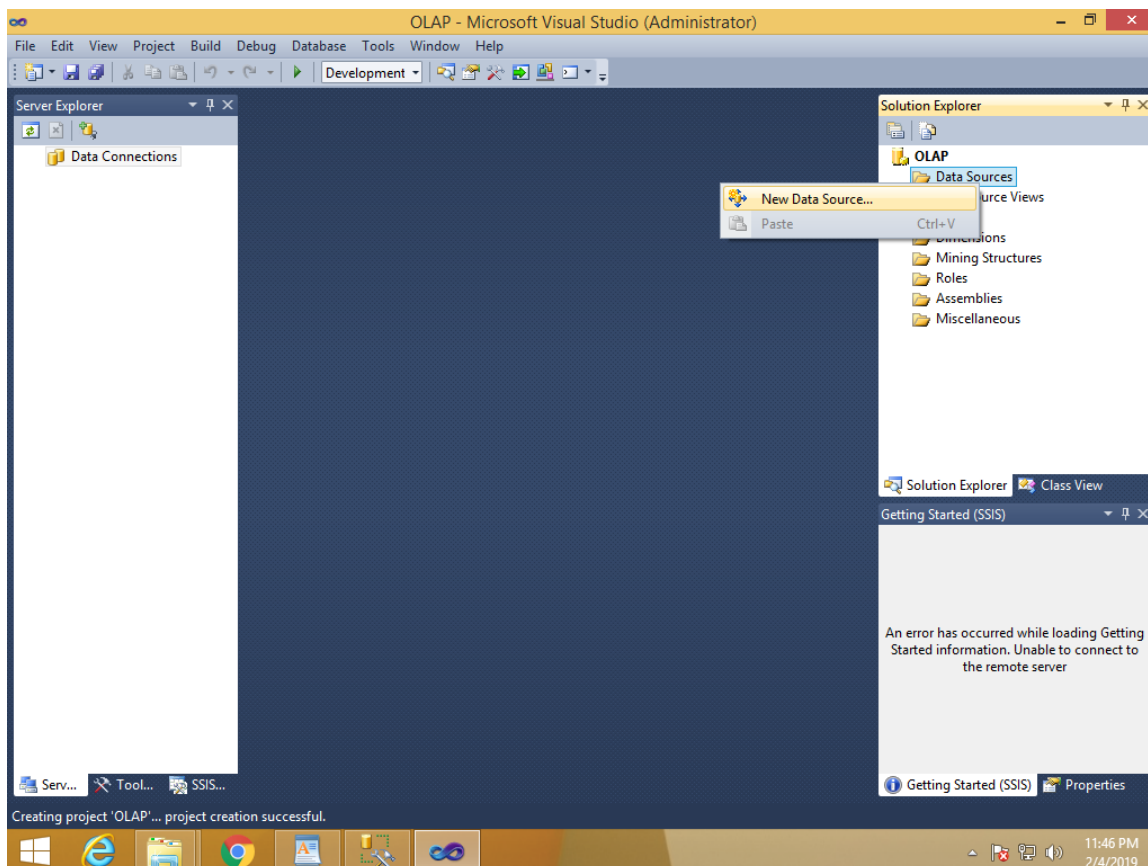
Click on File → New → Project



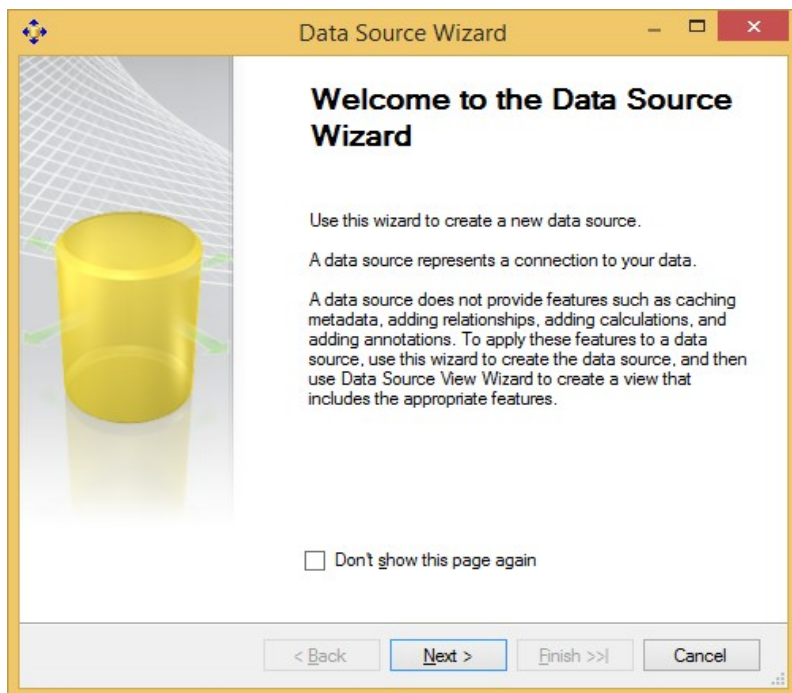
In Business Intelligence → Analysis Services Multidimensional and Data Mining models → appropriate project name → click OK



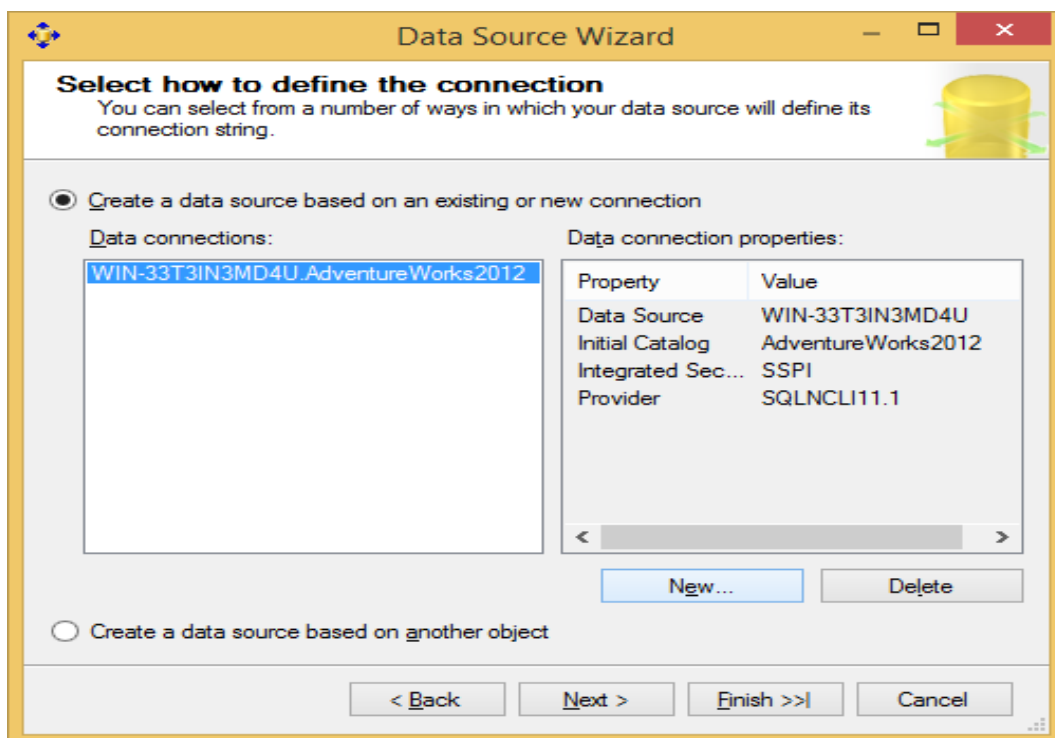
Right click on Data Sources in solution explorer → New Data Source



Data Source Wizard appears

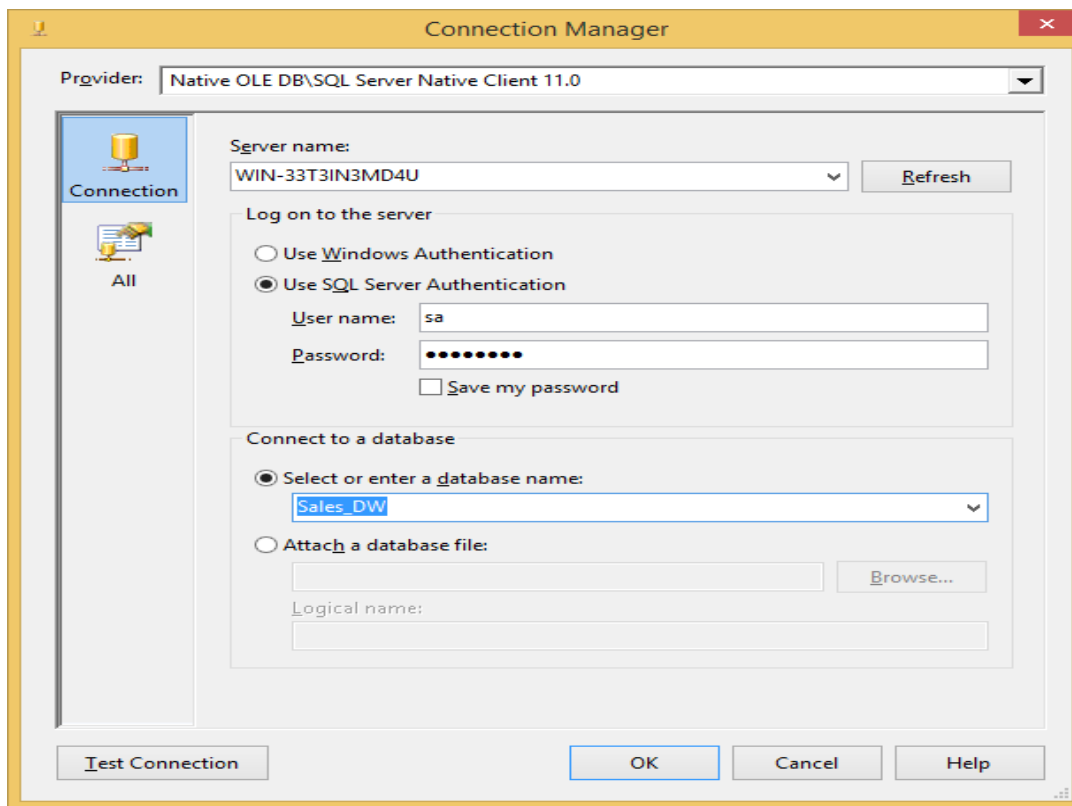


Click on New

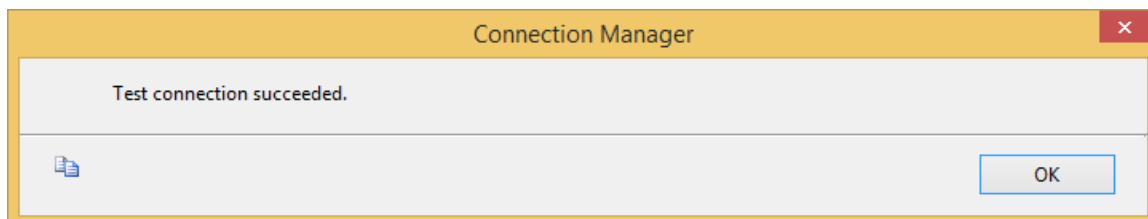


Select Server Name → select Use SQL Server Authentication → Select or enter a database name (Sales_DW)

Note : Password for sa : admin123 (as given during installation of SQL 2012 full version)



The screenshot shows the 'Connection Manager' dialog box. The 'Provider' is set to 'Native OLE DB\SQL Server Native Client 11.0'. Under 'Log on to the server', 'Use SQL Server Authentication' is selected. The 'User name' is 'sa' and the 'Password' is masked with dots. The 'Save my password' checkbox is unchecked. Under 'Connect to a database', 'Select or enter a database name:' is selected, and 'Sales_DW' is entered in the dropdown. The 'Test Connection' button is highlighted.



