# Using Analysis Services for Tabular Mode

# Index

# About SQL Server Analysis Services

Analysis Services is an analytical data engine used in decision support and business analytics. It provides enterprise-grade semantic data models for business reports and client applications such as Power BI, Excel, Reporting Services reports, and other data visualization tools.

A typical workflow includes creating a tabular or multidimensional data model project in Visual Studio, deploying the model as a database to a server instance, setting up recurring data processing, and assigning permissions to allow data access by end-users. When it's ready to go, your semantic data model can be accessed by client applications supporting Analysis Services as a data source.

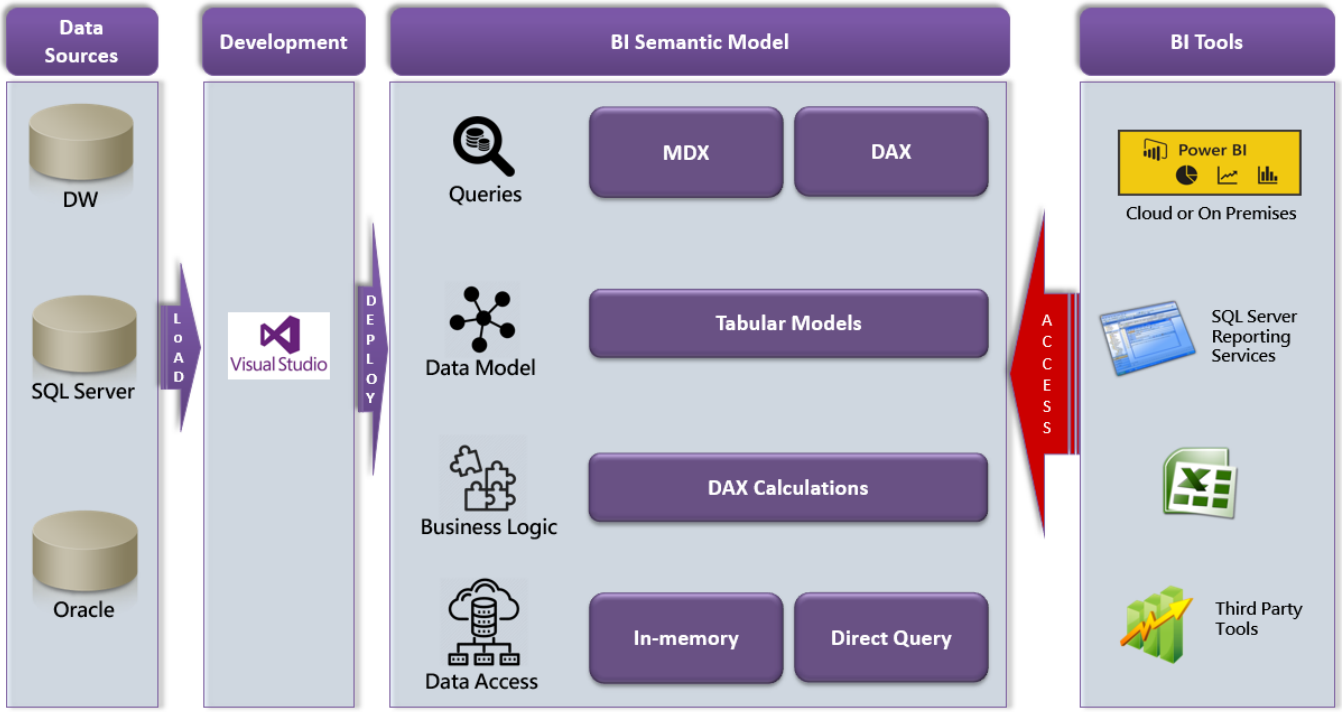
Analysis Services is available in two different platforms:

Azure Analysis Services - Supports tabular models at the 1200 and higher compatibility levels. DirectQuery, partitions, row-level security, bi-directional relationships, and translations are all supported. To learn more, see Azure Analysis Services.

SQL Server Analysis Services - Supports tabular models at all compatibility levels, multidimensional models, data mining, and Power Pivot for SharePoint.

https://docs.microsoft.com/en-gb/sql/analysis-services/analysis-services?view=sql-server-2017

# Architecture




Development: Brsasql0247\corupa - 4 CPUs + 16GB RAM

Production: Brsasql0248\urubici – 8 CPUs + 16GB RAM

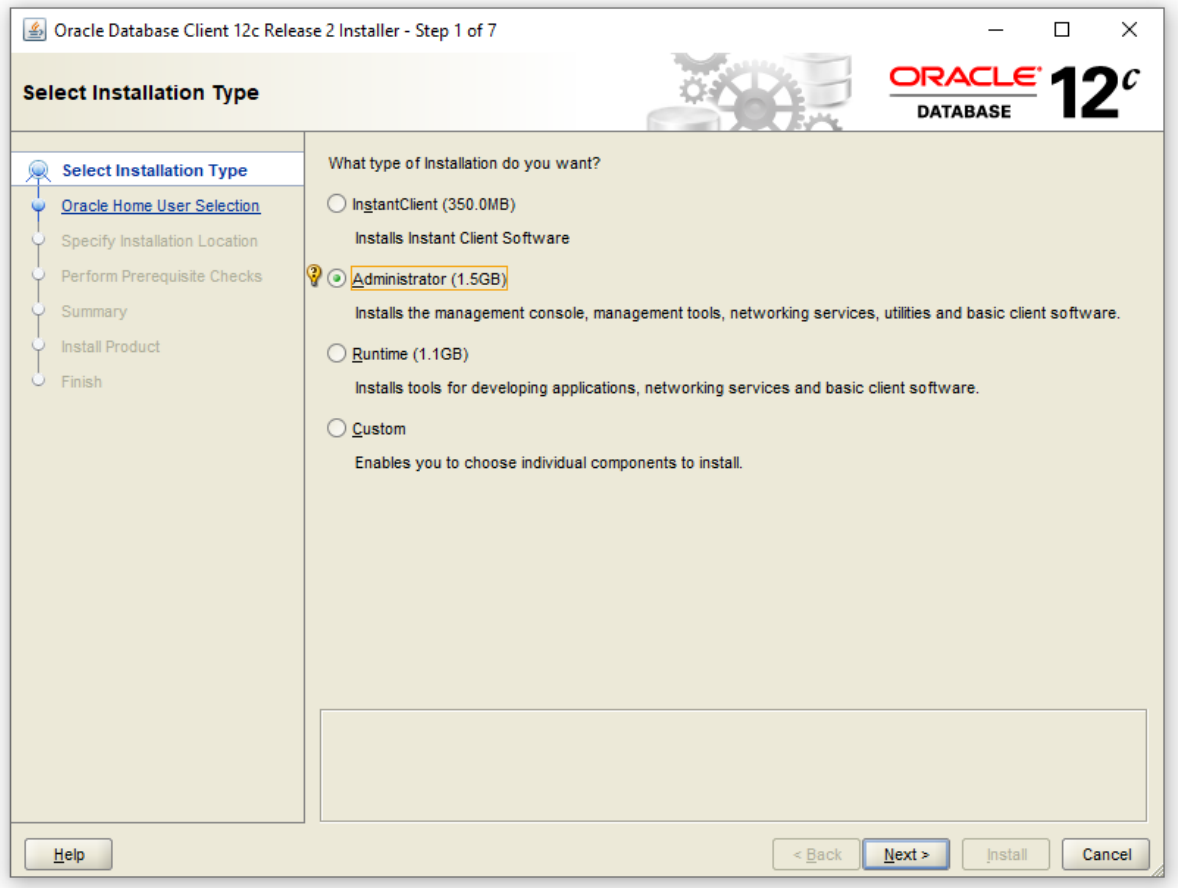
# Analysis Services Value Add


**Advantages to use Analysis Services:**

- Lightning Response;
- Larger Models;
- Reusability;
- Data Governance;
- Single Source of Truth;
- Documented;
- Direct Query Mode;
- In-Memory;
- Access by AD group;
- Solution code saves on Tfs or Git repositories;
- Refresh routine can be scheduled.

# Pre-Requirements for the Development

- Visual Studio 2017 Professional or Enterprise. Call to 9500(customer support)
- Microsoft SQL-Server Data Tools. Available on \\brsanas01\public$\SSAS\SSDT-Setup-ENU.exe
- Microsoft SQL-Server Management Studio. Available on \\brsanas01\public$\SSAS\SSMS-Setup-ENU.exe
- Oracle Client 32 bits for Visual Studio and install using the Administrator type. Available on \\brsanas01\public$\SSAS\Oracle12c Client for Windows 32 bits\win32_12201_client\client32\setup.exe




- ODAC12102432bit and it is available on \\brsanas01\public$\SSAS\ODAC122010Xcopy_32bit, unzip on the folder and install using the command below:

install.bat oledb C:\app\client\product\12.2.0\client_1 oracle_home true

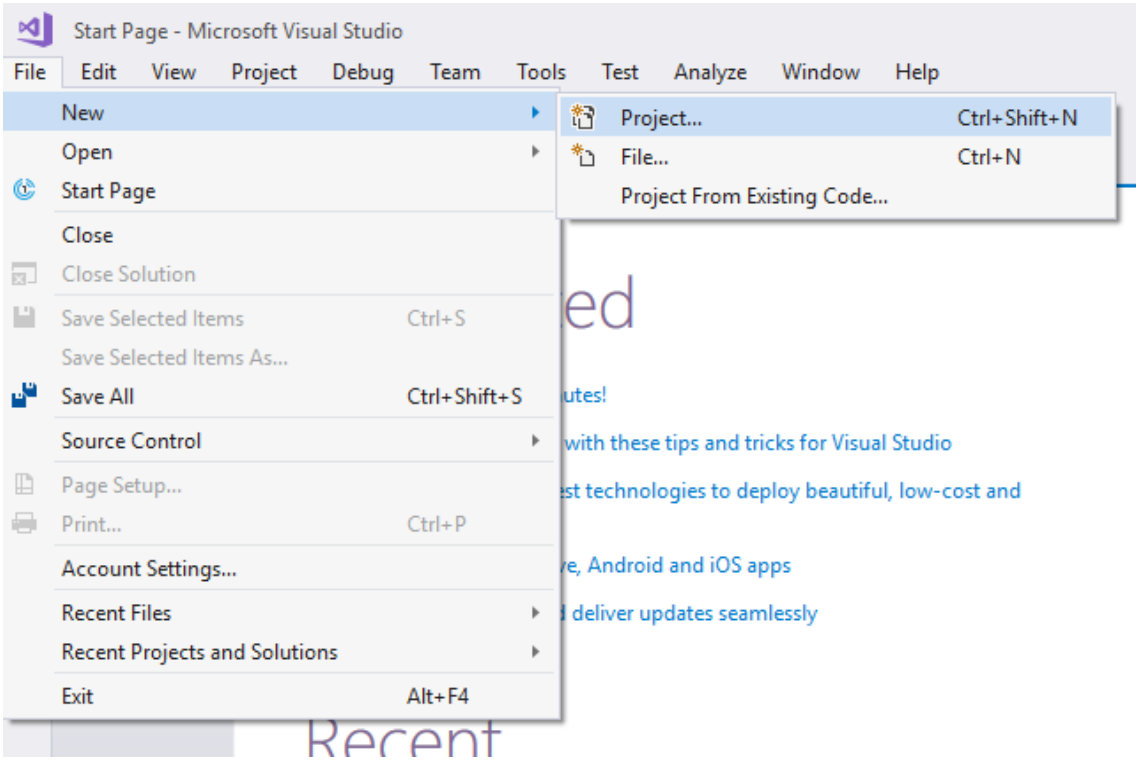
Edit your environment variable on:

Path -> C:\app = client\product\12.2.0\client_1;C:\app\client\product\12.2.0\client_1\bin

