Step-By-Step guide to Virtual InfoCube Implementation

Applies to:

SAP NetWeaver BW. For more information, visit the EDW homepage

Summary

This article provides a detailed insight into Virtual Infocube data loading based on Direct Access for DTP.

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Created on: 15 April 2011

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Virtual InfoCubes with Services

Definition

A virtual InfoCube with services is an InfoCube that does not physically store its own data in BW. The data source is a user-defined function module. You have a number of options for defining the properties of the data source more precisely. Depending on these properties, the data manager provides services to convert the parameters and data.

Use

You use a virtual InfoCube with services if you want to display data from non-BW data sources in BW without having to copy the data set into the BW structures. The data can be local or remote. You can also use your own calculations to change the data before it is passed to the OLAP processor.

This function is used primarily in the SAP Strategic Enterprise Management (SEM) application.

In comparison to the RemoteCube, the virtual InfoCube with services is more generic. It offers more flexibility, but also requires more implementation effort.

Structure

When you create an InfoCube you can specify the type. If you choose Virtual InfoCube with Services as the type for your InfoCube, an extra Detail pushbutton appears on the interface. This pushbutton opens an additional dialog box, in which you define the services.

1. Enter the name of the function module that you want to use as the data source for the virtual InfoCube. There are different default variants for the interface of this function module. One method for defining the correct variant, together with the description of the interfaces, is given at the end of this documentation.
2. The next step is to select options for converting/simplifying the selection conditions. You do this by selecting the Convert Restrictions option. These conversions only change the transfer table in the user-defined function module. The result of the query is not changed because the restrictions that are not processed by the function module are checked later in the OLAP processor.

Options:

- No restrictions: If this option is selected, no restrictions are passed to the InfoCube.
- Only global restrictions: If this option is selected, only global restrictions (FEMS = 0) are passed to the function module. Other restrictions (FEMS > 0) that are created, for example, by setting restrictions on columns in queries, are deleted.
- Simplify selections: Currently this option is not yet implemented.
- Expand hierarchy restrictions: If this option is selected, restrictions on hierarchy nodes are converted into the corresponding restrictions on the characteristic value.

3. Pack RFC: This option packs the parameter tables in BAPI format before the function module is called and unpacks the data table that is returned by the function module after the call is performed. Since this option is only useful in conjunction with a remote function call, you have to define a logical system that is used to determine the target system for the remote function call, if you select this option.
4. SID support: If the data source of the function module can process SIDs, you should select this option.

   If this is not possible, the characteristic values are read from the data source and the data manager determines the SIDs dynamically. In this case, wherever possible, restrictions that are applied to SID values are converted automatically into the corresponding restrictions for the characteristic values.

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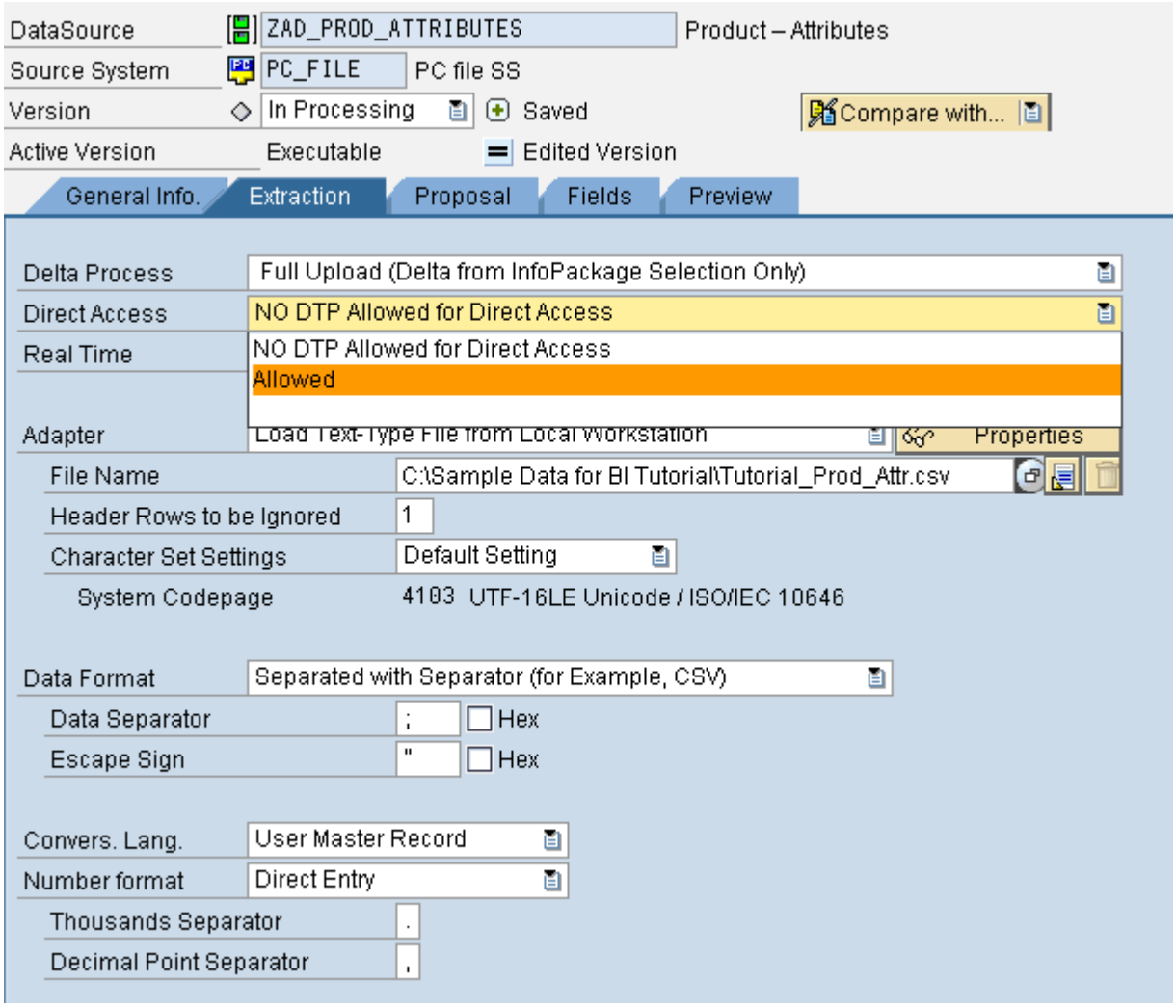
5. With navigation attributes: If this option is selected, navigation attributes and restrictions applied to navigation attributes are passed to the function module.
   If this option is not selected, the navigation attributes are read in the data manager once the user-defined function module has been executed. In this case, in the query, you need to have selected the characteristics that correspond to these attributes. Restrictions applied to the navigation attributes are not passed to the function module in this case.
6. Internal format (key figures): In SAP systems a separate format is often used to display currency key figures. The value in this internal format is different from the correct value in that the decimal places are shifted. You use the currency tables to determine the correct value for this internal representation.
   If this option is selected, the OLAP processor incorporates this conversion during the calculation.

