How to Create BO Universe using SAP BW

Applies to:

SAP BW3.5, BI7.0. For more information, visit the Business Objects homepage.

Summary

This document will explain the steps to create BO Universe on top BW InfoCube and Bex Query.

Author: Tej Trivedi

Company: L&T Infotech

Created on: 28 September 2010

Author Bio

Tej Trivedi is a SAP BI/BO Consultant currently working in Larsen & Toubro Infotech Ltd. He has over 5+years of core experience in various BW/BI Implementation, Migration, Rollout, Support Pack Upgrade, BI Upgrade and Support Projects. The experience includes 1 year experience on BO Platform.

Table of Contents

Introduction

In order to report data using Business Objects reporting tools, we need to create universe on top of the underlying database. Business Objects provides a tool known as Designer to create universe on top of any database. The scope of this document is restricted to SAP BW. This document will outline steps that need to be followed to create a universe on top of SAP BW.

Business Scenario

Your company is planning to use Business Objects reporting tools for reporting on SAP BW data.

What is a Universe?

A Universe is a business-oriented mapping of the data structure found in the database. It is a semantic layer that isolates the end user from the technical issue of the database structure. Universe components include classes, Objects, Joins, Contexts, etc.

As we are going to create universe using SAP BW, we will focus on OLAP universe. OLAP Universe is BO universe that is generated from an OLAP cube or from a query built on top of an OLAP cube. OLAP universes are automatically created from an OLAP datasource.

In our scenario, SAP BW will serve as an OLAP datasource.

Prerequisites to create universe using SAP BW

One has to ensure following before proceeding with universe creation:
- Business Objects Integration Kit for SAP is installed.
- SSO (Single Sign On) is enabled so that you can logon to Designer using your SAP credentials.

Steps to Create BO Universe using SAP InfoCube

To create a universe using BW InfoCube, proceed as follows:

1. Start the Designer Application by going to **Start > Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > Designer**.

2. You will be prompted to a login screen as shown in the below screenshot.

   Enter the system detail followed by your BI credentials. Make sure you select "Authentication" as "SAP". You may contact your BO Administrator for the system details.
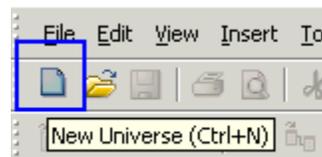
On successful login, you will see a **Quick Design Wizard – Welcome Screen** if the wizard is configured to run at the application startup. Refer below screenshot for more details.
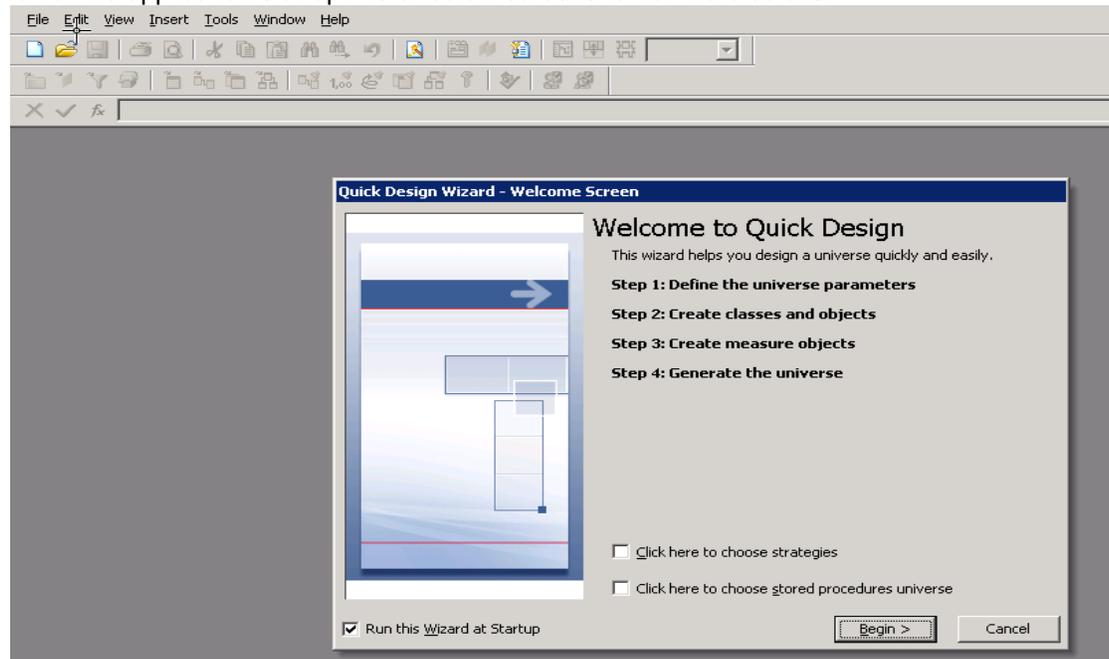
3. Click **Cancel** to exit the wizard.

