

# **EECS 495 – Introduction to Database Systems**

*MS SQL Server Installation, Data Import, and  
Running MDX Queries*

*Prepared by Mas-ud Hussain*

# Outline

- Installation
- Data Import
- Running MDX Queries

# INSTALLATION

# Installation

- Go to the link below:

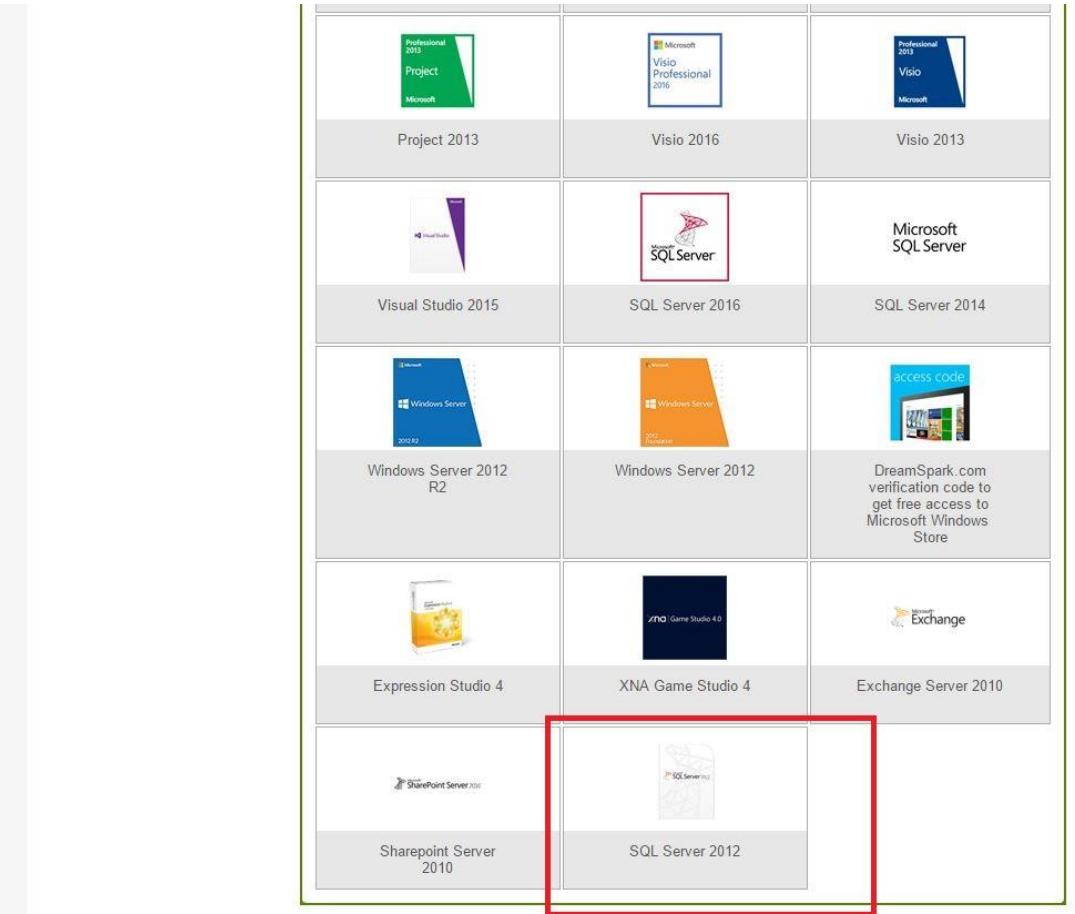
<http://e5.onthehub.com/WebStore/Welcome.aspx?ws=8fee047b-836f-e011-971f-0030487d8897>

You will be asked to provide net-id and **EECS password**.

**NOTE: the link asks for EECS password, not the one (if not same) you use to log-into Caesar.**

# Installation

- Choose SQL Server 2012:



Microsoft partners with Kivuto Solutions to make ELMS for DreamSpark WebStores available for distribution of Microsoft DreamSpark software through an agreement between your academic

# Installation

- Choose **\*Enterprise Core Edition\***:

The screenshot shows a list of SQL Server 2012 editions available for download from DreamSpark. Each entry includes the edition name, a 'Free' badge, and an 'Add To Cart' button.

- SQL Server 2012 Business Intelligence with Service Pack 2 32/64-bit (English) - DreamSpark
- SQL Server 2012 Developer Edition with Service Pack 2 32/64-bit (English) - DreamSpark
- SQL Server 2012 Enterprise Core Edition with Service Pack 2 32/64-bit (English) - DreamSpark** (This entry is highlighted with a red box)
- SQL Server 2012 Enterprise Edition with Service Pack 2 32/64-bit (English) - DreamSpark
- SQL Server 2012 Express Management Studio with SP 2 32/64-bit (English) - DreamSpark
- SQL Server 2012 Express with SP 2 32/64-bit WoW (English) - DreamSpark
- SQL Server 2012 Service Pack 2 32/64-bit (English) - DreamSpark
- SQL Server 2012 Standard Edition with Service Pack 2 32/64-bit (English) - DreamSpark
- SQL Server 2012 Web Edition with Service Pack 2 32/64-bit (English) - DreamSpark

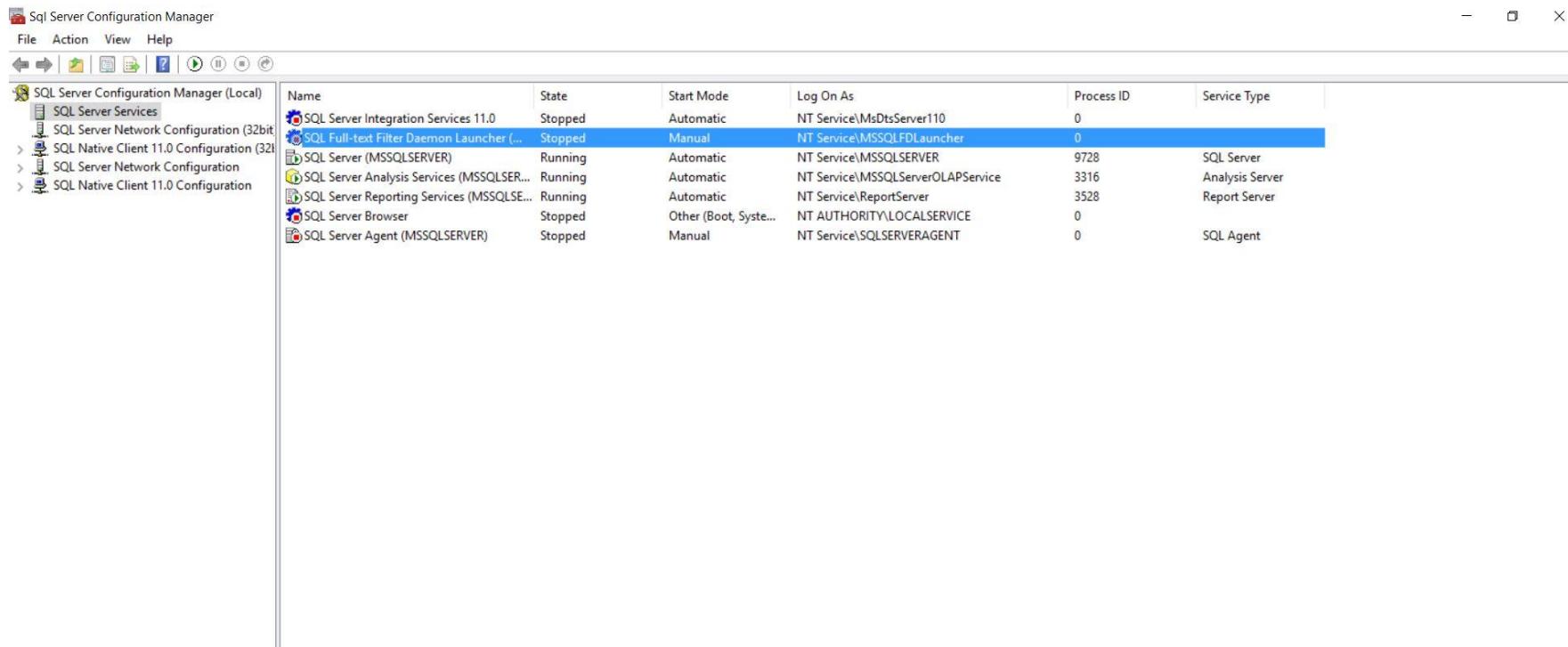
# Installation

- After downloading, install MS SQL Server with default features.
- Installation is easy.
- During installation, choose default options in most screens, and press next.
- **If, at any window, asked if you want to add any user, add the current user (press that button).**

# DATA IMPORT

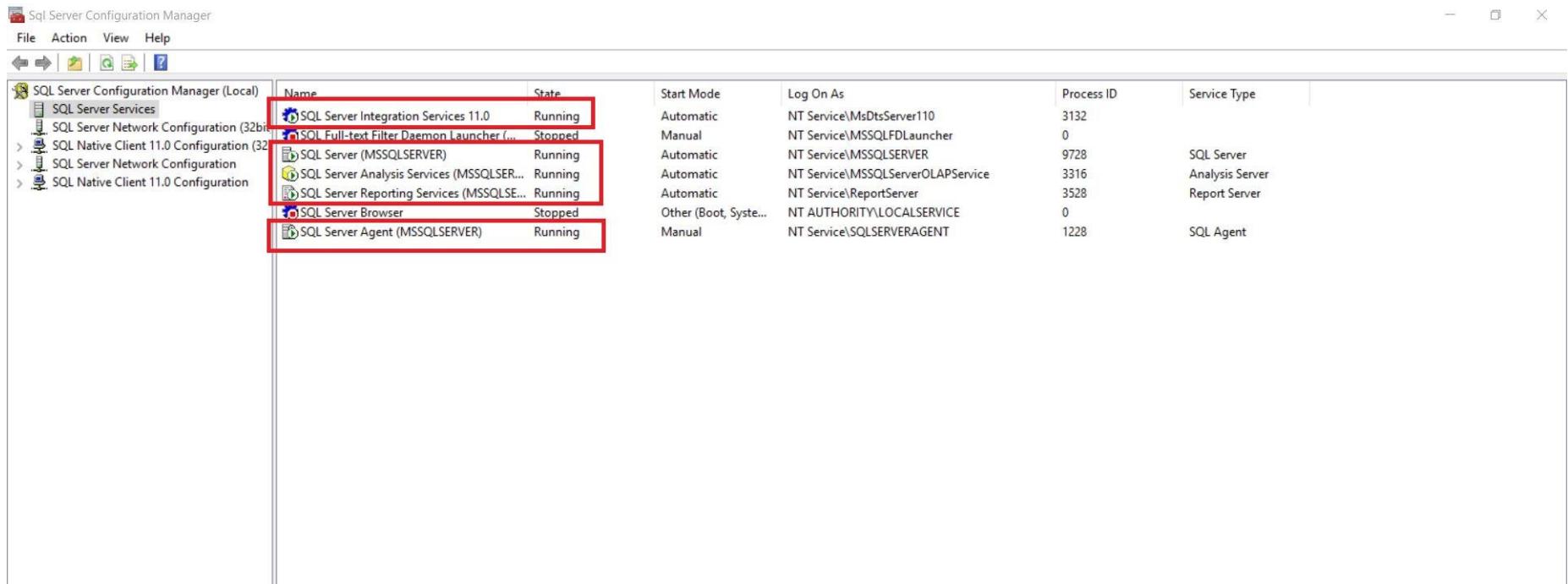
# Data Import

- First open SQL Server Configuration Manager.
- Then, check if everything is running (else right click on it and make them run)



# Data Import

- At least the following services should be running.

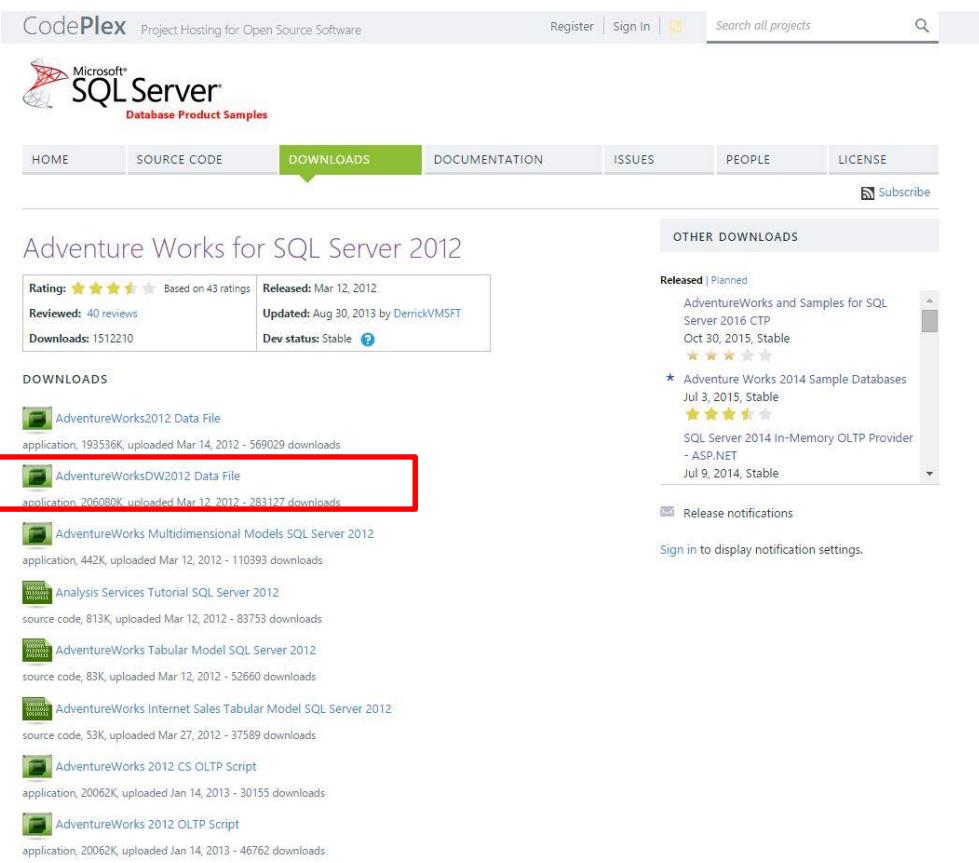


The screenshot shows the SQL Server Configuration Manager interface. On the left, there's a navigation pane with items like 'SQL Server Services', 'SQL Server Network Configuration (32bit)', 'SQL Native Client 11.0 Configuration (32bit)', 'SQL Server Network Configuration', and 'SQL Native Client 11.0 Configuration'. The main area is a table displaying service details:

Name	State	Start Mode	Log On As	Process ID	Service Type
SQL Server Integration Services 11.0	Running	Automatic	NT Service\MsDtsServer110	3132	
SQL Full-text Filter Daemon Launcher (MSSQLSERVER)	Stopped	Manual	NT Service\MSSQLFDLauncher	0	
SQL Server (MSSQLSERVER)	Running	Automatic	NT Service\MSSQLSERVER	9728	SQL Server
SQL Server Analysis Services (MSSQLSERV...)	Running	Automatic	NT Service\MSSQLServerOLAPService	3316	Analysis Server
SQL Server Reporting Services (MSSQLSERV...)	Running	Automatic	NT Service\ReportServer	3528	Report Server
SQL Server Browser	Stopped	Other (Boot, Syste...)	NT AUTHORITY\LOCALSERVICE	0	
SQL Server Agent (MSSQLSERVER)	Running	Manual	NT Service\SQLSERVERAGENT	1228	SQL Agent

# Data Import

- Now download the database file (AdventureWorksDW-2012) from this link:  
<http://msftdbprodamples.codeplex.com/releases/view/55330>
- Make sure, you download the second file.



The screenshot shows the Microsoft SQL Server Database Product Samples project on CodePlex. The 'Downloads' tab is active. A red box highlights the 'AdventureWorksDW2012 Data File' download link, which is the second file mentioned in the list. Other download links shown include 'AdventureWorks2012 Data File' and several other sample databases like Multidimensional Models, Analysis Services Tutorial, and Internet Sales Tabular Model.

Rating: ★★★★☆ Based on 43 ratings | Released: Mar 12, 2012  
Reviewed: 40 reviews | Updated: Aug 30, 2013 by DerrickVMSFT  
Downloads: 1512210 | Dev status: Stable

OTHER DOWNLOADS

- Released | Planned
  - AdventureWorks and Samples for SQL Server 2016 CTP | Oct 30, 2015, Stable
  - Adventure Works 2014 Sample Databases | Jul 3, 2015, Stable
  - SQL Server 2014 In-Memory OLTP Provider - ASP.NET | Jul 9, 2014, Stable

Sign in to display notification settings.