Illustrated implementation Procedure

Data Source Creation

Firstly, while creating the Data Source, in the Extraction tab, you should choose the Allowed option in the drop down menu.



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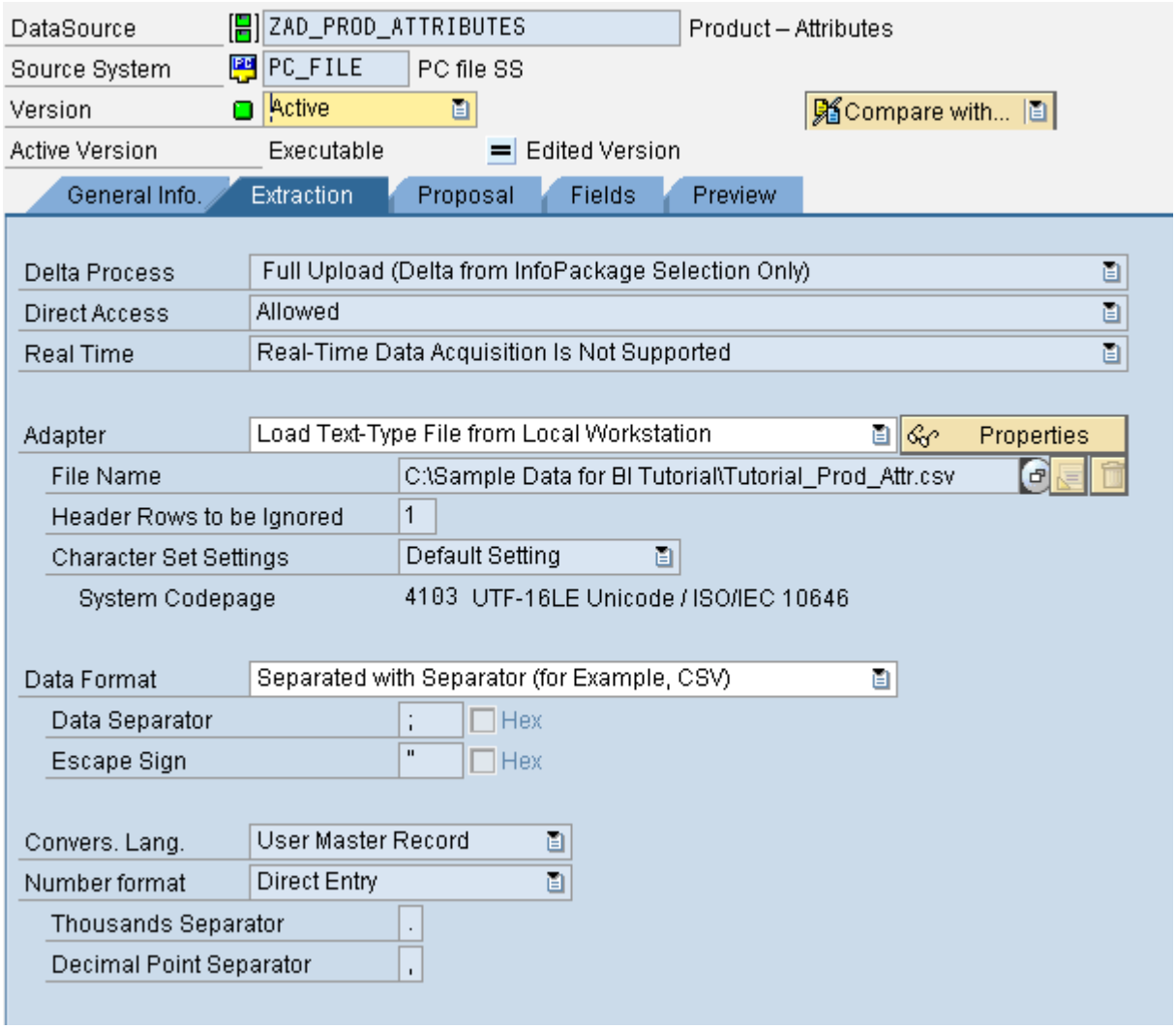
Then Save and activate the data-source after providing the required configuration and field details as shown below.



Do the same for all of the data sources that are being used.

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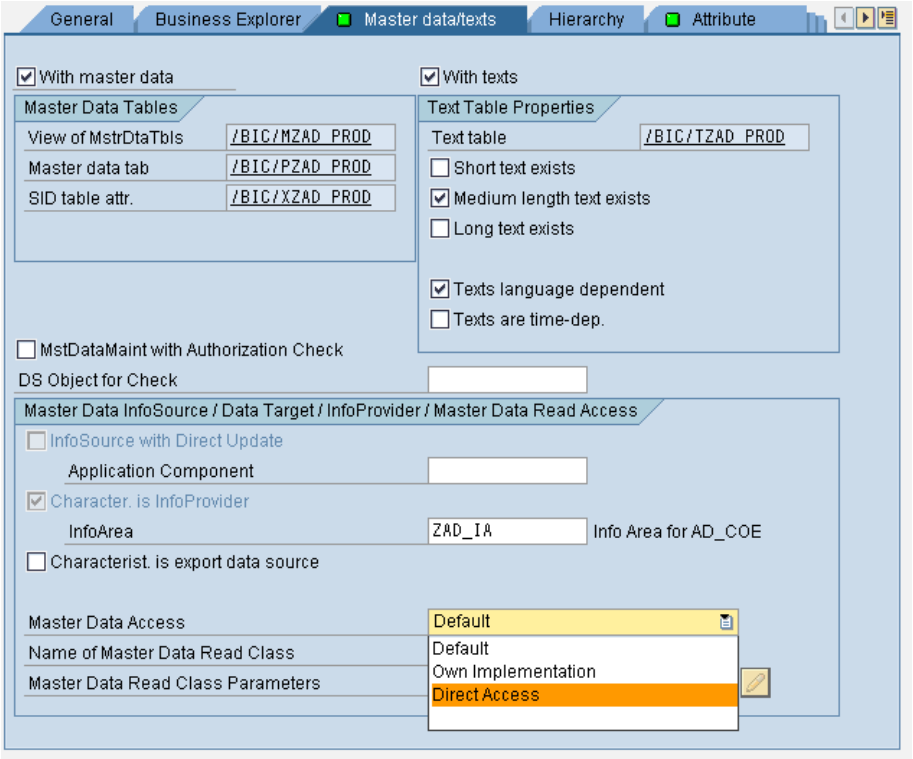
InfoObject Creation

Key figure InfoObjects will still be created in the usual way but Characteristics InfoObjects will need some modifications.