The screenshot shows the 'Connection Manager' dialog box with a message box overlay that says 'Test connection succeeded.' The 'OK' button is visible in the bottom right corner.

Click Next

Data Source Wizard

Select how to define the connection
You can select from a number of ways in which your data source will define its connection string.

☒ Create a data source based on an existing or new connection

Data connections:

WIN-33T3IN3MD4U.AdventureWorks2012
WIN-33T3IN3MD4U.Sales_DW.sa

Data connection properties:

Property	Value
Data Source	WIN-33T3IN3MD4U
Initial Catalog	Sales_DW
Provider	SQLNCLI11.1
User ID	sa

☐ Create a data source based on another object

Select Inherit → Next

Data Source Wizard

Impersonation Information
You can define what Windows credentials Analysis Services will use to connect to the data source.

☐ Use a specific Windows user name and password

User name:

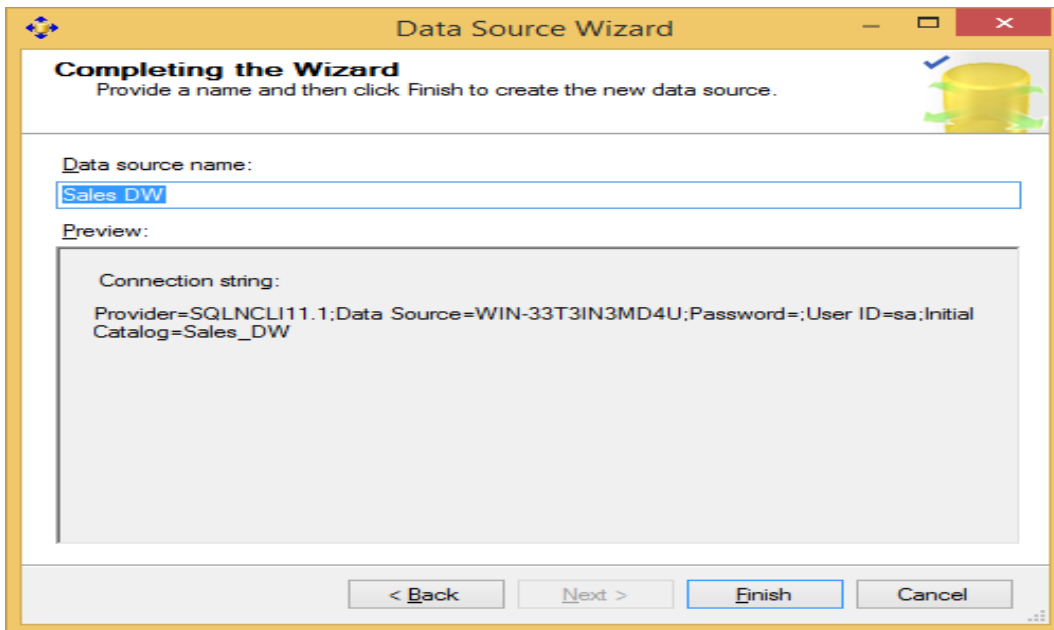
Password:

☐ Use the service account

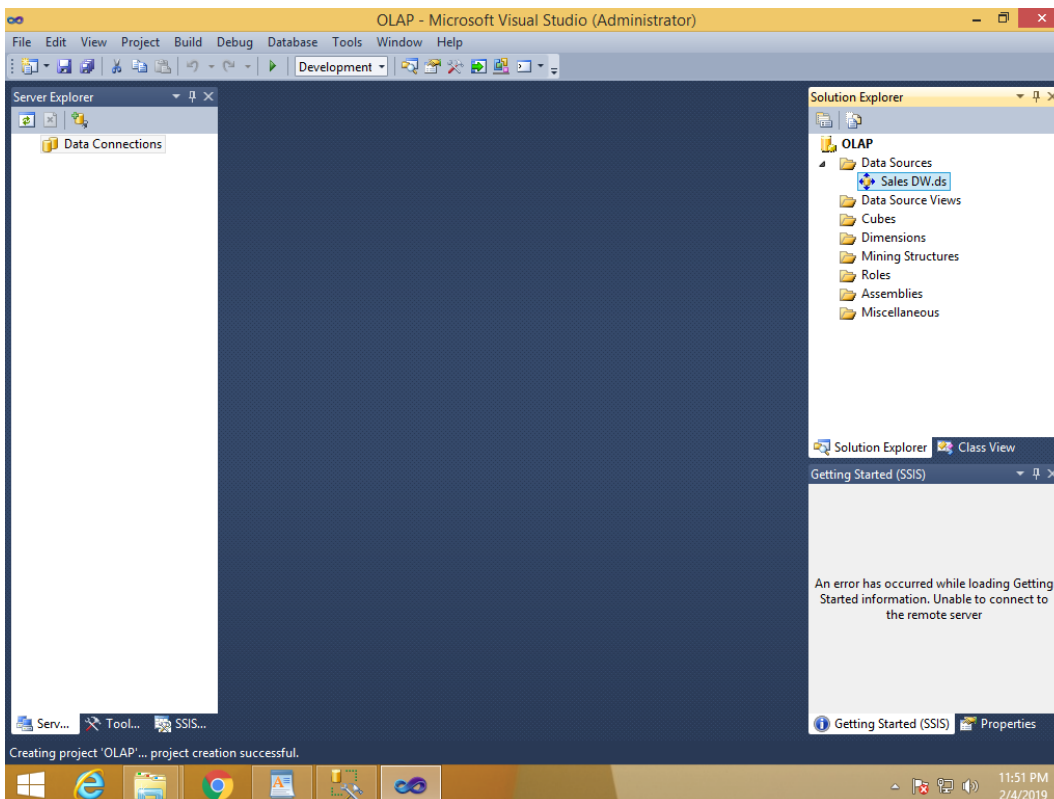
☐ Use the credentials of the current user

