

# How to... use BPC10.1 NW with Hana Smart Data Access for real time integrated planning with any SAP or non-SAP solution/database without any data duplication

## Applies to:

SAP BPC10.1NW

## Summary

An overview of how to consume any SAP or non-SAP data from on-premise or cloud system into BPC10.1NW planning applications without any data duplication and in real time by leveraging Smart Data Access feature of Hana.

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## Author Bio

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# Business Scenario and background information

SAP's Business Planning and Consolidation version for Netweaver 10.1 (BPC 10.1) became generally available in Q2 2014. With this release of BPC, SAP offers Standard model and embedded model as two model types that can be deployed to meet your business needs. The architecture and functionality of standard model type is very much similar to SAP Business Planning and Consolidation version for NetWeaver 10.0 (BPC10.0NW) whereas embedded model type is similar to the modelling paradigm of SAP BW Integrated Planning (BW-IP) and Planning Applications Kit (PAK) where master and transactional data from the entire host EDW environment is accessible by the application. This model allows easy access to all data within the host BW, as well as other data sources accessible by BW including Big Data. Embedded model in BPC10.1NW uses Hana as the primary database and hence the embedded model can easily leverage the features and functions of Hana to extend the scope of planning functionality offered by BPC. This how to guide will explain how we can use embedded model to easily access the non-BW data within Hana database; as well as go beyond data contained within Hana by leveraging Smart Data Access (SDA) feature of Hana to use external data in planning applications within BPC10.1NW. Please note that this how to guide pertains to the transactional data integration but a similar approach can be followed for master data integration as well (master data integration is not covered in this guide)

There can be multiple business scenarios where this guide can be useful. Firstly, in the use cases where the users need to extend their reach to any internal or external, SAP or non-SAP data (accessible by SDA) for using it in the embedded planning models. Secondly, this is useful in use cases where the use cases where the users want to use real-time data in the planning from external systems without having to go through any ETL processes. Thirdly in use cases where the users don't have any need to store external data anywhere in between the source and direct consumption in planning functions, this technique can be very effectively used since here we are avoiding any data duplication or replication since SDA creates only virtual tables without storing any physical data.. This dramatically increases the agility of the planning application.

We will now see in detail how to access the external data through SDA and how to consume the external data in the planning functions of BPC10.1NW.

## Step by Step Procedure

### 1. Configuring SDA to external database – pre-requisites and steps to configure

Before configuring Smart Data Access, please ensure that all the pre-requisites are met. The detailed pre-requisites for realizing SDA are listed at:

[http://help.sap.com/saphelp\\_nw74/helpdata/en/bb/df686dc0d94f779b5c11d06753da95/content.htm?](http://help.sap.com/saphelp_nw74/helpdata/en/bb/df686dc0d94f779b5c11d06753da95/content.htm?)

Once the pre-requisites are met then you can logon to Hana Studio and perform following steps to configure external database:

**1.1 Select remote source:** In the 'provisioning' node, select 'new remote source' from the context menu.

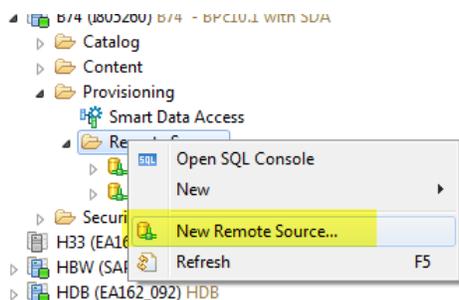


Figure 1: Select remote source

1.2 **Define properties of remote source:** Once you select the option 'new remote source' in the above step, the screen to define properties of the remote source will open up as shown in Fig 2 below. Enter the name of the source and select the adapter you want to use depending upon the remote source database. Next, enter the properties of the remote source as shown in Figure 3. There you can enter the server details, port and the username/ password that can be used to access the remote source. Please note that only the data that is accessible by the username that you enter in this step will be available for you to use in the rest of this article. Hence it is important to ensure that the username that you enter in this step has the requisite authorization for the data that you want to use in your planning application.

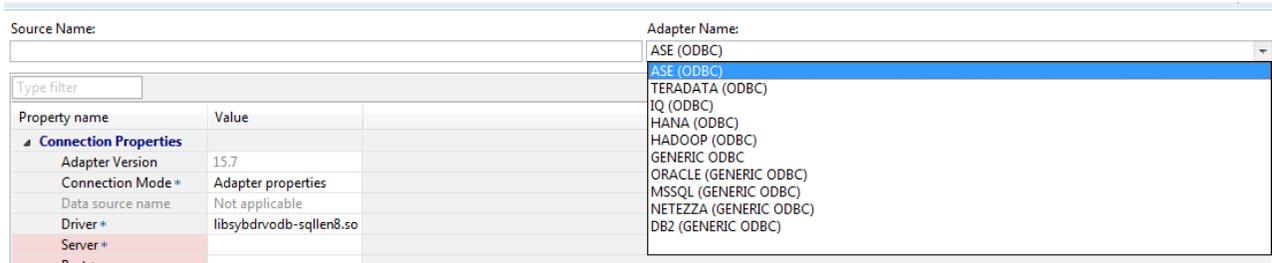


Figure 2 – Select the adapter for remote source

Property name	Value
<b>Connection Properties</b>	
Adapter Version	15.7
Connection Mode *	Adapter properties
Data source name	Not applicable
Driver *	libsybdrvodb-sqlen8.so
Server *	
Port *	
Extra Adapter Properties	
<b>Credentials</b>	
Credentials Mode *	Technical User
User Name *	🔒
Password *	*****

Figure 3 – Define properties of remote source

1.3 **Test the connection:** Once you enter the properties of the remote source, select the icon for testing the connection as shown in Fig 4 below and make sure that you get a confirmation as shown in Figure 5. You can then see that the remote source gets added to the remote sources available to you and you can now check the tables that you want to use in the planning applications as shown in Figure 6. In this example, we will be using the table PR\_REV\_BY\_CNTRY in our planning application. This table is stored in the external database but accessible to us through the remote source defined in the smart data access.