For example, In the Product Characteristic shown below, go to Master data/texts tab and select Direct Access from the drop down menu in Master Data Access Menu.



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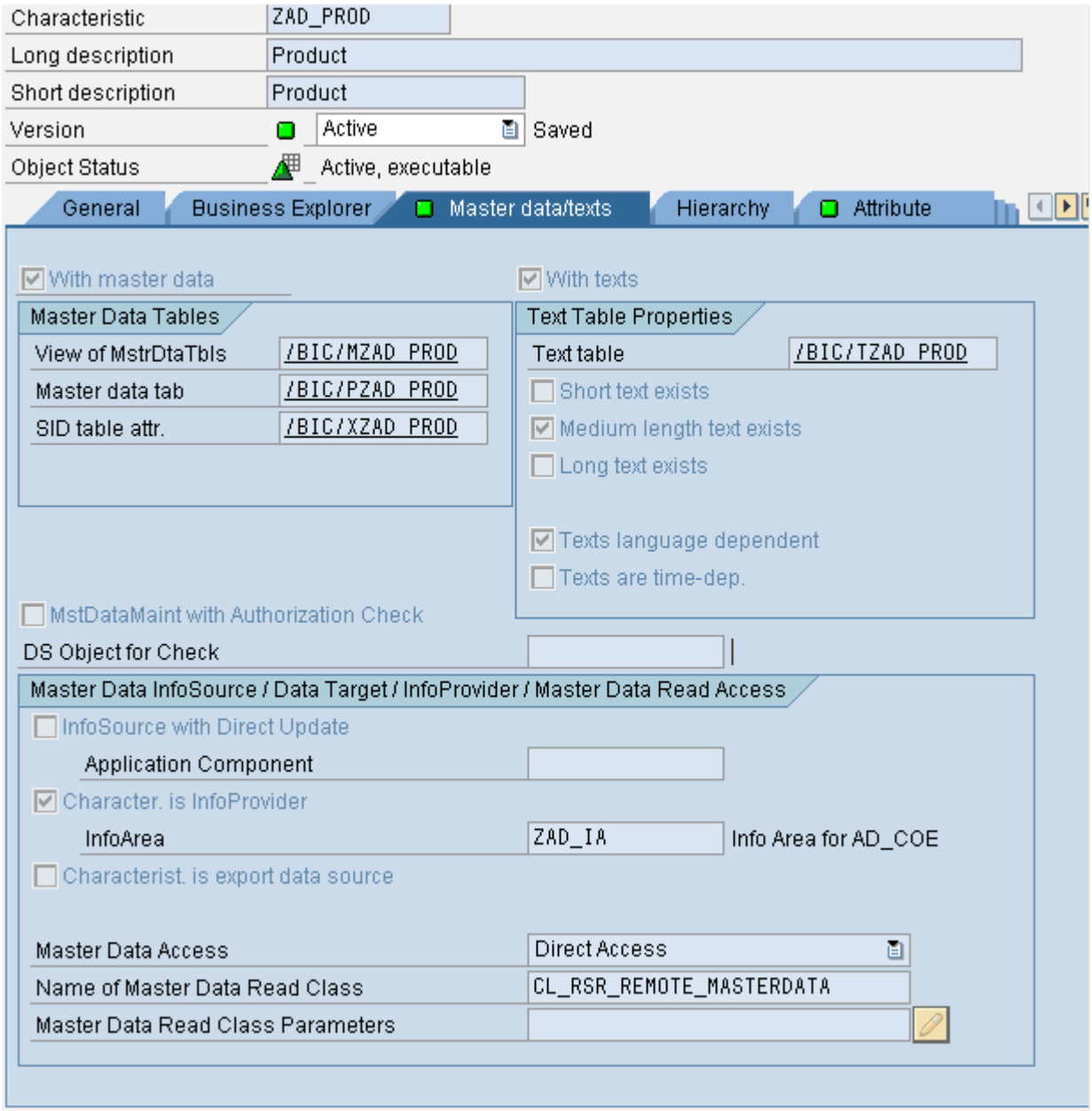
Now save and activate the DataSource.



Do the same for all the characteristics InfoObjects involved in your development.

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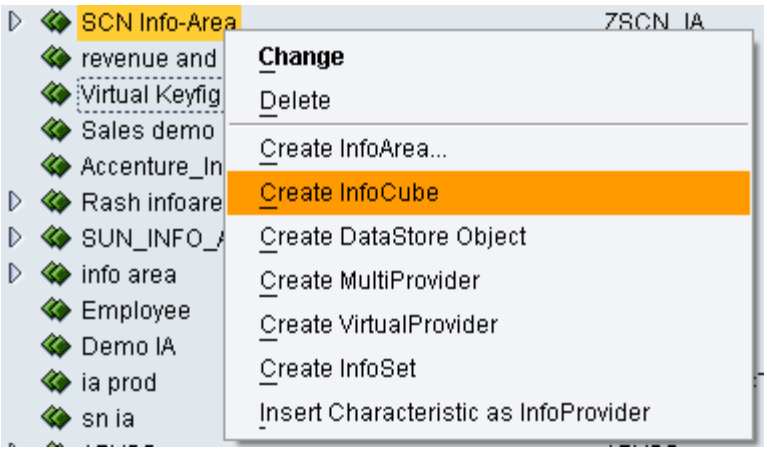
Virtual InfoCube Creation

To create a Virtual InfoCube, go to RSA1 transaction, Right click on your InfoArea and select the Create InfoCube option.