4. From the **File** menu, select **New** to create a new universe.
   Alternately, click the symbol as highlighted in the below screenshot.

The **Universe Parameters** screen appears as shown in the screenshot below.
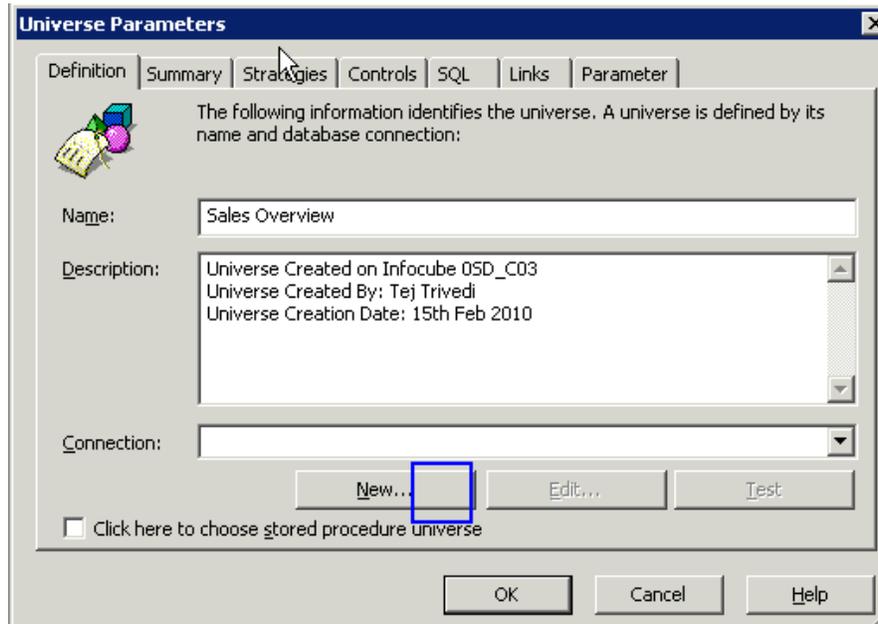
5. Enter a suitable name and description for the universe. Click **New** to create a connection for the universe. The **Define a new connection wizard** appears as shown below. Click **Next** to proceed.

The **Database Middleware Selection** screen appears as shown in the below screenshot.
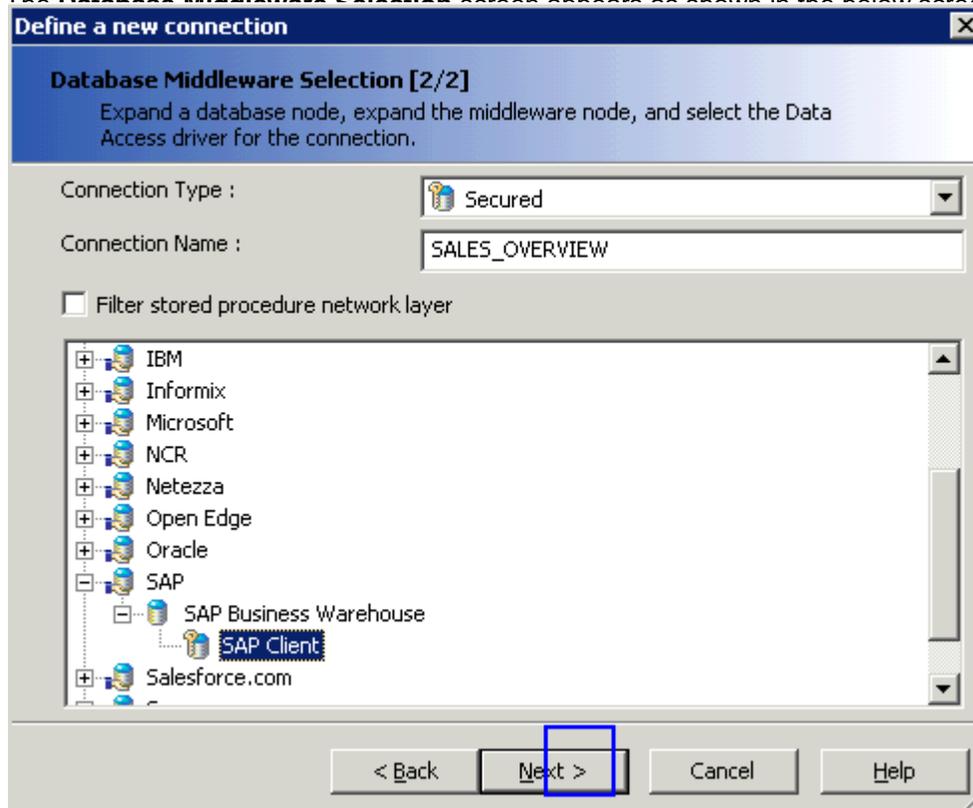
Here, we specify following:

a. **Connection type:** Connection type specifies who can use the connection. There are three values in the dropdown:

   i. *Personal*: Personal connection will restrict the access to universe creator.

   ii. *Shared*: Shared connection allows access to all users. However, these types of connection are unsecured in terms of Business Objects product security. Universe with shared connection cannot be exported to repository.

   iii. *Secured*: Universe with secured connection can be exported to repository. Secured connection guarantees a centralized access to data.

Select connection type as "Secured".

b. **Connection Name**: Give a suitable name for the connection.

c. **Select data source**: Here we will select data source as "SAP-->SAP Business Warehouse-->SAP Client"

Click **Next** to proceed. The **Login Parameters** screen appears as shown in the below screenshot

6. Enter the login parameters of the BI system. Select **Authentication Mode** as **Use Single Sign On when refreshing reports at view time** to use you SAP login credentials. Click **Next** to proceed.

If login parameters are proper, the following screen appears.
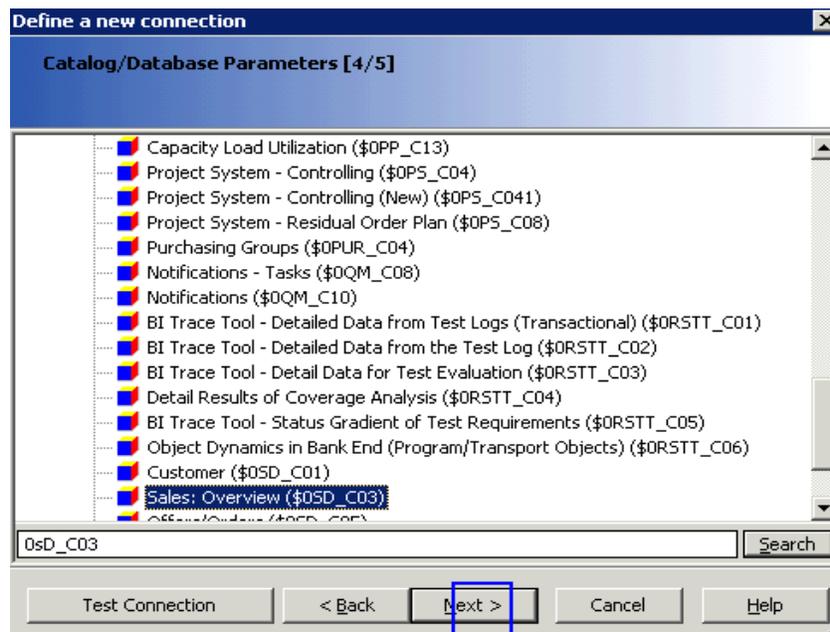
7. Expand the node **OLAP Cubes**. You will see a ($INFOCUBE) folder. Refer the below screenshot.
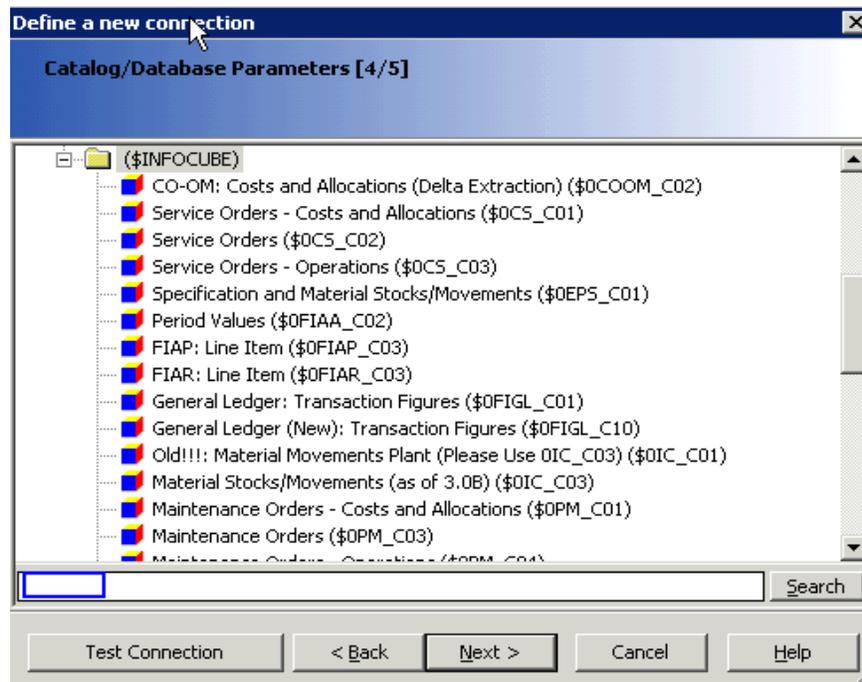
8. Search your InfoCube. In our case, we will search for "0SD_C03". Click **Next**.