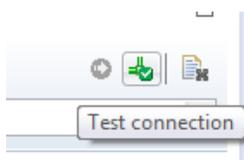


Figure 4 – Test connection

**i** Connection to remote system established

Figure 5 – Get confirmation message for the remote source connection

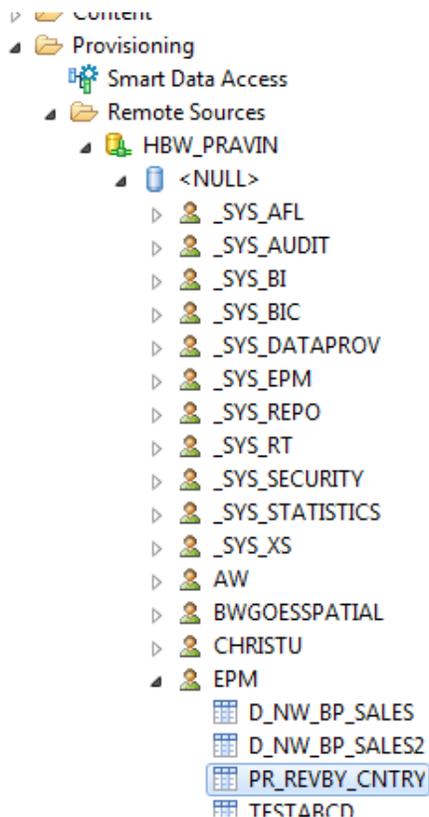


Figure 6 – Check if the tables from the remote source

1.4 **Create virtual table:** Once you ensure that you can access the required table from the remote source, select the table, right mouse click and select 'Add as virtual table' as shown in Figure 7. This will create a virtual table for the physical table in the remote source. You can name the virtual table with the appropriate name that you want to give as shown in Figure 8. Once you click 'Create' button in Figure 8, the virtual table will be generated and you will get a confirmation message as shown in Figure 9. Click OK to proceed.

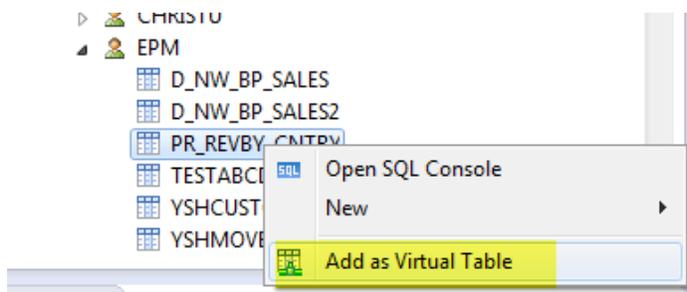


Figure 7 – Add virtual table

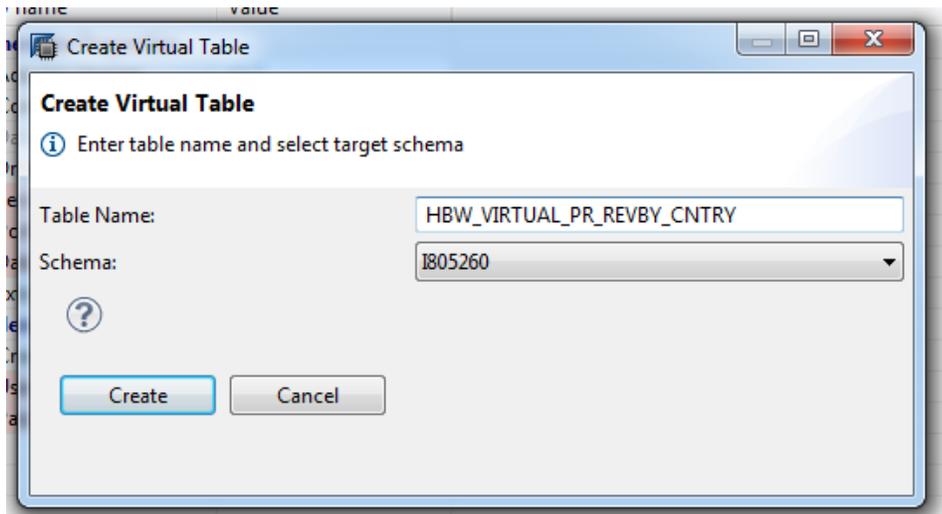


Figure 8 – Create virtual table

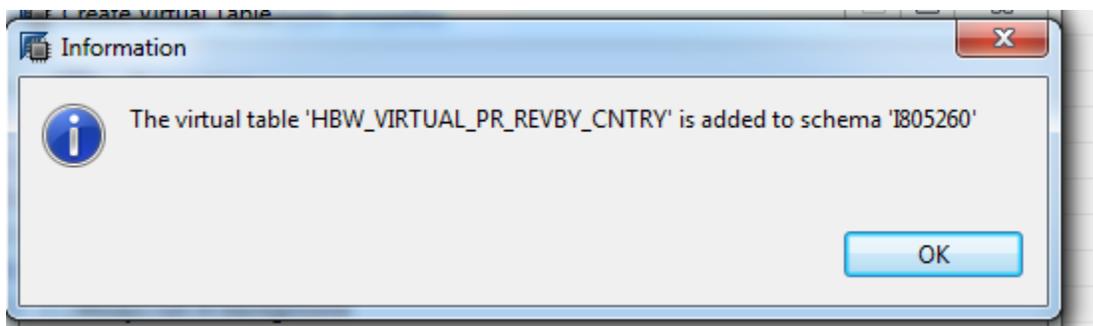


Figure 9 – Confirmation message for creation of virtual table

1.5 **Check the virtual table:** Once you create the virtual table in the above step, you can navigate to your schema and open up tables to see the virtual table as shown in Figure 10.