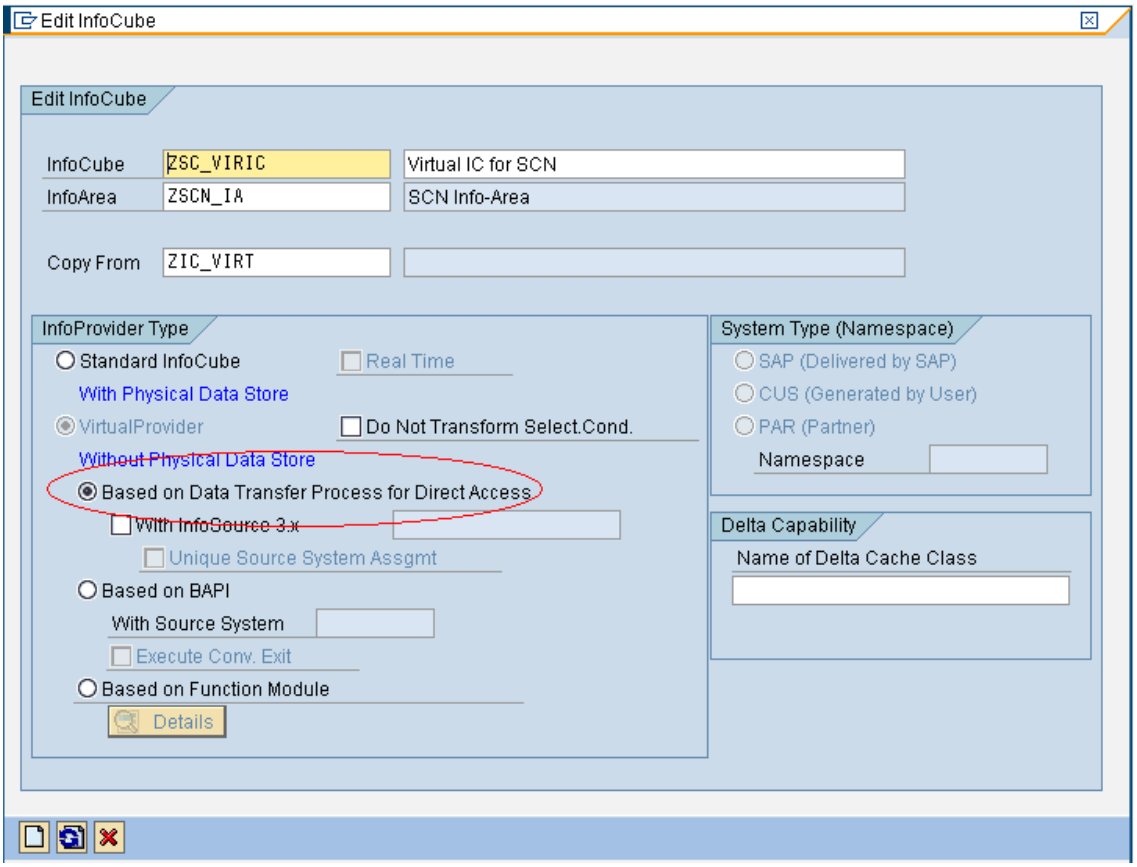


You will see the following familiar window.

Fill in the InfoCube Technical Details and the description.

We will copy the InfoCube structure from another Cube ZIC_VIRT

Be sure to Check the Based on Data Transfer Process for Direct Access radio-button.



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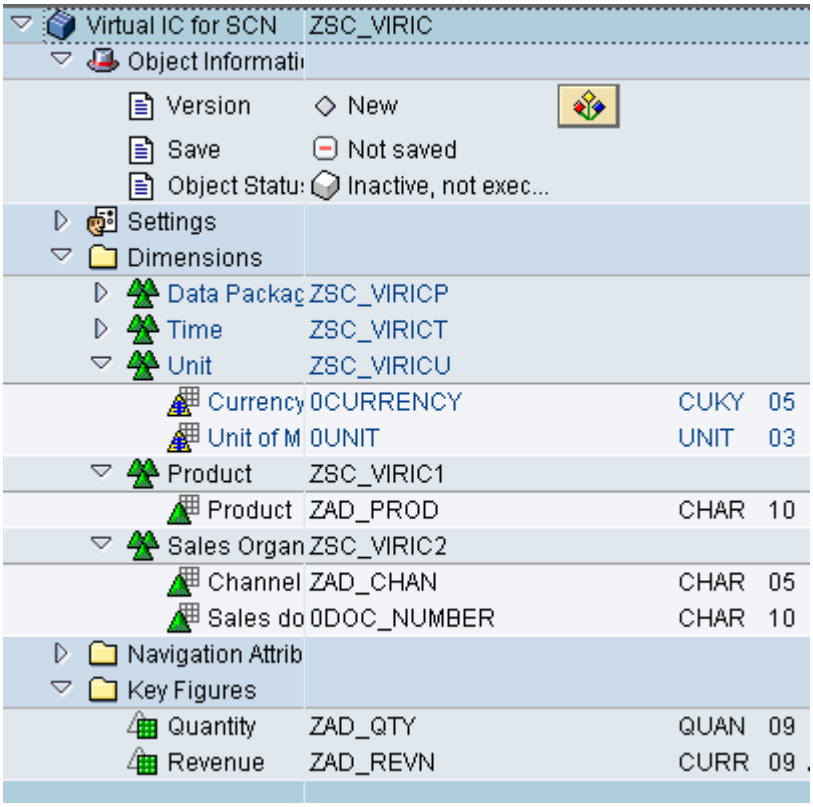
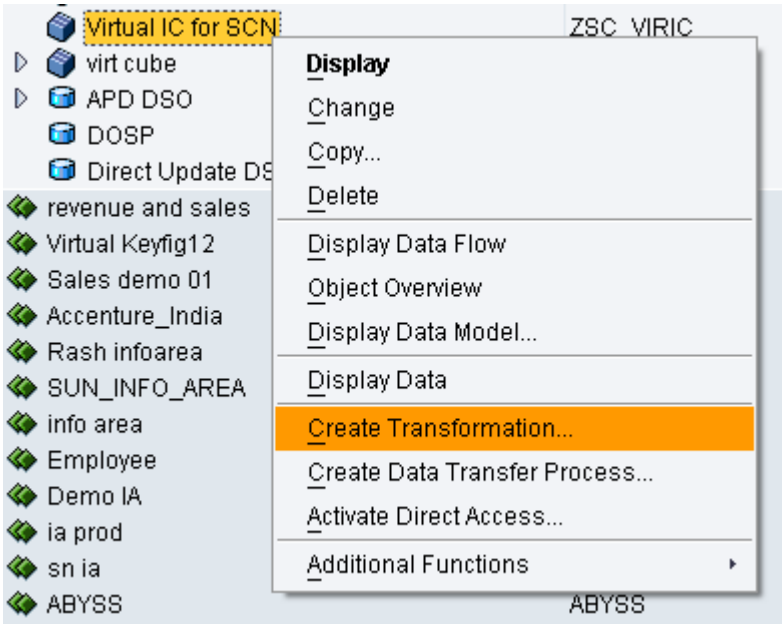
The structure of the new InfoCube is given below.