☒ Inherit

Click Finish

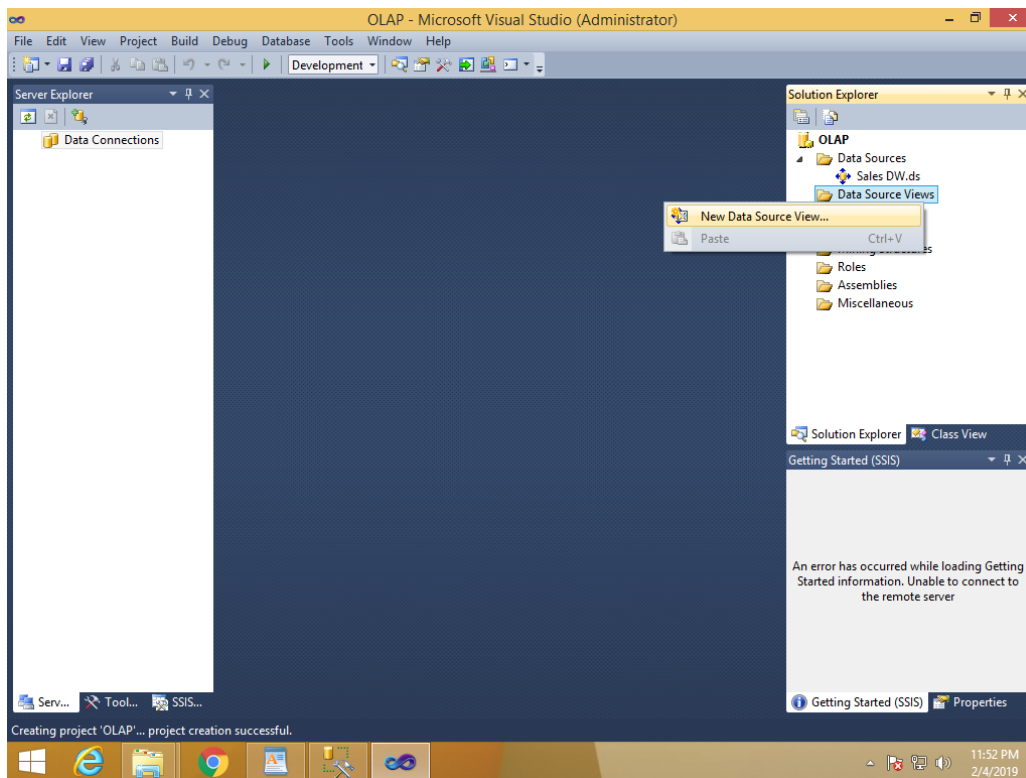


Sales_DW.ds gets created under Data Sources in Solution Explorer

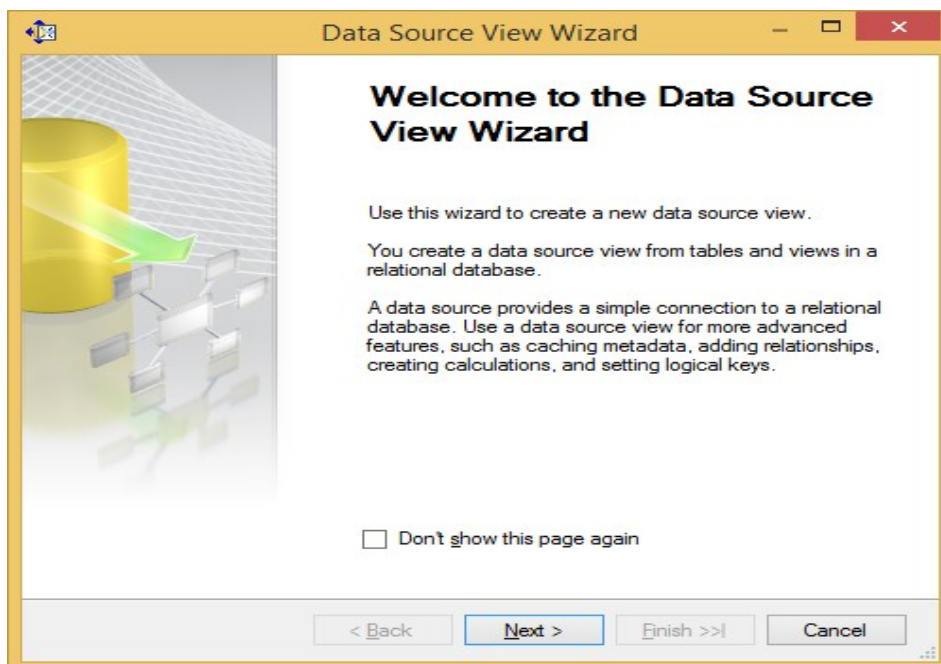


Step 3: Creating New Data Source View

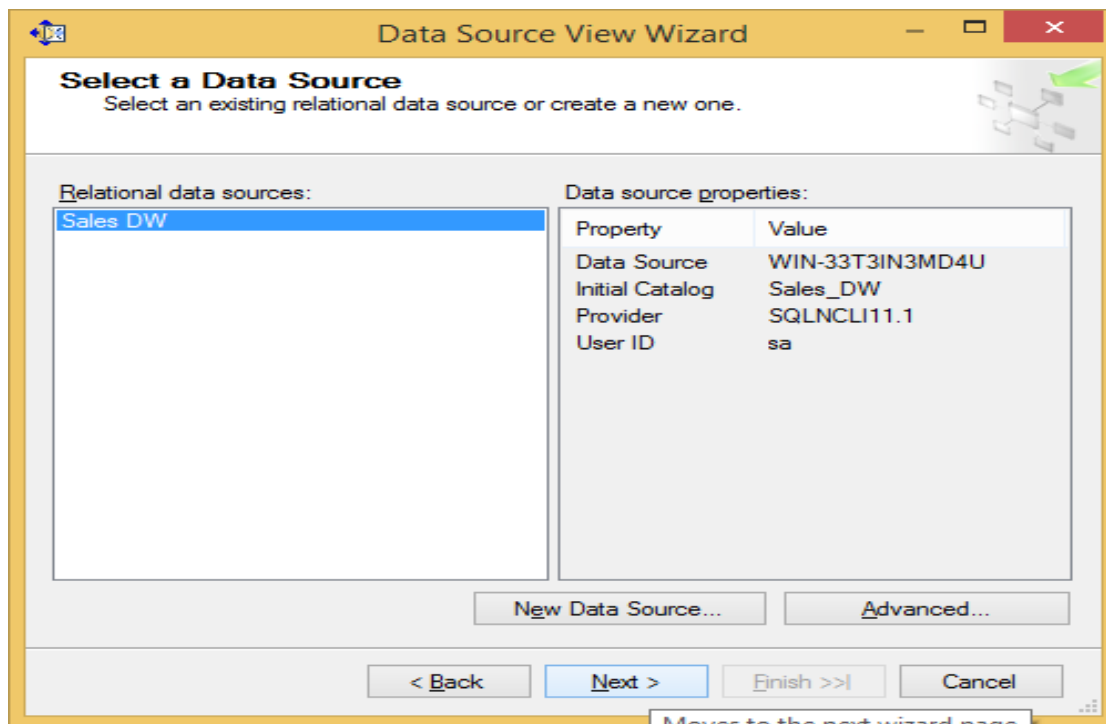
In Solution explorer right click on Data Source View → Select New Data Source View



Click Next



Click Next

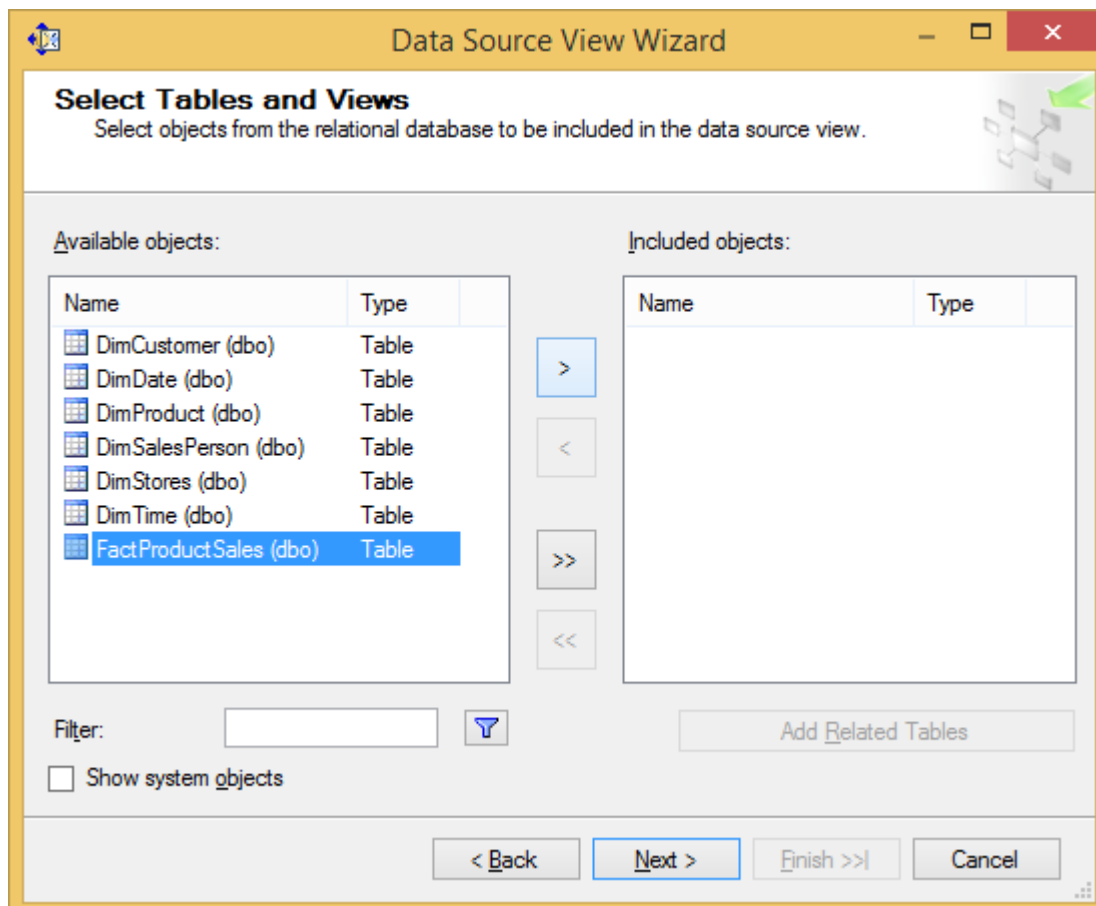


The screenshot shows the 'Data Source View Wizard' window, specifically the 'Select a Data Source' step. The window title is 'Data Source View Wizard'. The main heading is 'Select a Data Source' with the instruction 'Select an existing relational data source or create a new one.' Below this, there are two panes. The left pane, 'Relational data sources:', contains a list with 'Sales_DW' selected. The right pane, 'Data source properties:', shows a table with the following data:

Property	Value
Data Source	WIN-33T3IN3MD4U
Initial Catalog	Sales_DW
Provider	SQLNCLI11.1
User ID	sa

At the bottom of the wizard, there are buttons: '< Back', 'Next >', 'Finish >>', and 'Cancel'. A tooltip for the 'Next >' button says 'Moves to the next wizard page'.

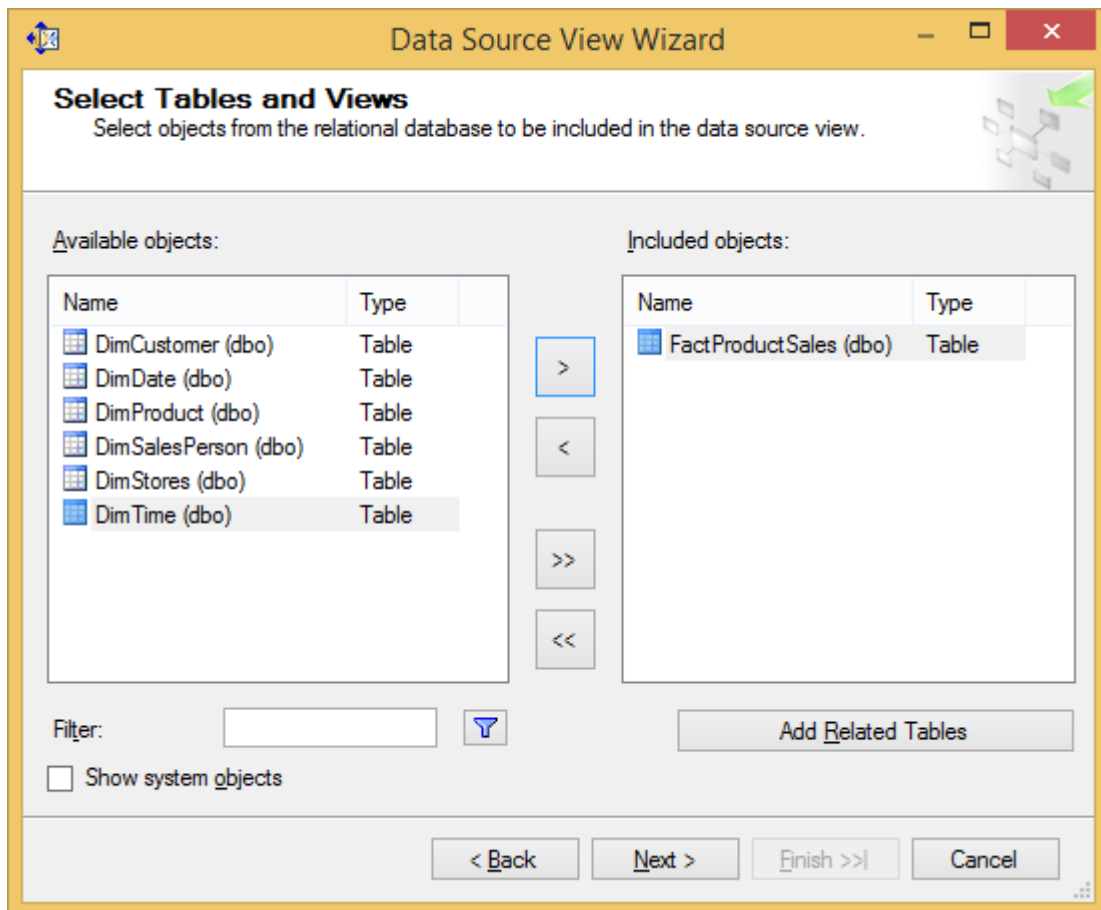
Select FactProductSales(dbo) from Available objects and put in Includes Objects by clicking on 