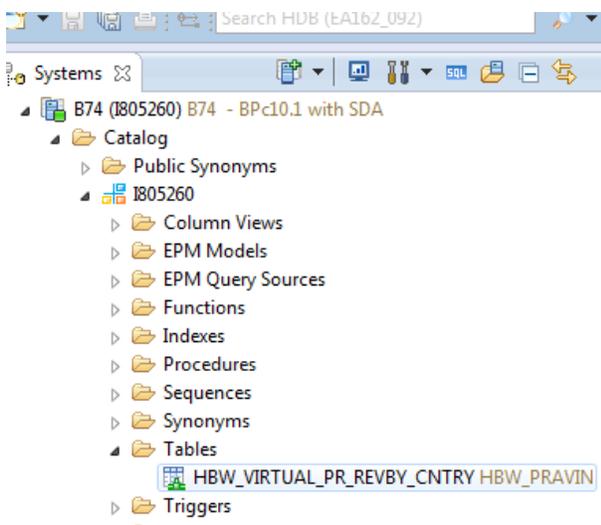


Figure 10 – Check the virtual table

1.6 **Preview the virtual table:** Click on the virtual table described in the step above and right mouse click to select data preview as shown in figure 11. The data in the remote table is displayed as shown in Figure 12.

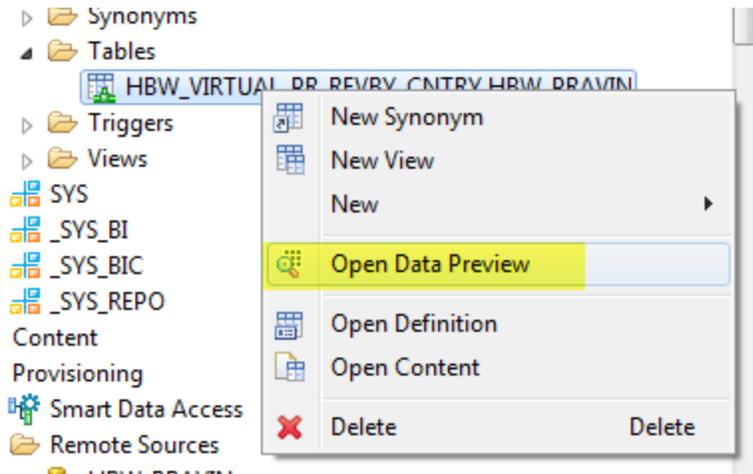


Figure 11 – Select data preview

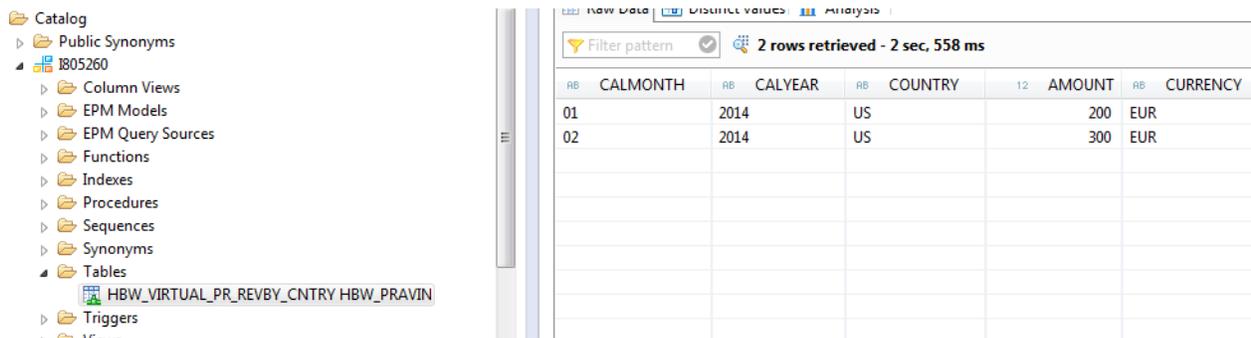


Figure 12 – Open data preview

1.7 **Create a package** – The next step is to create a calculation view for the virtual table created above. In order to do that, you can either select an existing package or create a new package. To create a new package, navigate to Content node and right mouse click to select New and Package as shown in Figure 13. Then you will be prompted to enter the name and description of the package as shown in Figure 14. Click OK to continue.

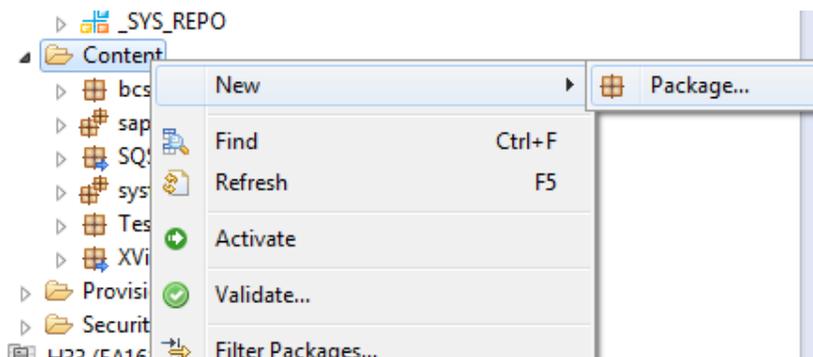


Figure 13 – Create a package

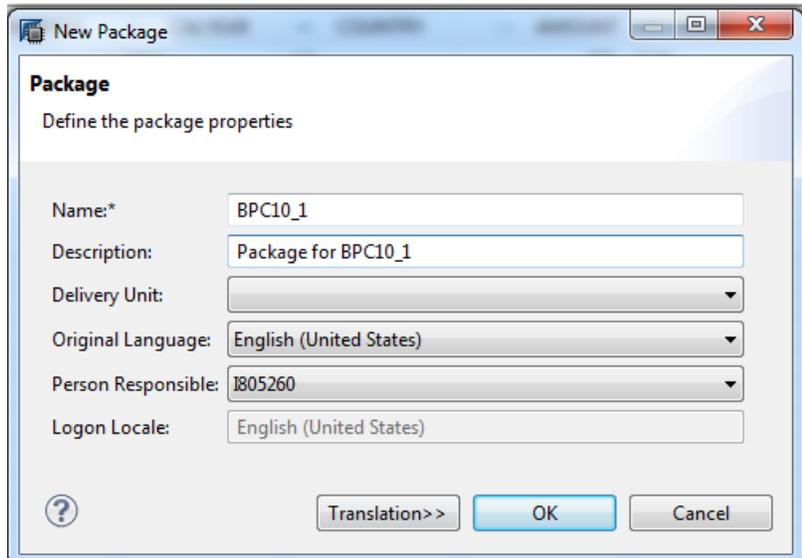


Figure 14 – Define a package

1.8 **Create a calculation view** – Select the package created above and right mouse click to select 'New' and 'calculation view' as shown in figure 15.