The **Configuration Parameters** appears screen as shown in the below screenshot.

You can modify the parameters suggested by the system.
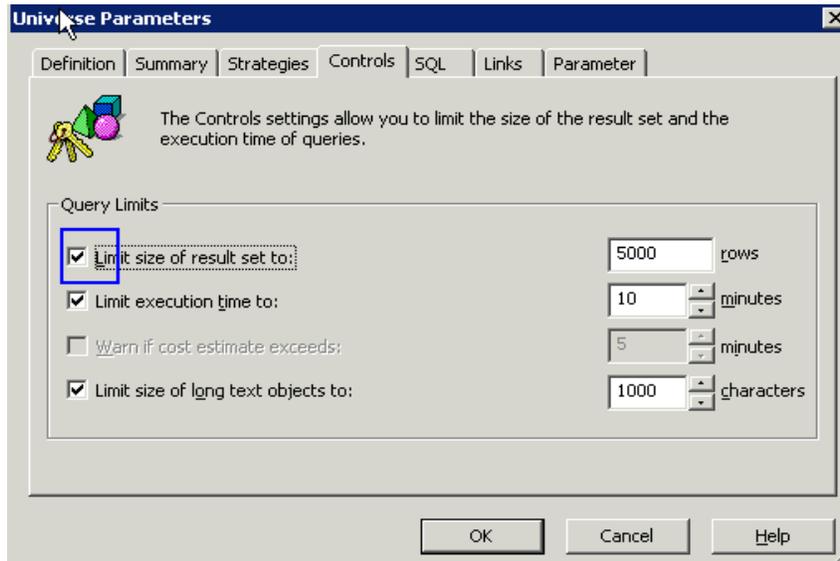Click Finish to complete the connection creation process. The Universe Parameters screen reappears.

Test the Connection

Click the **Test** button. The following message appears.
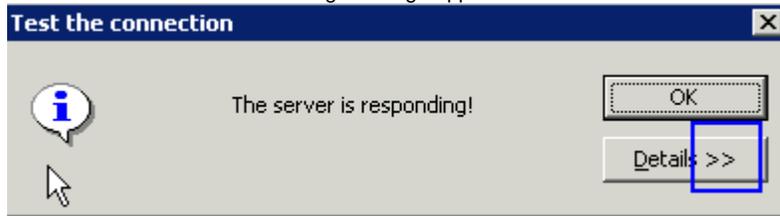
Navigate to **Controls** tab of the **Universe Parameters** screen.

1. Uncheck all the **Query Limits**.

2. Click **OK**. The Designer tool will start creating the universe. This activity will take some time depending on following:

    • The number of characteristics and key figures in the InfoCube.
    • The Location of the server.