McCormick

Northwestern Engineering

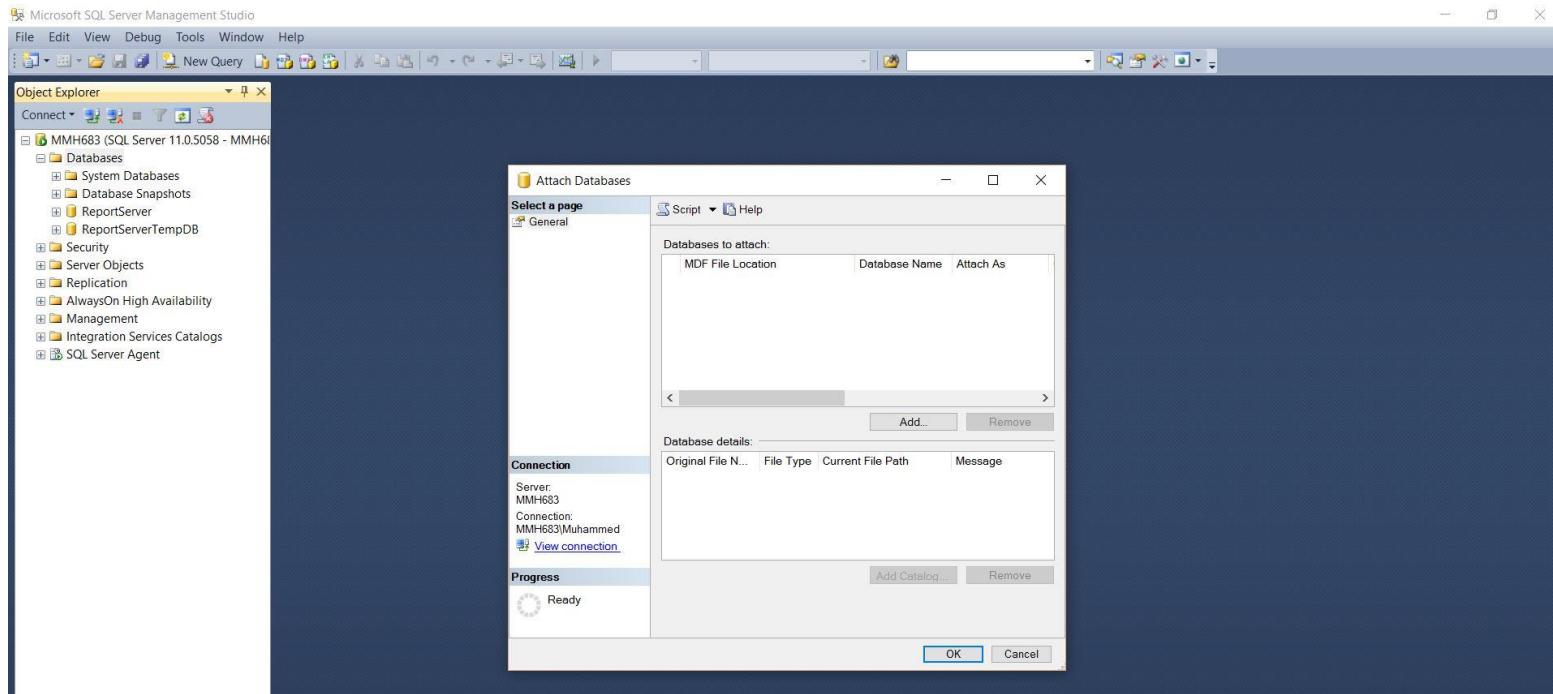
# Data Import

- After downloading the file, put the file into this directory: *C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA*  
(You can replace “C:\Program Files” with wherever you have installed your MS SQL Server)

**Note: This part is very important, otherwise data import won't work.**

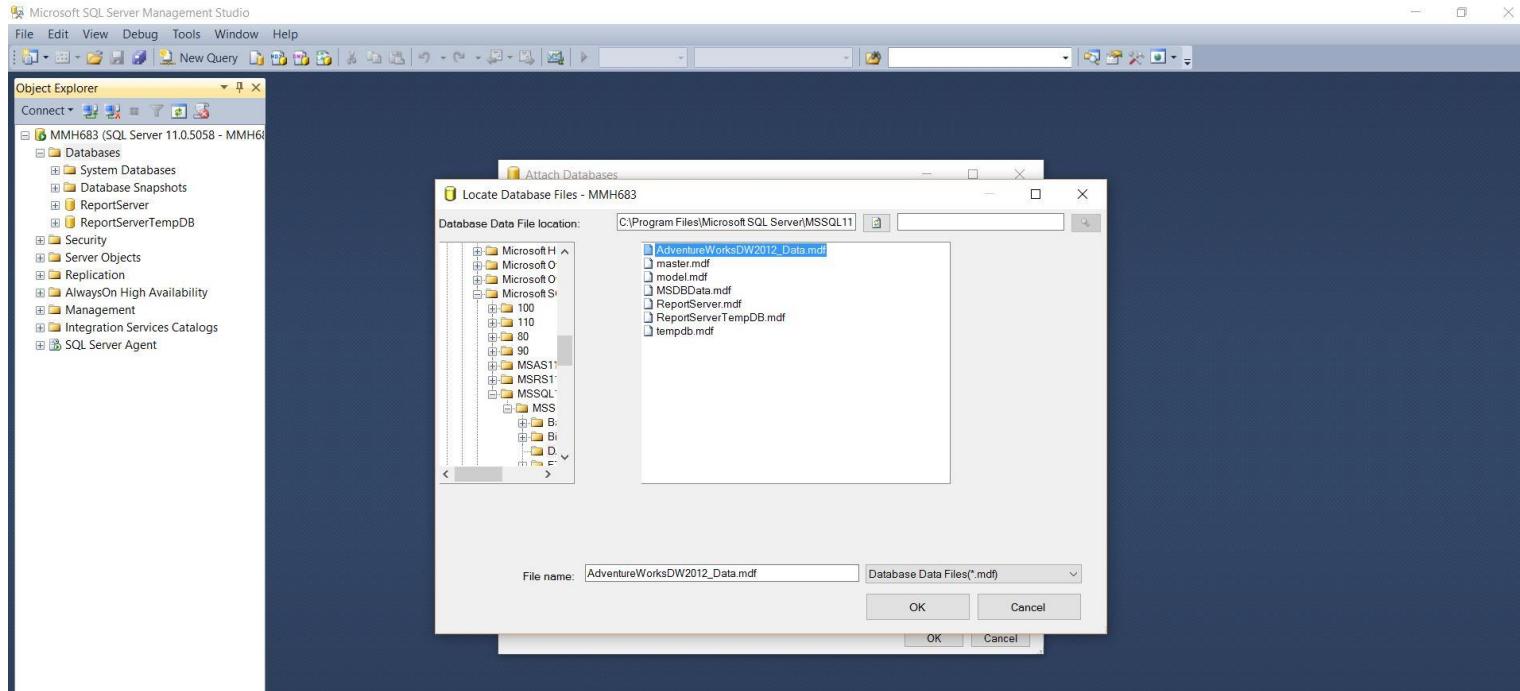
# Data Import

- After connecting, Right click on “Databases”, and select “Attach”.
- You will be taken to the window below.



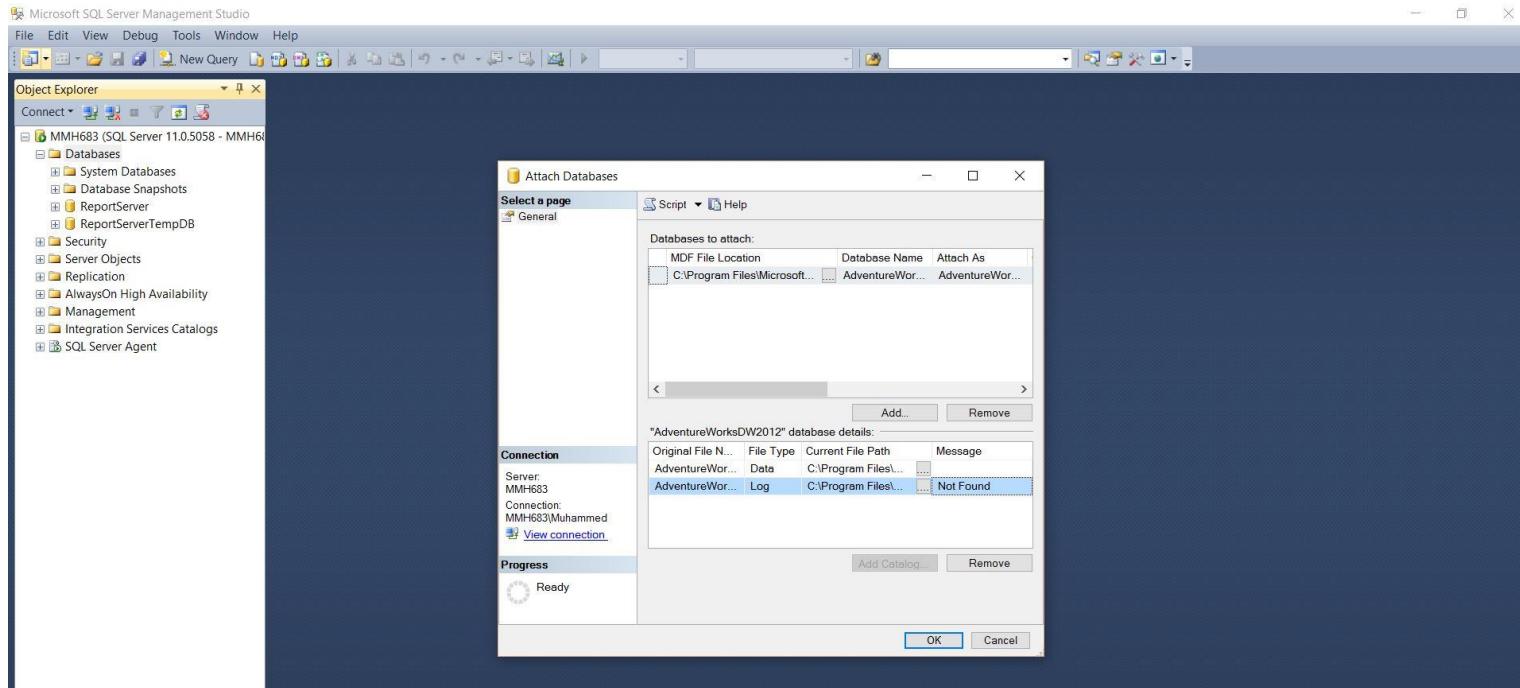
# Data Import

- Add the downloaded (and copied) file from the MS SQL Server Data folder, and click ok.



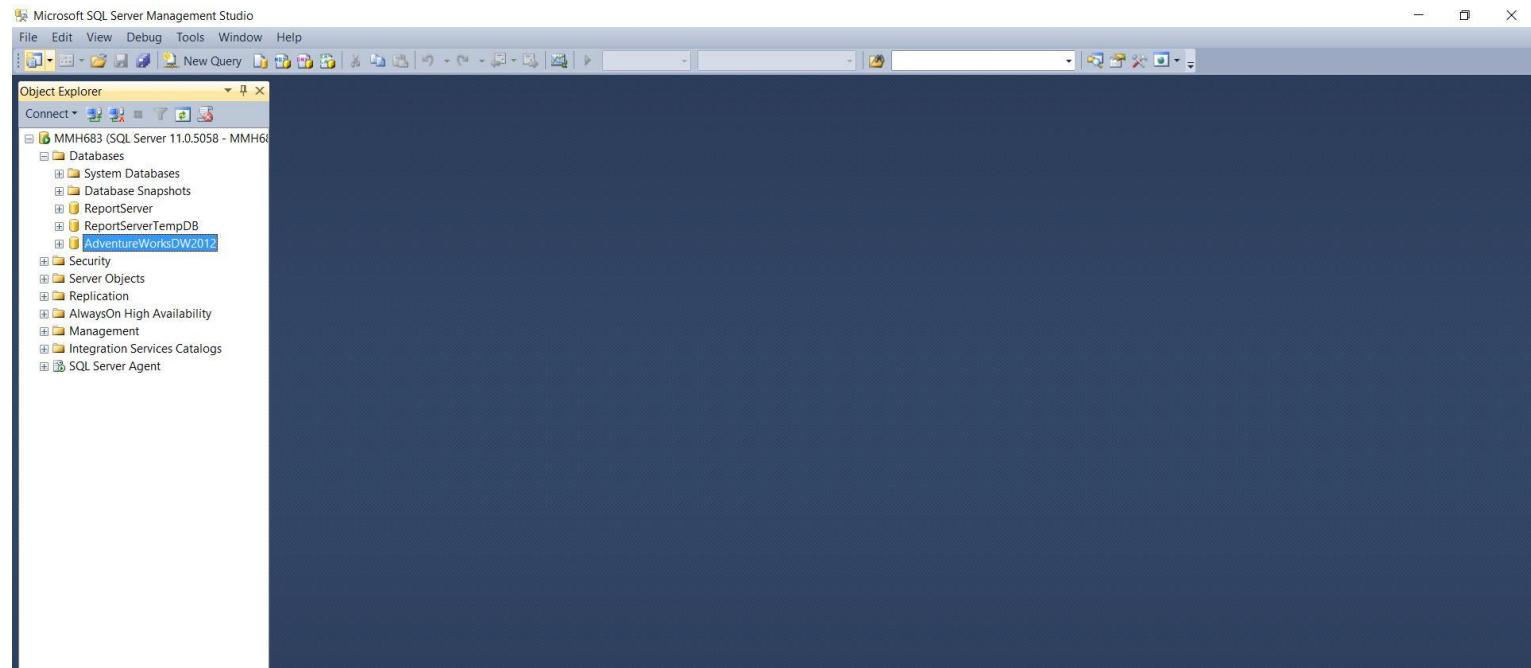
# Data Import

- After that, you will see a screen as below.
- Remove the “Log” file (highlighted in the figure), and click ok.  
**Removing log file is important for the data import process.**



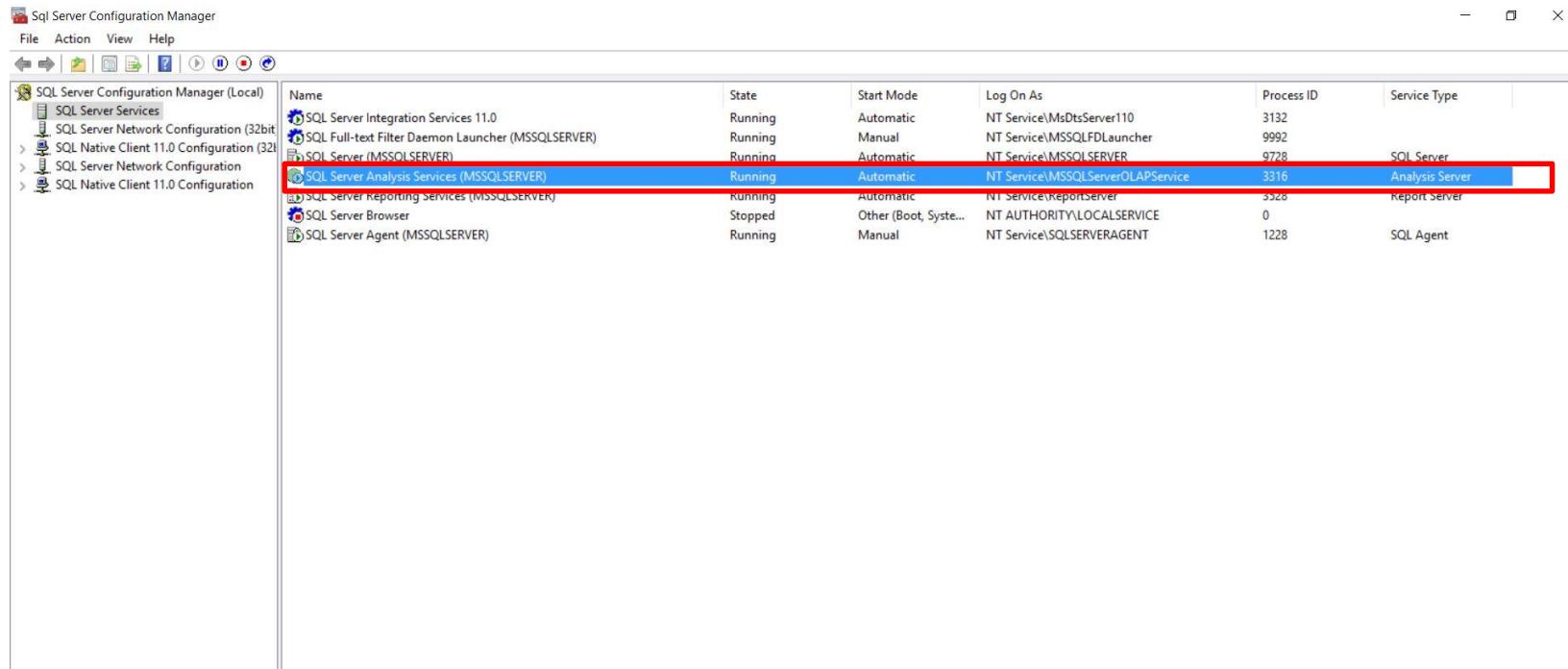
# Data Import

- Finally, you will see the new database in the list of available databases.