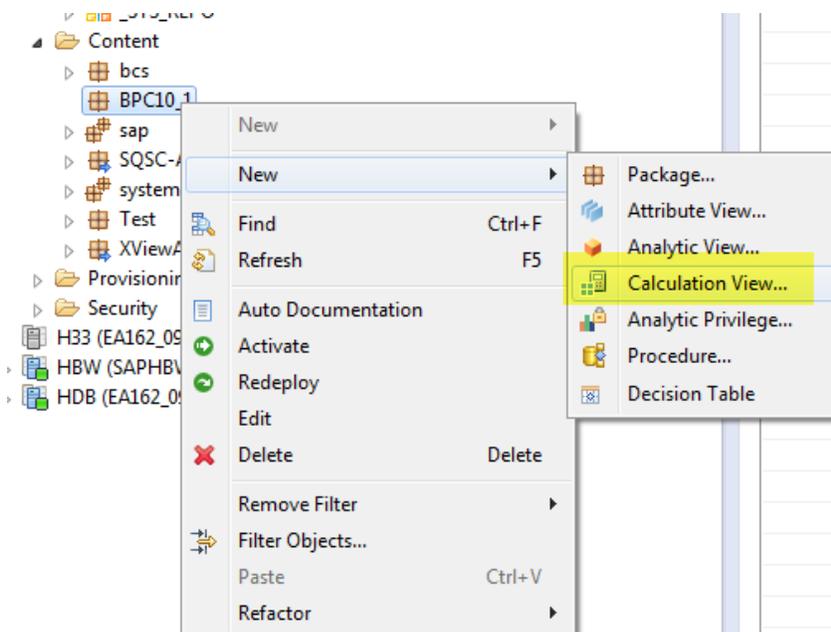


Figure 15 – Create a calculation view

1.9 **Define the calculation view** – Enter name and description for the calculation view as shown in Figure 16. Click 'finish' to continue.

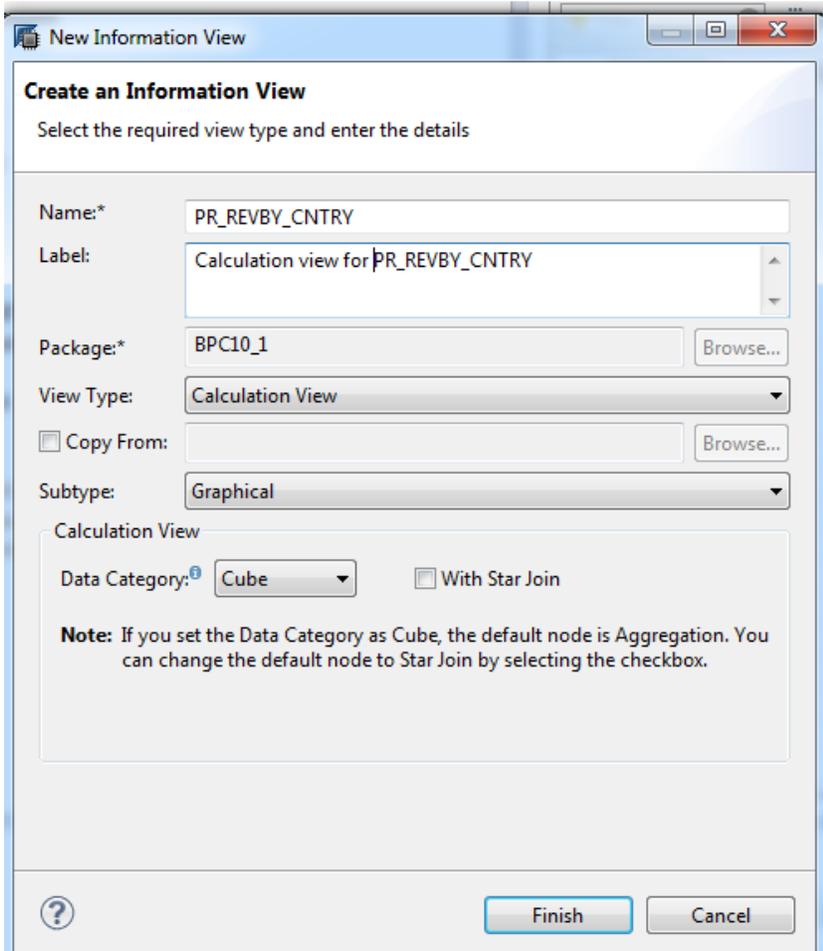


Figure 16 – Define the calculation view

1.10 **Configure the calculation view** – The above step will open the editor as shown in Figure 17. Locate the virtual table created in step 1.4 and drag and drop the same on the 'Aggregation' as shown in Figure 17.