Below screenshot display the screen after the universe is created.
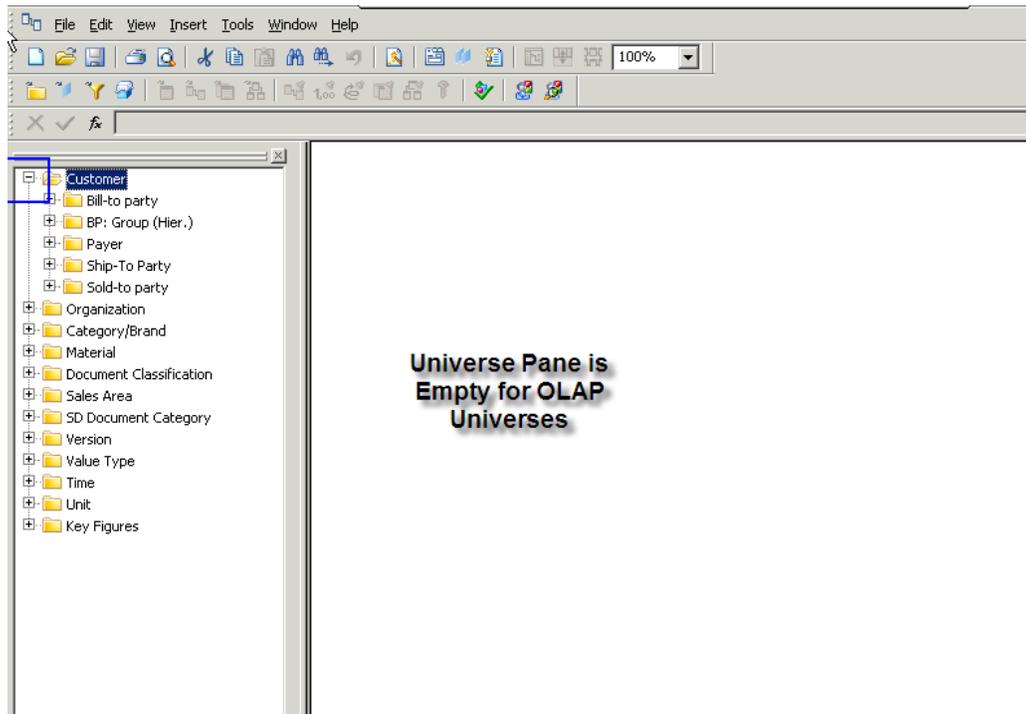
As clear from the above screenshot, the universe pane is empty for OLAP universes.

3. Click the icon to check integrity of universe. The following screen appears.
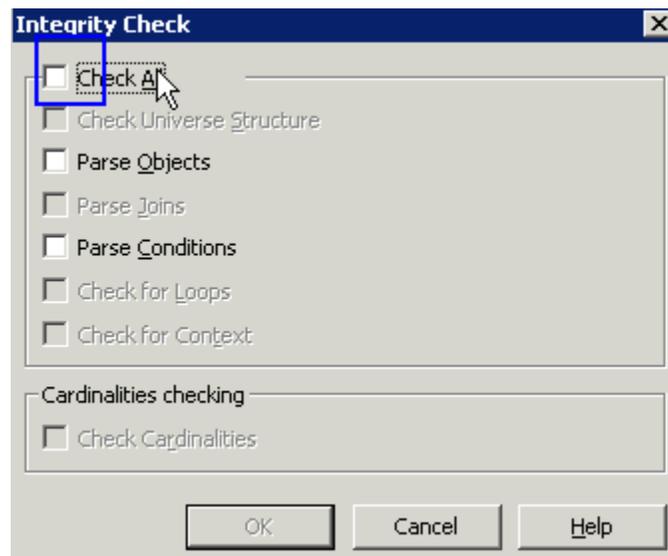
4. Click **Check All.** Certain options are grayed out as they are not applicable for OLAP universes.

This activity will take some time depending on the objects in the universe. On successful check, you will see following screen.
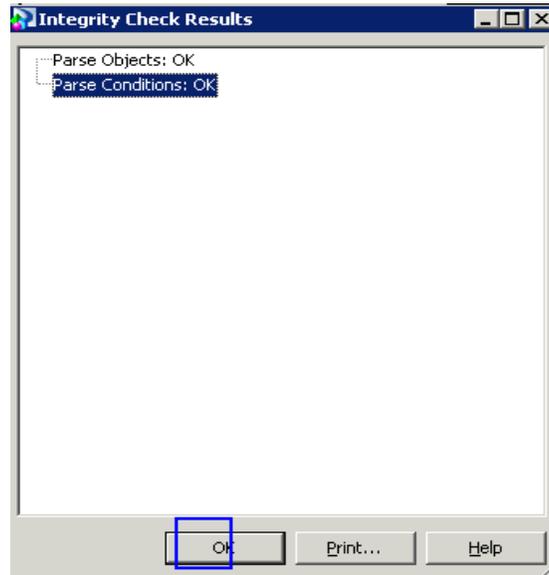
5. Click the 🖫 icon to save the universe.