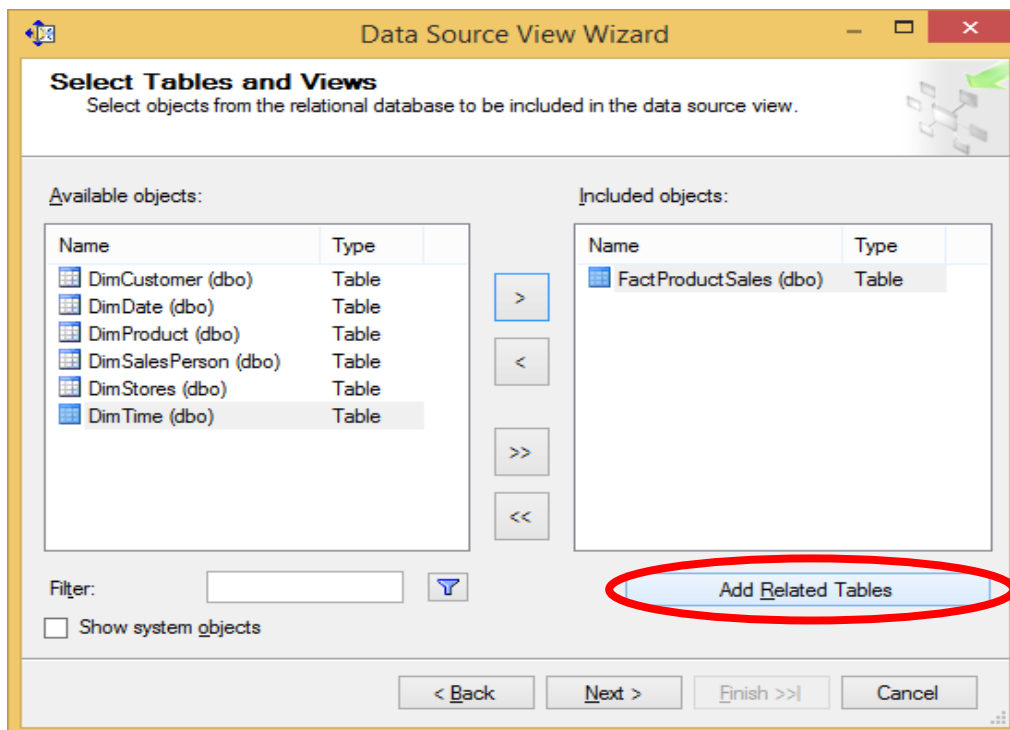
The screenshot shows the 'Data Source View Wizard' window, specifically the 'Select Tables and Views' step. The window title is 'Data Source View Wizard'. The main heading is 'Select Tables and Views' with the instruction 'Select objects from the relational database to be included in the data source view.' Below this, there are two panes. The left pane, 'Available objects:', contains a table with the following data:

Name	Type
DimCustomer (dbo)	Table
DimDate (dbo)	Table
DimProduct (dbo)	Table
DimSalesPerson (dbo)	Table
DimStores (dbo)	Table
DimTime (dbo)	Table
FactProductSales (dbo)	Table

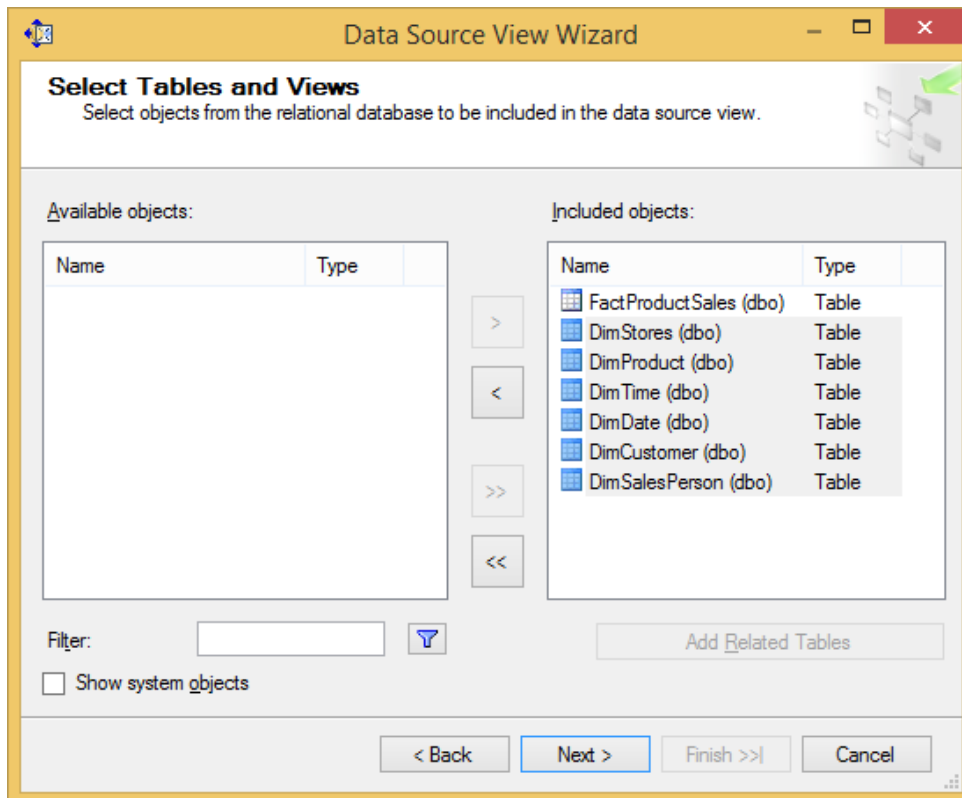
The right pane, 'Included objects:', is currently empty. Between the panes are buttons: '>', '<', '>>', and '<<'. At the bottom left, there is a 'Filter:' text box and a 'Show system objects' checkbox. At the bottom right, there is an 'Add Related Tables' button. At the very bottom, there are buttons: '< Back', 'Next >', 'Finish >>', and 'Cancel'.



Click on Add Related Tables



Click Next




Select Tables and Views
Select objects from the relational database to be included in the data source view.

Available objects:

Name	Type
------	------

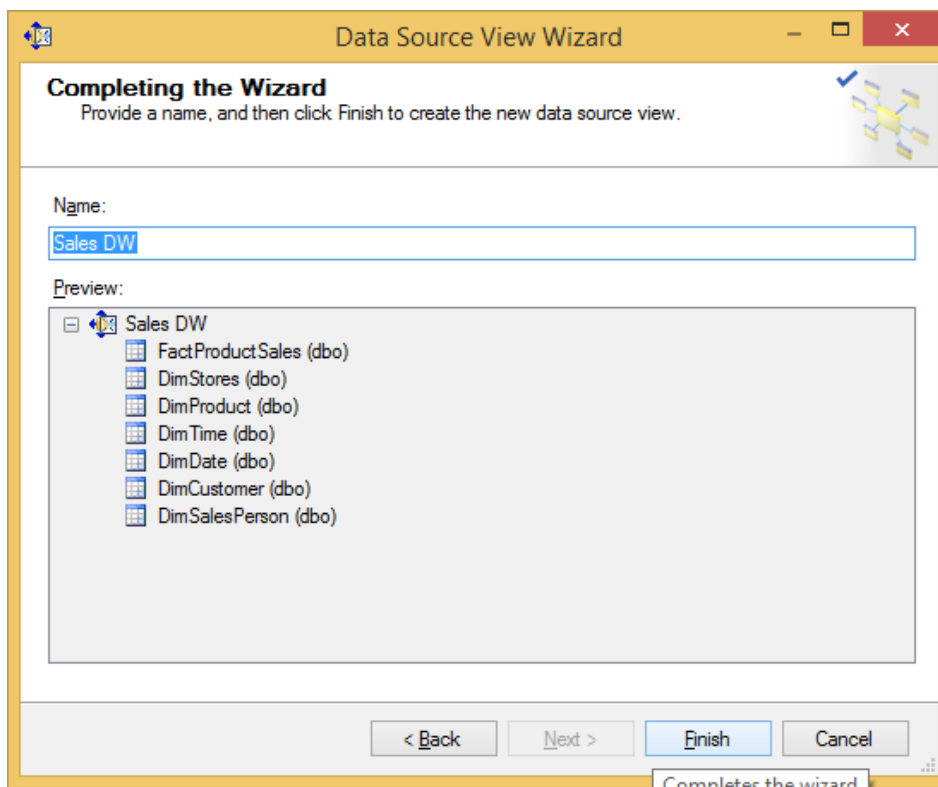
Included objects:

Name	Type
FactProductSales (dbo)	Table
DimStores (dbo)	Table
DimProduct (dbo)	Table
DimTime (dbo)	Table
DimDate (dbo)	Table
DimCustomer (dbo)	Table
DimSalesPerson (dbo)	Table

Filter: 

☐ Show system objects

Click Finish



Completing the Wizard
Provide a name, and then click Finish to create the new data source view.

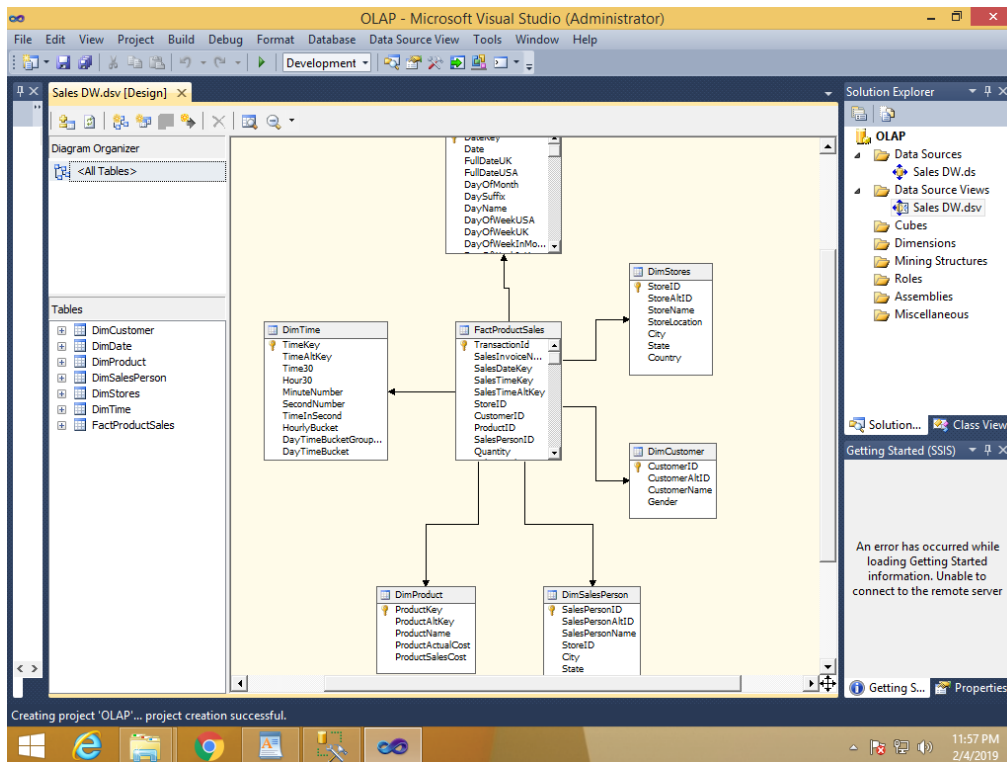
Name:

Preview:

- ☒ Sales DW
 - FactProductSales (dbo)
 - DimStores (dbo)
 - DimProduct (dbo)
 - DimTime (dbo)
 - DimDate (dbo)
 - DimCustomer (dbo)
 - DimSalesPerson (dbo)

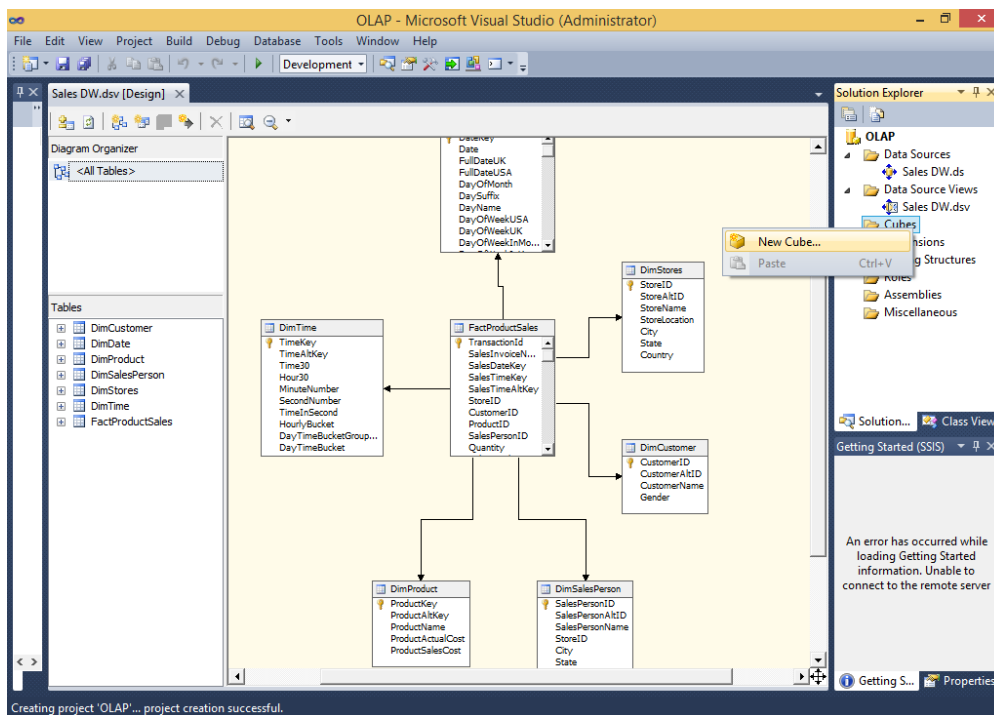
Completes the wizard

Sales DW.dsv appears in Data Source Views in Solution Explorer.



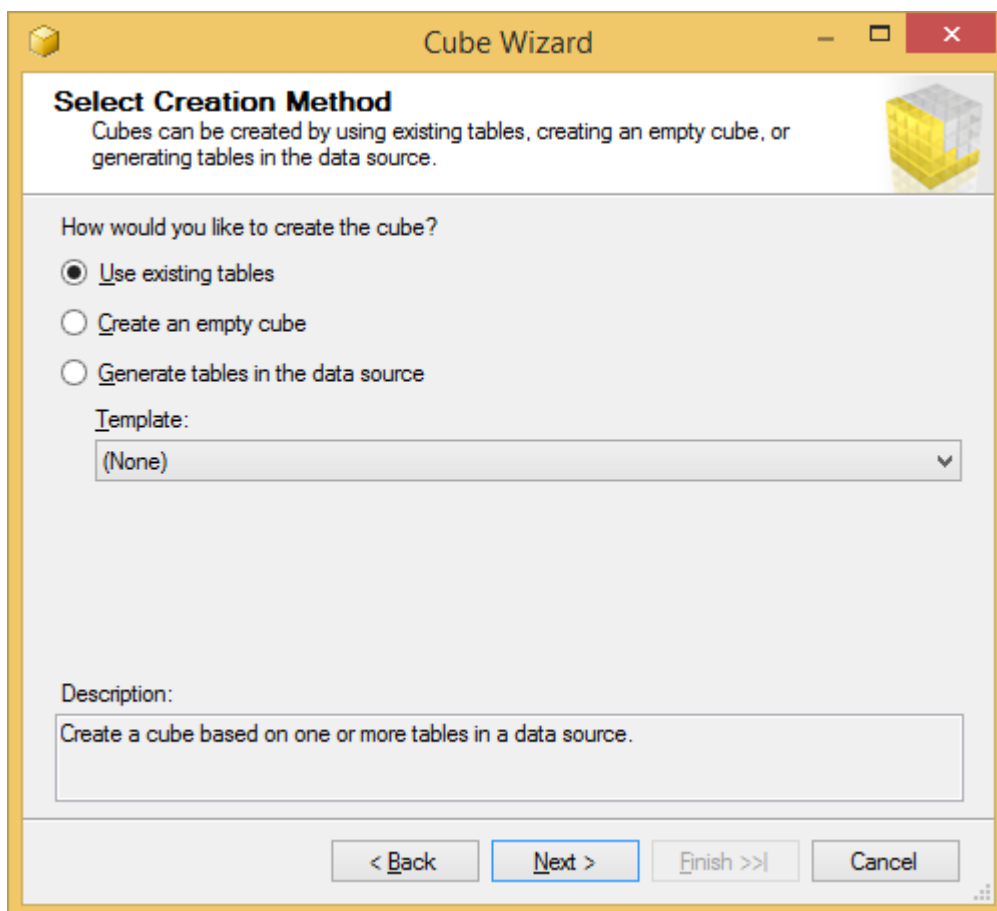
Step 4: Creating new cube

Right click on Cubes → New Cube

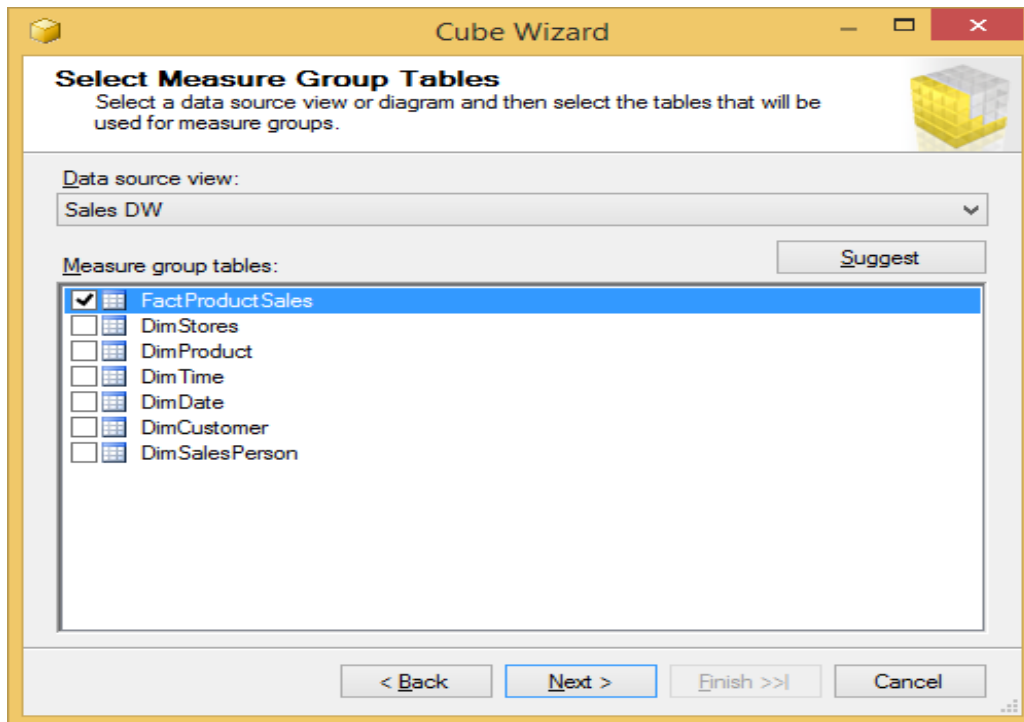




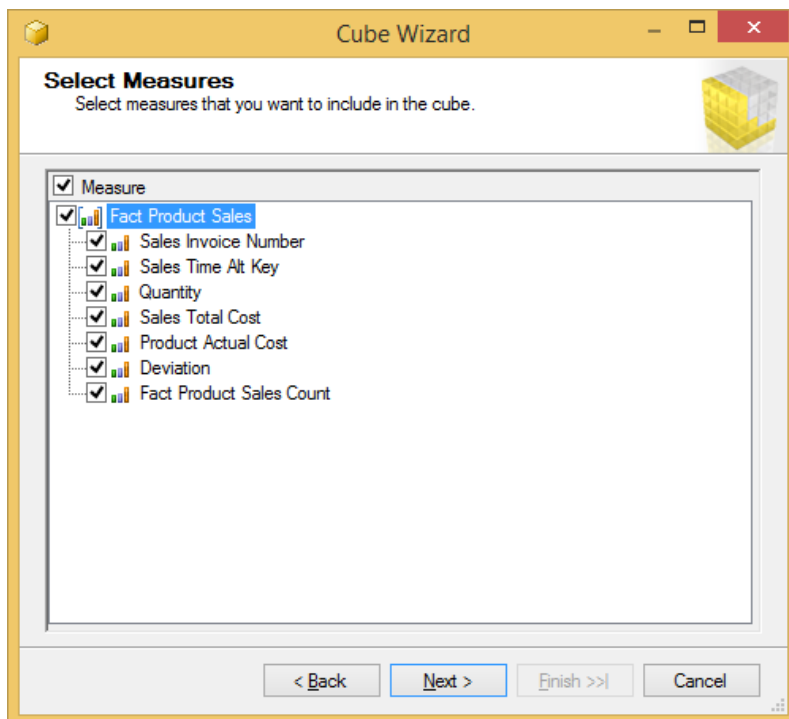
Select Use existing tables in Select Creation Method → Next