Right Click on the InfoCube and select Create transformation



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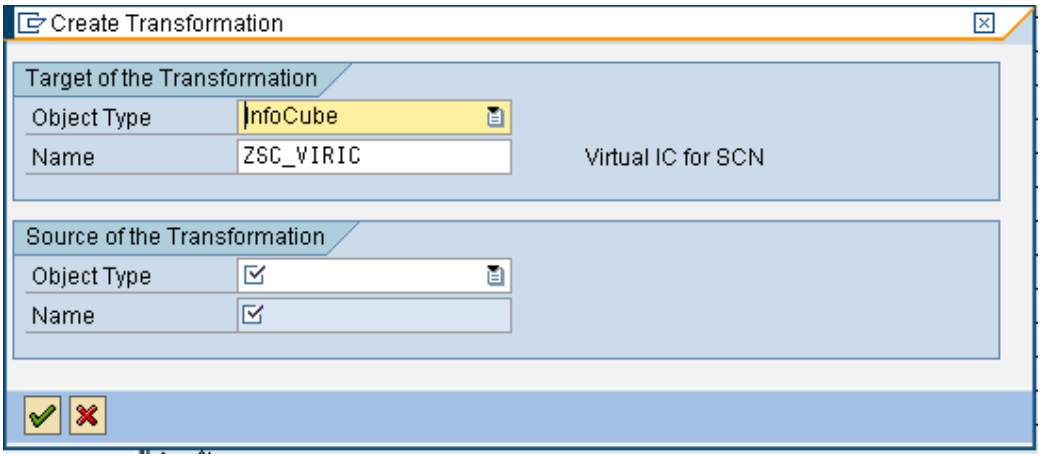
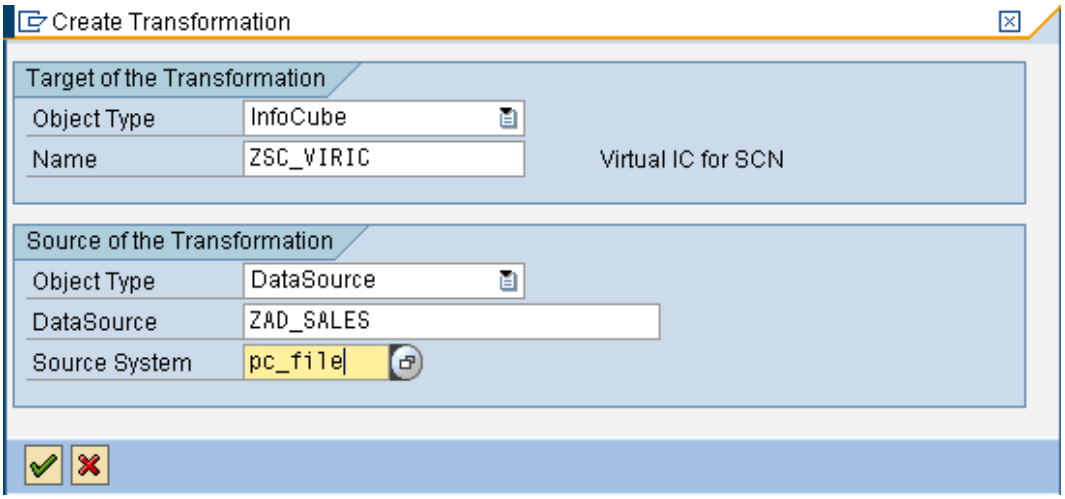
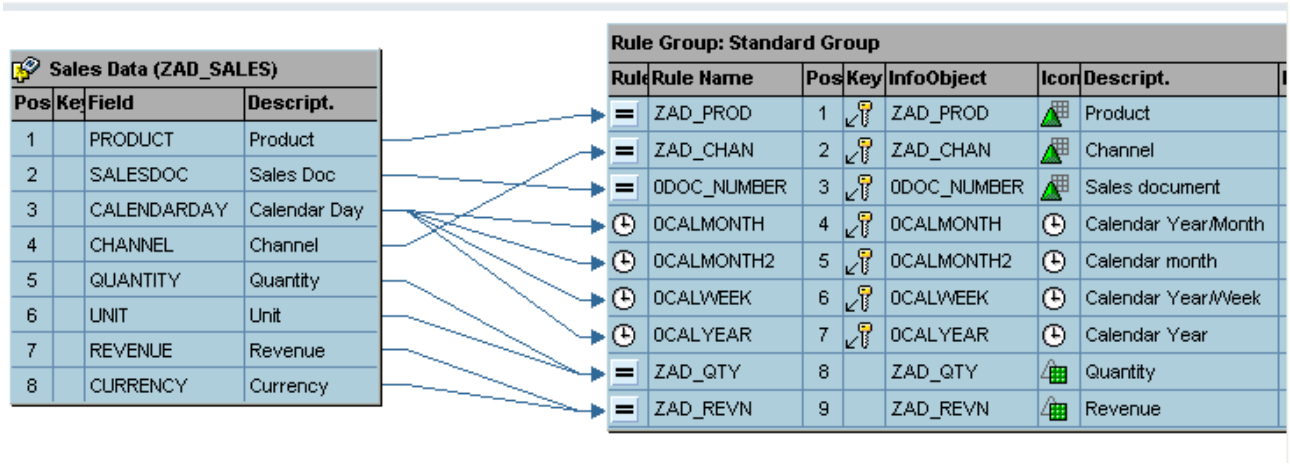
You will see the following pop-up



Input your DataSource Details as shown below.



The Transformation mappings are shown below. Save and active the Transformation.