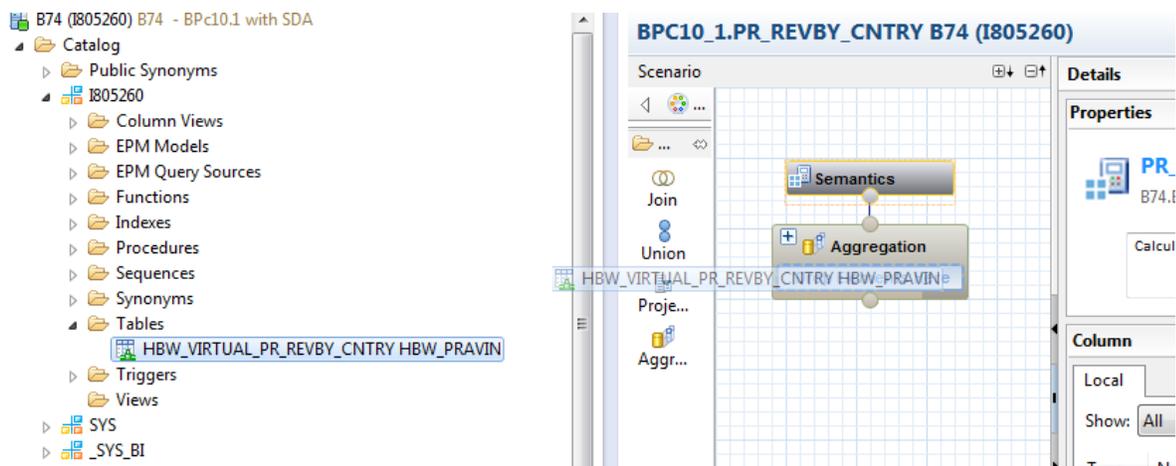


Figure 17 – Configure the calculation view

1.11 **Add fields to output** – The above step will display all the fields available in the virtual table. Select the fields from the table that you want to have in your planning applications and right mouse click to select 'Add to output' as shown in Figure 18. In this example, I have selected all the fields from the table.

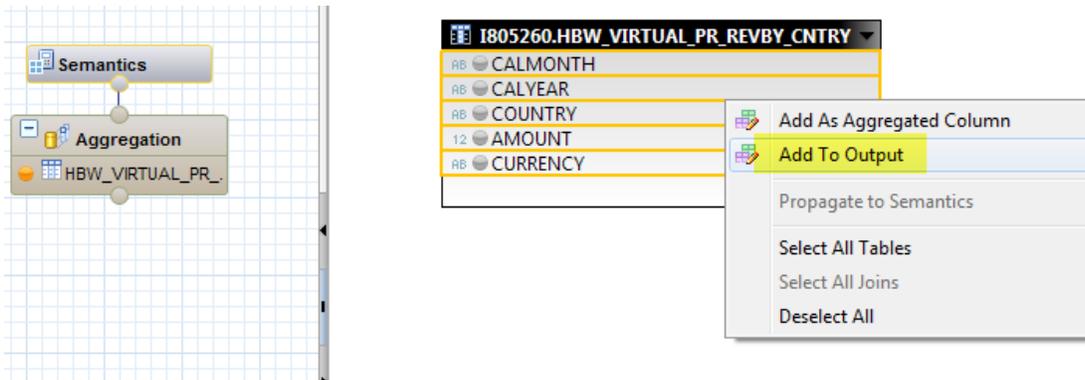


Figure 18 – Add to output

1.12 **Activate the calculation view** – Locate the 'save and activate' icon in the editor as shown in Figure 19 to save and activate the calculation view.



Figure 19 – Save and activate the calculation view

1.13 **Preview the data from calculation view** – After activating the calculation view, you can preview the data from the calculation view by right clicking the calculation view and selecting the 'data preview' option as shown in Figure 20. In the data preview, you can see the data by clicking on the 'raw data' tab'. The data that you see in this preview will be available for planning. A sample data preview is shown in Figure 21. This step completes the configuration required within the Hana studio.

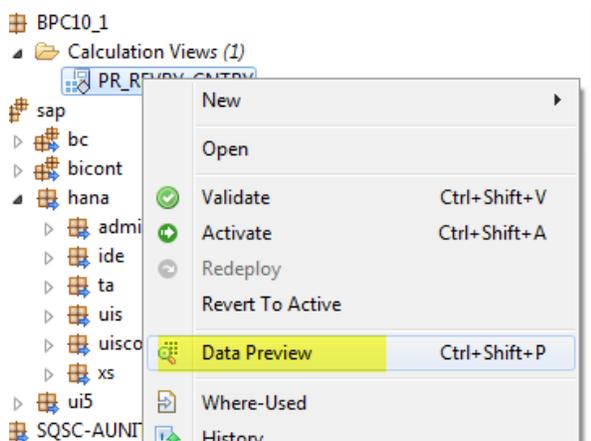


Figure 20 – Select Data Preview

AMOUNT	QUANTITY	VERSION	COUNTRY	STORE	MATERIAL	MATGRP	CALMONTH	YEAR	UNIT
12,000	350	100	NEW	1	COPAS00128	100	01	2014	ST

Figure 21 – Data preview in 'raw data' tab

2. **Configuring BW to consume external data in planning applications** - Once we have an active calculation view as explained in the previous section, we can proceed with BW and BPC10.1 configuration to use this data in planning applications. Please note that till now, there is no data duplication/replication and all the changes to the data in the remote source are available in the calculation view real time.

2.1 **Log into SAP system:** Log on to SAP BPC10.1 system with your username and password as shown in figure 22.

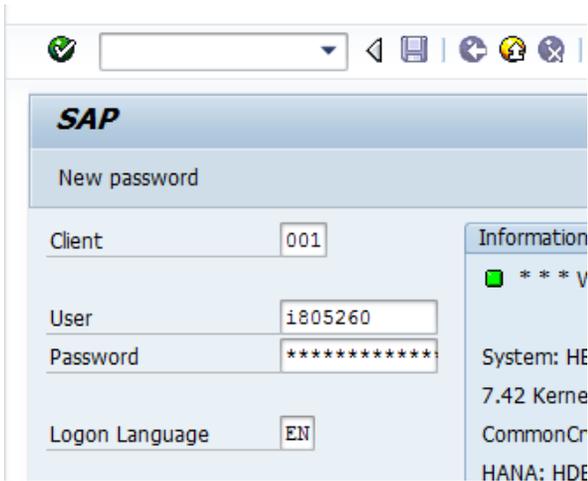


Figure 22 – Log on to SAP BPC10.1 system

2.2 **Access data warehousing workbench** - Enter transaction rsa1 as shown in figure 23 to access data warehousing workbench.