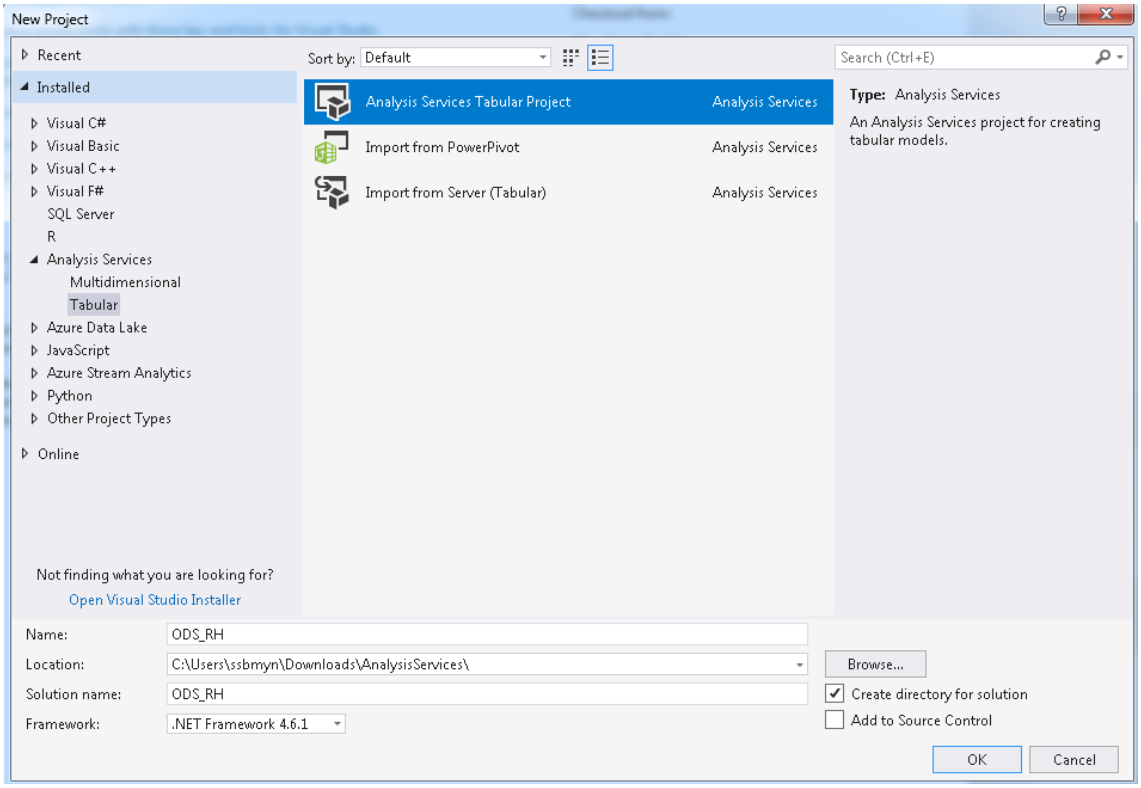
TNS_Admin = C:\app\client\product\12.2.0\client_1\network\admin

# Creating a new SSAS project by Visual Studio

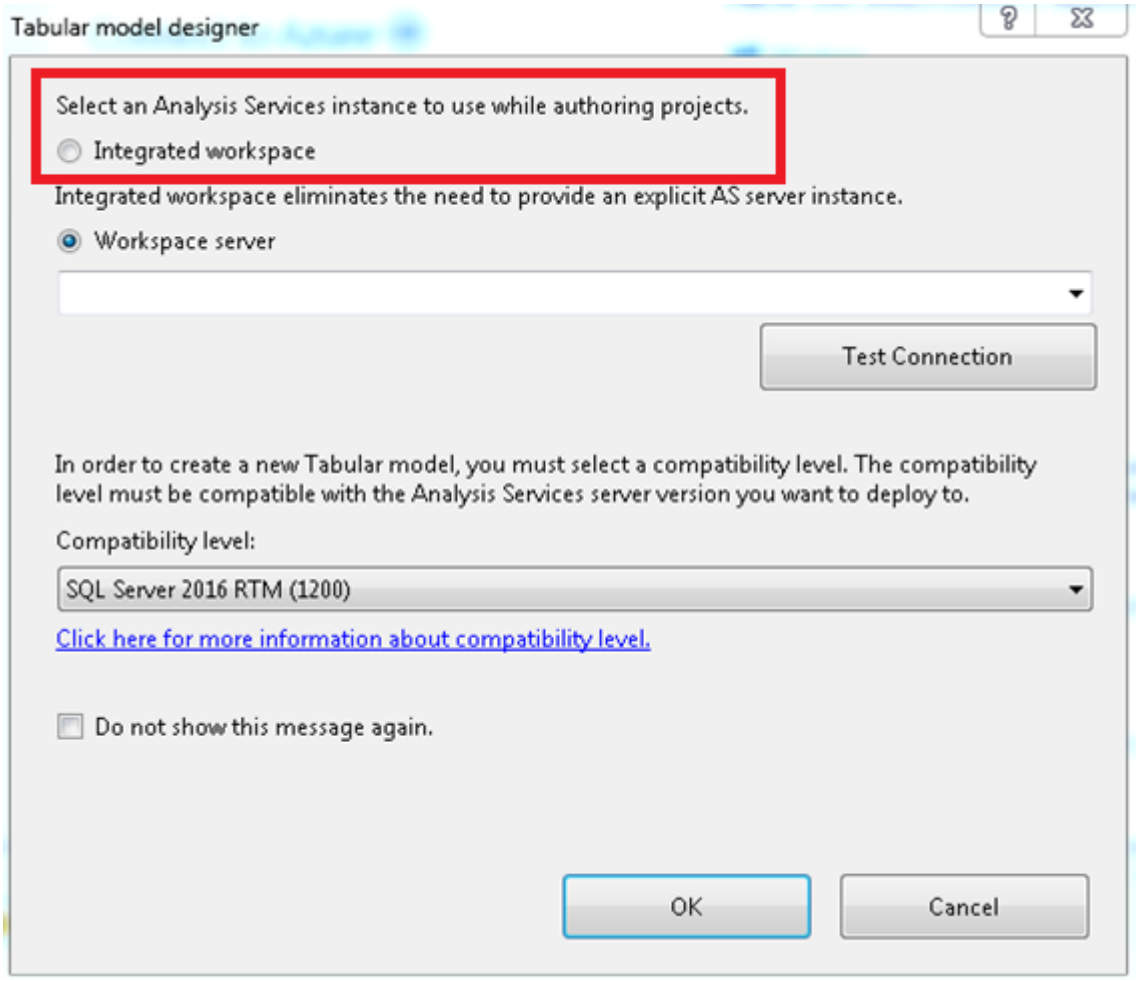
Open the Visual Studio and click on menu File\New\Project.



Choose the Analysis Services Tabular Project and fill the fields Name, Location, Solution Name and press OK button.

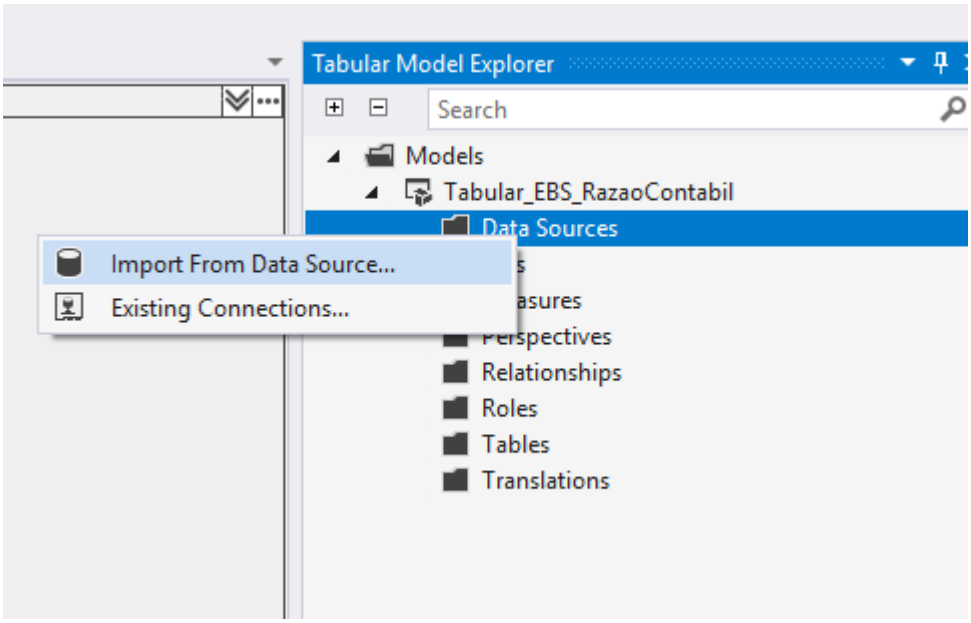


On Tabular Model Designer screen choose the option “Integrated Workspace” and press OK button.