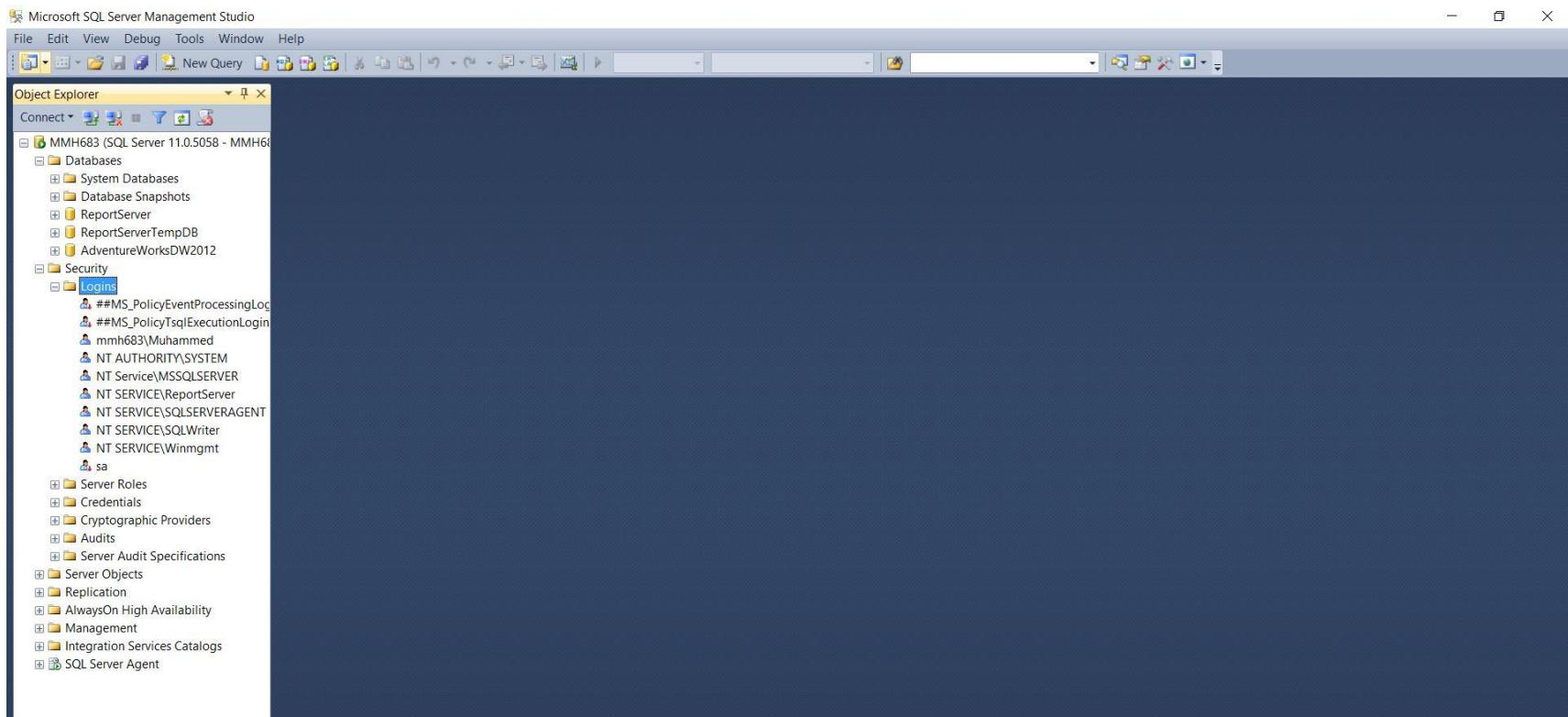
# Data Import

- As a last step in data import phase, we have to grant some permission for SQL Analysis Services. First, open SQL Configuration Manager, and check the name of the service, which is by default: NT Service\MSSQLServerOLAPService.



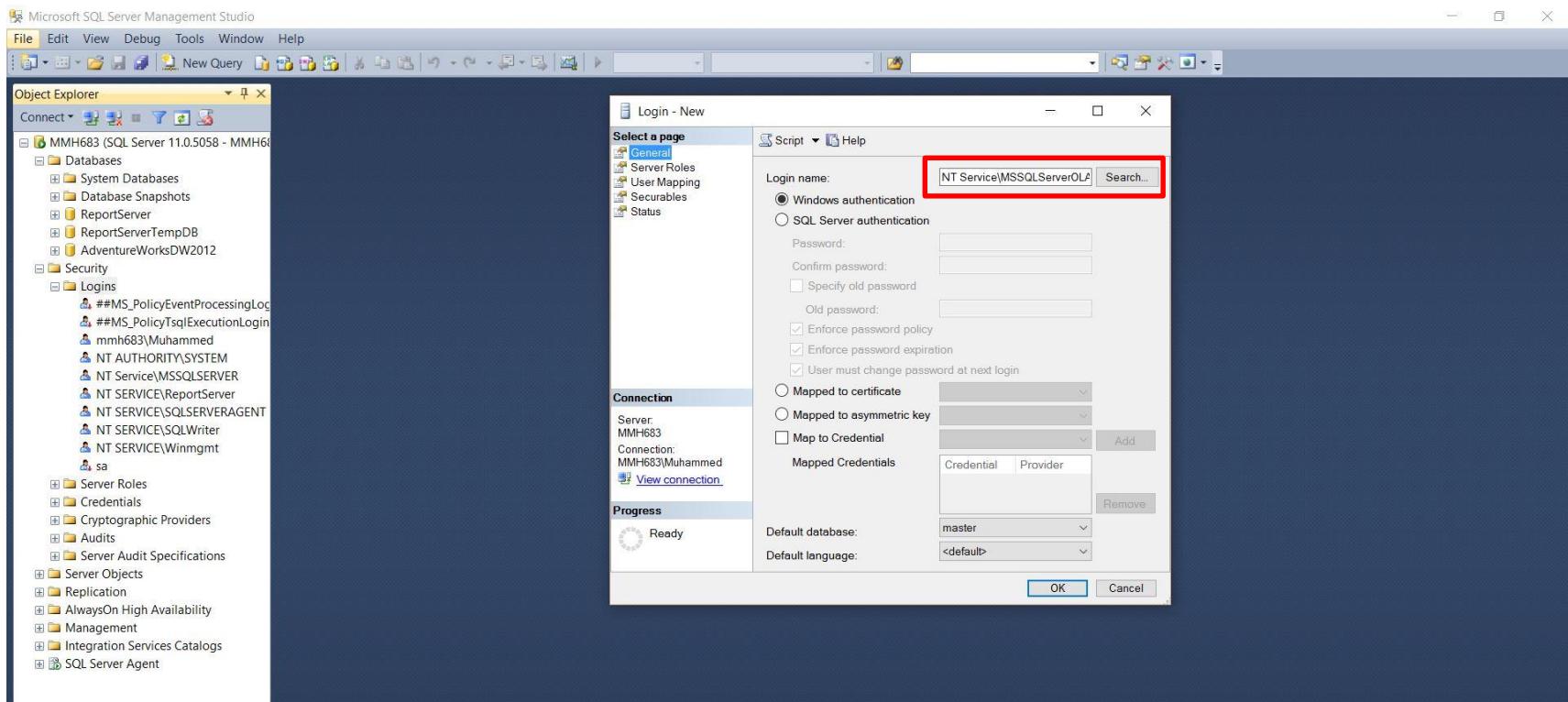
# Data Import

- Go back to SQL Server Management Studio, expand “Security” and right click on “Logins”. Select “Create New Login”.



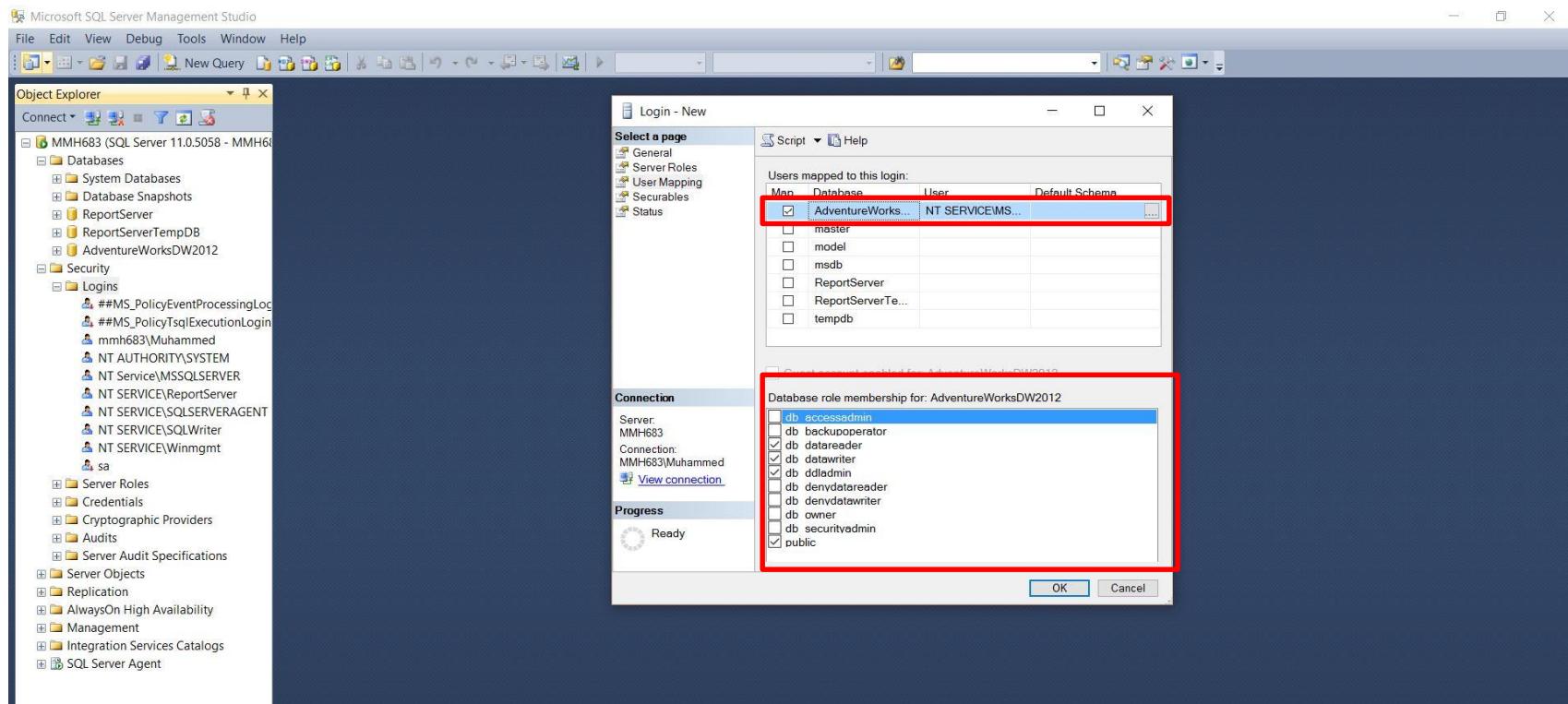
# Data Import

- Paste the analysis service name in the Login name (General tab), and select the options as shown below.



# Data Import

- Switch to user mapping tab. Select the “AdventureWorks..” database, and check appropriate permissions as shown below. Make sure tha at least public and datareader is checked. Click ok.



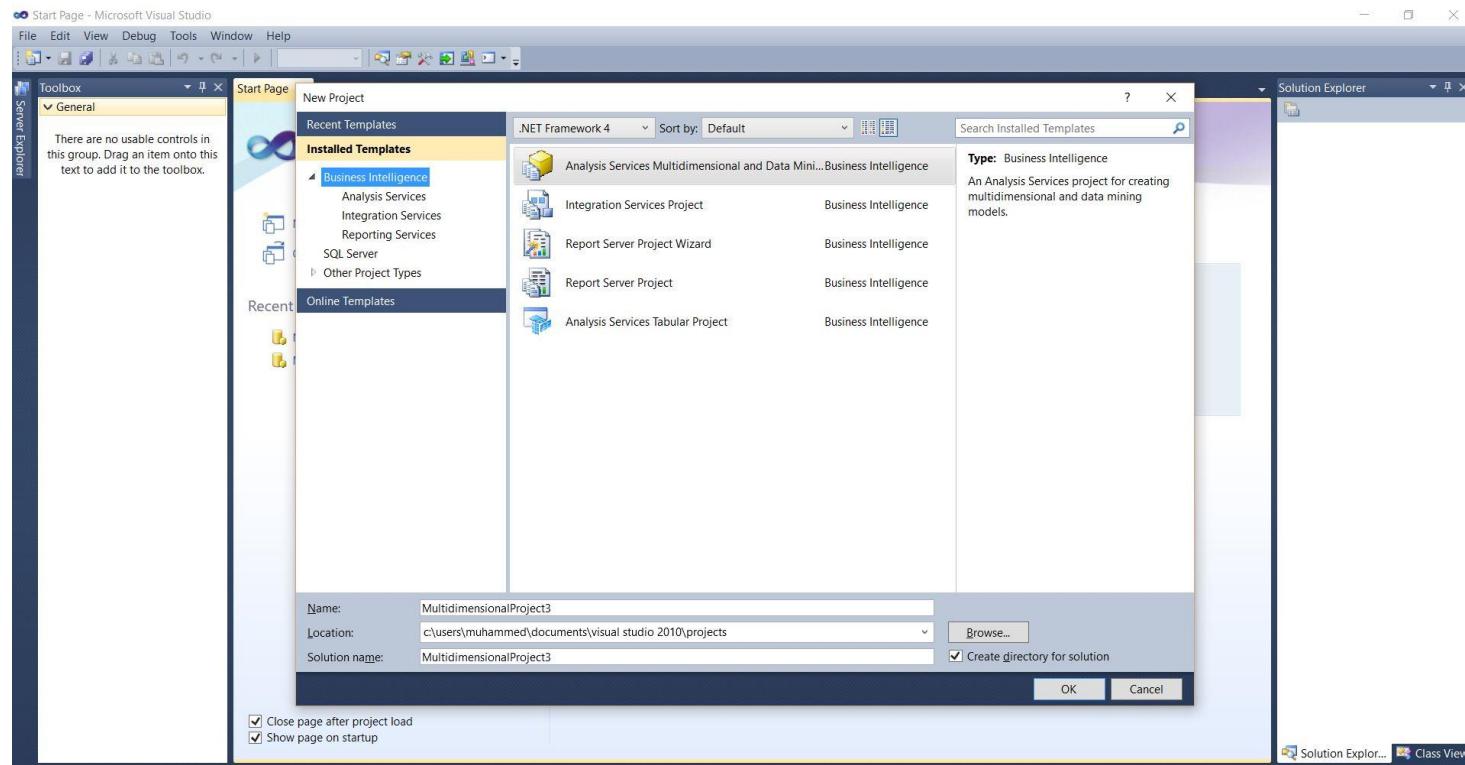
# RUNNING MDX QUERIES

# Running MDX Queries

- Run **SQL Server Data Tools** from the start menu.
- This will open a visual studio window.
- Create a new project, with options shown in the subsequent slides.

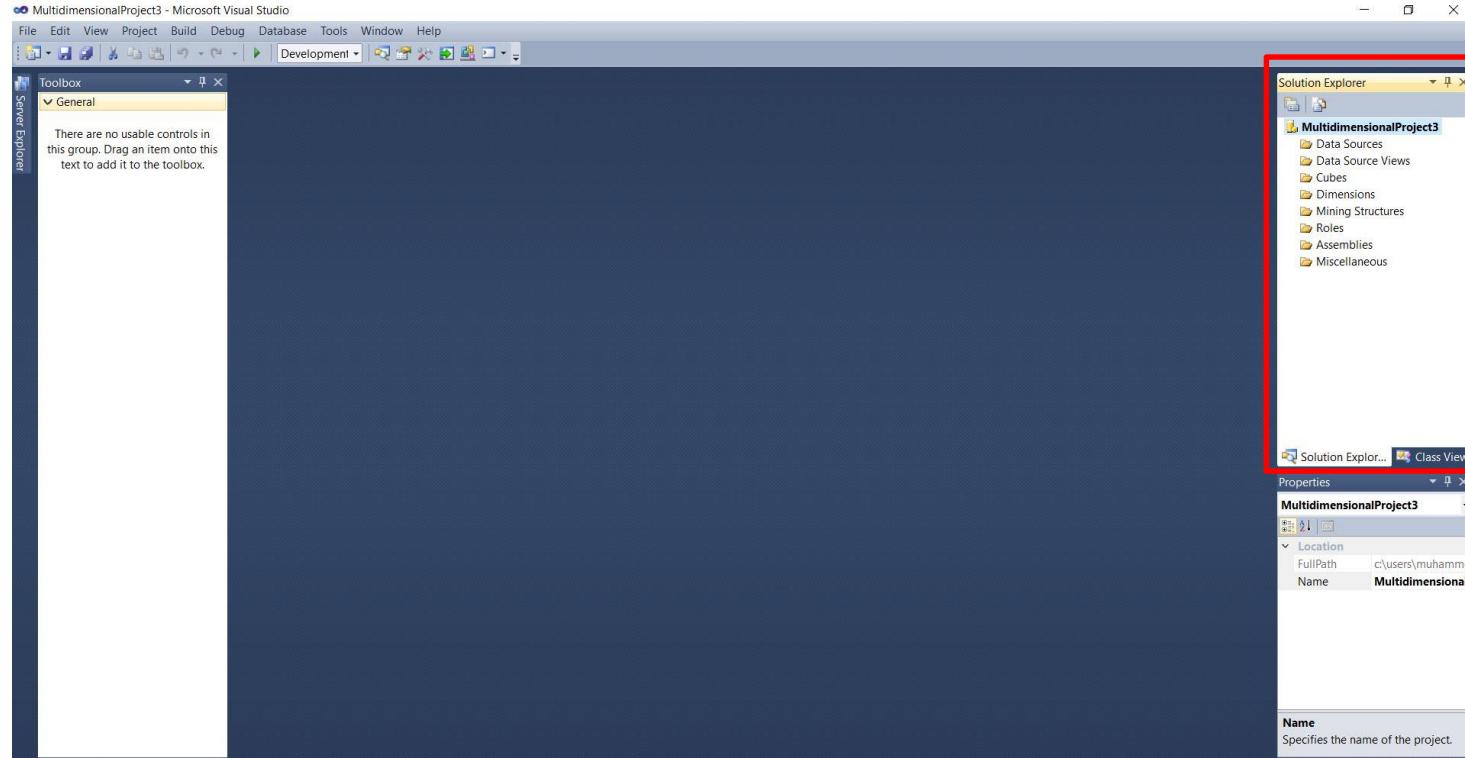
# Running MDX Queries

- Select “Business Intelligence” -> “Analysis Services Multidimensional and Data Mining Models”.