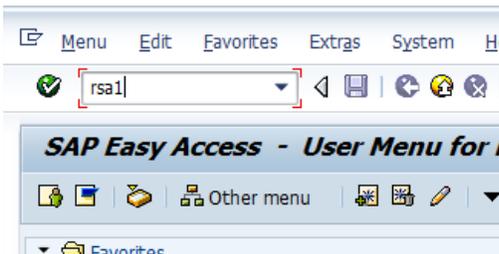


Figure 23 – Access data warehousing workbench

2.3 **Create virtual infoprovider** – In this step we create a virtual infoprovider that is linked to the calculation view we created in the previous section. Within the data warehousing workbench, select the info

area where you want to create the virtual infoprovider; right mouse click to select 'virtual infoprovider' as shown in figure 24.

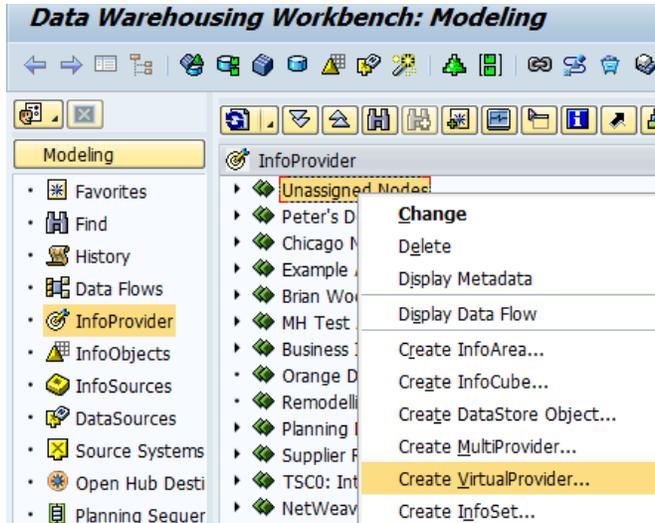


Figure 24 – Create virtual infoprovider

2.4 **Link to Hana model** – As shown in figure 25 below, select the option 'Based on SAP Hana model'.

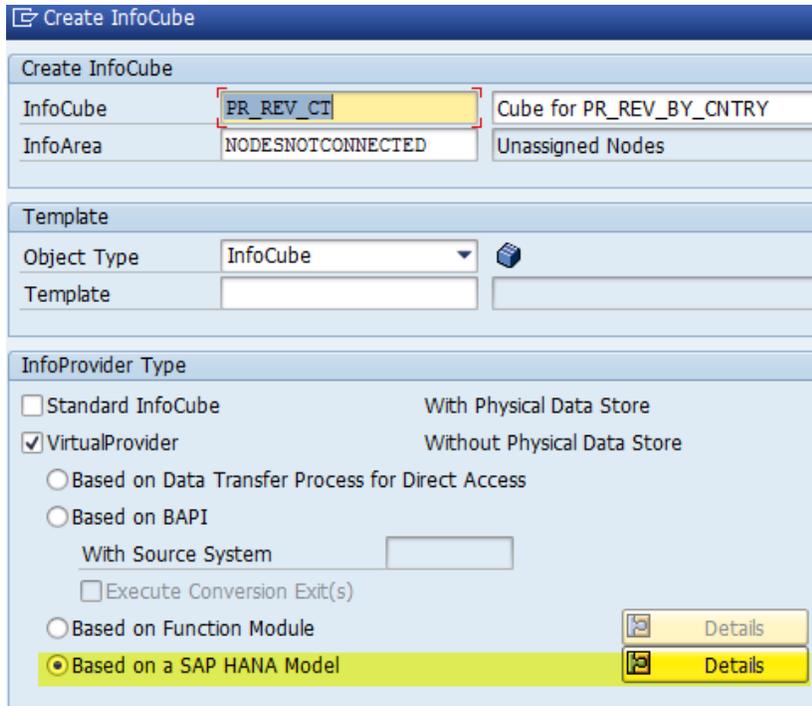


Figure 25 – Link virtual infoprovider to Hana model

2.5 **Select the package** – Click on the 'Details' button shown in figure 25 and enter the package created in step 1.7 as shown in figure 26. Click the green check box to create the virtual infoprovider. This will create the virtual infoprovider and you can enter the infoobjects for it in the next step.