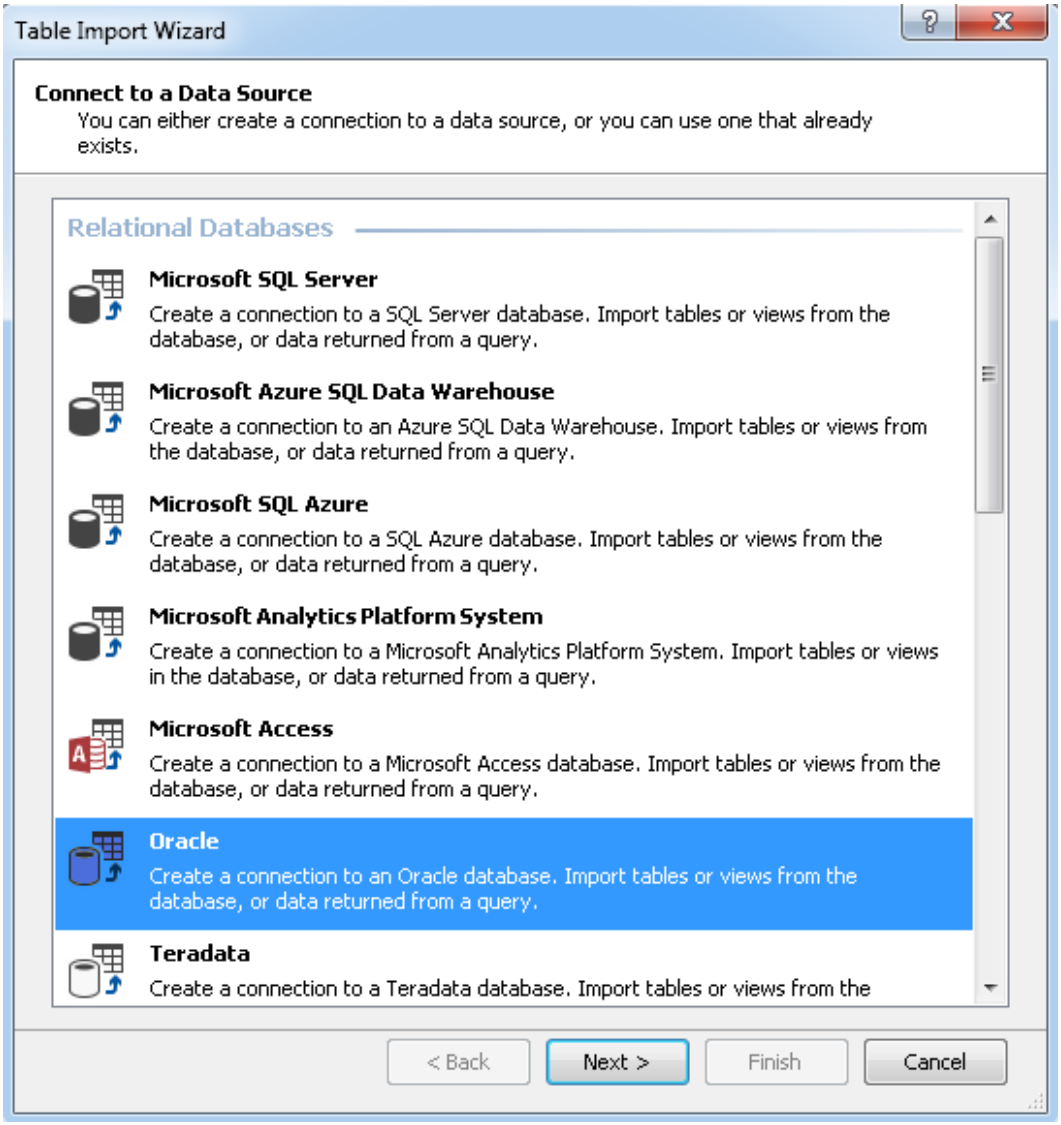


# Importing tables from Oracle Database

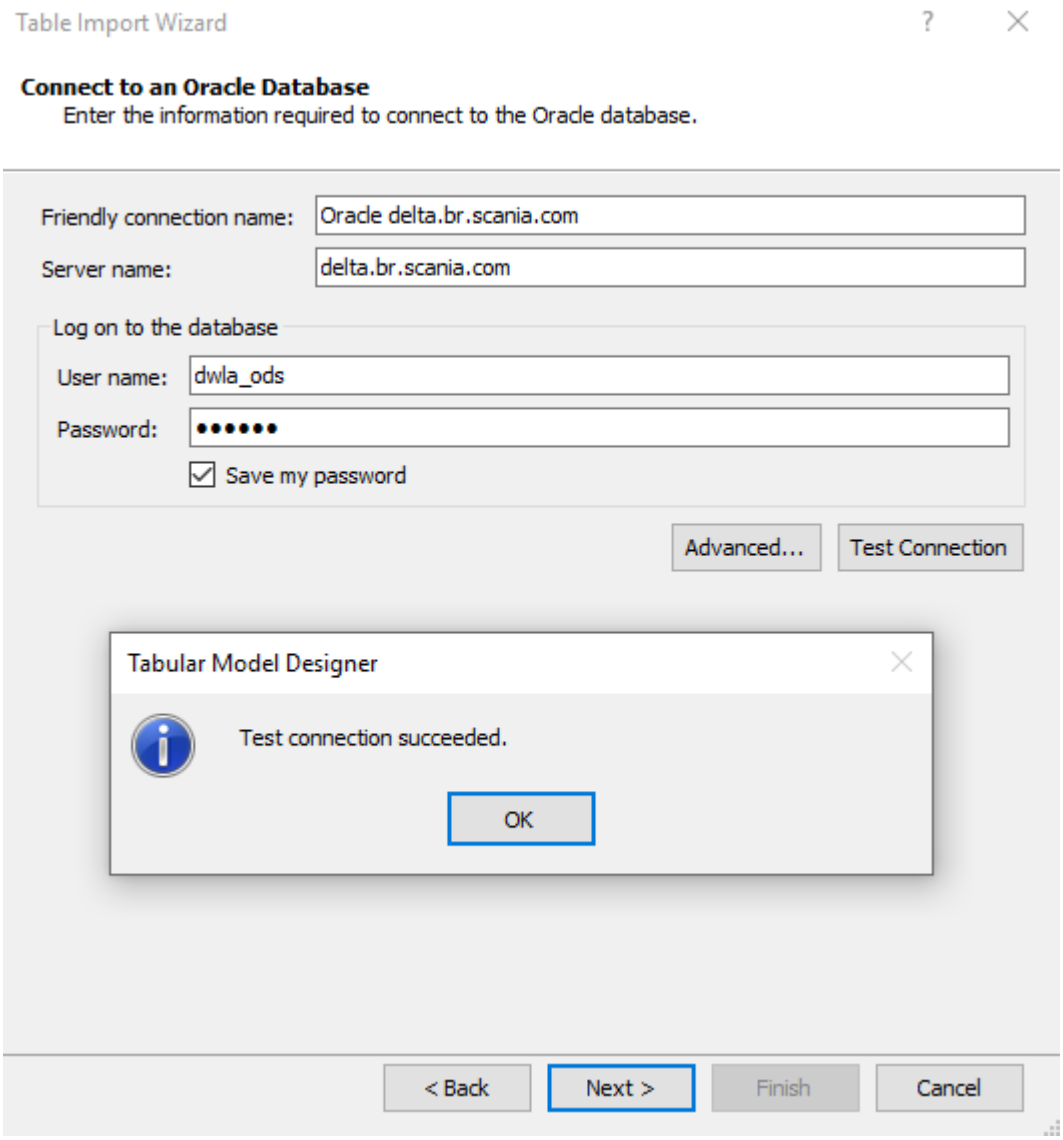
In Tabular Model Explorer click on Data Sources with right button and choose “Import From Data Source”



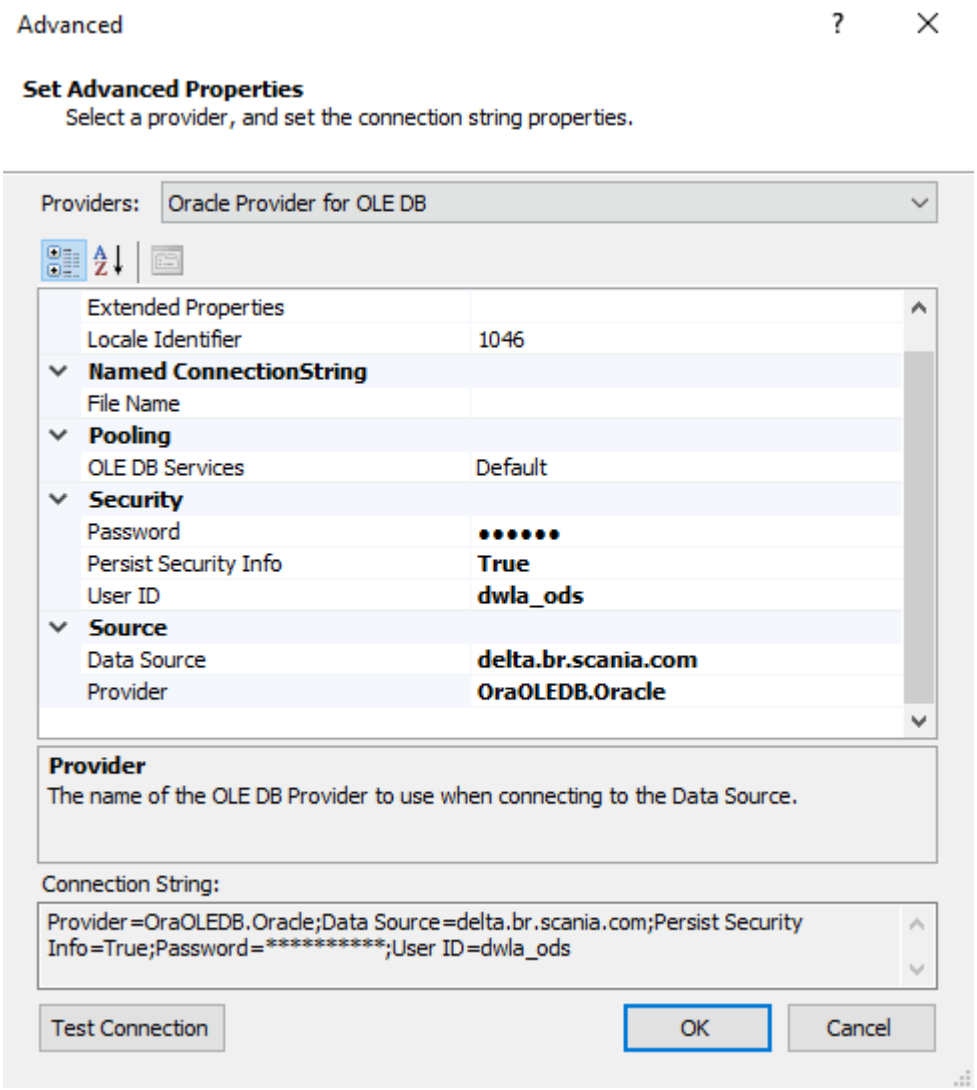
Choose Oracle:



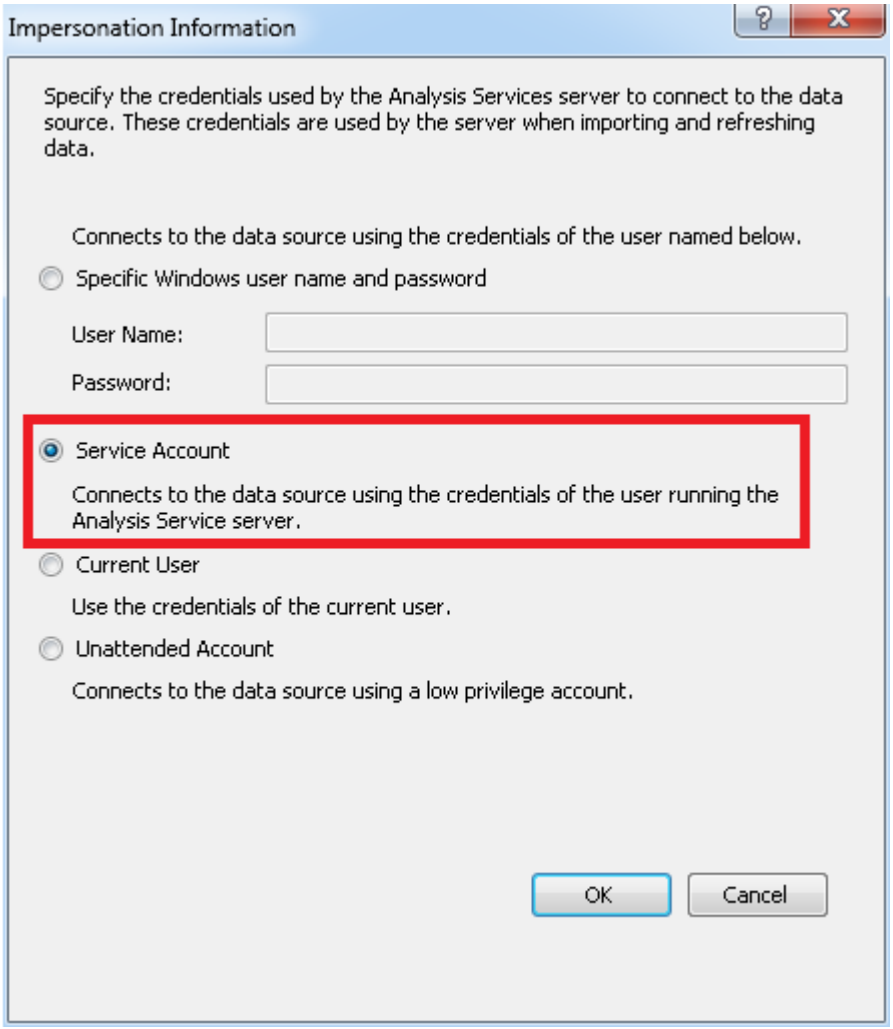
Fill the connection name, server name, username and password and test it:



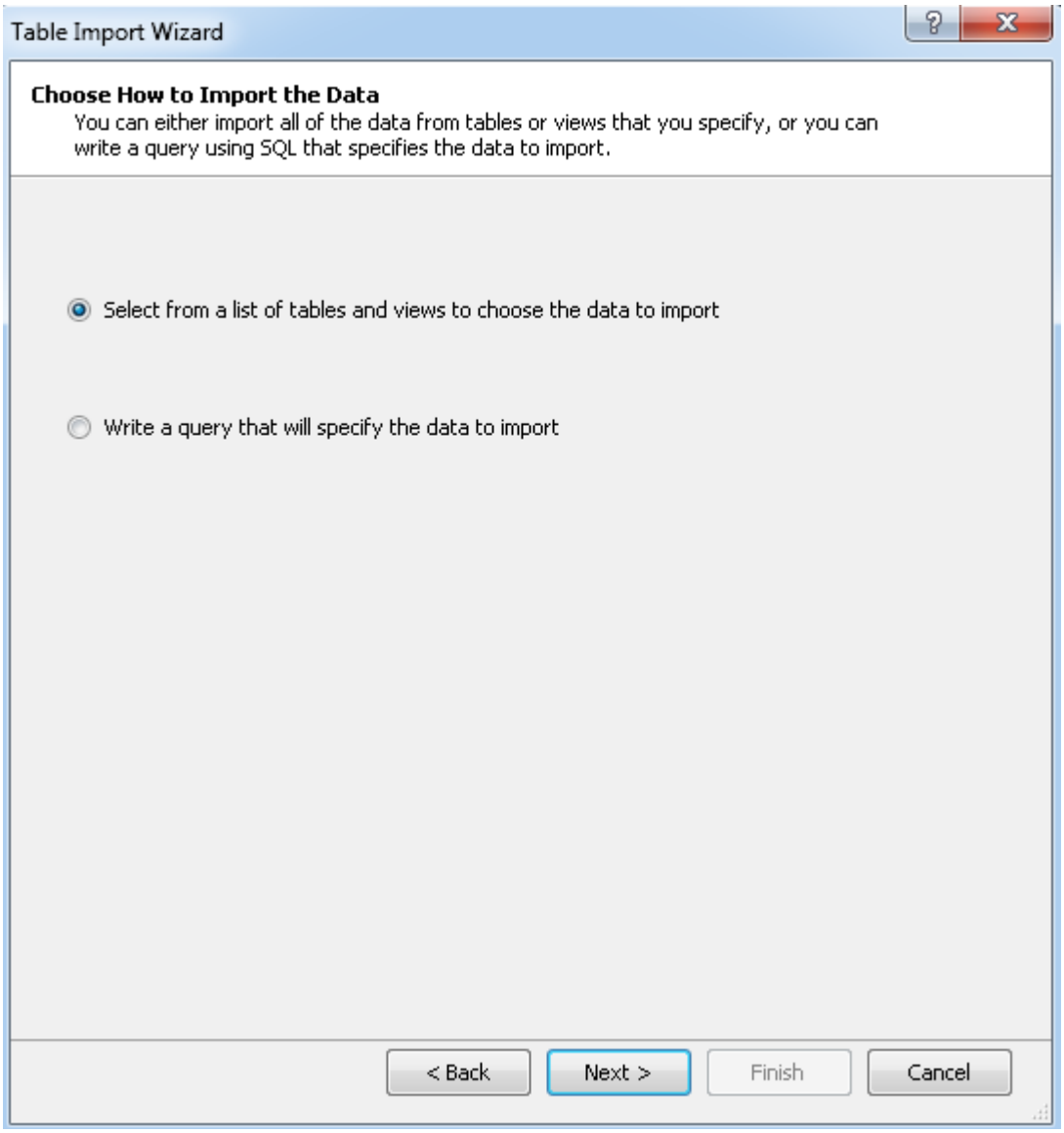
Choose the Oracle Provider for OLE DB as Providers:



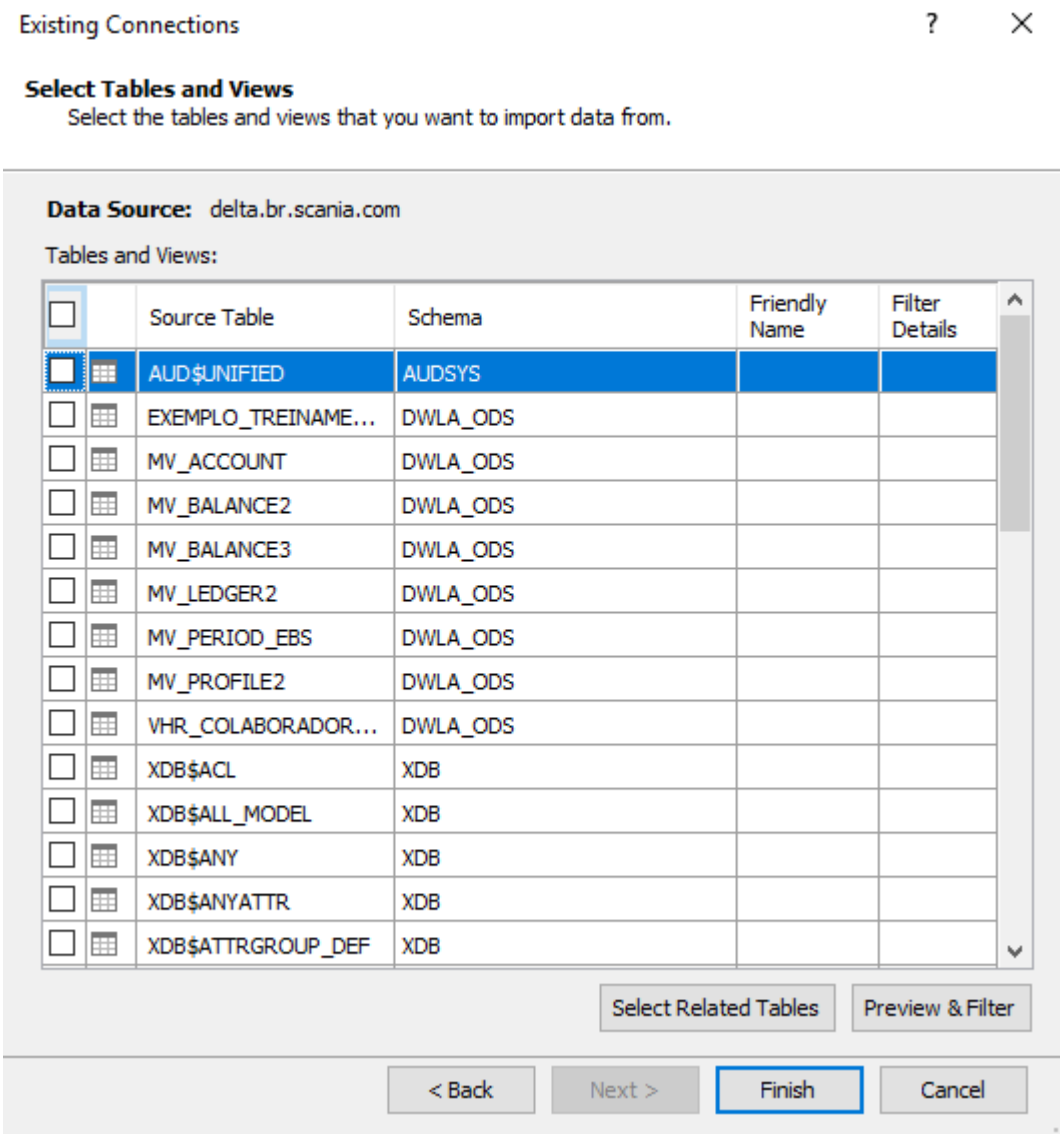
In Impersonation Information choose the Service Account:



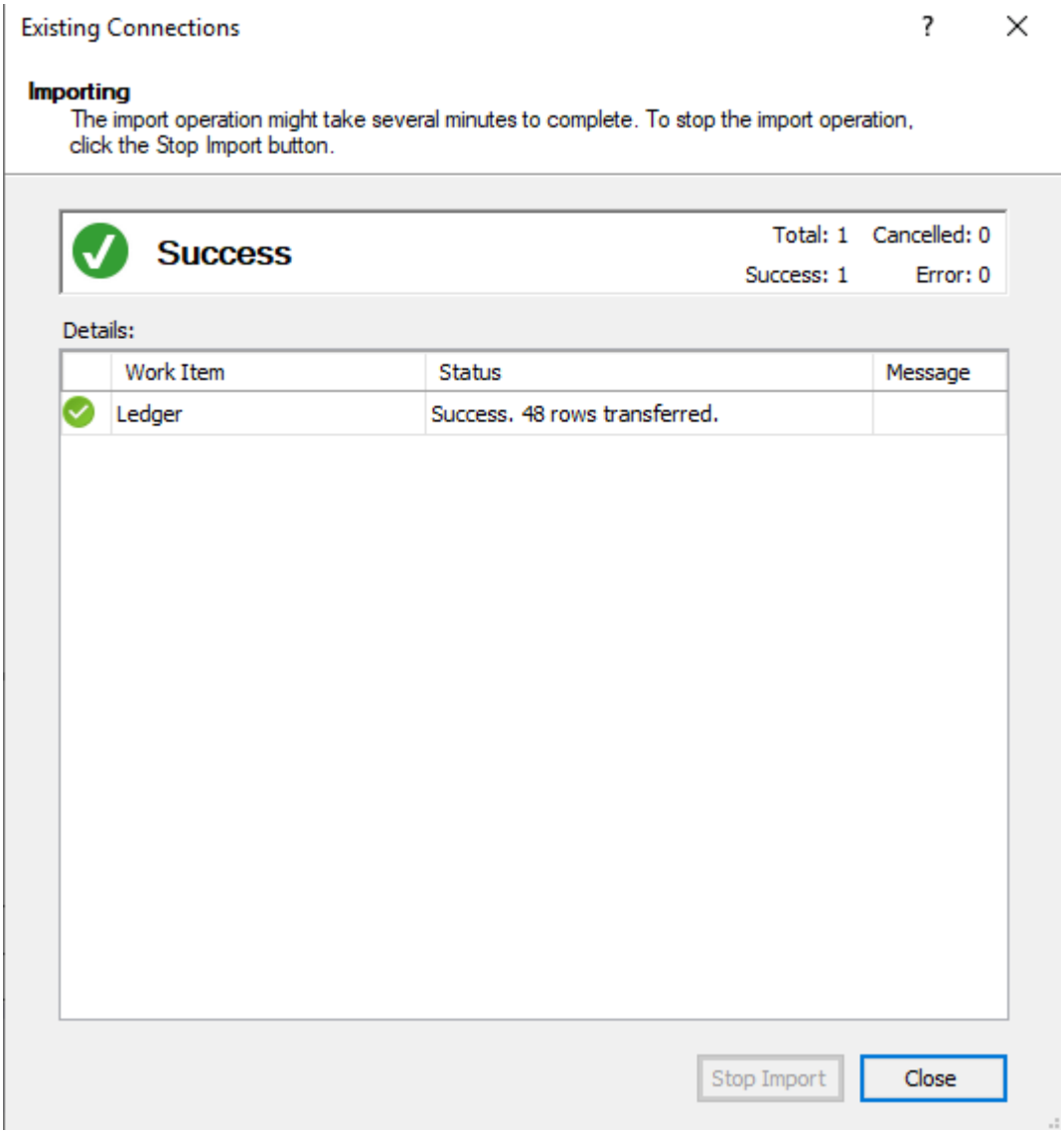
Choose how to import the Data according to username filled before where you can select the tables or write a query that will specify the data:



Select the tables to be imported and press the Finish button:

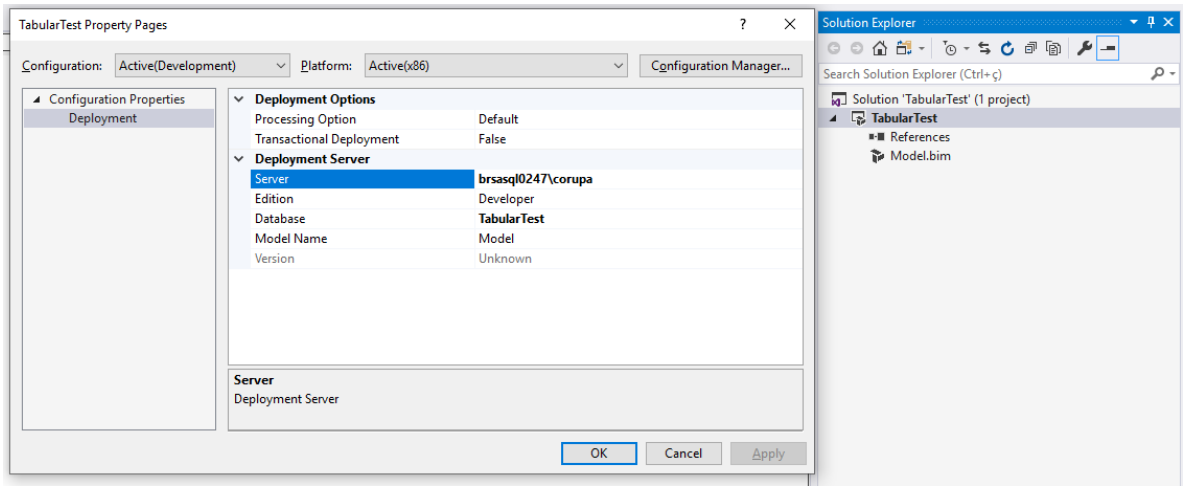


The data will be imported showing the message Success.



# Configuring the deployment server

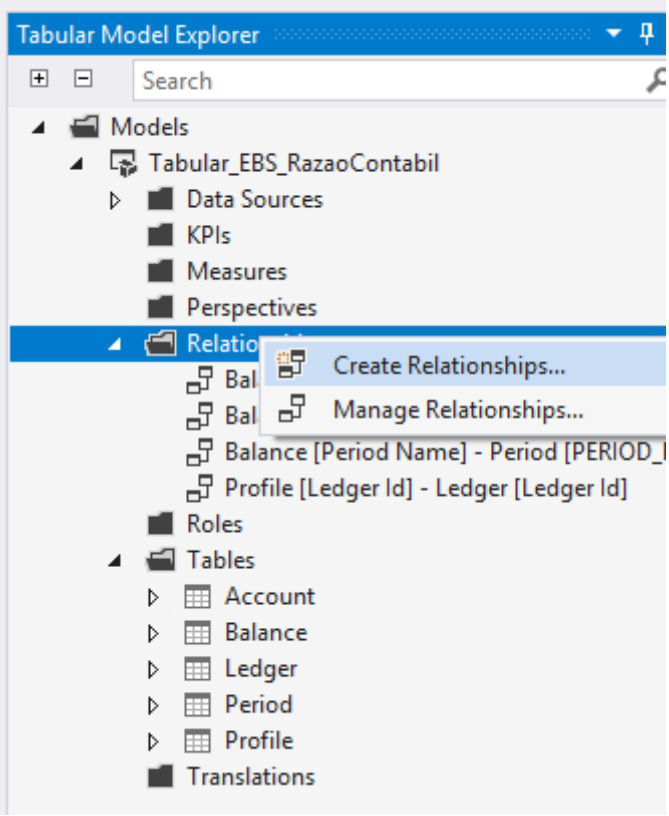
In Solution Explorer go to properties and fill the server name, the **brsasql0247\corupa** is development environment and the **brsasql0248\urubici** is production environment.