6. Click **File > Export** to export the universe to repository. The following screen appears.
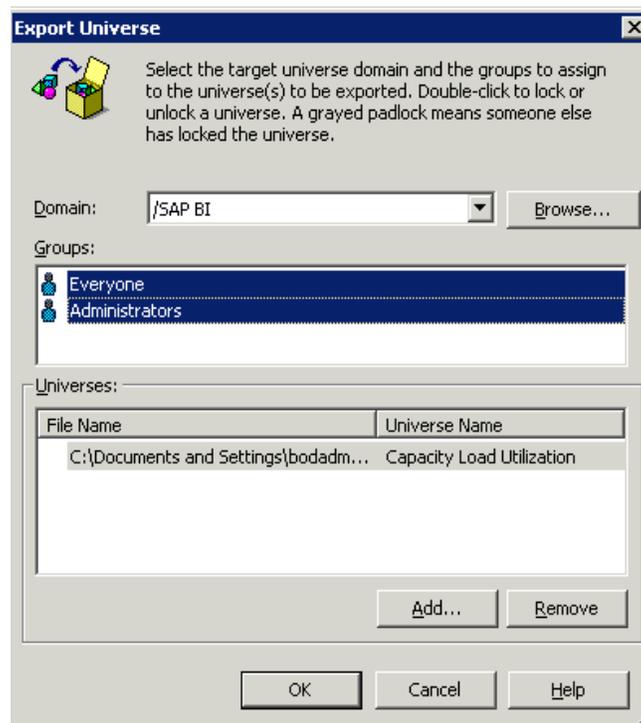
7. Select **Domain** and **Groups** to which the universe should be assigned. Click **OK** to export the universe. On successful export of universe, the following message appears.
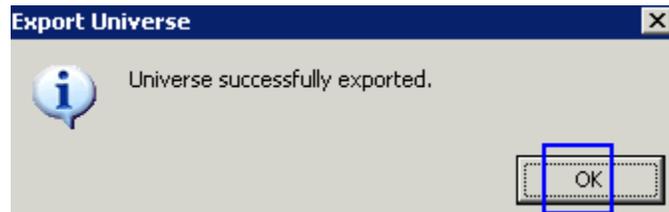
8. Click **OK**.
   Steps to Create BO Universe using Bex Query

Steps to create universe on Bex Query are identical to that of InfoCube. However, before one proceeds for universe creation on Bex Query, one has to release the Bex Query for external access. Let's say we want to create a universe on Bex Query 0SD_C03_Q007 (i.e. Billing documents). Proceed as follows:

1. Open the Query 0SD_C03_Q007 in Query Designer.
2. Navigate to **Query > Properties**.
3. Click the **Advanced** tab.
4. Check **Allow External Access to this Query** as shown in the screenshot below.
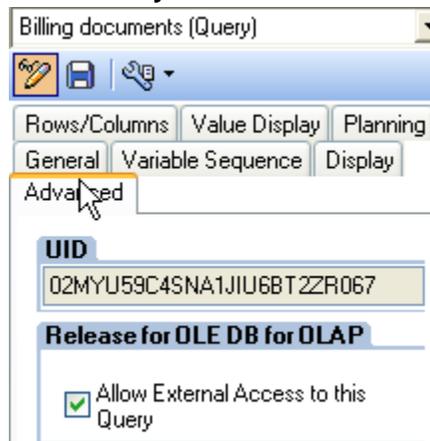
5. Save the Query.
   6. The remaining steps are the same. Only difference is that the query does not appear in the ($INFOCUBE) folder. Instead it appears in a folder with InfoCube name. In this case, the query

appears in "Sales:Overview (0SD_C03)" folder as shown in the screenshot below.
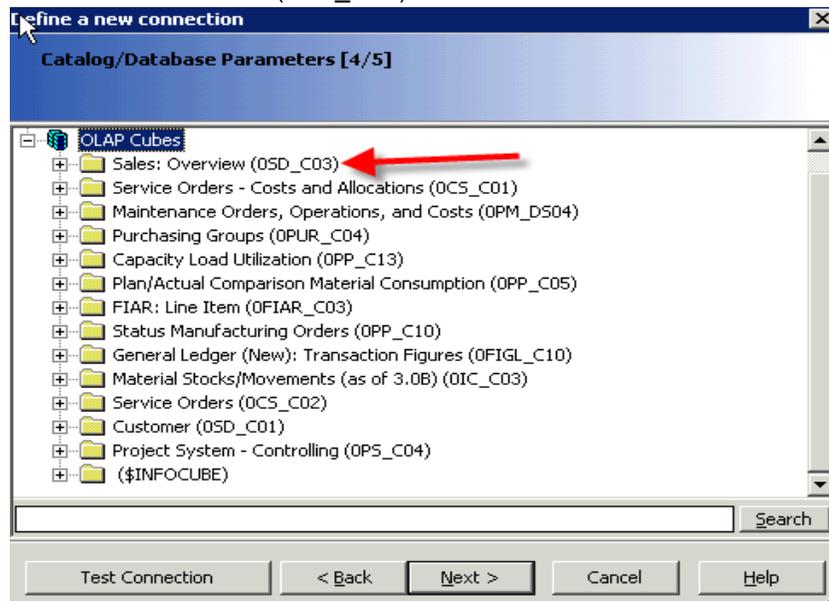
Other InfoProviders on which BO Universe can be created

Apart from InfoCube and Bex Query, we can create universe on following InfoProviders:

1. DSO
2. Infoset
3. InfoObject
4. Multiprovider

Universe on DSO, Infoset and InfoObject can be created either by including them in a MultiProvider or by creating a Bex Query on DSO, Infoset and InfoObject respectively. The steps to create a universe on MultiProvider are same as that of InfoCube.