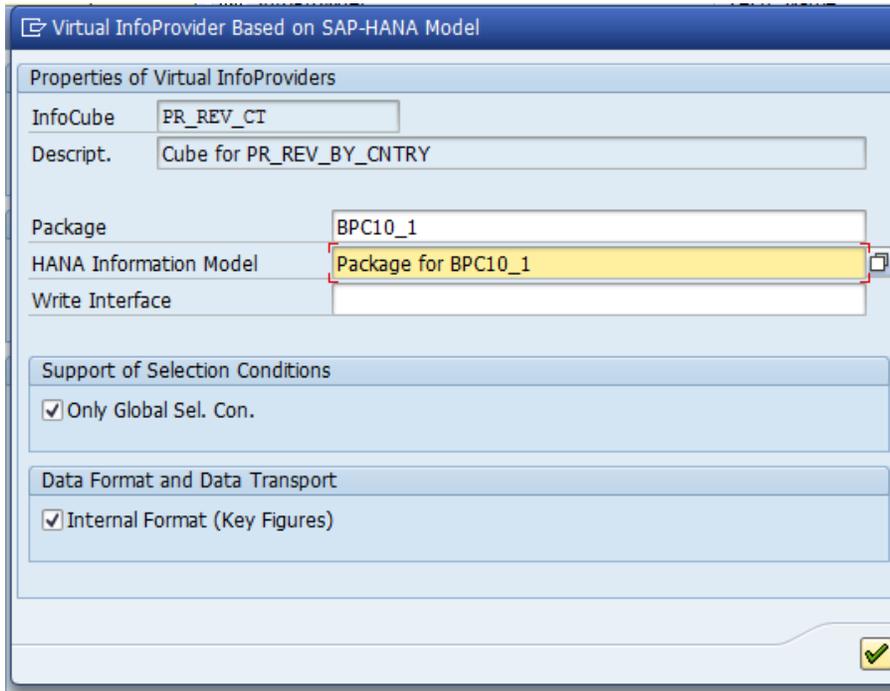


Figure 26 – Enter Hana package

2.6 **Enter infoobjects** – We can now enter the infoobjects for the virtual infoprovider. We need to enter the infoobjects for the table fields in the virtual table we created in Hana. One way to enter infoobjects is to use the direct input as shown in figure 27. Once entered, the infoobjects will show up in the definition of the virtual infoprovider. In our example, we can enter the infoobjects for the table fields as shown in figure 28. Please note that 0AMOUNT is a key figure and the rest are characteristics.

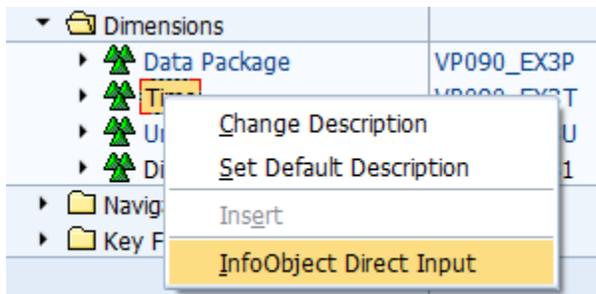


Figure 27 – Infoobject direct input

▼ Object Information	
• Version	◇ New
• Save	⊖ Not saved
• Object Status	⊞ Inactive, not ex...
▶ Settings	
▼ Dimensions	
▶ Data Package	VP090_EX2P
▼ Time	VP090_EX2T
• Calendar month	0CALMONTH2
• Calendar year	0CALYEAR
▼ Unit	VP090_EX2U
• Currency key	0CURRENCY
▶ Dimension 1	VP090_EX21
▶ Navigation Attributes	
▼ Key Figures	
• Amount	0AMOUNT

Figure 28 – Infoobjects in the virtual infoprovider

2.7 **Map to Hana table fields** – We now have to map each characteristic and key figure to the Hana table fields. In order to do that, click on each characteristic and key figure and right mouse click provider specific properties. Figure 29 shows an example of how this can be done for 0AMOUNT. Figure 30 shows how we can select the table field Amount from the drop down for attribute name.

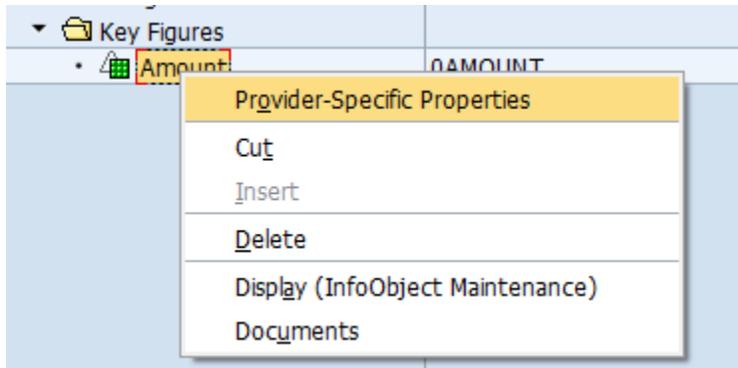


Figure 29 – Provider specific properties

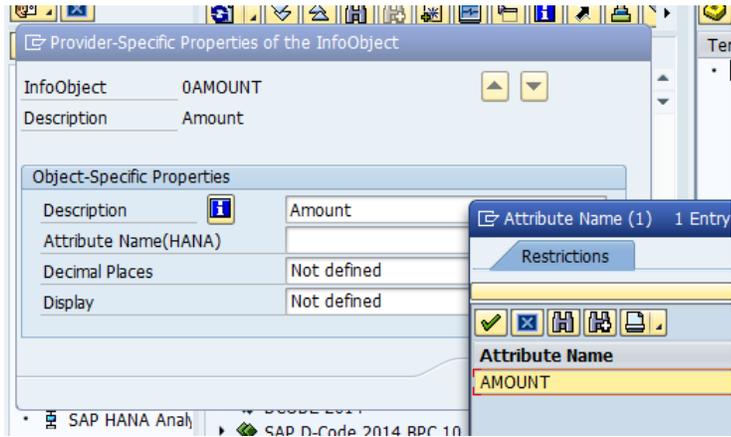


Figure 30 – Mapping table attributes to infoobjects

2.8 **Activate virtual infoprovider** - Save and Activate the Virtual Provider by clicking on the activate icon on the ACTIVATE icon as shown in figure 31. Acknowledge any warning messages and proceed with the activation.

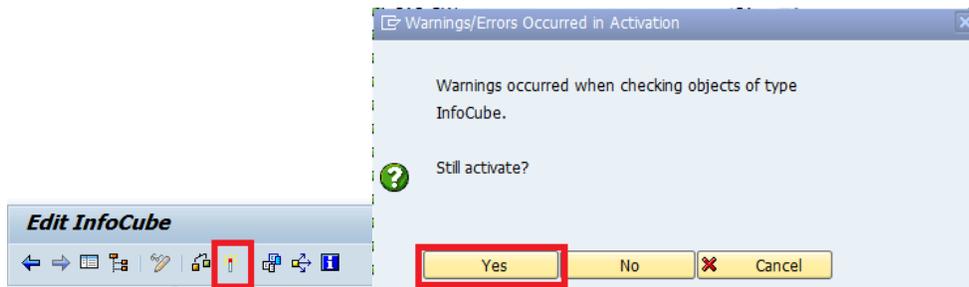


Figure 31 – Save and activate virtual infoprovider

2.9 **Verify data in the virtual infoprovider** – In order to verify correct operation of the virtual provider, locate the virtual provider, highlight and right click, choose Display Data as shown in figure 32. This will present you with the selection screen. In the selection screen, select all key figures and characteristics as shown in figure 33 and execute. This will show you the data in the virtual infoprovider