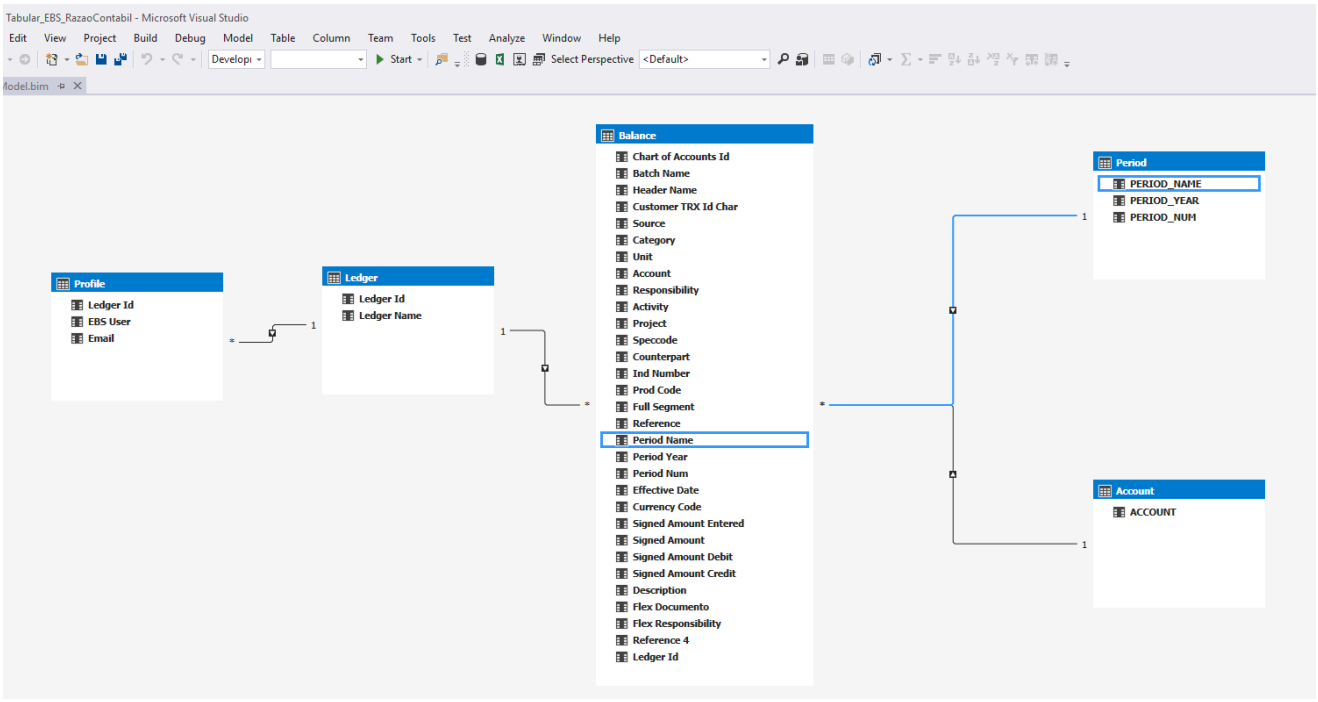
# Creating relationships

In Tabular Model Explorer go to Relationships and click with right button.

You can also create KPIs, Measures and Perspectives.

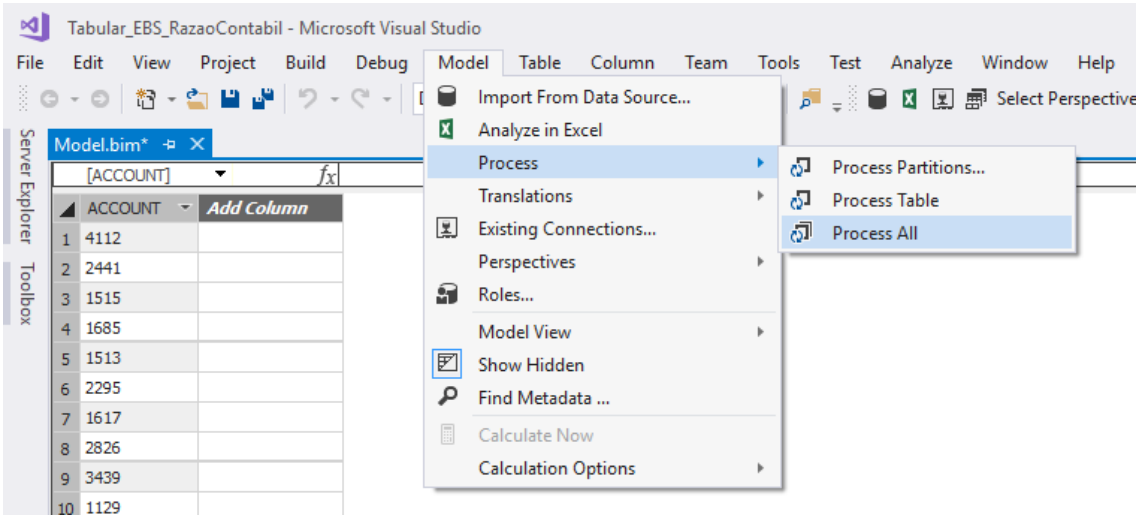


Create the relationships between the tables.

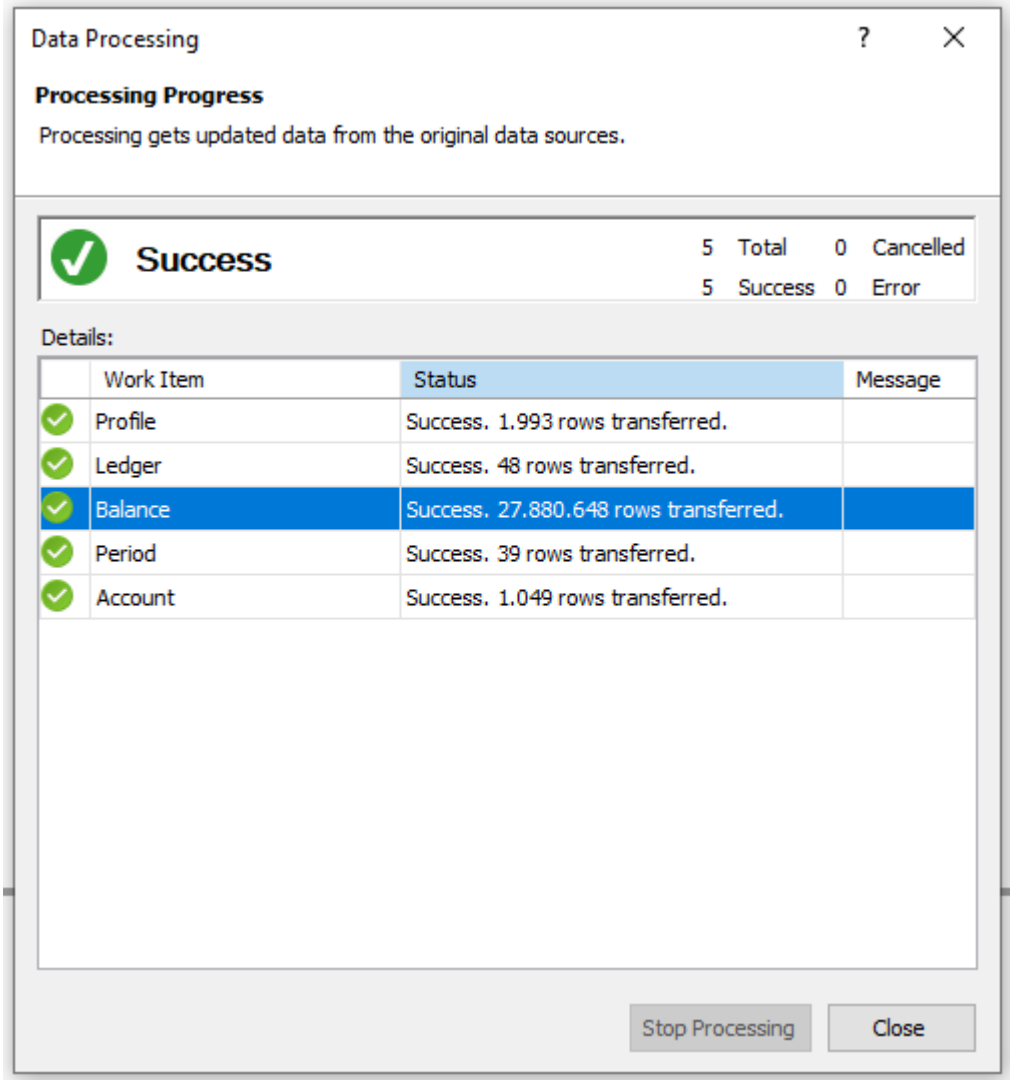


# Process the Model

Process the model go to menu Model\Process and choose the option that you want it.

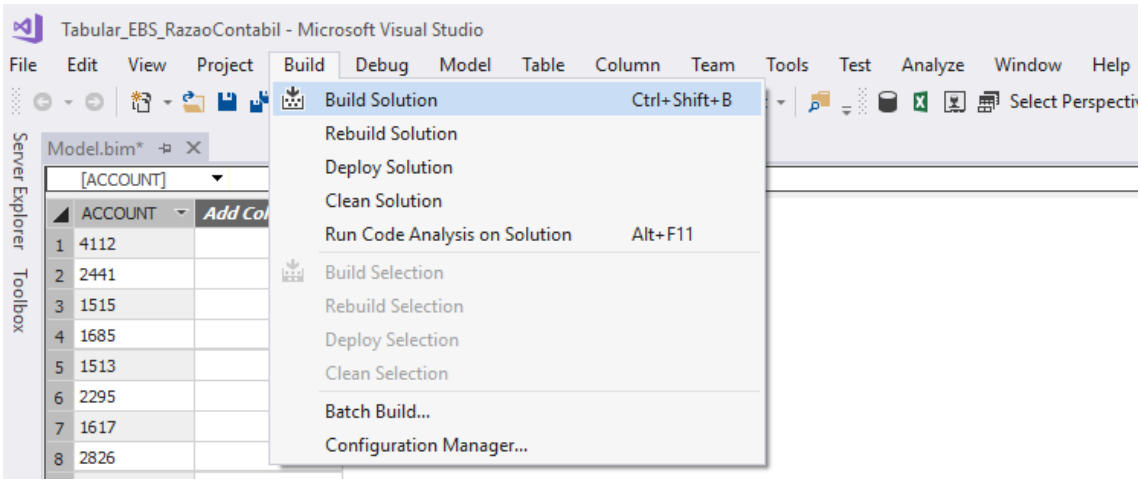


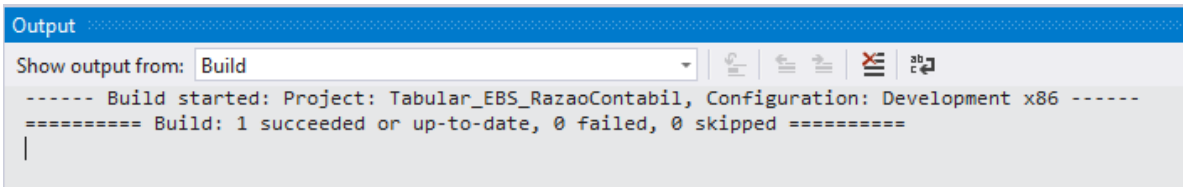
If the structure and the data are OK then the processing will be finished OK.



# Build Solution

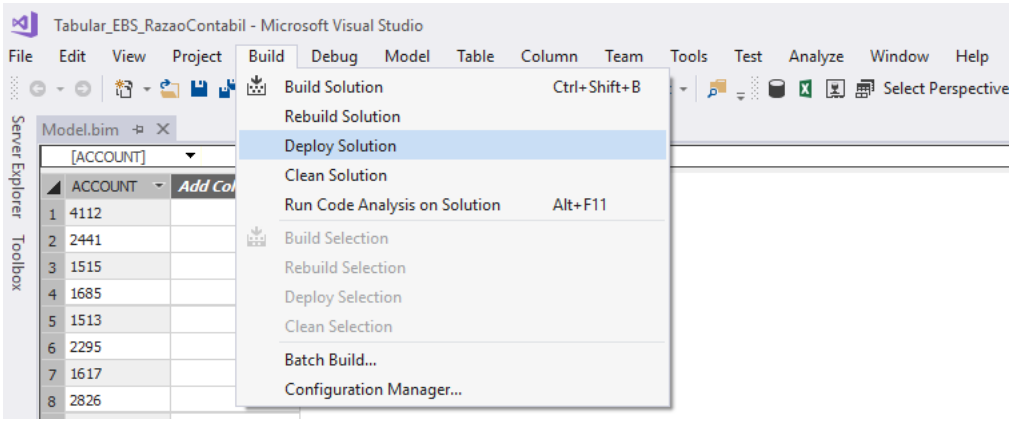
Build Solution go to menu Build\Build Solution and if the solution will be OK then a message with Succeeded will be showed.