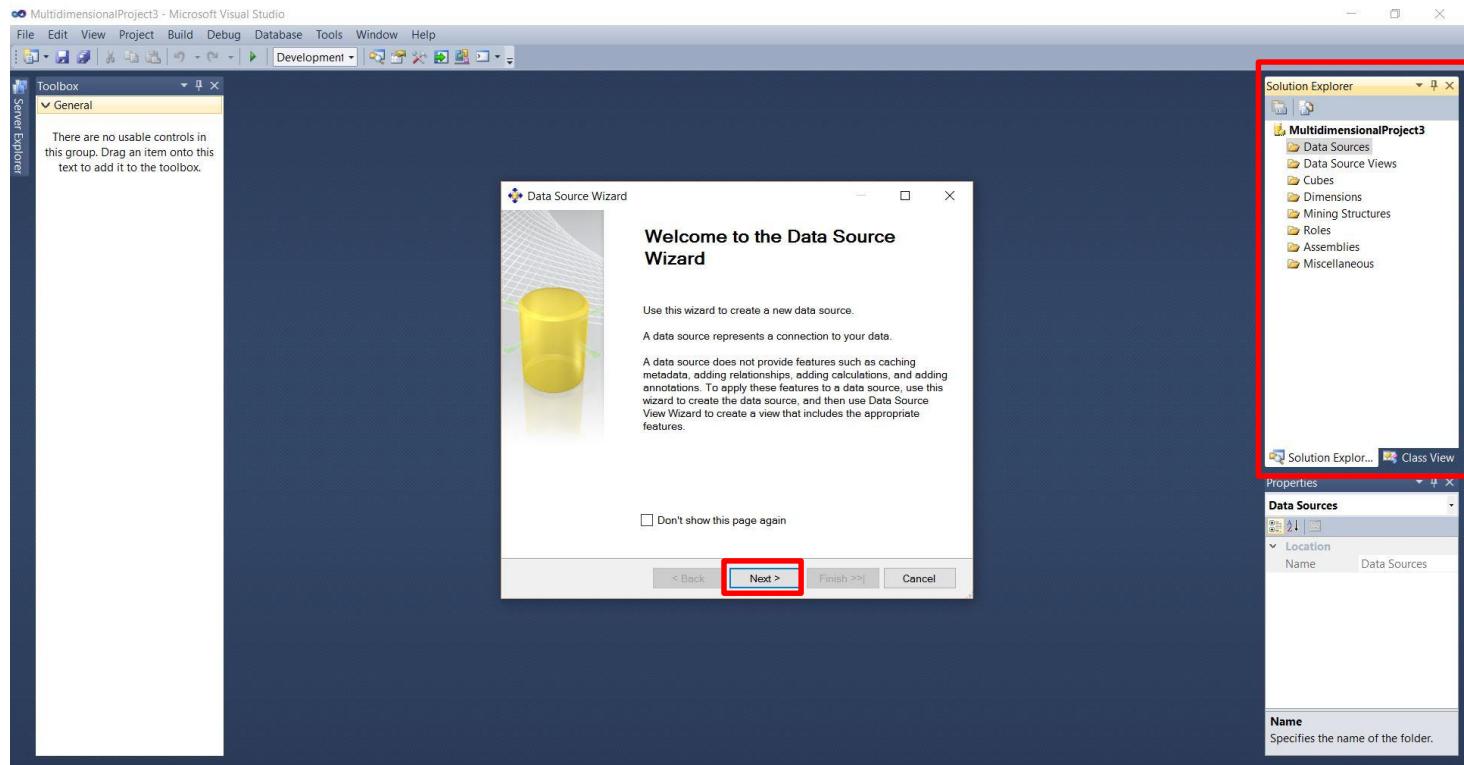
# Running MDX Queries

- You will see a new project created. Details of the project will be available in the “Solution Explorer” section.



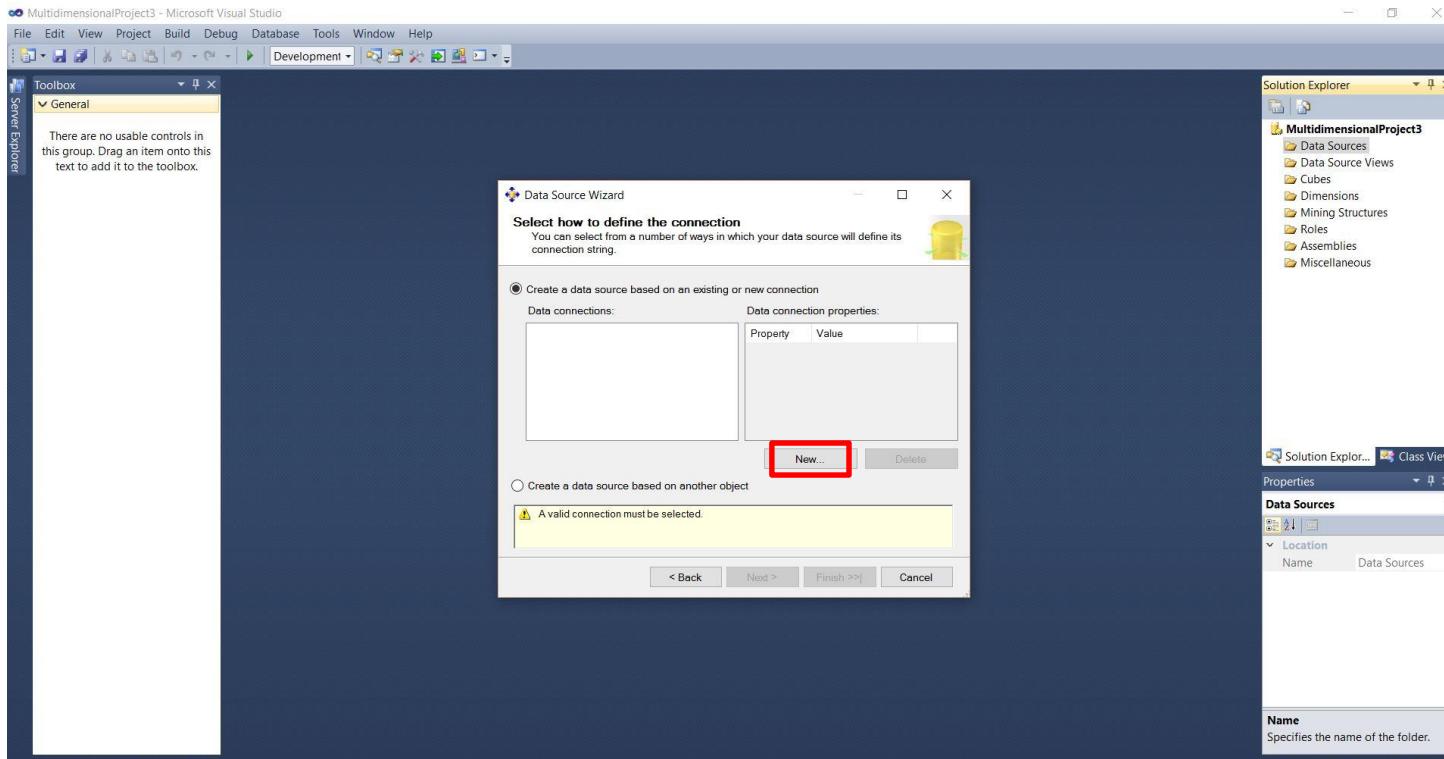
# Running MDX Queries

- Right click on “Data Source” and choose create a new data source. Click next on the first screen.



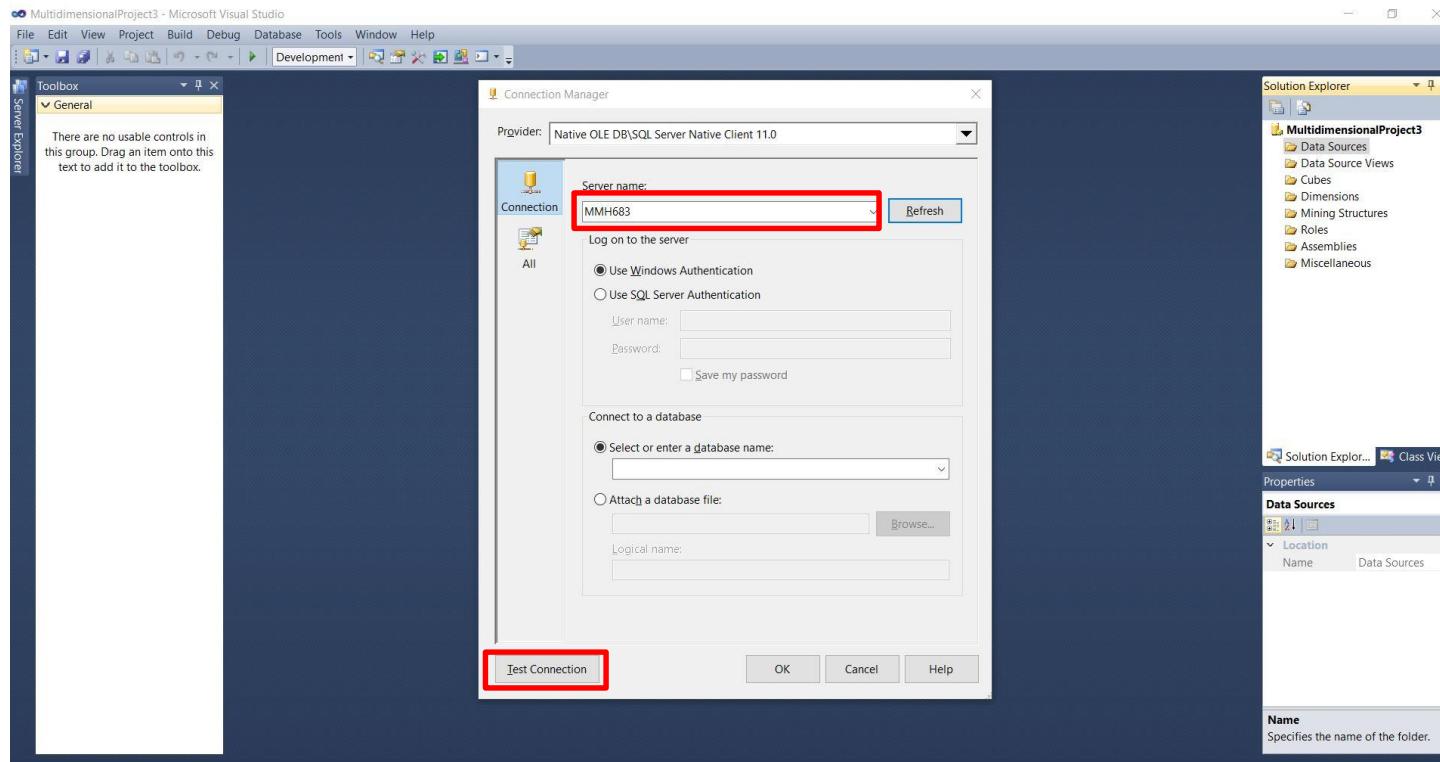
# Running MDX Queries

- Select “New” to create a new connection.



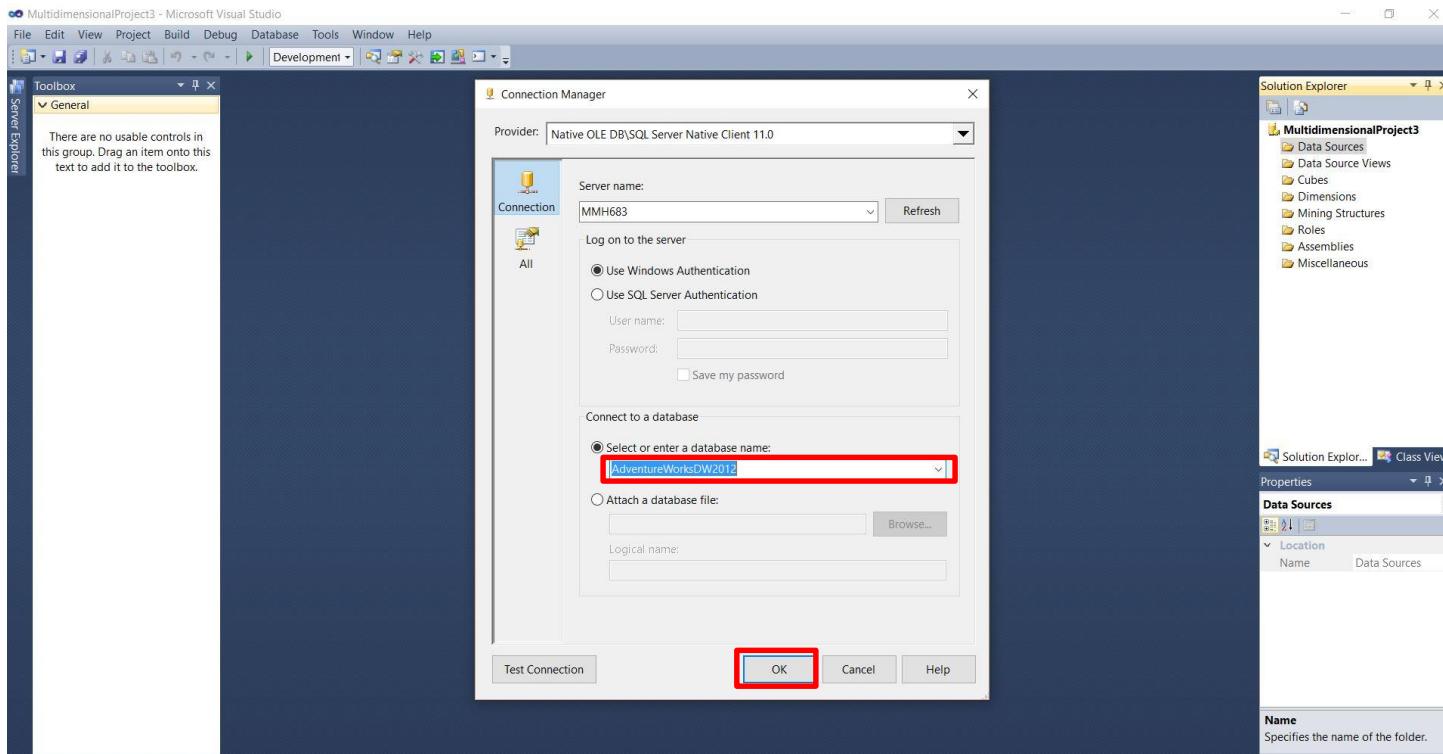
# Running MDX Queries

- Write the appropriate name of your server (in my case, MMH683 --- it was selected by default (my pc name)). Test th connection, and check if succeeds.