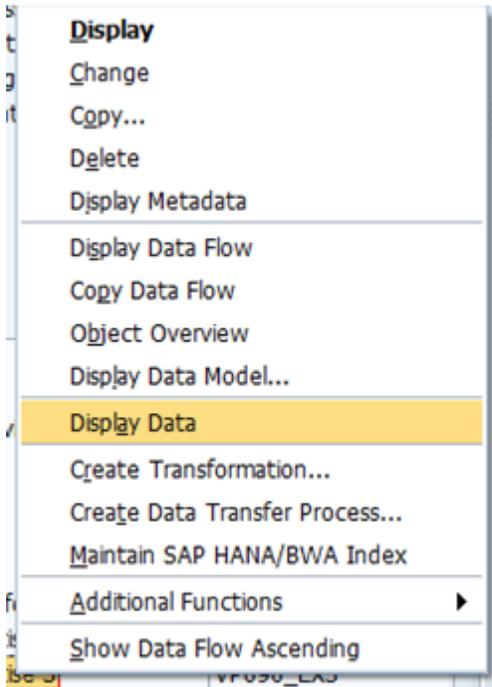


Figure 32 – Choose 'display data'

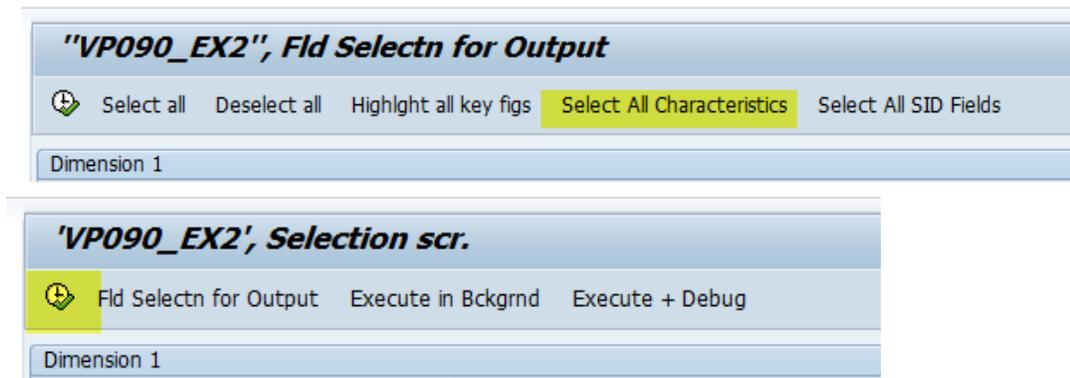


Figure 33 – Selection screen for display data

2.10 **Consuming the data into planning application** - Thus we have verified that the data from the external source is now there in the virtual infoprovider. This virtual infoprovider can now be included in a multiprovider along with BPC10.1NW plan cube. The data from the virtual infoprovider can be used in the planning applications using planning functions as shown in figure 34.

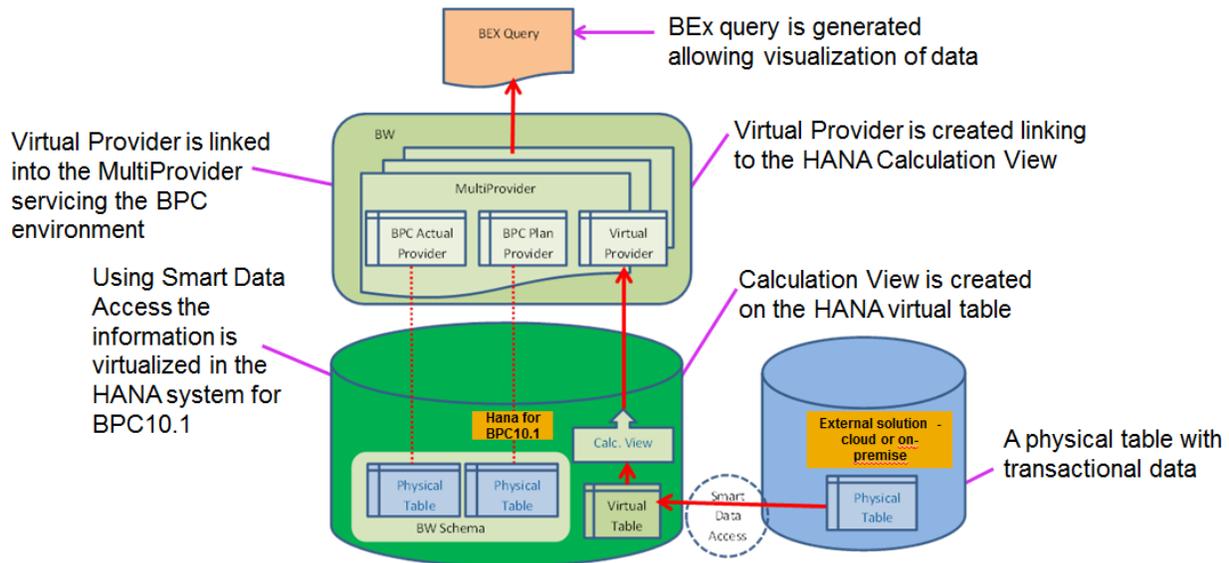


Figure 34 – Consuming the data from virtual infoprovider into planning applications

Please note that the data we have virtualized to be used in the planning application is the real time data from external system without any data replication anywhere. Whenever the data changes in the physical table in the external system, without any data duplication, that change is available in our virtual infoprovider instantaneously and can be consumed in the planning applications at any time.

## Related Content

<http://scn.sap.com/community/hana-in-memory/blog/2013/08/22/smart-data-access-a-new-feature-by-hana>

<http://scn.sap.com/community/hana-in-memory/blog/2014/10/20/smart-data-access--basic-setup-and-common-problems>

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