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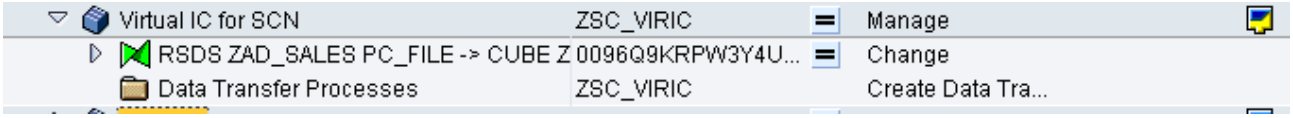
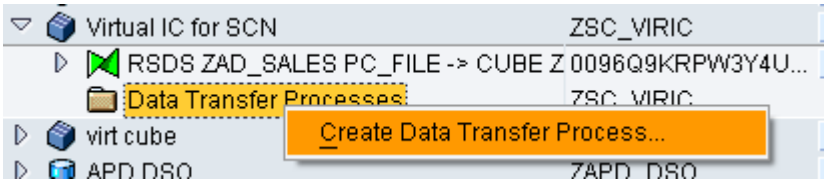
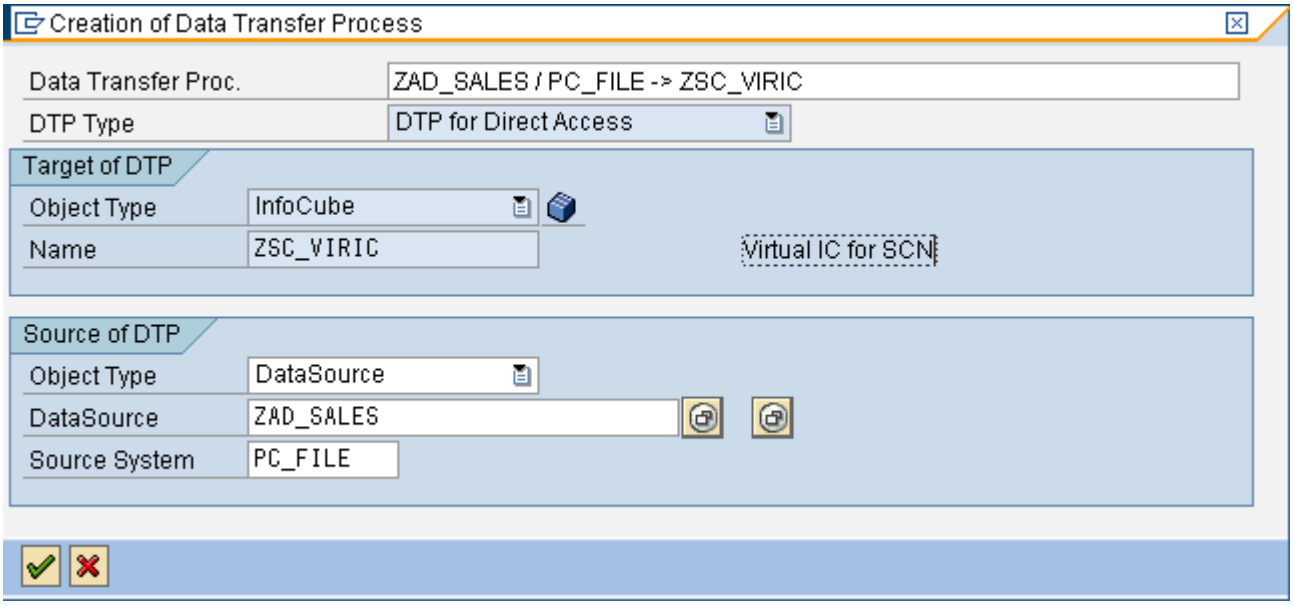
It is seen that that the transformation has been created and is activated.



Now create the DTP by following the step shown below.



You will see the following pop-up.