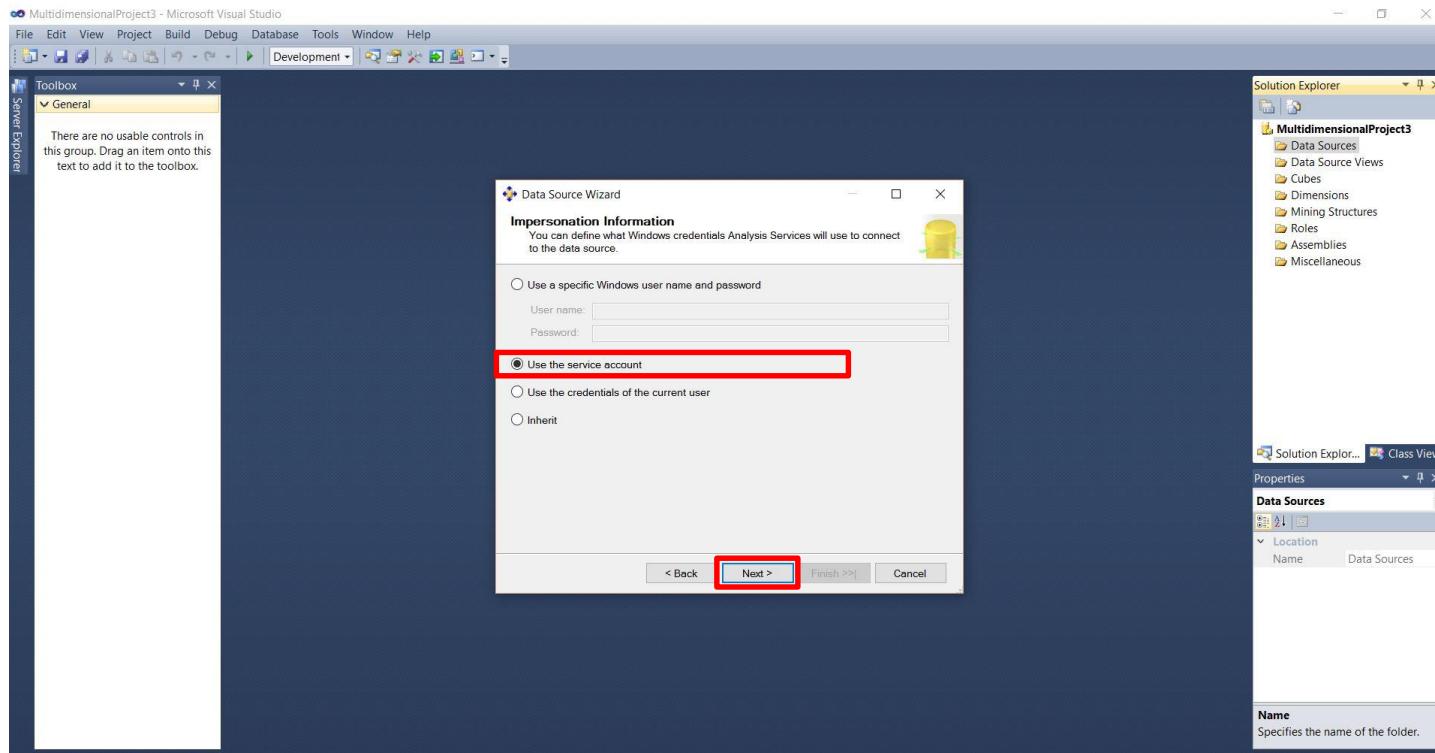
# Running MDX Queries

- Select “AdventureWorks..” database from the drop down list and click ok.



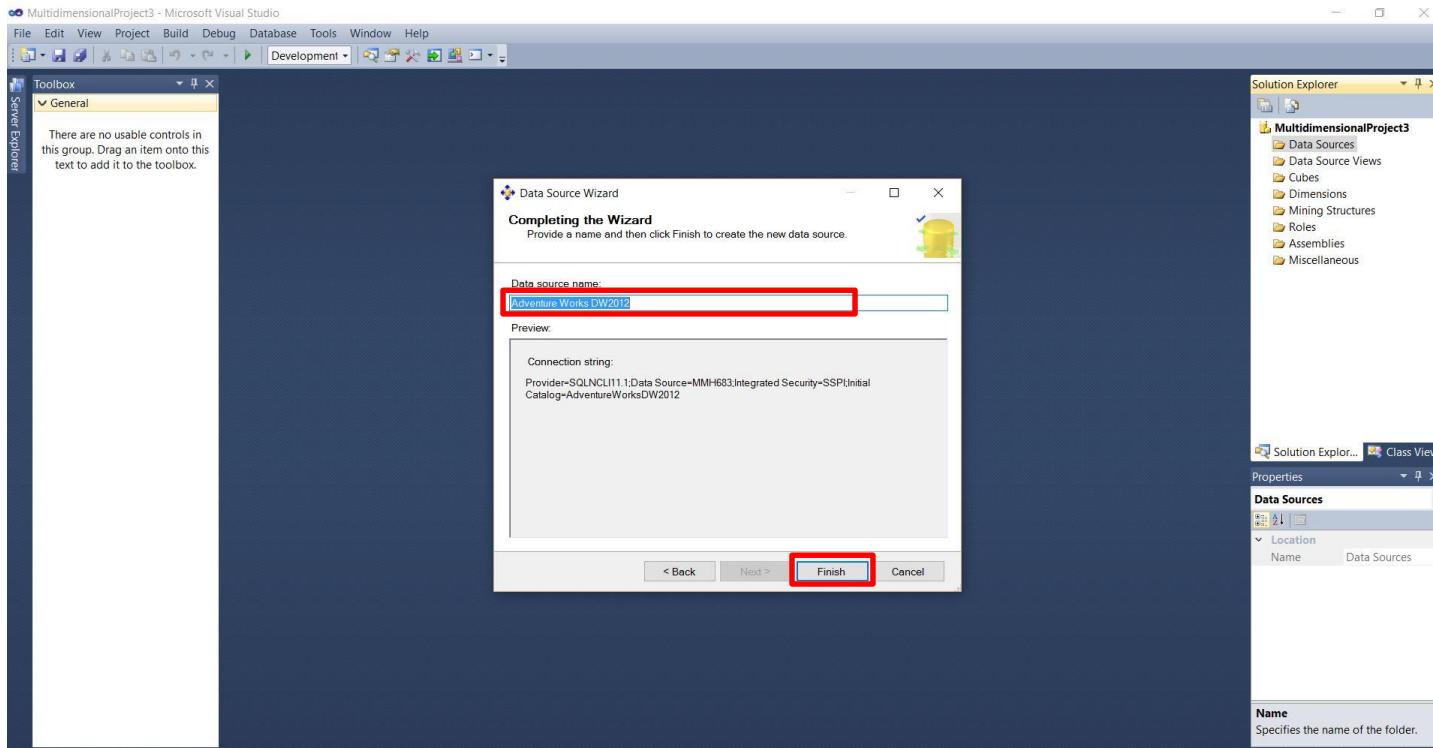
# Running MDX Queries

- Select “Use the service account” option in the next screen and press next.



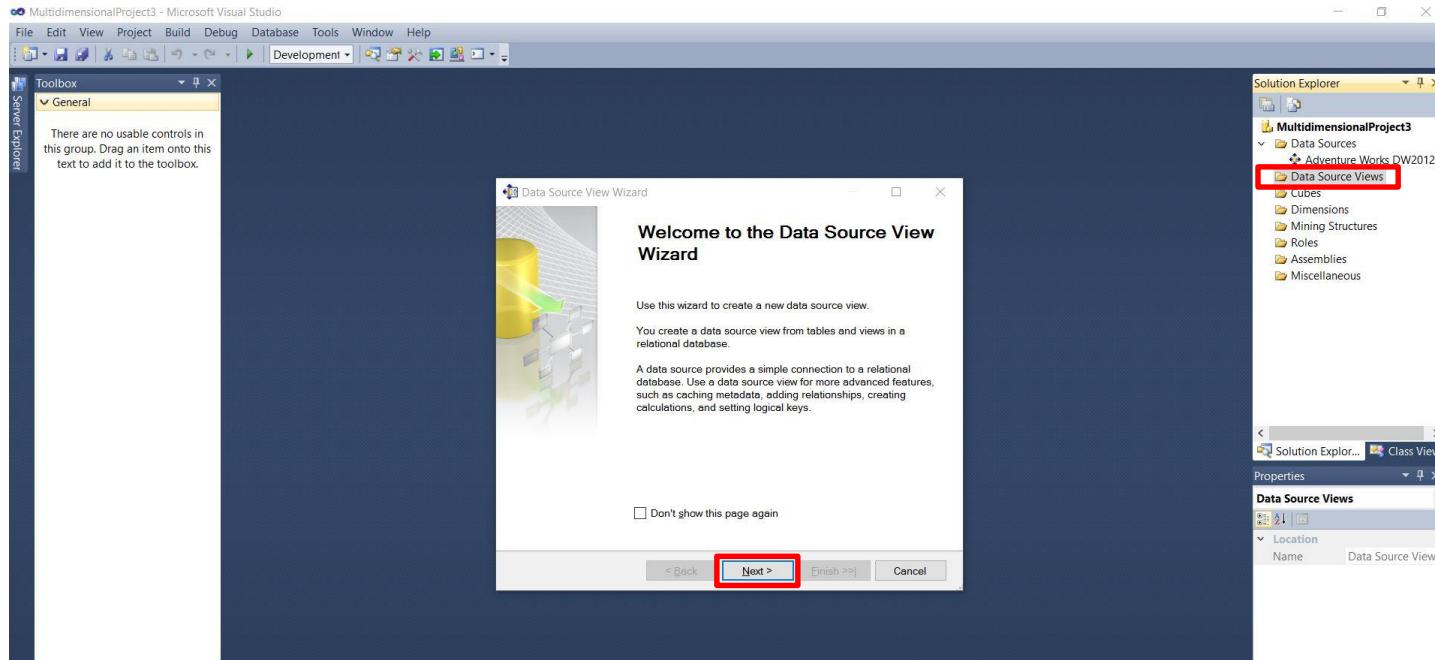
# Running MDX Queries

- Accept the default name for the data source, and click “Finish”.



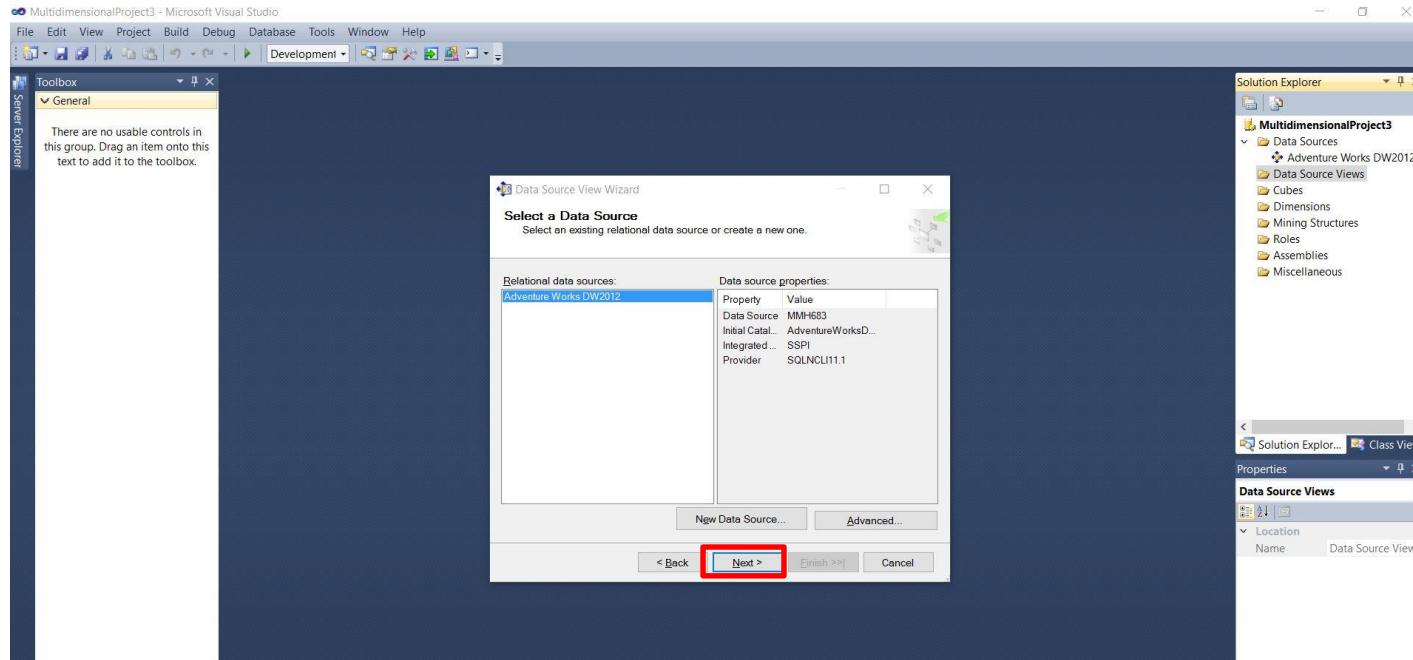
# Running MDX Queries

- Now, right click on “Data Source Views”, and choose to create a new one. Press “Next” in the first screen.



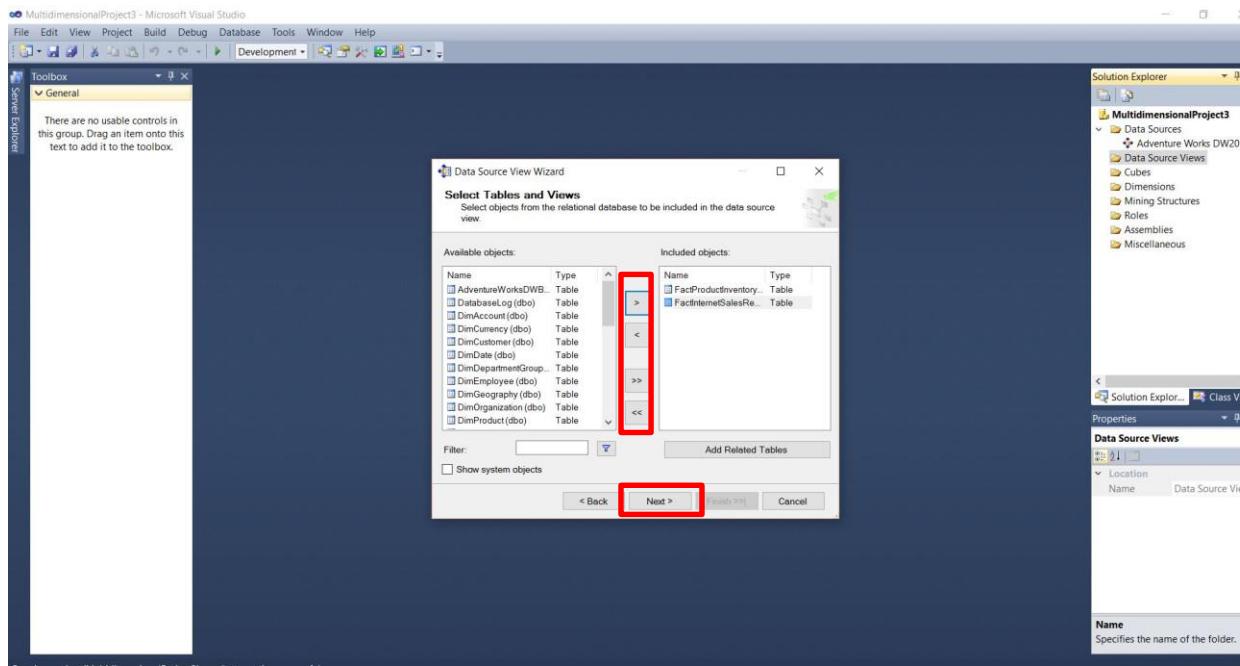
# Running MDX Queries

- Choose “AdventureWorks..” database, and press “Next”.



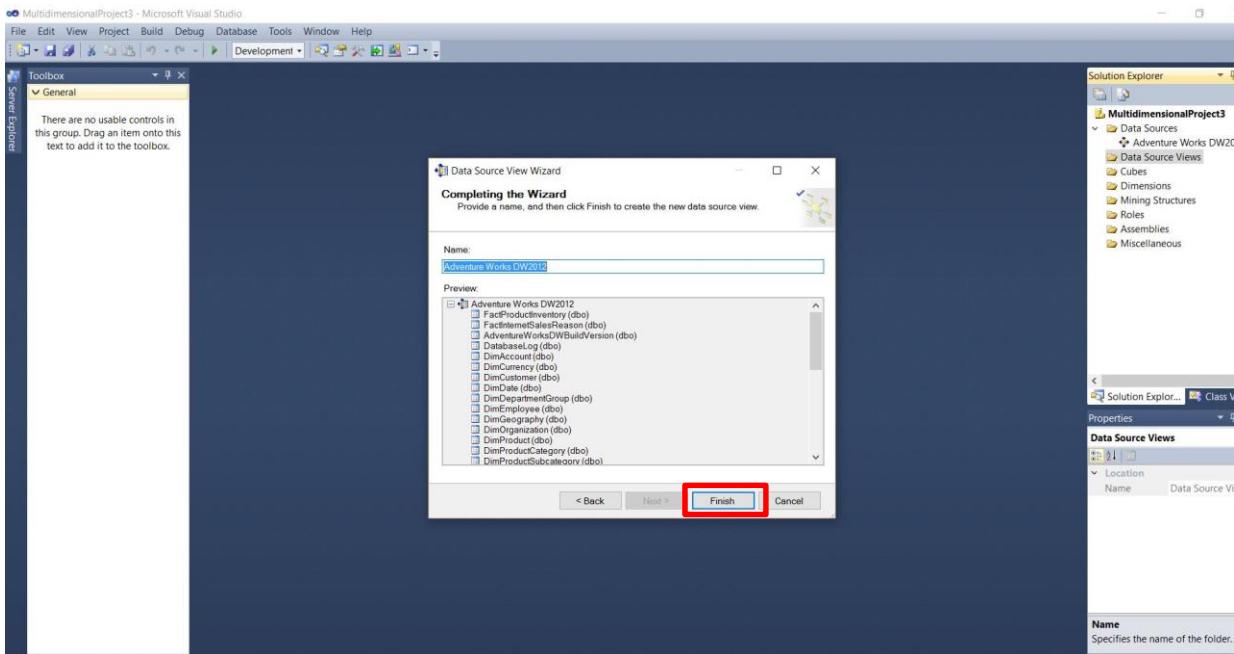
# Running MDX Queries

- In this step, you can select tables from the selected database to create the data source view. You can select any particular table using “>”, or all tables using “>>”. Lets select all tables in this step, and click “Next”.