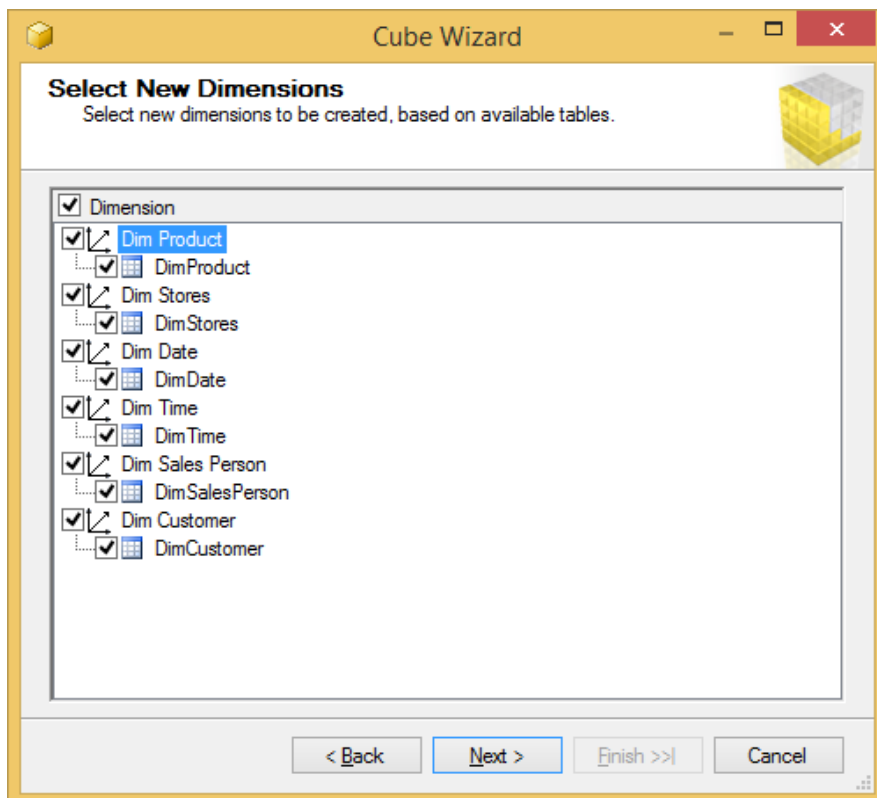
In Select Measure Group Tables → Select FactProductSales → Click Next



In Select Measures → check all measures → Next



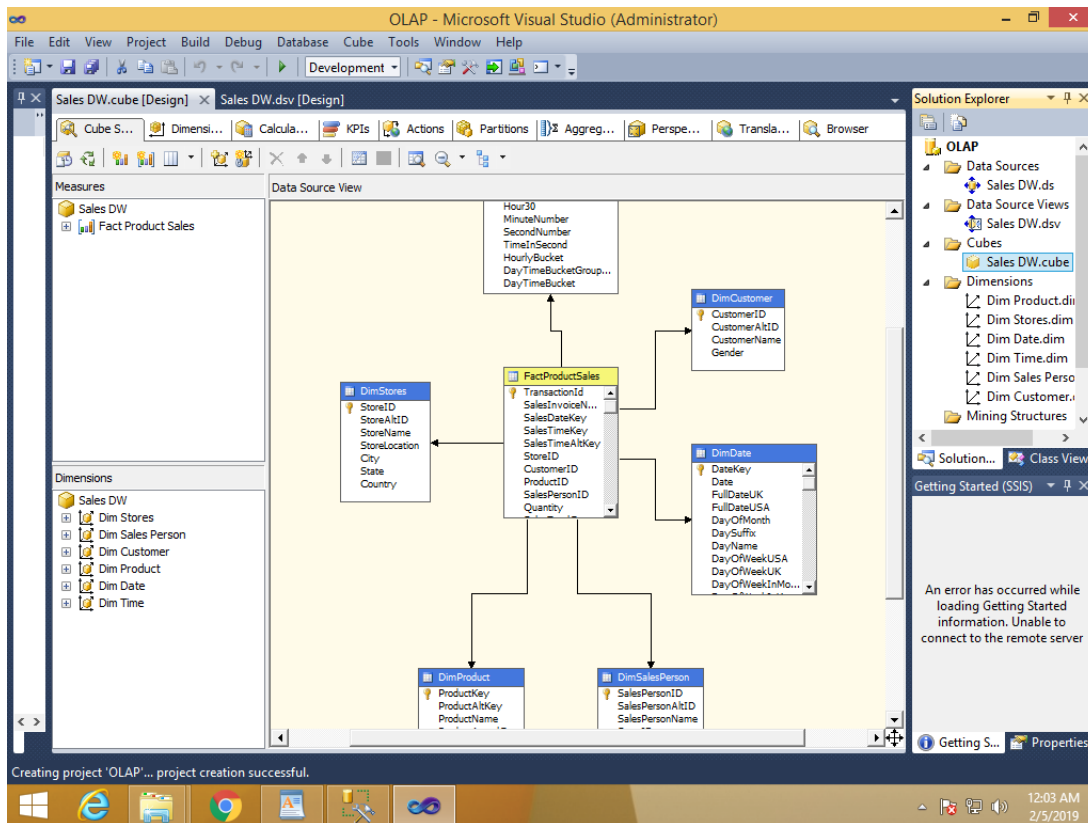
In Select New Dimensions → Check all Dimensions → Next



Click on Finish

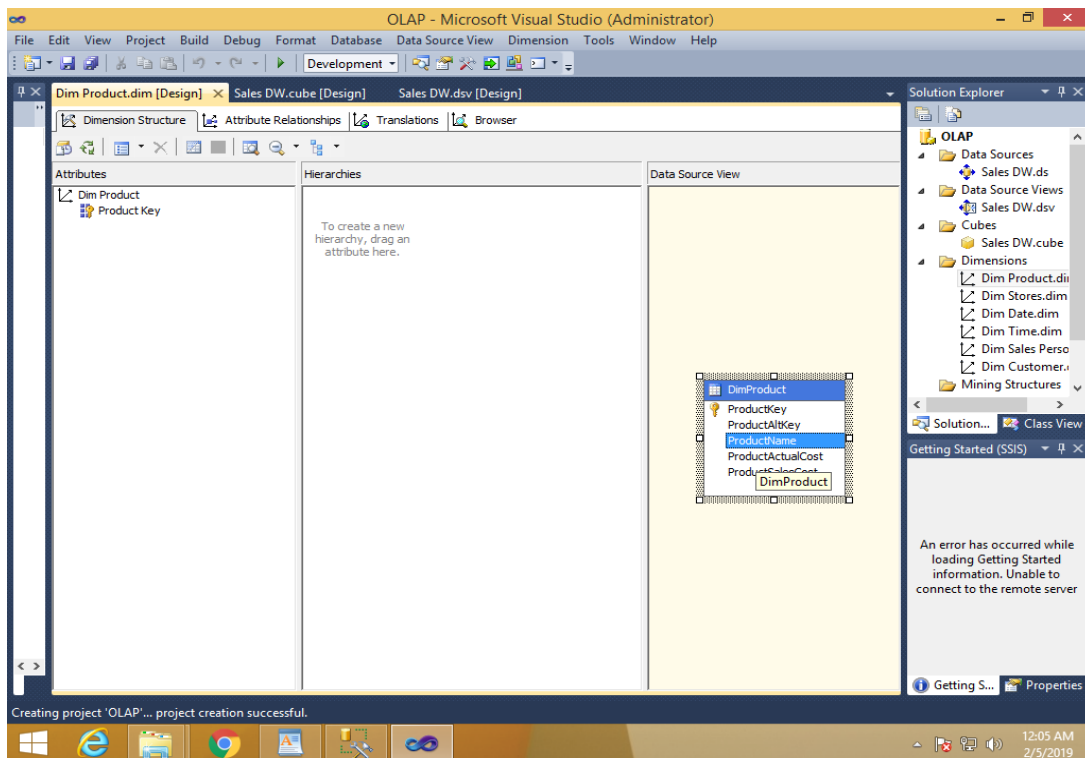


Sales_DW.cube is created



Step 5: Dimension Modification

In dimension tab → Double Click Dim Product.dim



Double click On Dim Date dimension -> Drag and Drop Fields from Table shown in Data Source View to Attributes-> Drag and Drop attributes from leftmost pane of attributes to middle pane of Hierarchy.

OLAP - Microsoft Visual Studio (Administrator)

File Edit View Project Build Debug Format Database Data Source View Dimension Tools Window Help

Development

Dim Date.dim [Design]* Dim Product.dim [Design]* Sales DW.cube [Design]* Sales DW.dsv [Design]

Solution Explorer

OLAP

- Data Sources
 - Sales DW.ds
- Data Source Views
 - Sales DW.dsv
- Cubes
 - Sales DW.cube
- Dimensions
 - Dim Product.dim
 - Dim Stores.dim
 - Dim Date.dim
 - Dim Time.dim
 - Dim Sales Perso
 - Dim Customer
- Mining Structures

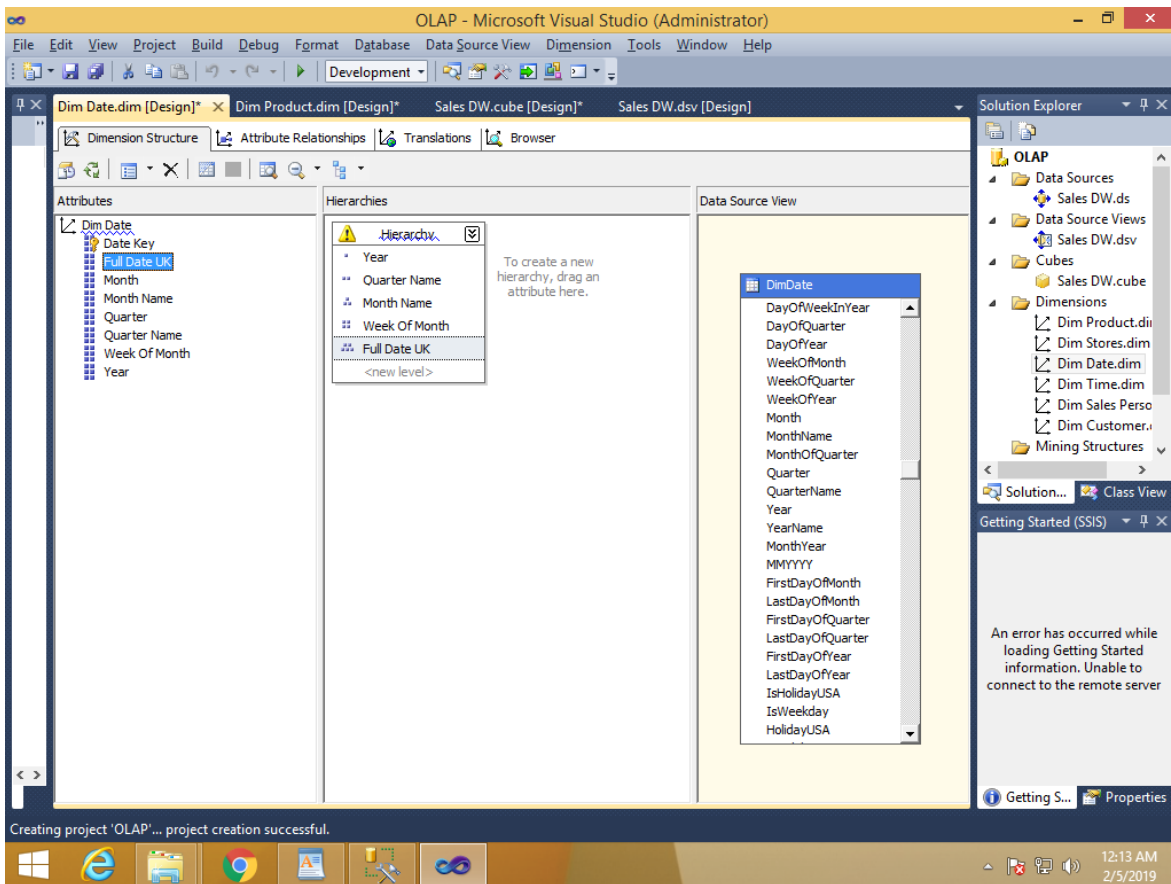
Getting Started (SSIS)