Refreshing an OLAP Universe

If the InfoCube or Bex Query on which universe is created undergoes a structural change, then we need to refresh the universe in designer. This ensures that universe structure is consistent with the underlying InfoProviders in BI.

To refresh the universe, proceed as follows:
1. Open the universe that needs to be refreshed in Designer.
2. Follow menu **View > Refresh Structure**.

The **Update OLAP Universe Wizard** appears as shown in the below screenshot.
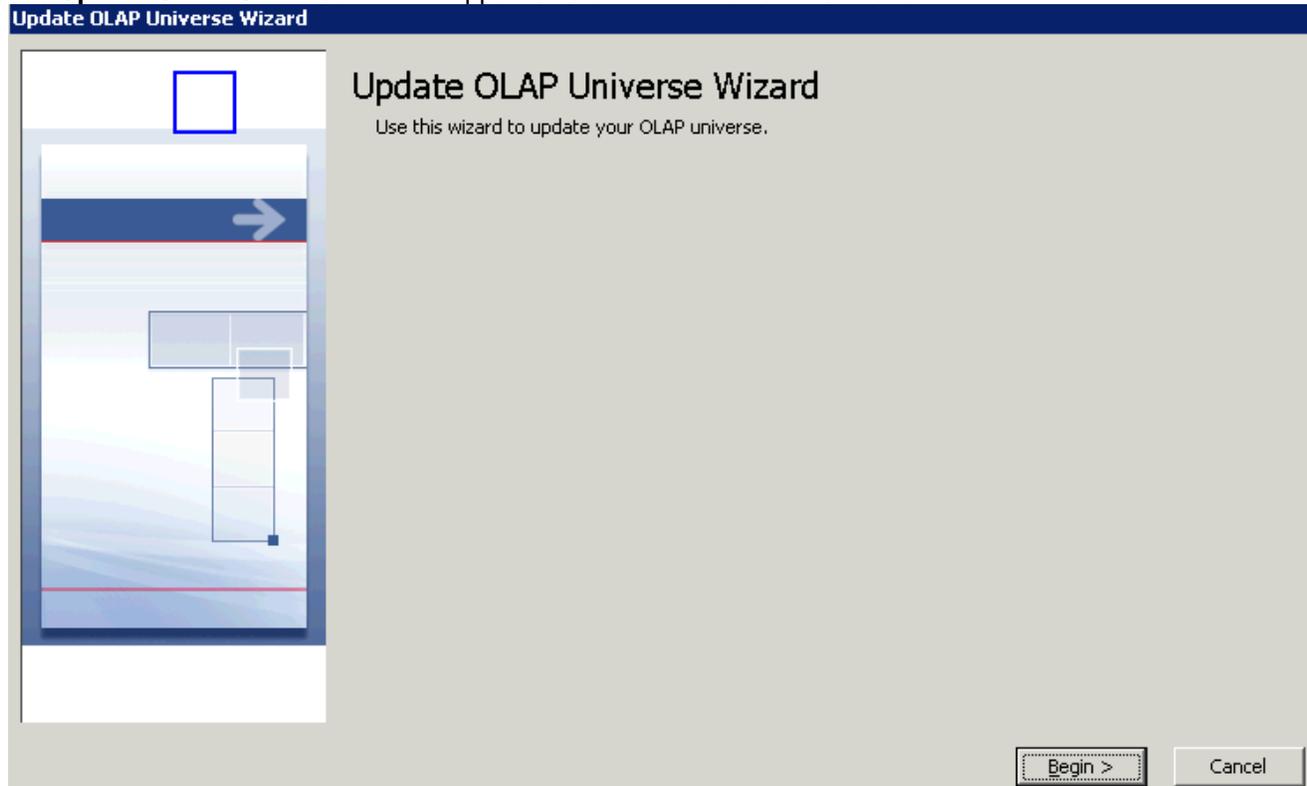
3. Click **Begin**. Options to update the universe appear.
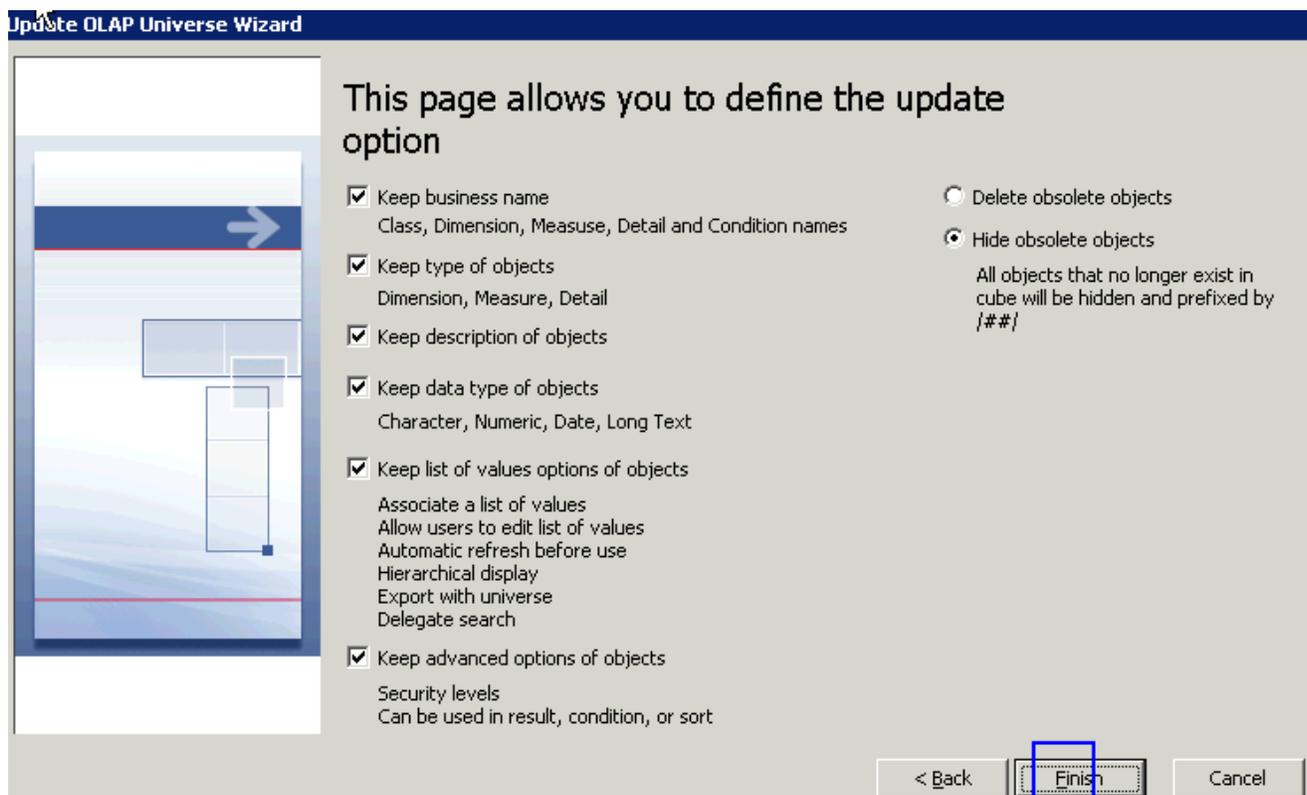
If there were any manual modification carried out at universe level like hiding some objects, renaming some objects, etc. then one should select all "Keep" options to preserve all modification.

All the "keep" options are selected by default and appear as checkbox. Apart from the checkbox option there are two options available as radio button. Following are the same:

- **Delete obsolete object**: This option will delete objects that are no longer available in the InfoCube or Bex Query.
- **Hide obsolete object**: This option will hide objects that are no longer available in the InfoCube or Bex Query.

Click **Finish** to start the refresh process. This activity will take time depending on the modification carried out at the underlying InfoCube or Bex Query.

Related Content

For more information, visit the [Business Intelligence homepage](#)

Disclaimer and Liability Notice

This document may discuss sample coding or other information that does not include SAP official interfaces and therefore is not supported by SAP. Changes made based on this information are not supported and can be overwritten during an upgrade.

SAP will not be held liable for any damages caused by using or misusing the information, code or methods suggested in this document, and anyone using these methods does so at his/her own risk.

SAP offers no guarantees and assumes no responsibility or liability of any type with respect to the content of this technical article or code sample, including any liability resulting from incompatibility between the content within this document and the materials and services offered by SAP. You agree that you will not hold, or seek to hold, SAP responsible or liable with respect to the content of this document.