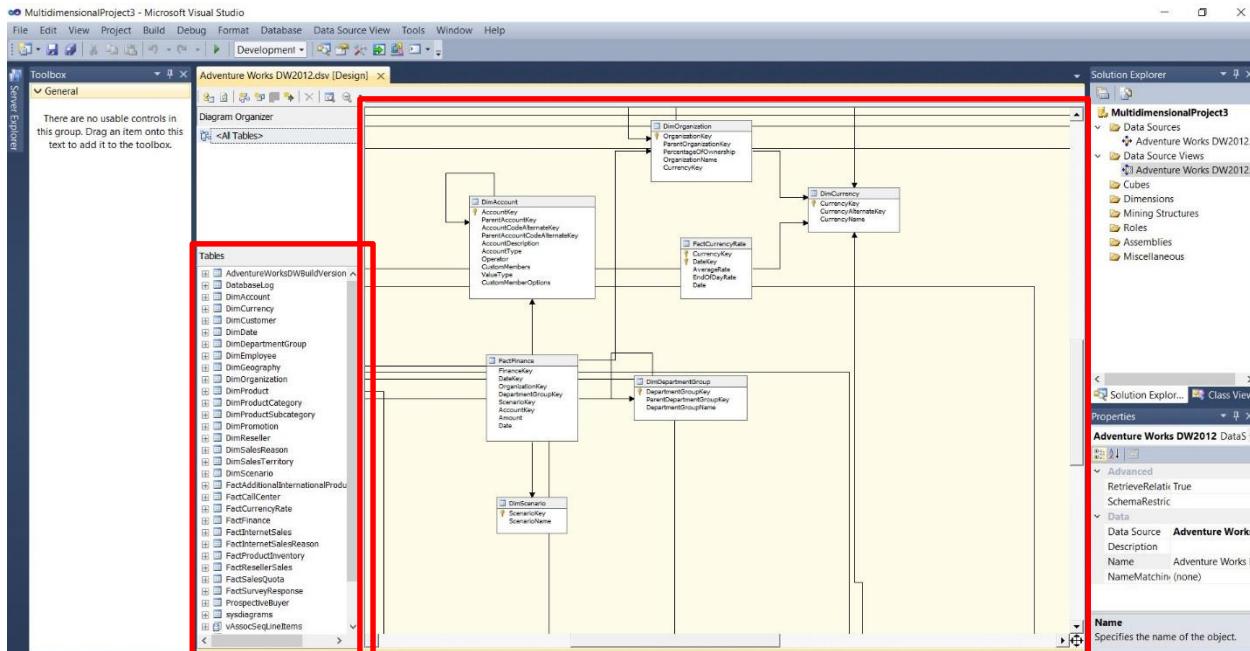
# Running MDX Queries

- Click “Finish” to complete creating the new data source view.



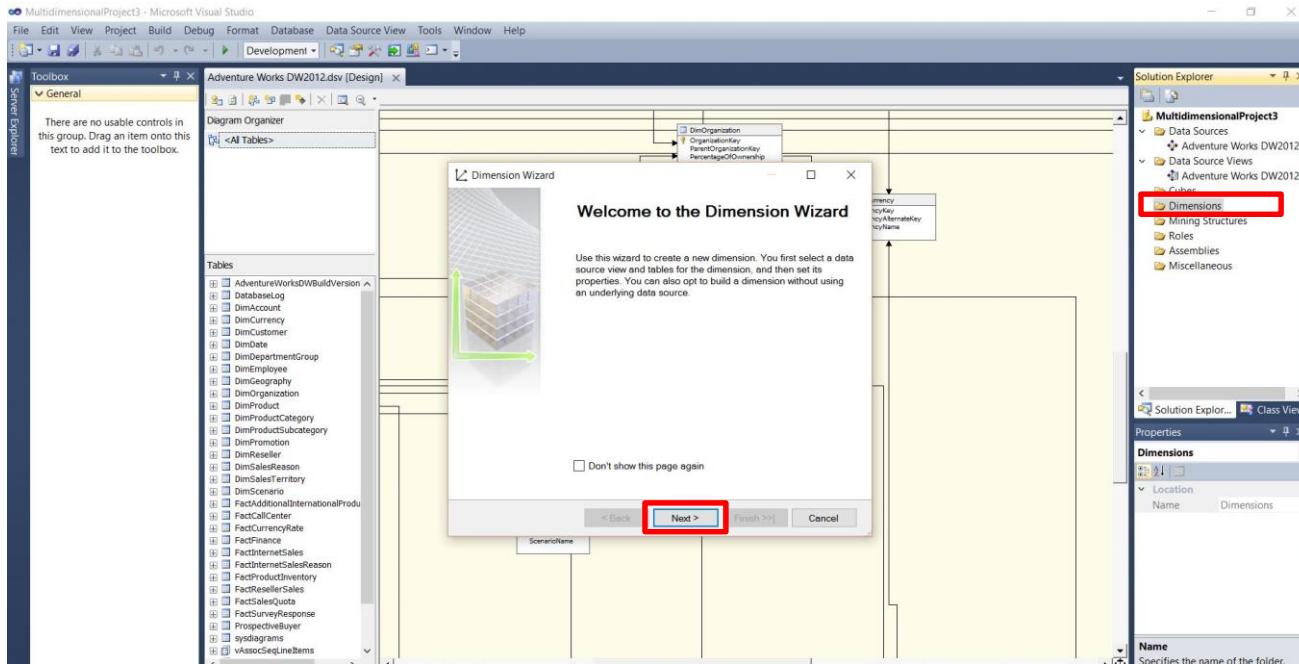
# Running MDX Queries

- When you finish adding Data Source Views, system will give you E/R diagram and relations of tables. On the left hand side, you will see tables. Right click on any of the tables, and hit Explore Data option and you will see actual data. For practice, play with the E/R diagram and explore data to have a better understanding of what we are working with.



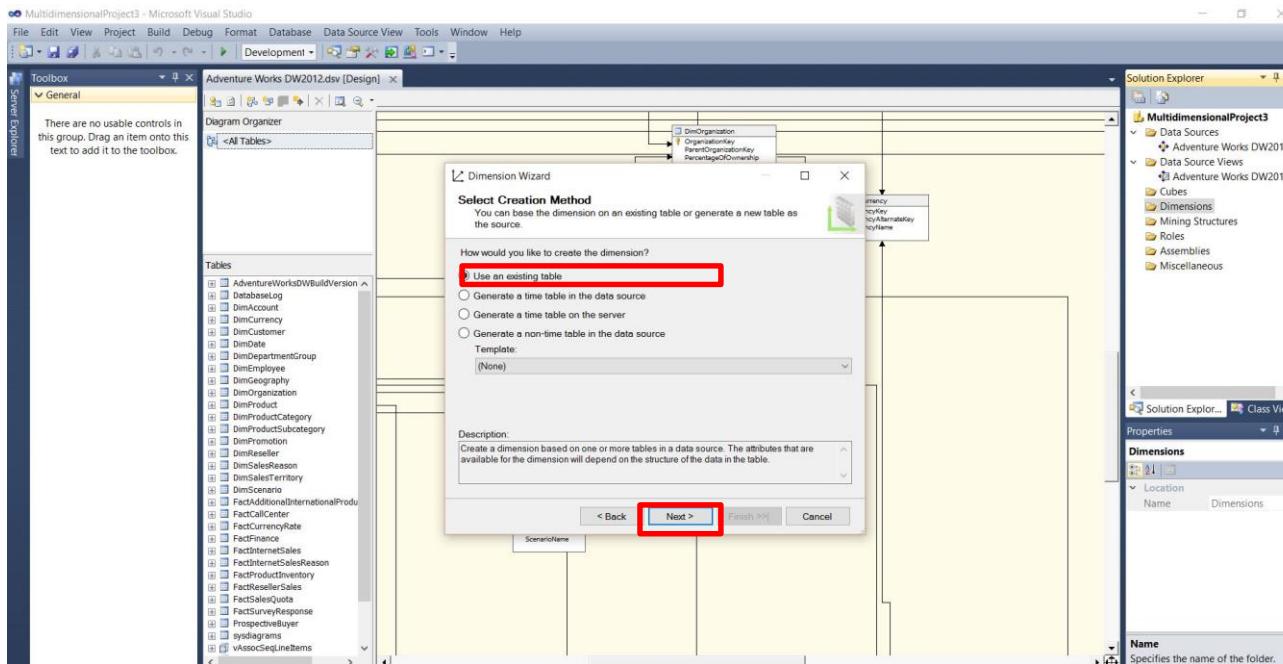
# Running MDX Queries

- Now, right click on “Dimensions”, and choose to create a new one. Press “Next” in the first screen.



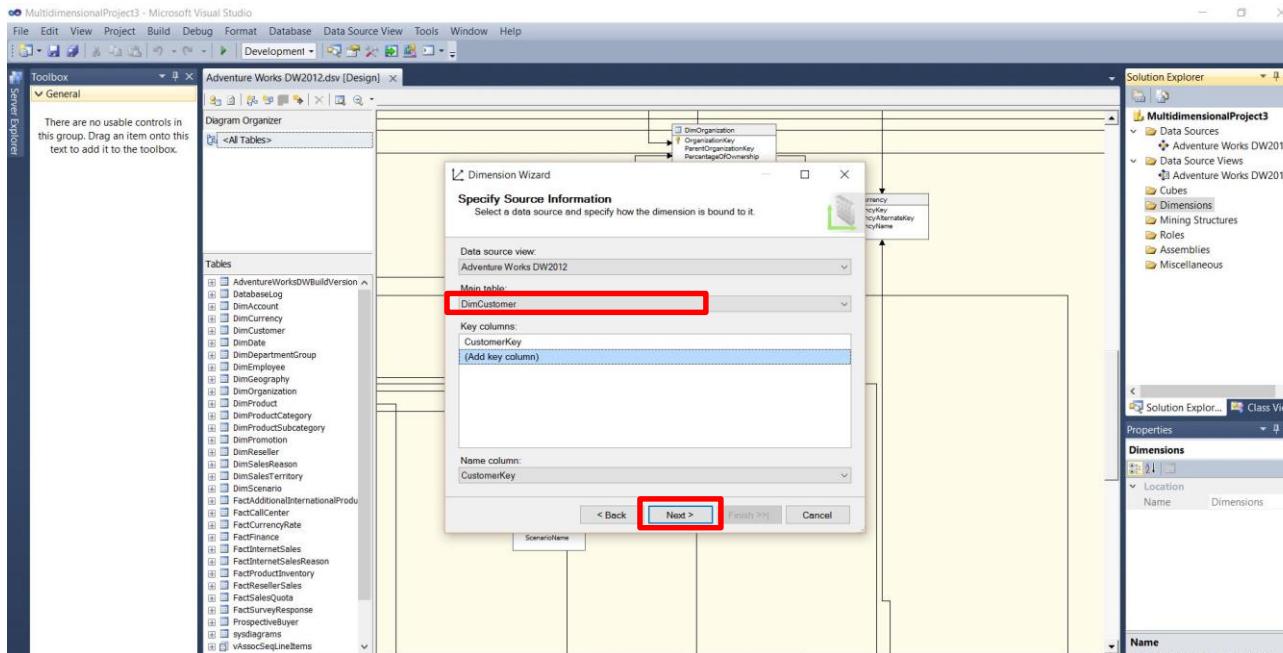
# Running MDX Queries

- Select “Use an existing table” and Press “Next”.



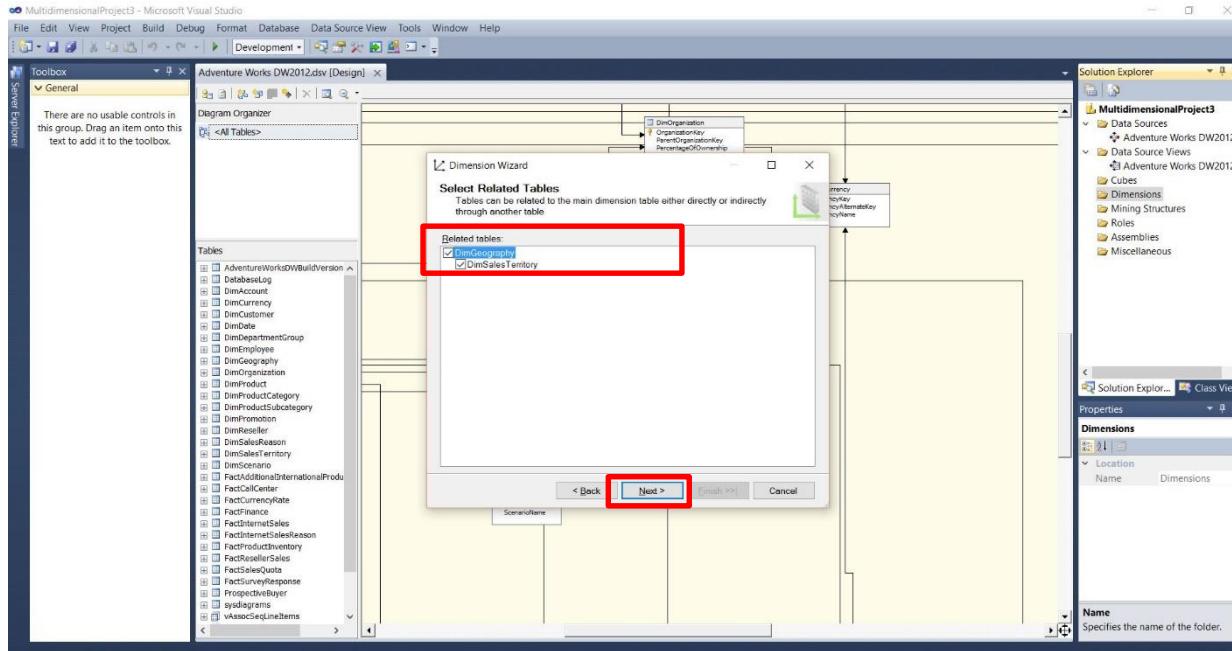
# Running MDX Queries

- We will add 3 dimensions to project; Customer, Product, and Date. As a first step, select DimCustomer from the drop down menu on the next screen and hit Next.



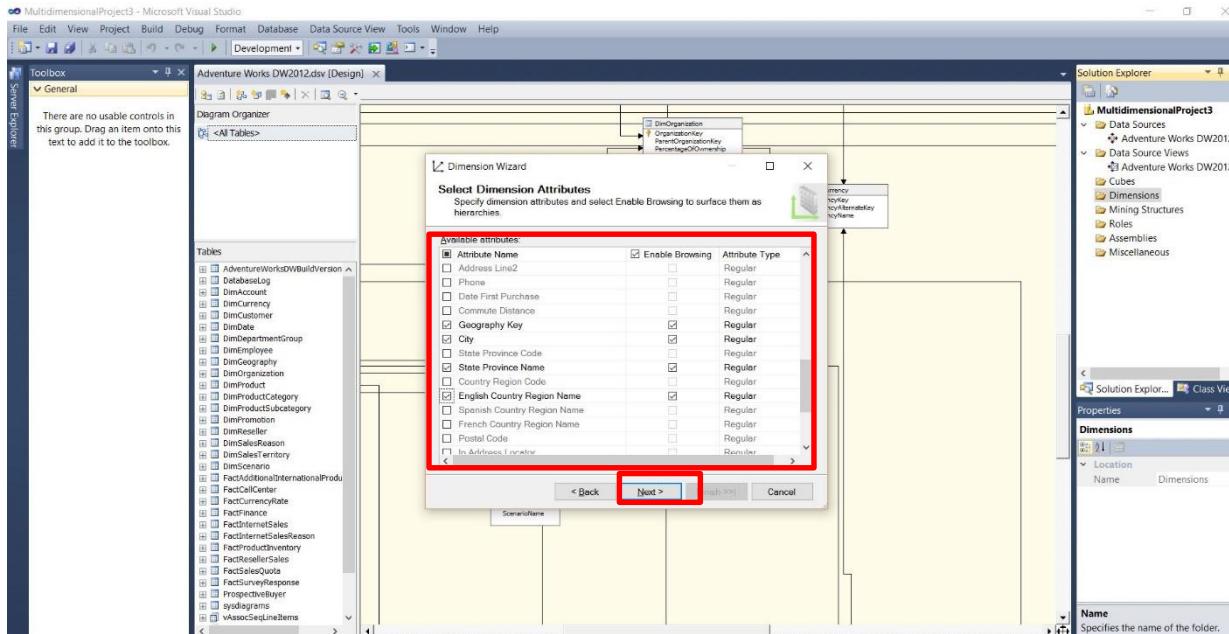
# Running MDX Queries

- On the next screen, you will be asked to include related tables. Check DimGeography box if it is unchecked and hit Next.