An error has occurred while loading Getting Started information. Unable to connect to the remote server

Getting Started... Properties

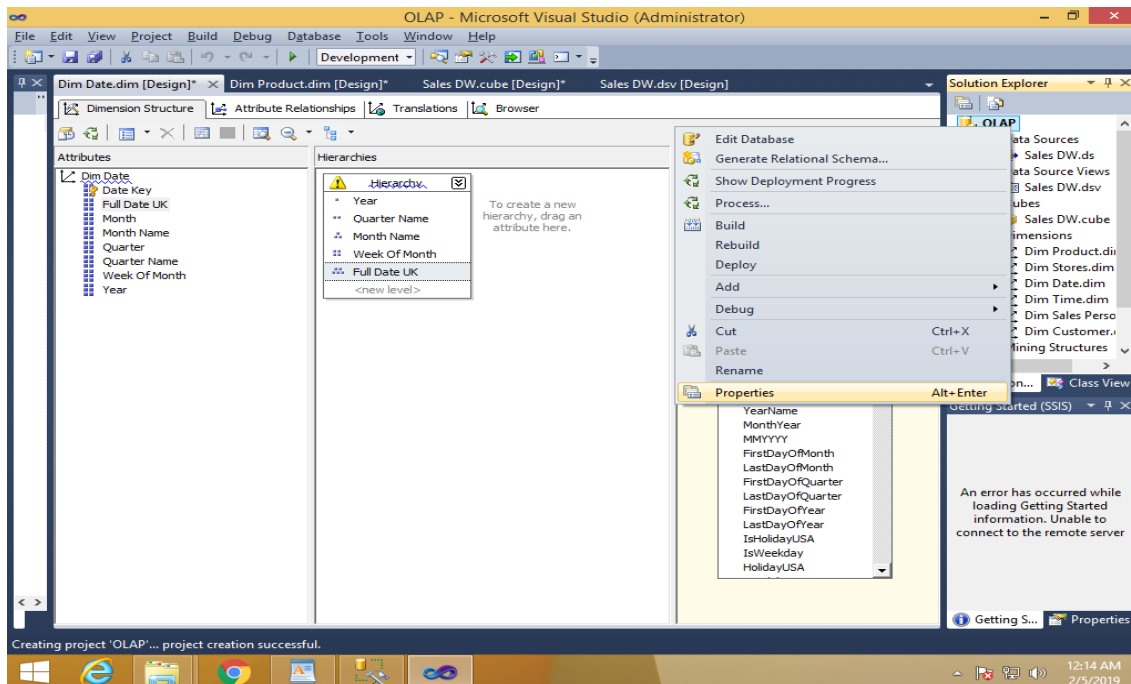
Creating project 'OLAP...' project creation successful.

12:08 AM 2/5/2011

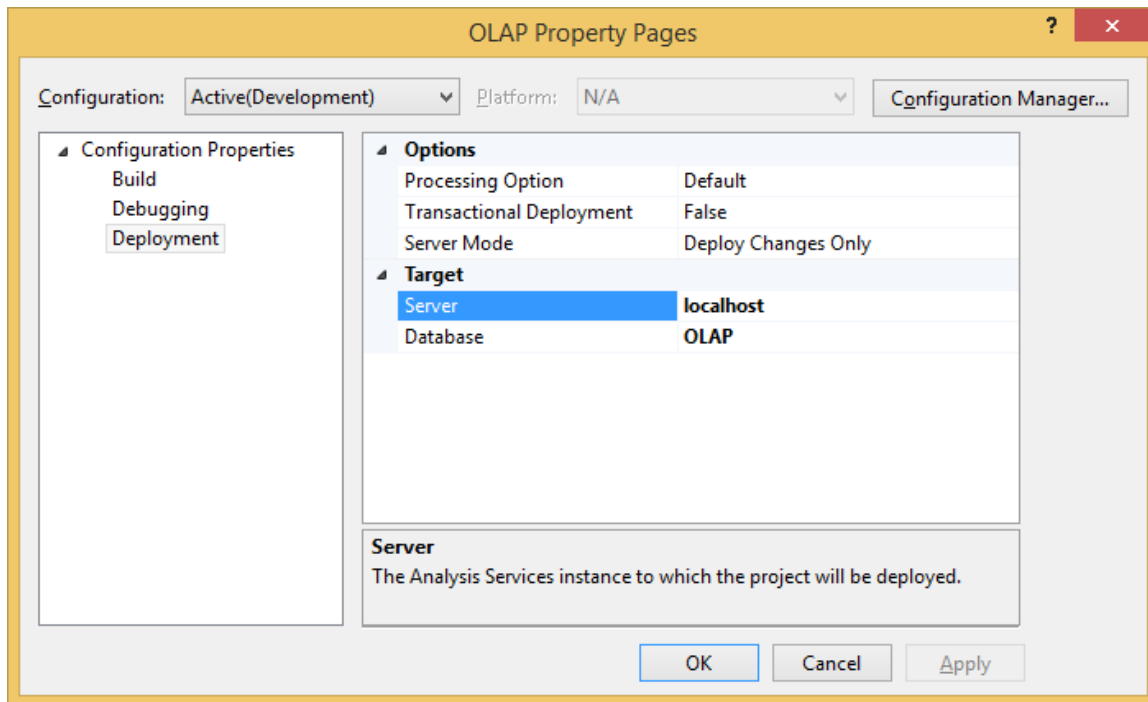


Step 7: Deploy Cube

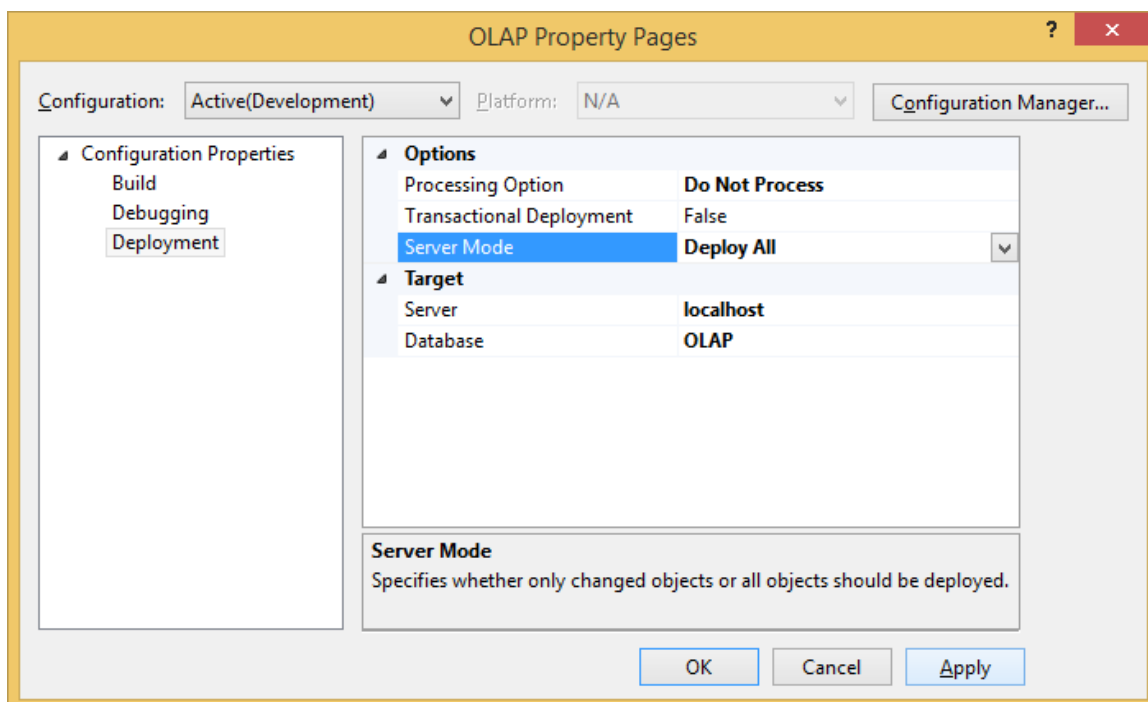
Right click on Project name → Properties