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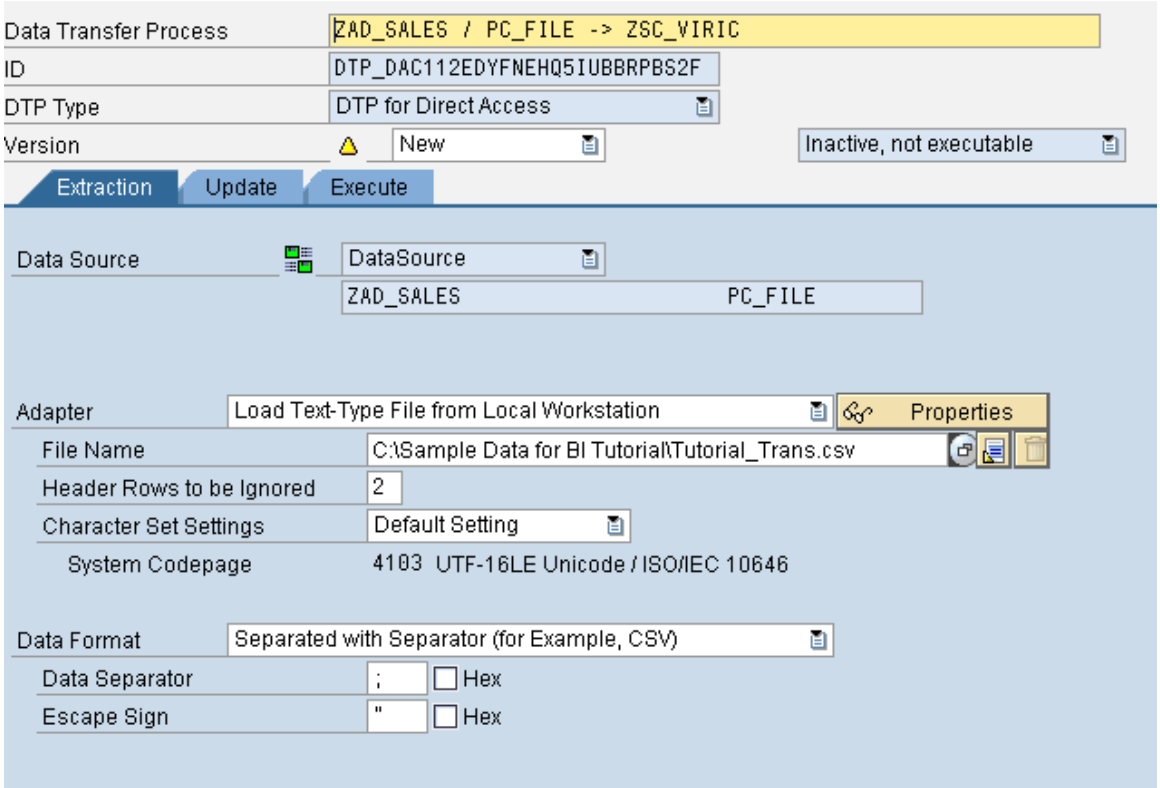
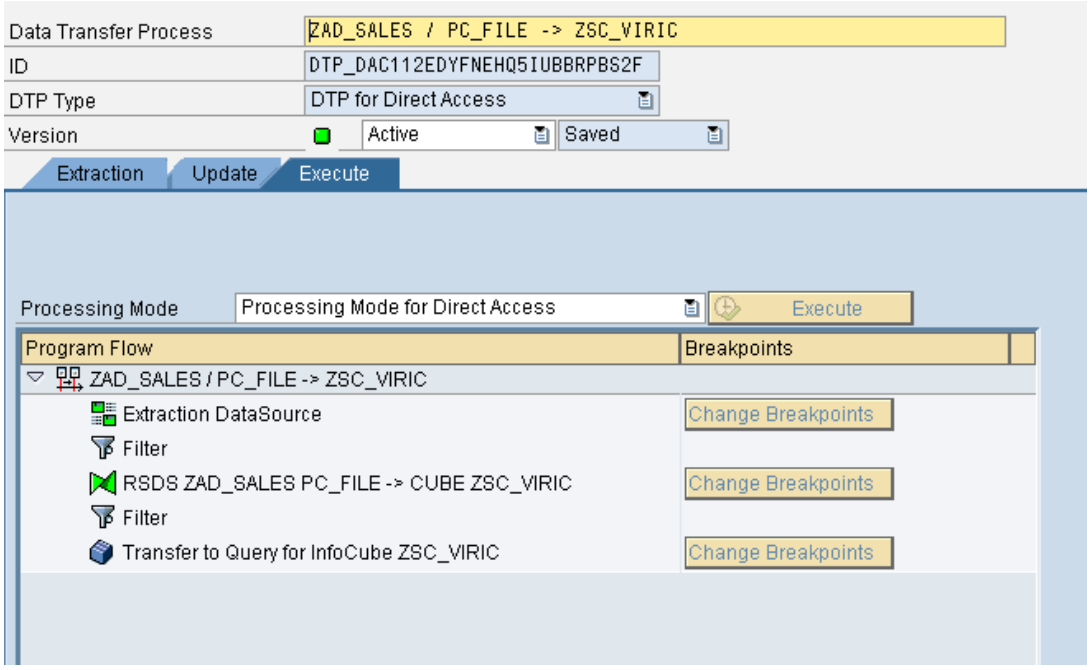
You will see the following screen for DTP.



Save and activate the DTP.

You will notice that the Execute button is grayed out. This is due to the fact that the data will accessed directly with the help of that Datasource.



Now right click on the cube and Select the Activate Direct Access option from the context menu.

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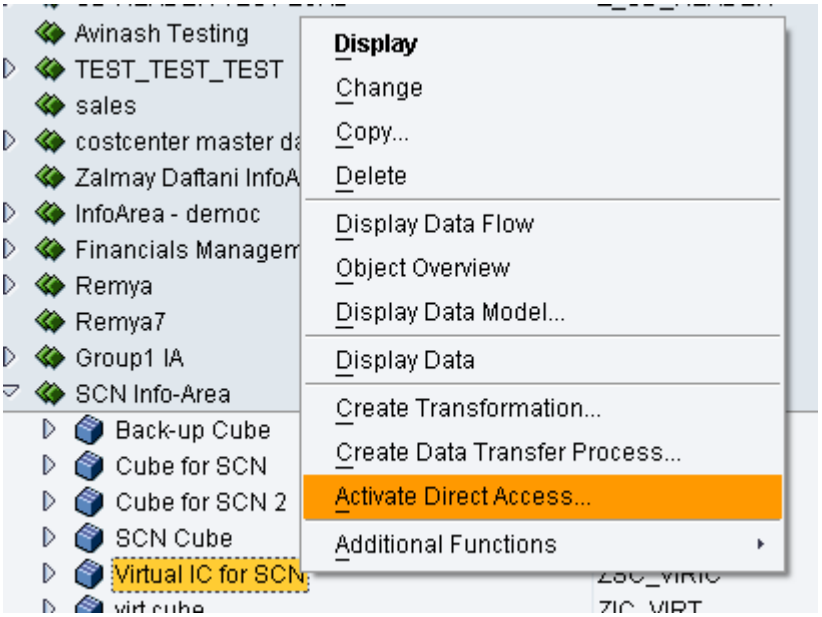
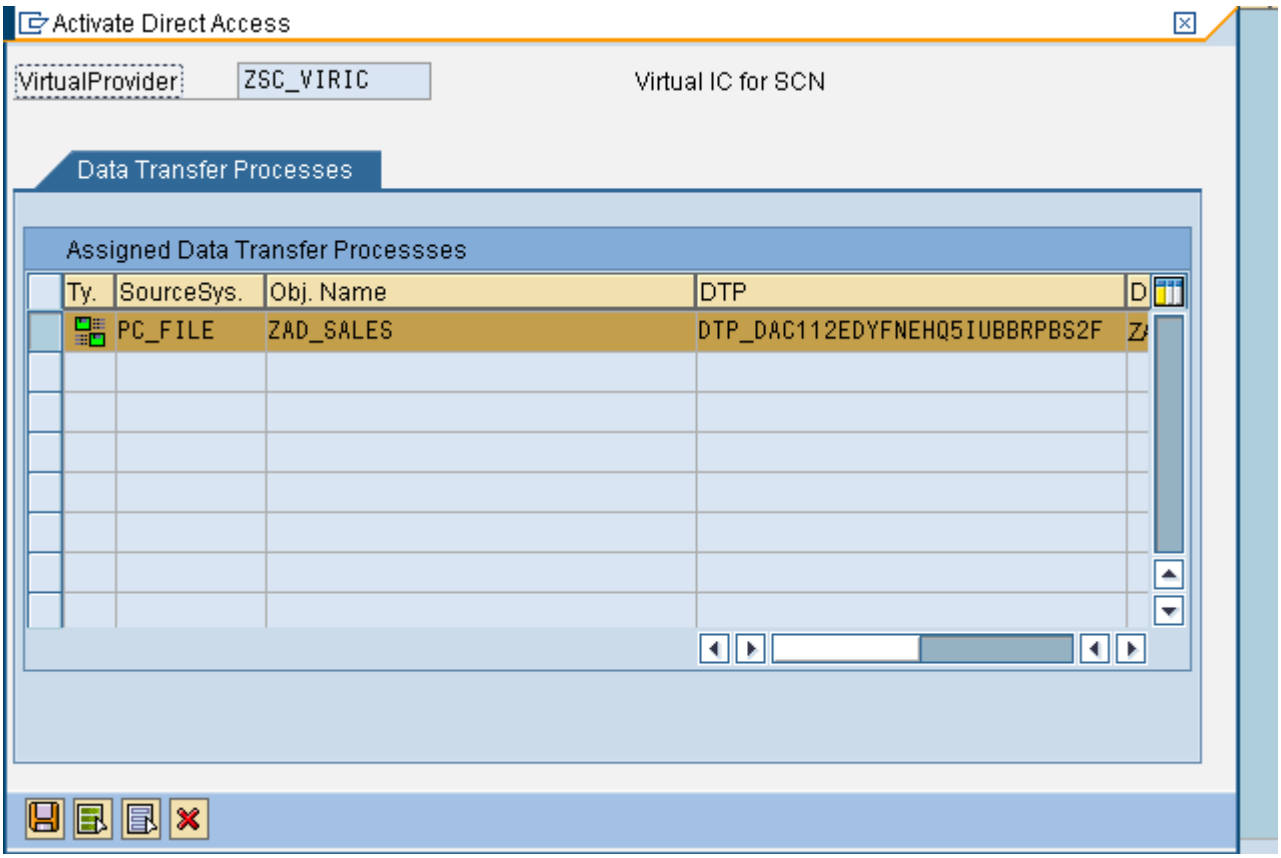