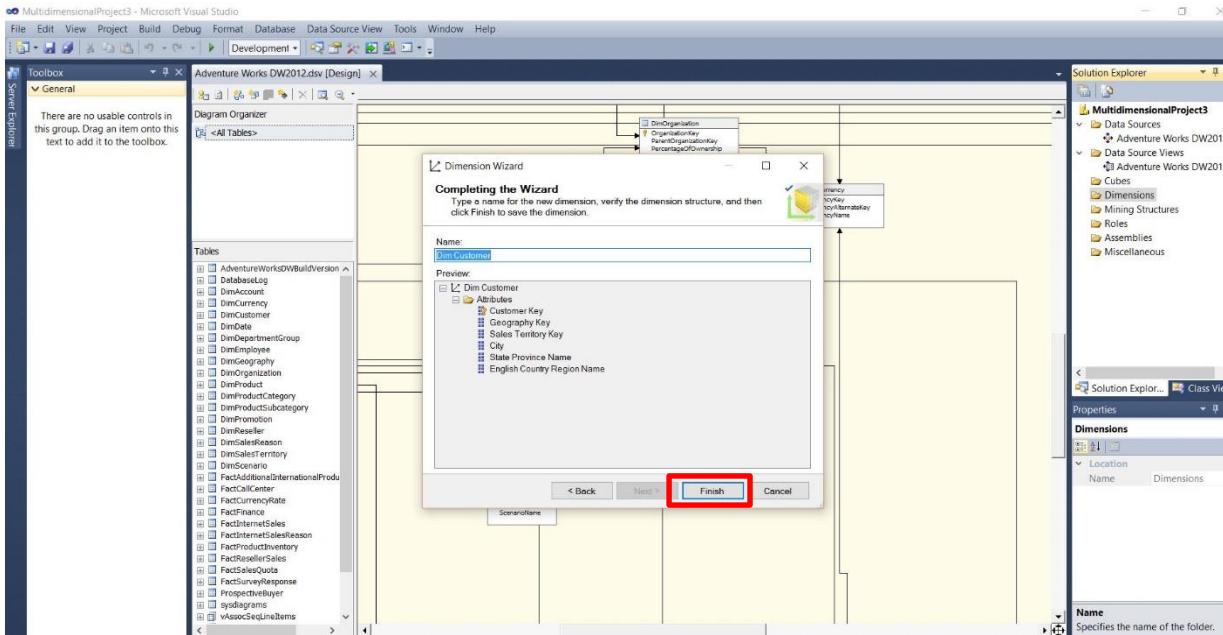
# Running MDX Queries

- System will ask you to select dimension attributes. In the screen, as shown in the picture below, scroll down and select City, State Province Name and English Country Region Name. Do not uncheck any key attributes (e.g., Geography Key and Customer Key in this step. Hit Next.



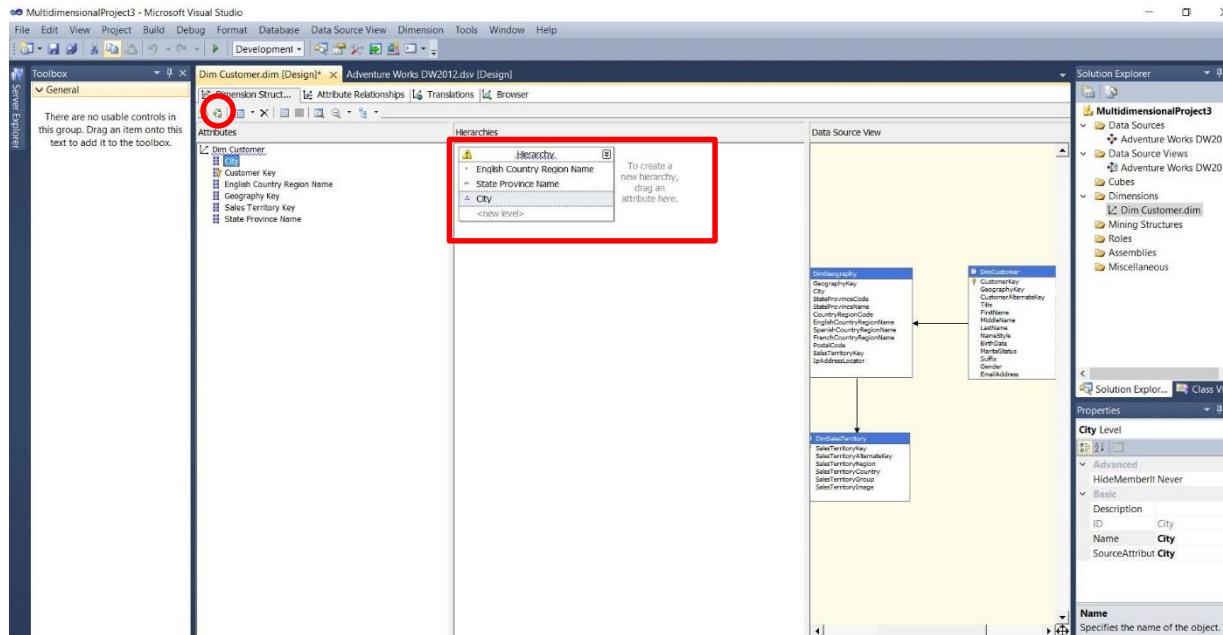
# Running MDX Queries

- Click Finish.



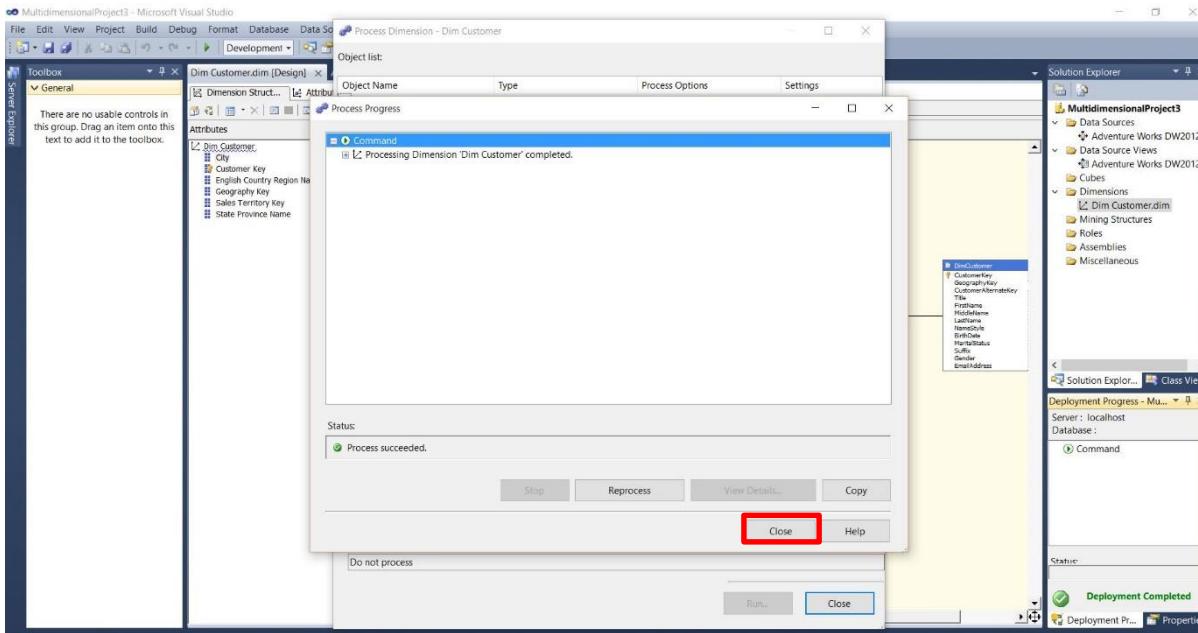
# Running MDX Queries

- Now, You will be asked to create a hierarchy in the dimension you just created. Create the same hierarchy shown in the picture by dragging and dropping the attributes. Save all files and hit process button (highlighted in the picture).



# Running MDX Queries

- Hit Run on the screen that is prompted to you and hit Close



# Running MDX Queries

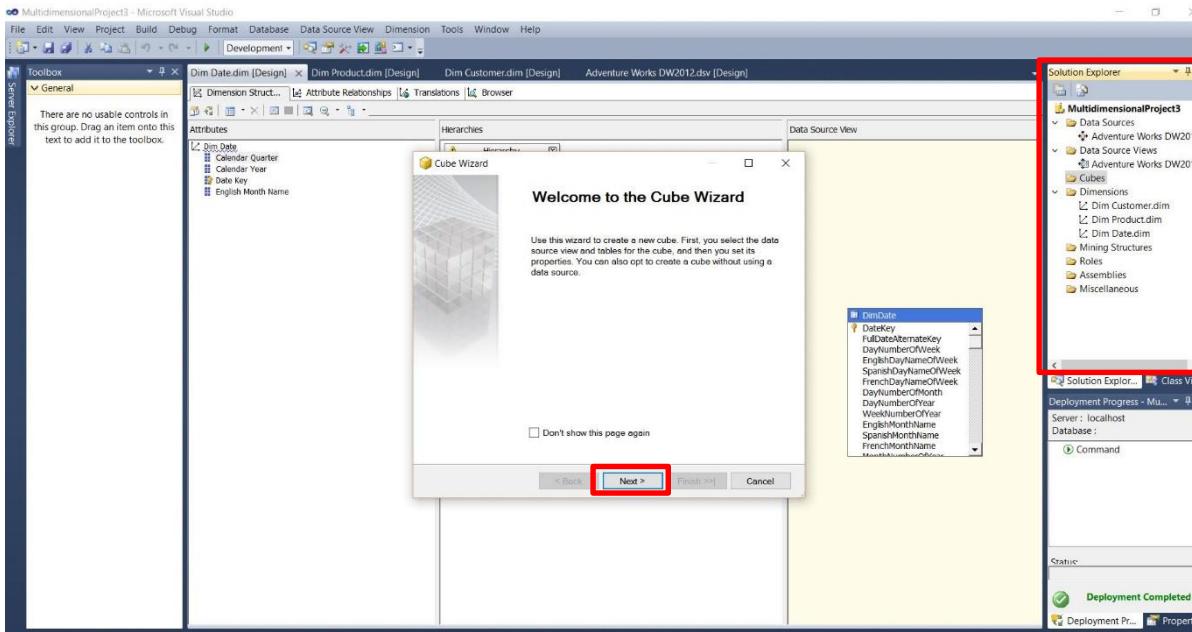
- Next, follow the same process with Products. Select DimProduct in the dropdown menu explained in slide 38 and include related tables in the next step. In attribute selection window, select English Product Name, English Product Category Name, and English Product Subcategory Name and finish (Do not uncheck any other key attributes). Then, as explained in the slide 42 and 43, create the hierarchy (English Product Name, English Product Category Name, and English Product Subcategory Name respectively) and hit process.

# Running MDX Queries

- Now, lets create another dimension for practice, date. Follow the same steps in slide 38 and select DimDate in dropdown menu. Hit Next and check Calendar Quarter, Calendar Year and English Month Name. Remember; do not uncheck keys (Date Key, in this case). Finish defining the dimension by setting hierarchy and hitting Process.

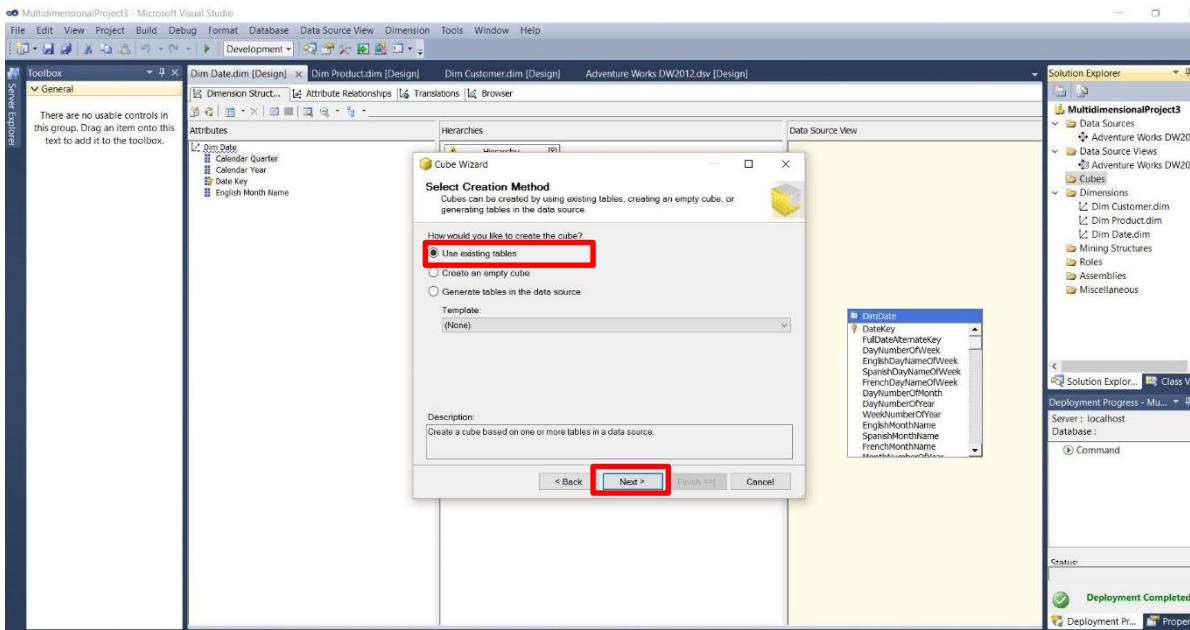
# Running MDX Queries

- Finally, we will create a cube. Go to Solution Explorer on the right and right click on Cube, select New Cube. On the prompted screen, hit Next.



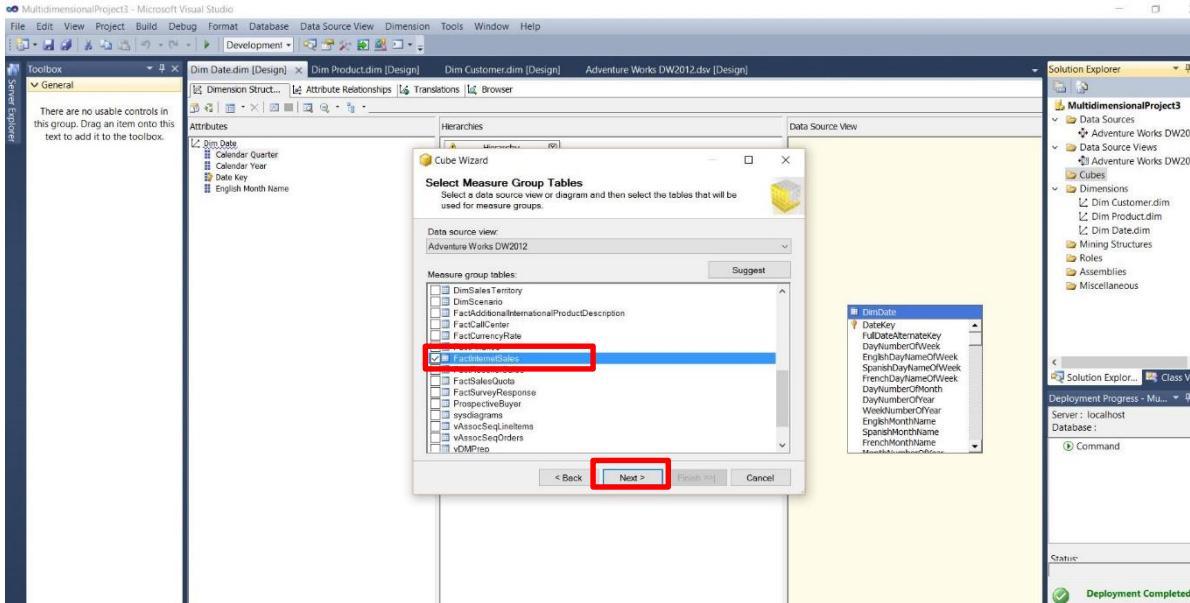
# Running MDX Queries

- Select “Use an existing table” and Press “Next”.