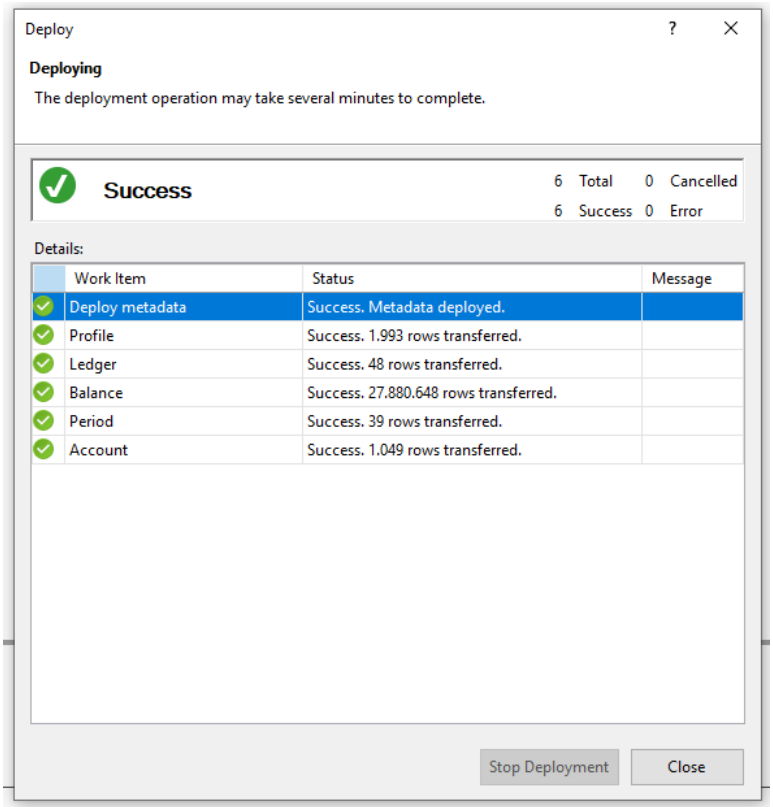



# Deploy Solution

Deploy Solution go to menu Build\Deploy Solution.

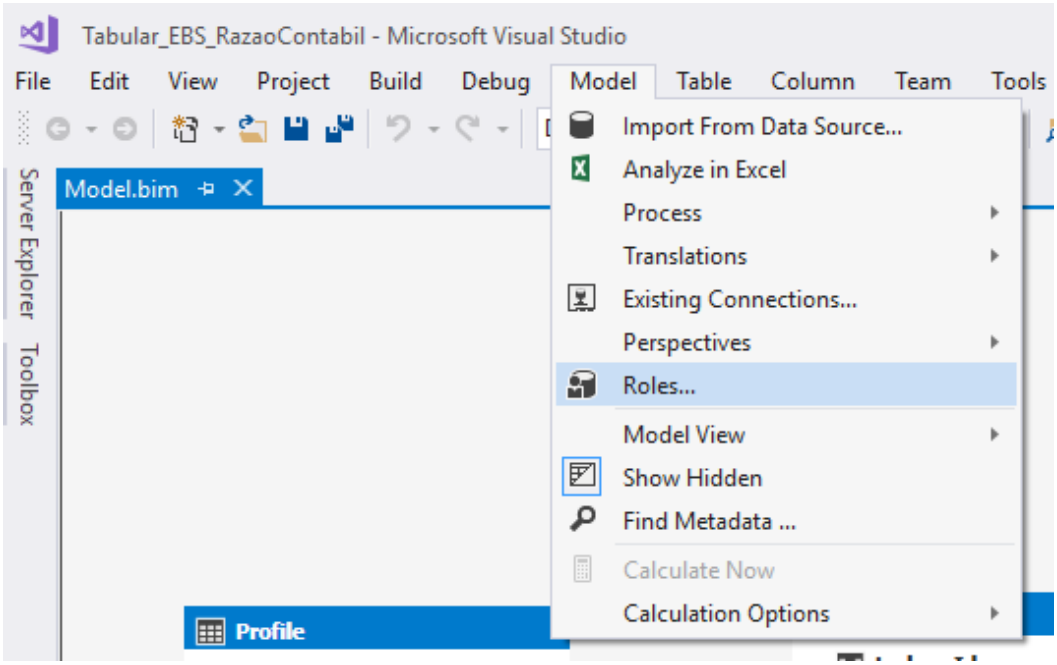



If it is OK then the solution will be deployed in SSAS.

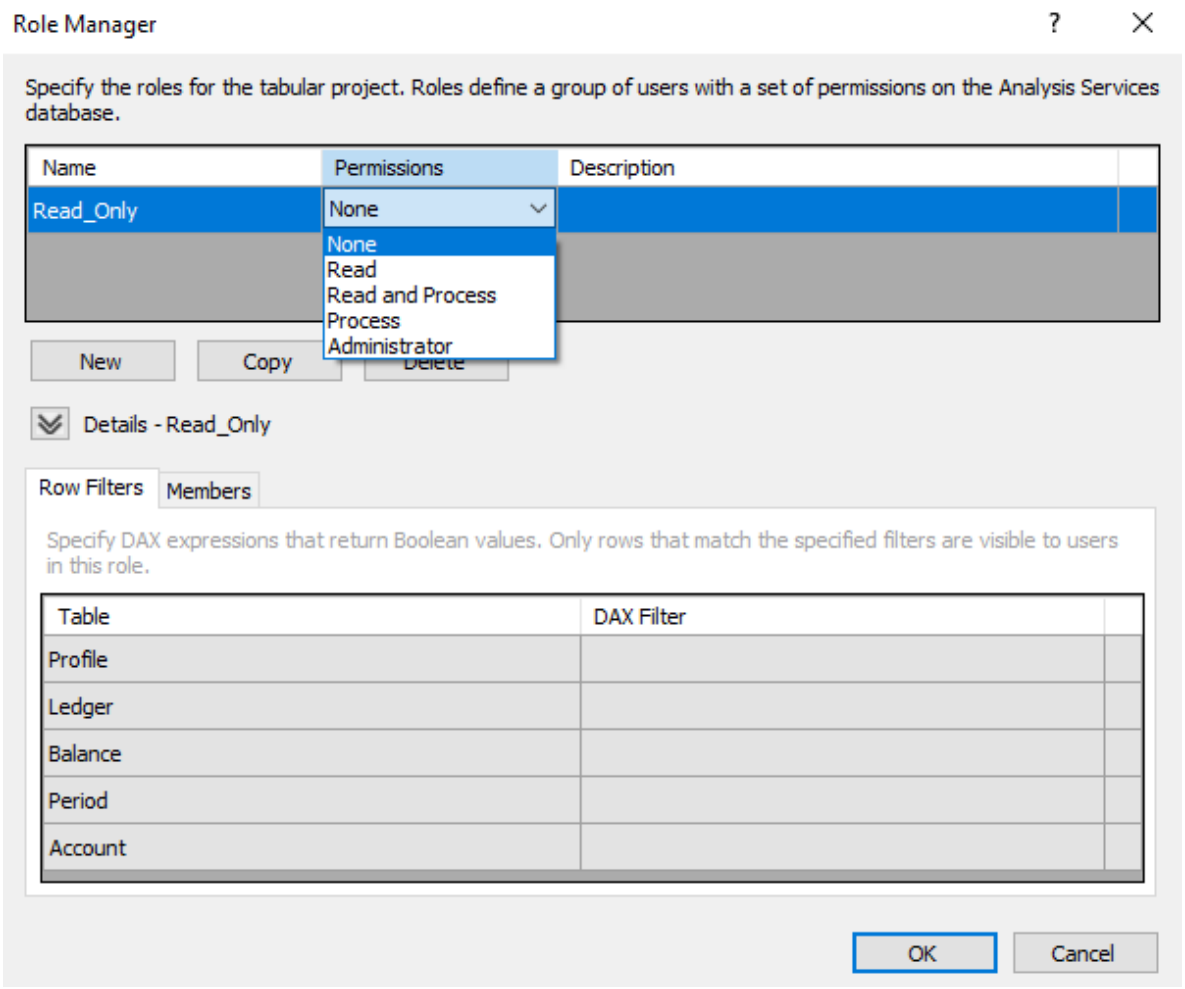


# Roles

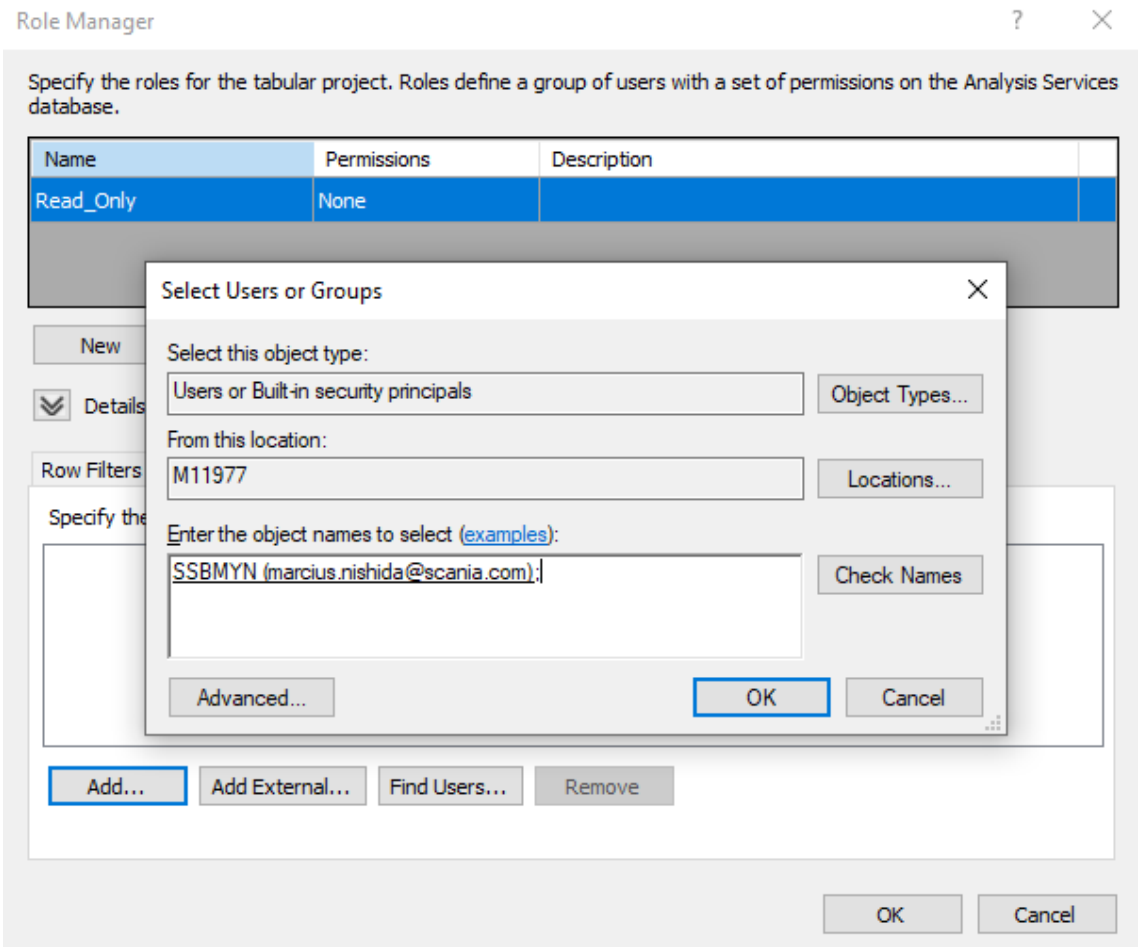
Define roles go to menu Model\Roles.



Fill the role name, permissions, row filters and the members.

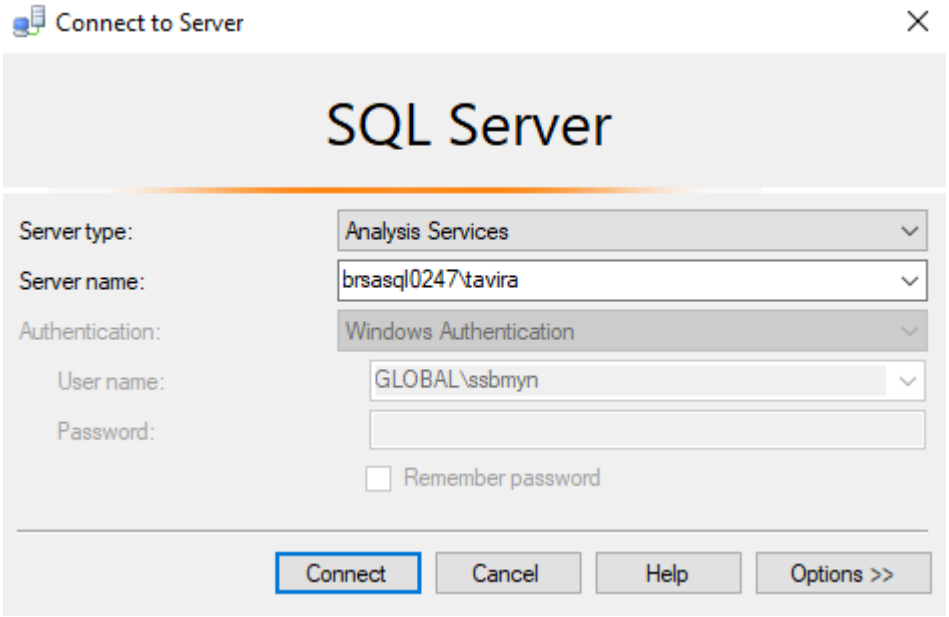


Fill the username or AD group.