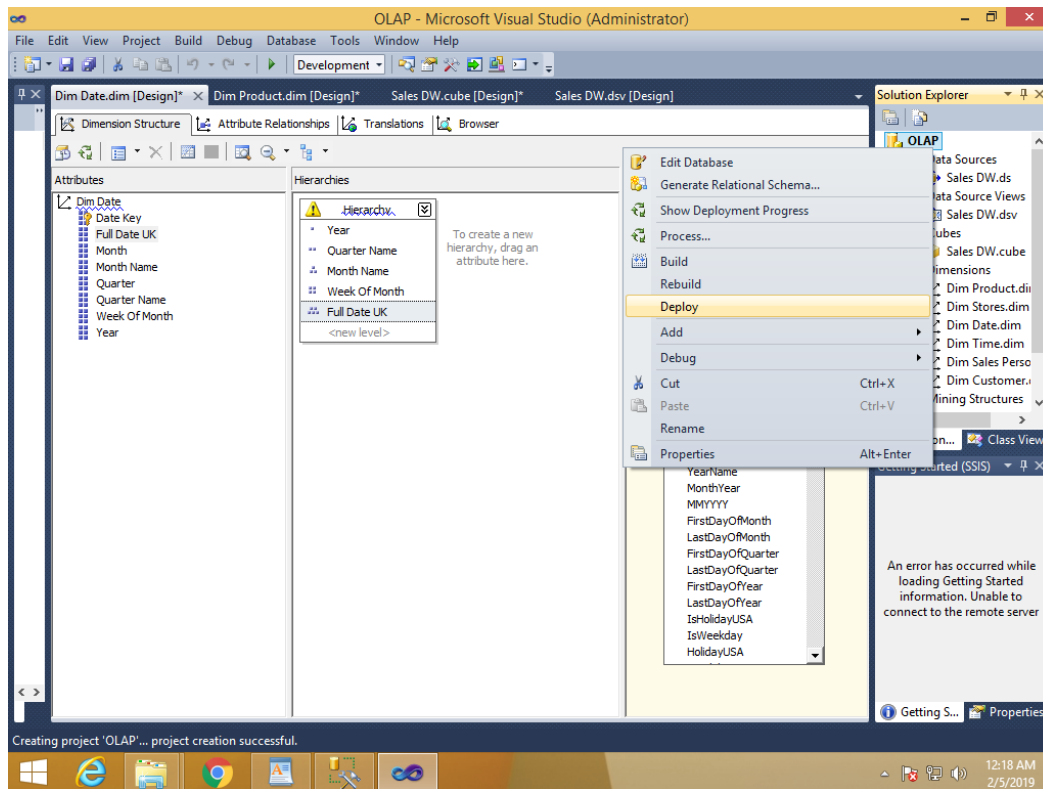
This window appears



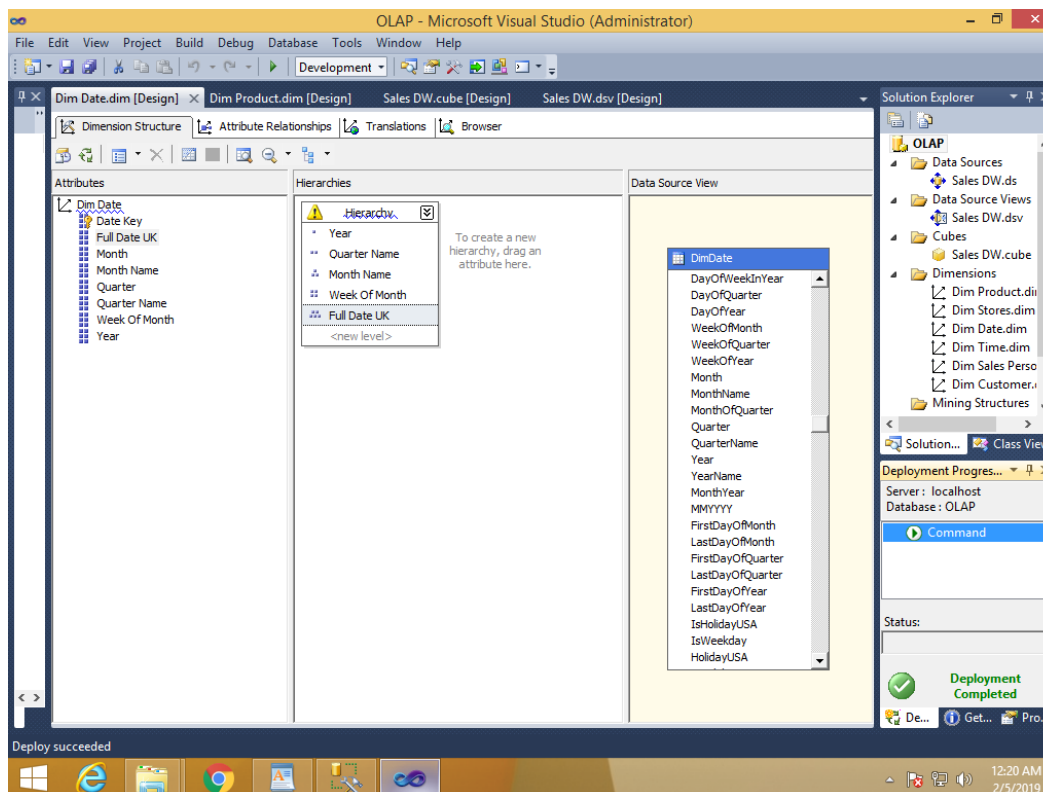
Do following changes and click on Apply & ok



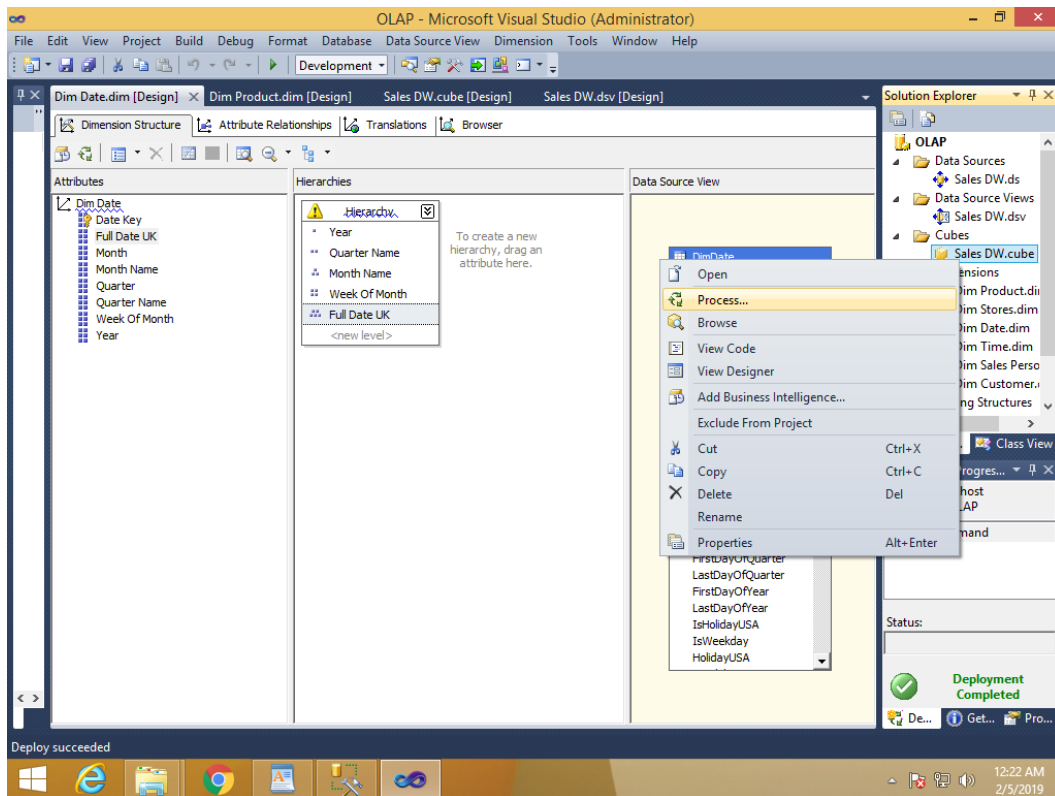
Right click on project name → Deploy



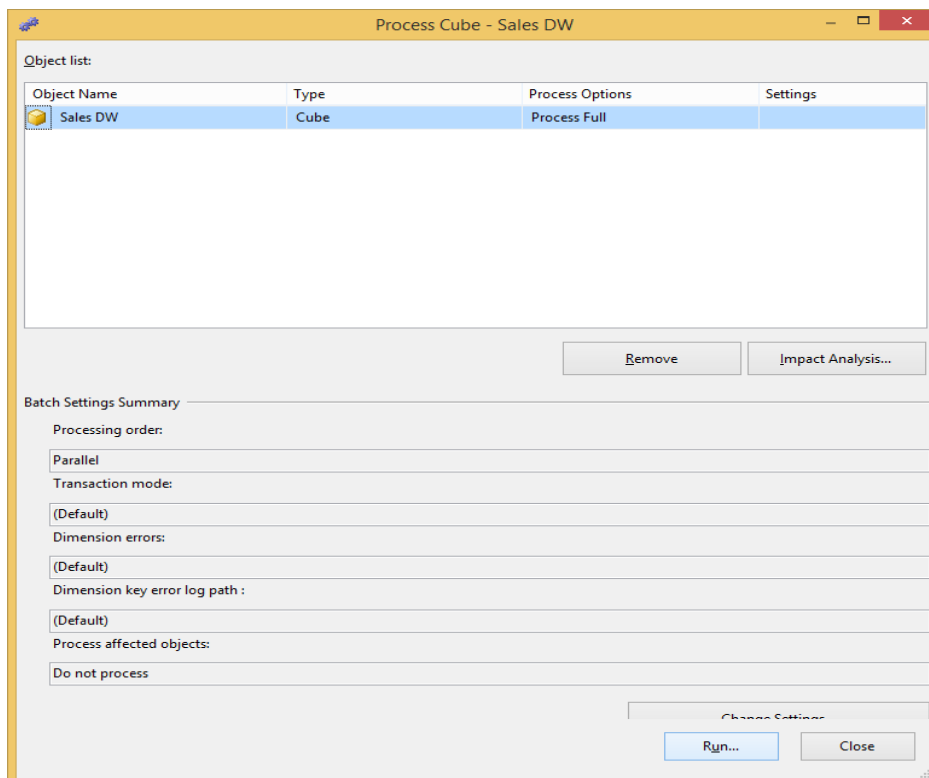
Deployment successful

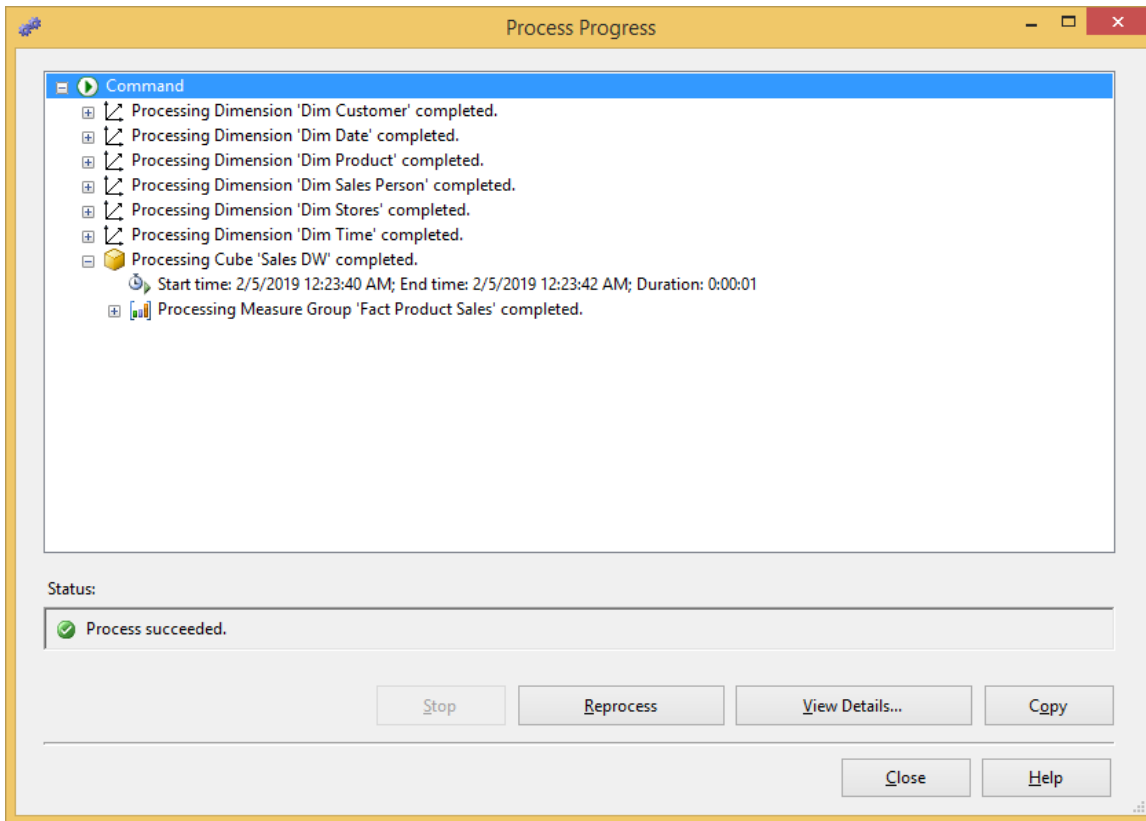


To process cube right click on Sales_DW.cube → Process



Click run





Browse the cube for analysis in solution explorer