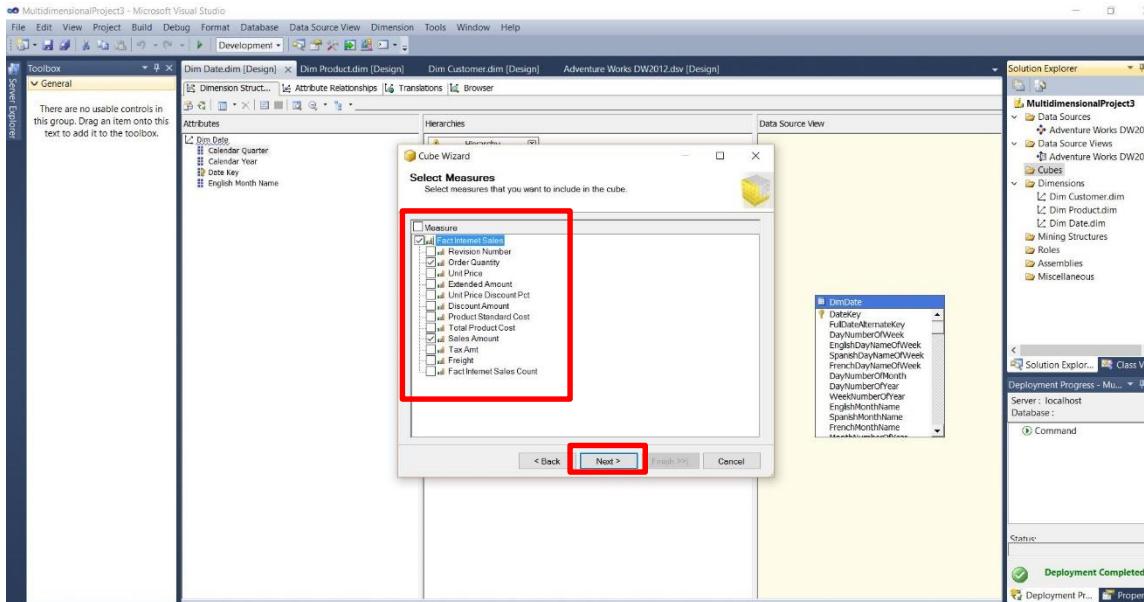
# Running MDX Queries

- On Select Measure Group Tables screen, select FactInternetSale and hit Next.



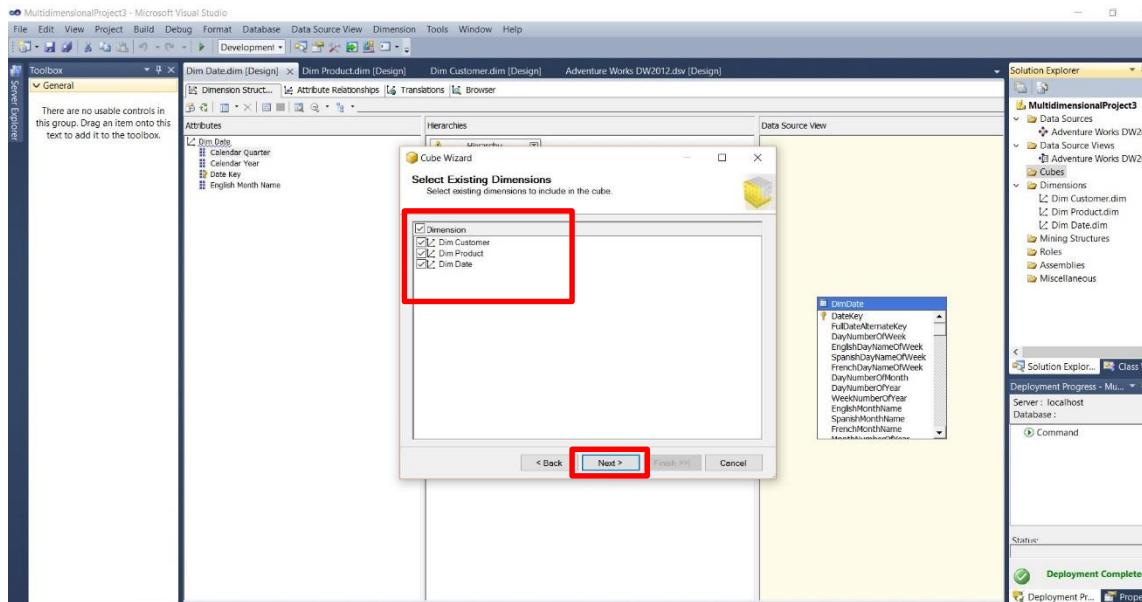
# Running MDX Queries

- Then you will be asked to what to include from your fact table. Select the options shown in the picture and hit Next.



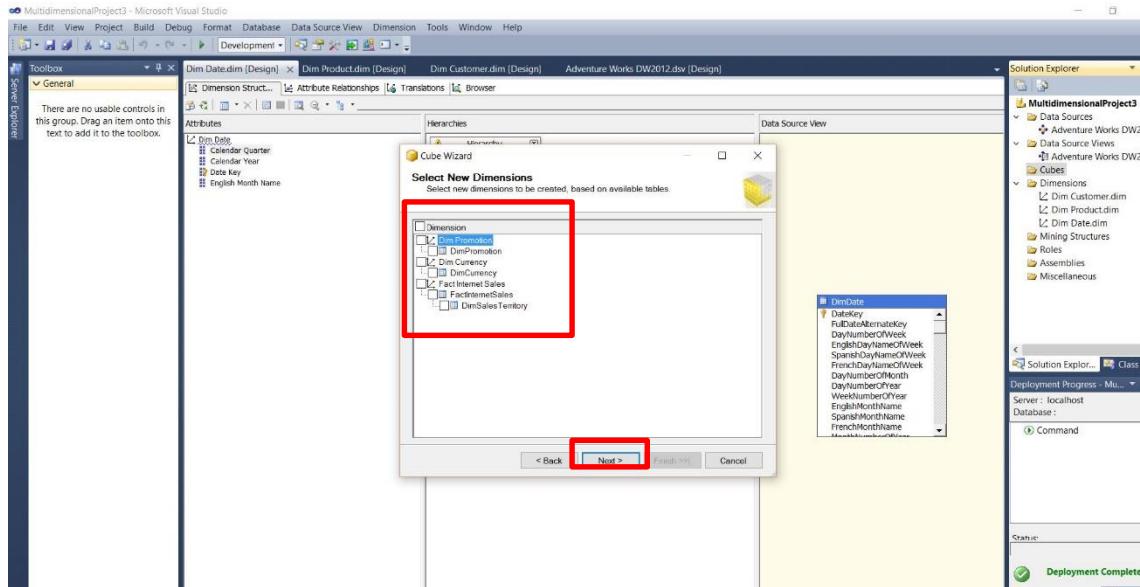
# Running MDX Queries

- Then, you will be asked which dimensions to include. Just hit Next, because all 3 dimensions you created should be checked by default.



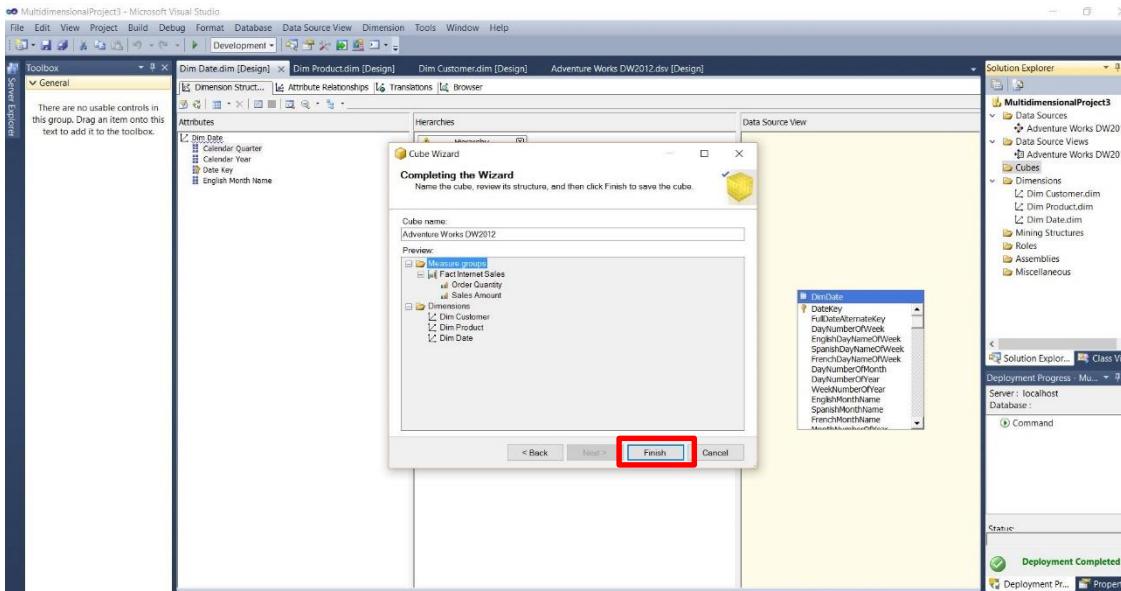
# Running MDX Queries

- Next, it will ask you to create New Dimensions. Uncheck everything on the menu. Click Next.



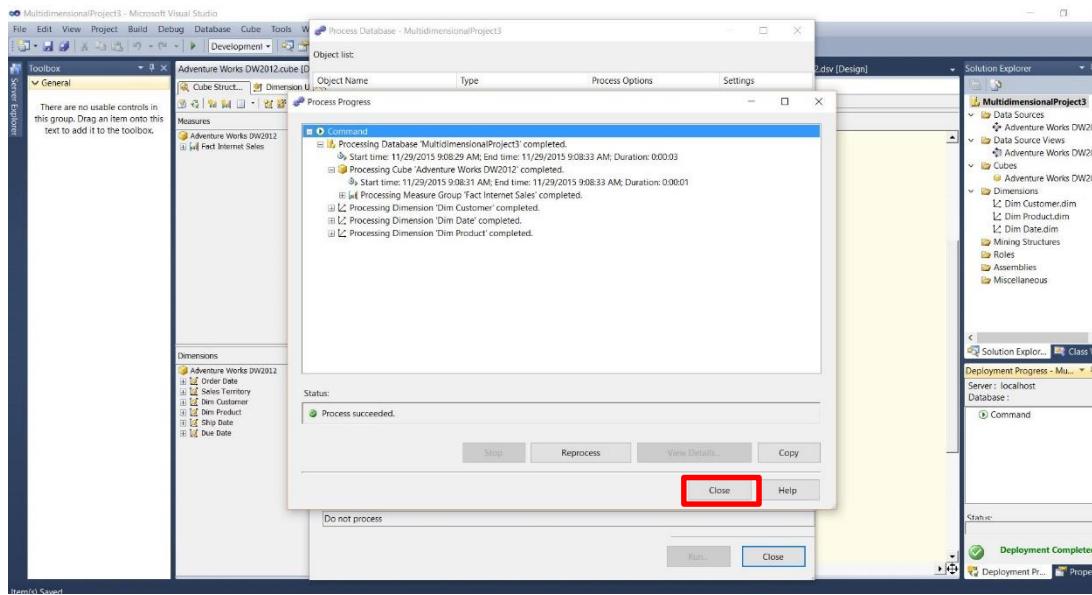
# Running MDX Queries

- Click finish and complete creating the cube.



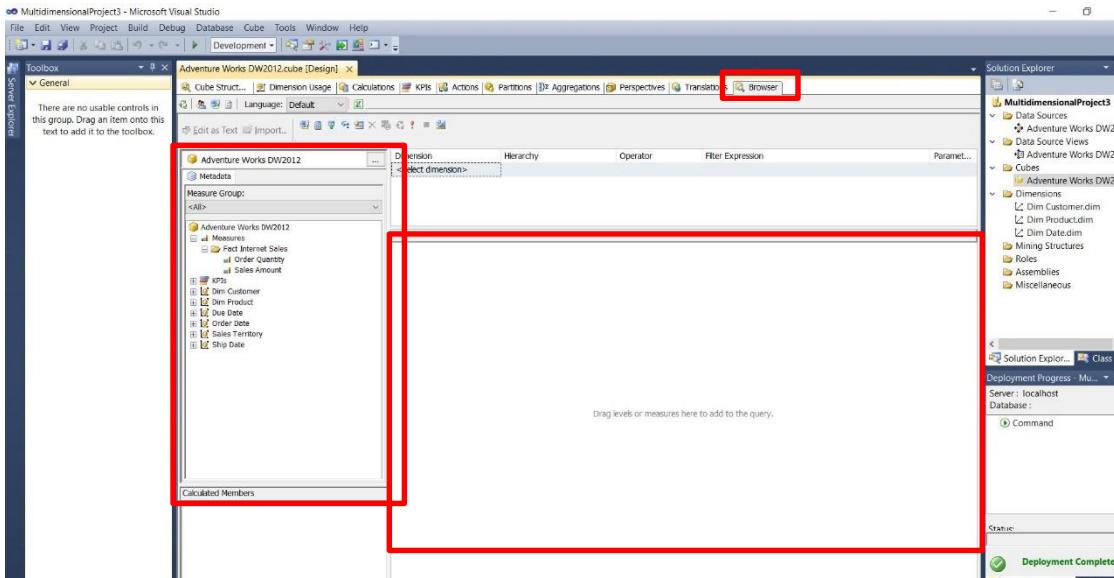
# Running MDX Queries

- After creating the cube, save everything and hit Process, then Run in subsequent screen.  
right click on MultidimensionalProject and hit process



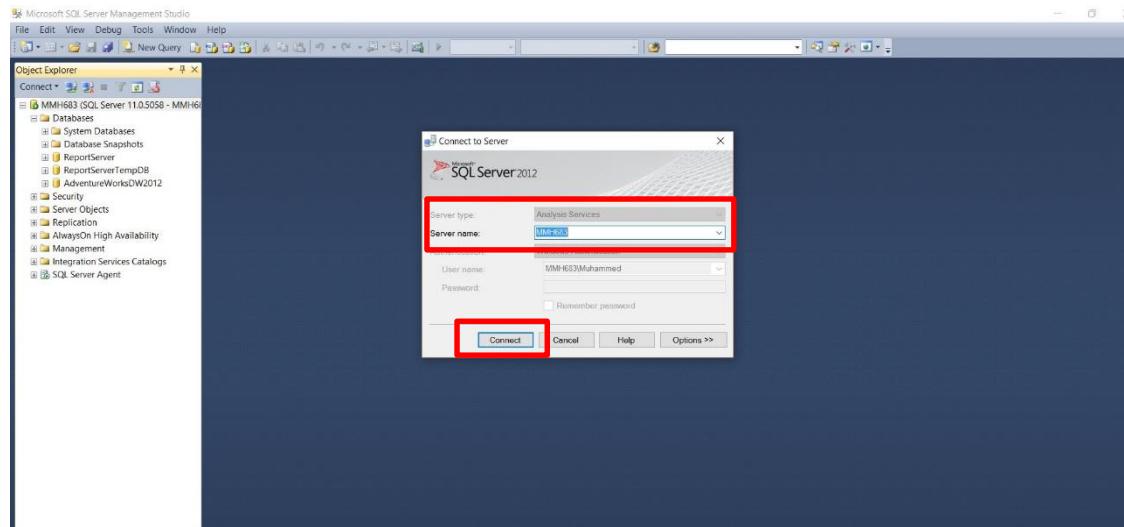
# Running MDX Queries

- After that, go select Browser tab (highlighted in the picture). In the browser tab, you are basically free to do any kind of data visualization.



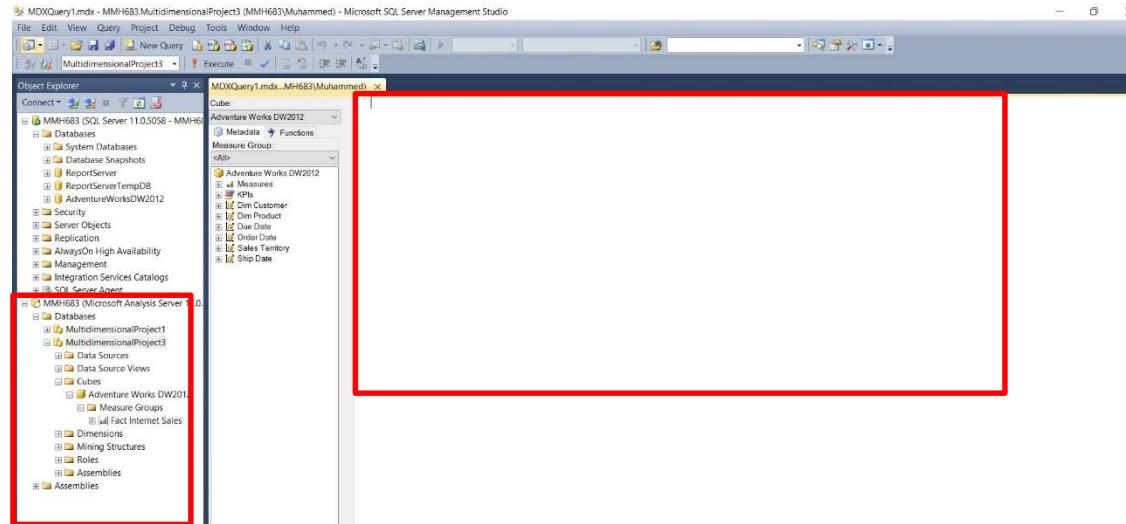
# Running MDX Queries

- To run MDX queries, go back to SQL Server Management Studio. Connect to Analysis Services, select the server and connect.



# Running MDX Queries

- Expand database tab, you will find your created projects. You can view cubes, data sources, etc. there. Right click on the specific project, and select MDX queries to run MDX queries on the right side of the screen.



# Running MDX Queries

- You can even browse databases now (as seen earlier on visual studio) in the management studio as shown below (after selecting browse).