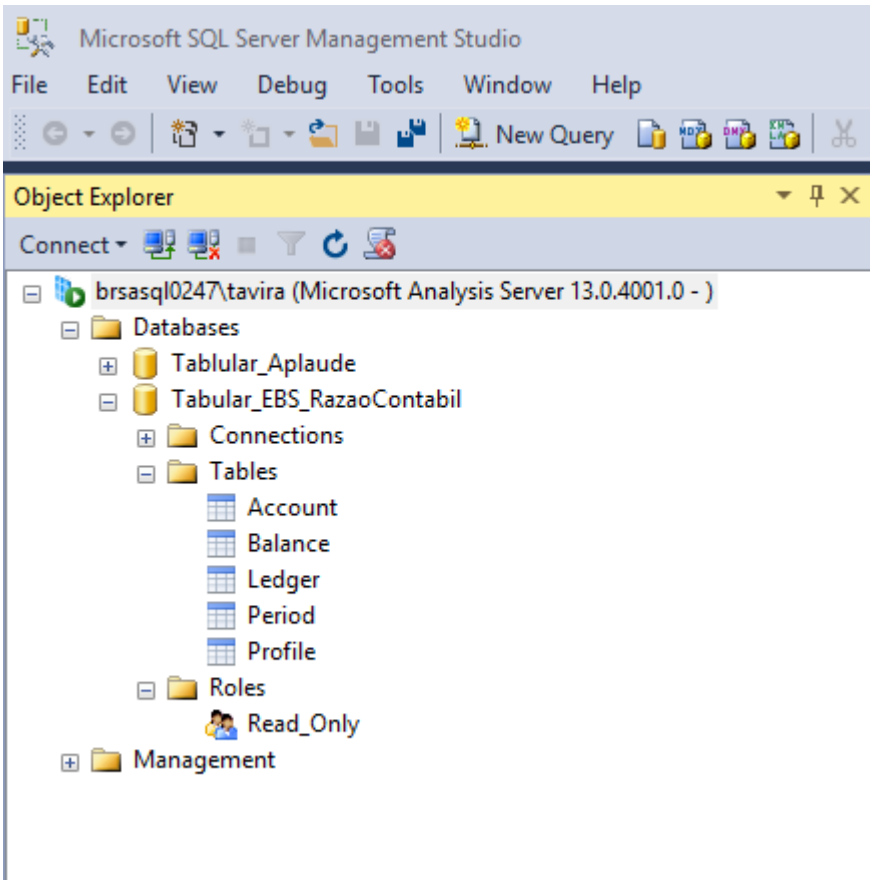


# Opening the Analysis Services

If you have permission so open the SQL-Server Management Studio and select the Analysis Services as Server Type and the server name is brsasql0247\tavira(development) or brsasql0248\tavira(production).

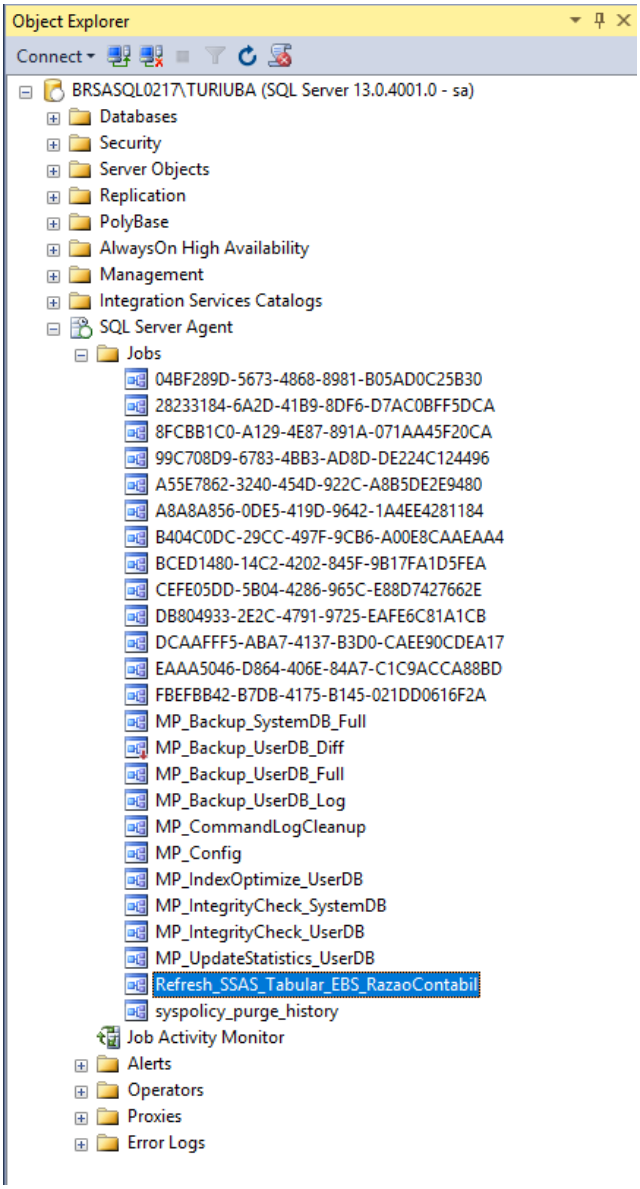


You can see the database on Analysis Services, connections, tables and roles as deployed by Visual Studio.

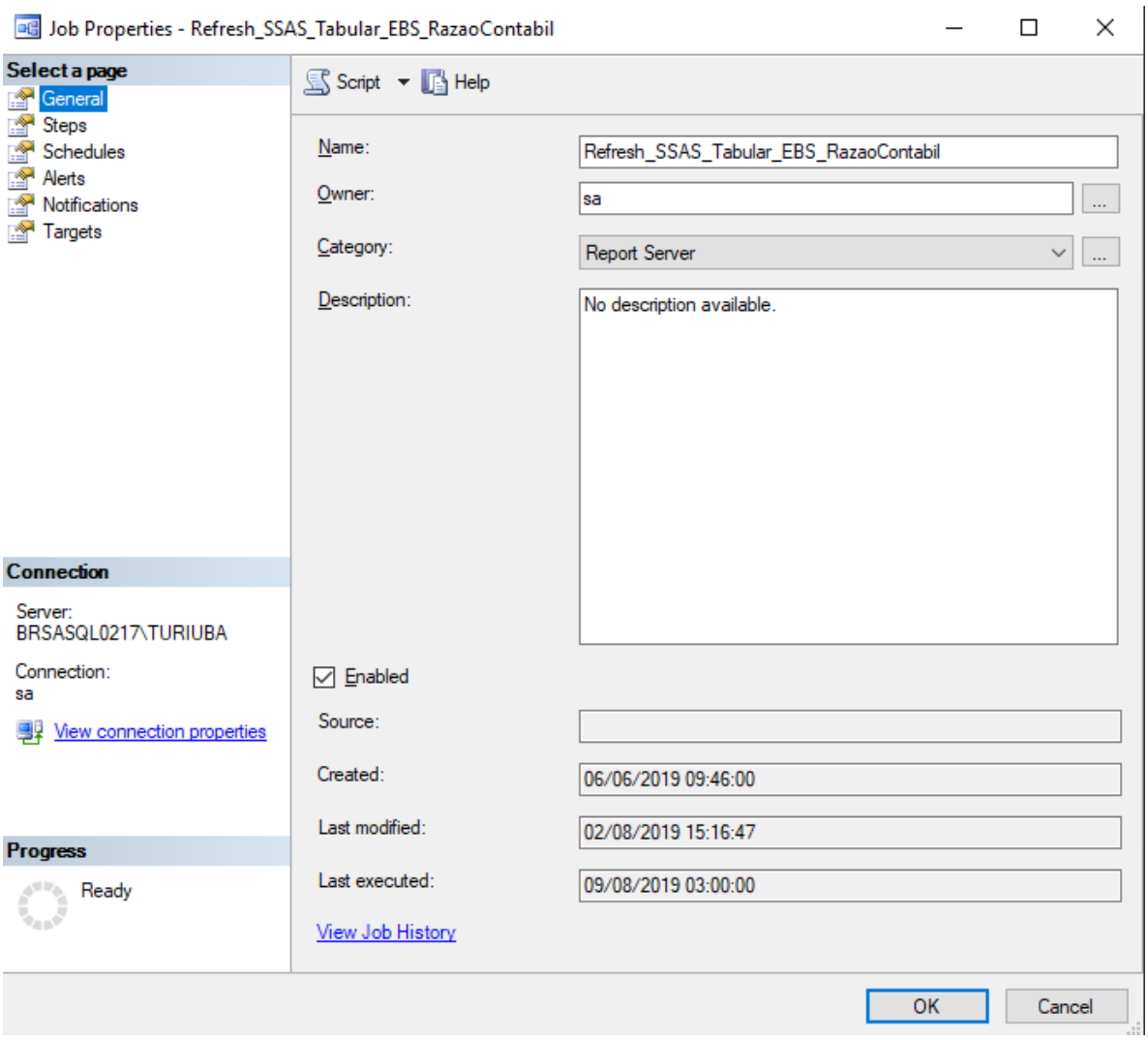


# Creating the refresh job for Analysis Services

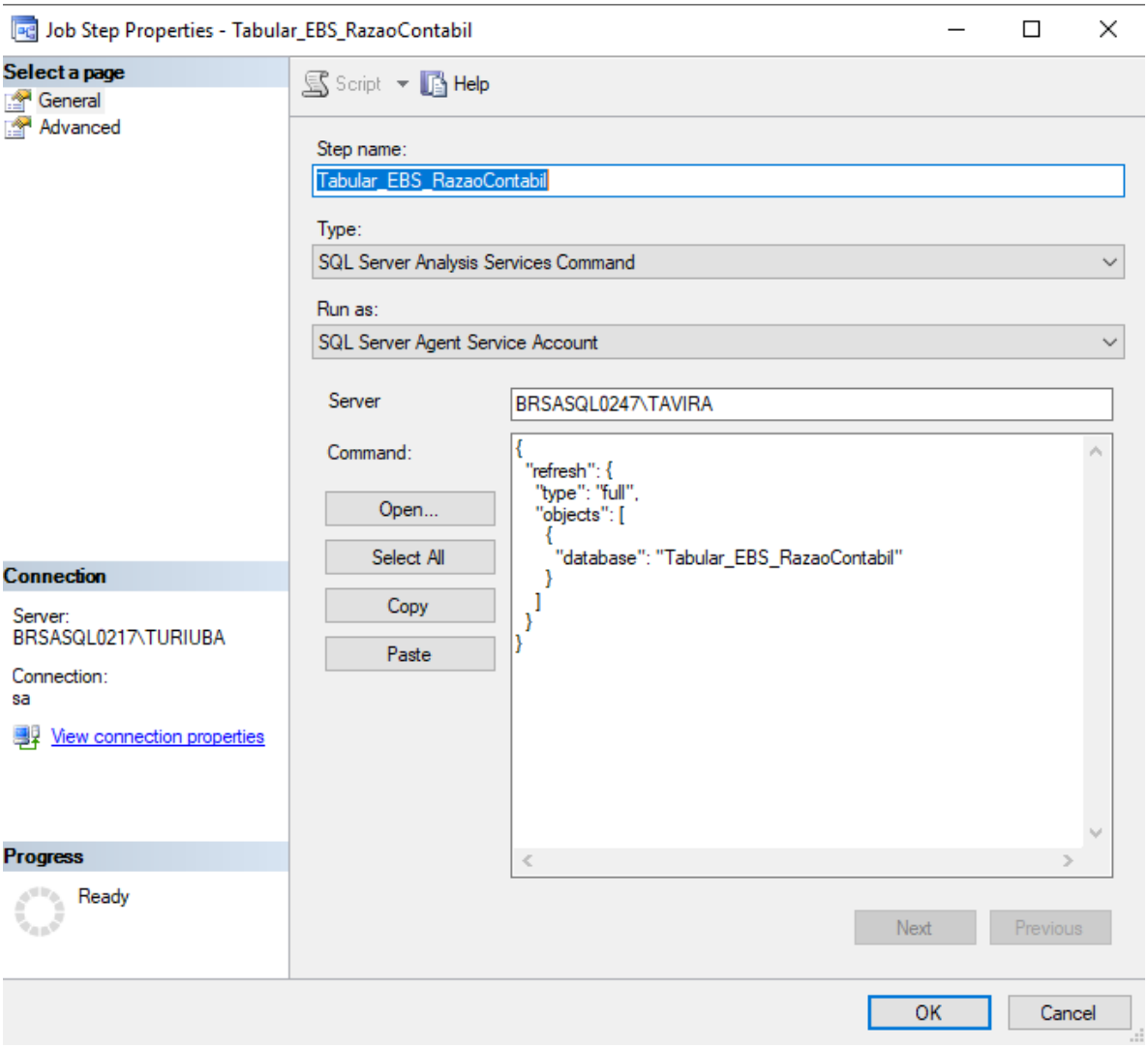
Create a new job on SQL-Server to refresh the data on Analysis Services, the data is in memory so you can schedule the refresh data loading from data sources.



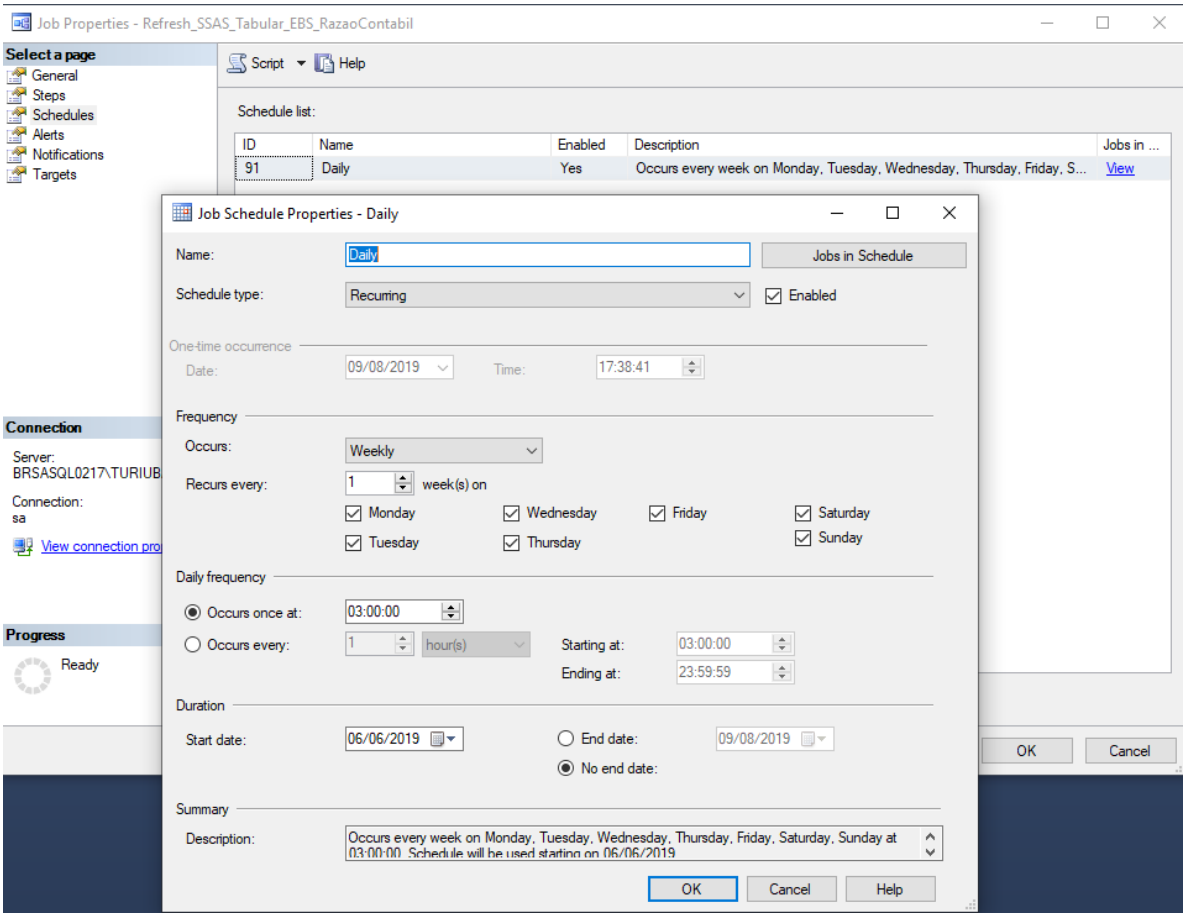
Create a new job fill the Name on the page General.



Fill the Step name, Server and the Command on the page Steps.

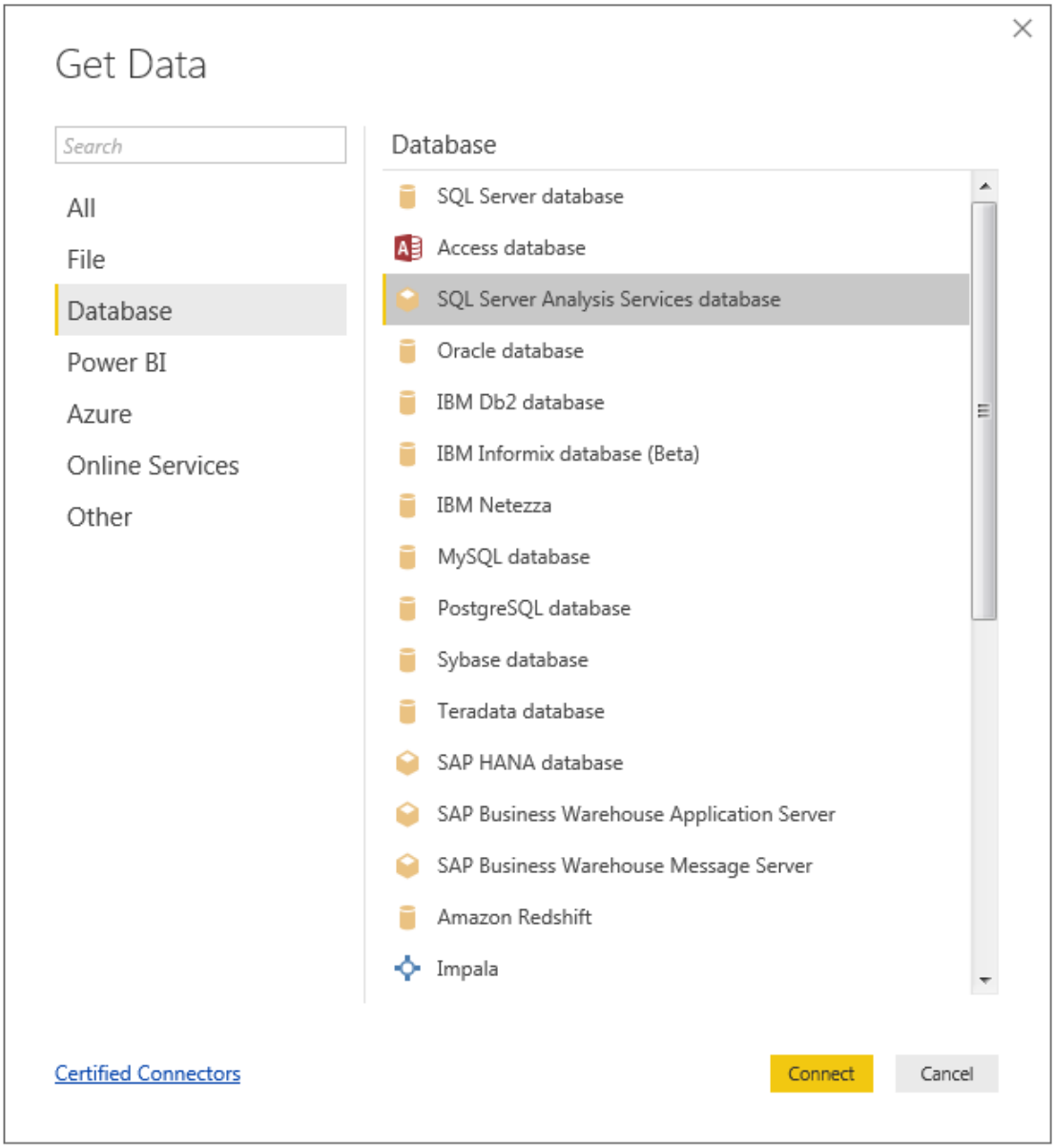


Fill the Name and the frequency on the page Schedules.

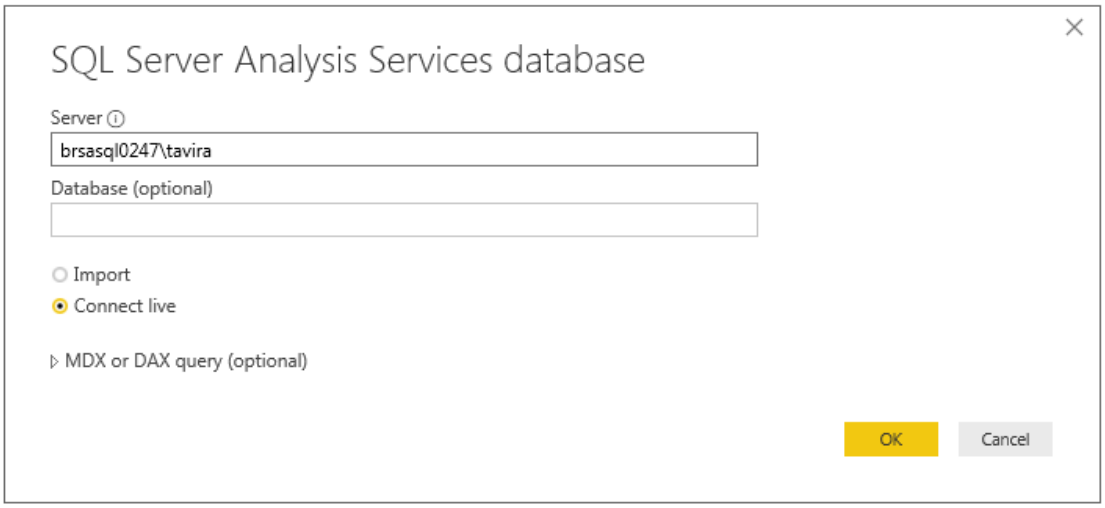


# Using Analysis Services by PowerBI

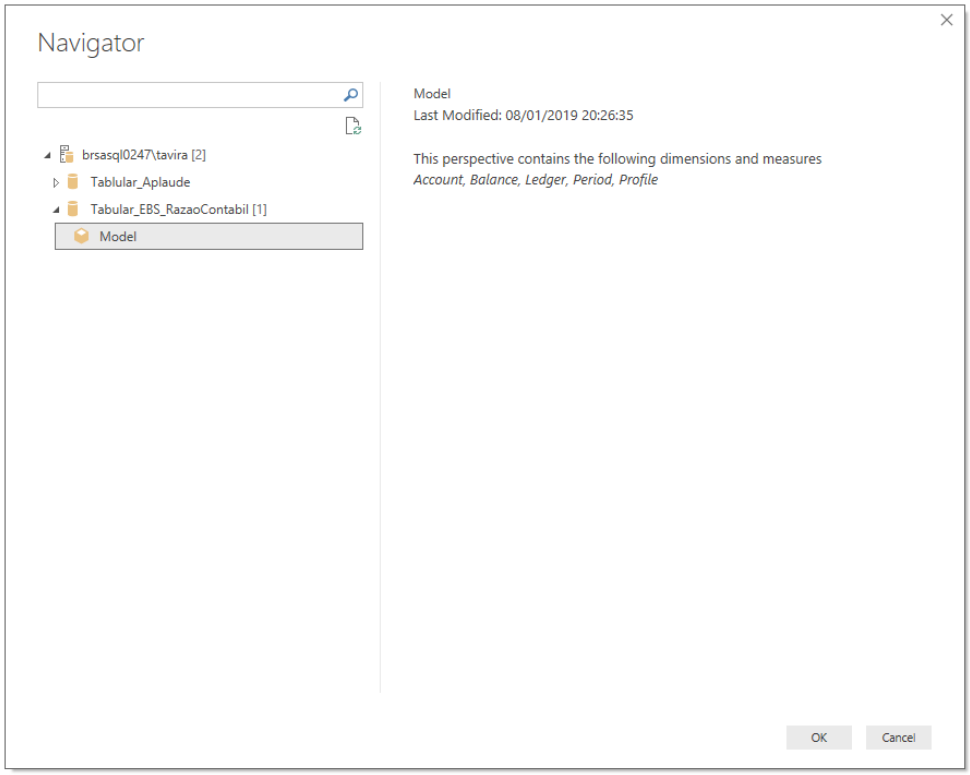
Open the PowerBI on Get Data and choose Database – SQL Server Analysis Services database.



Fill the server name.




It will show the databases that you have permission.



The tables from Analysis Services will be loaded on right side and you can create your report.