Now save the DTP as shown below.



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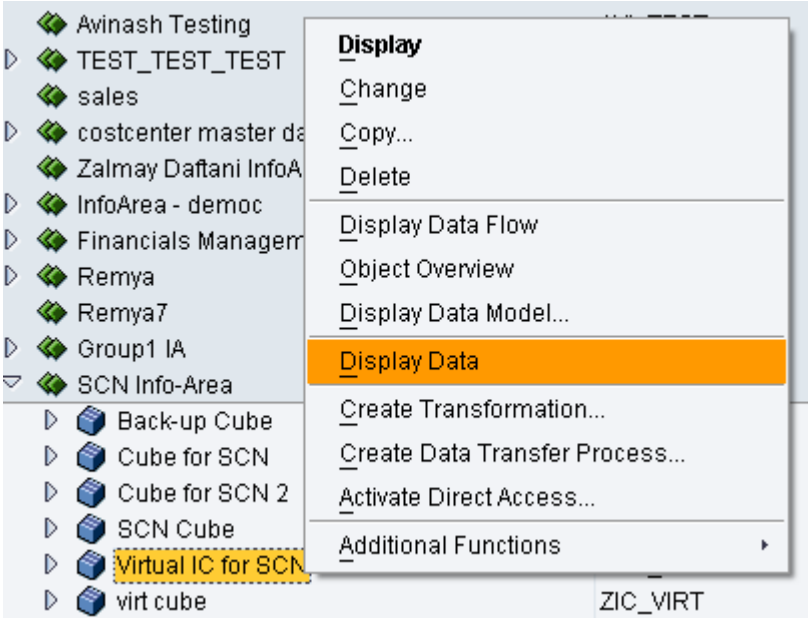
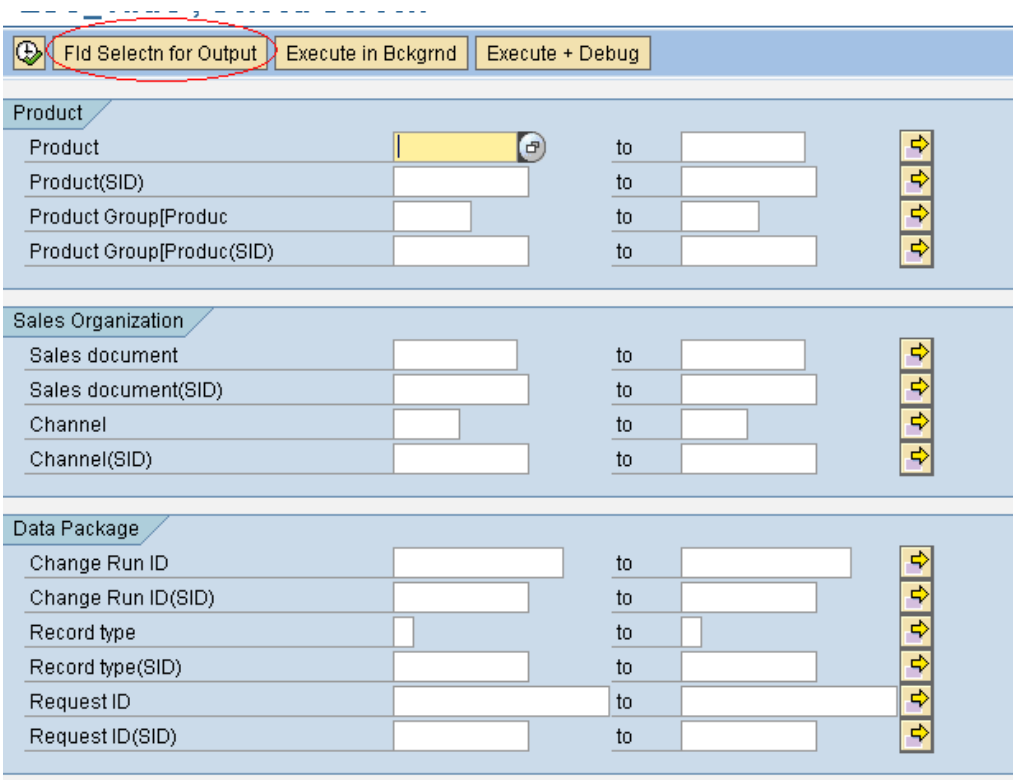
Now, to confirm that the data has been loaded, right click on the cube and select Display Data from the context menu.



You will see the following screen. Click on the Fld Selection for Output button (Circled in Red below) to select the fields you want to display in the output.



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You will see the following screen. Check the Fields you wish to see in the output and Press Execute.

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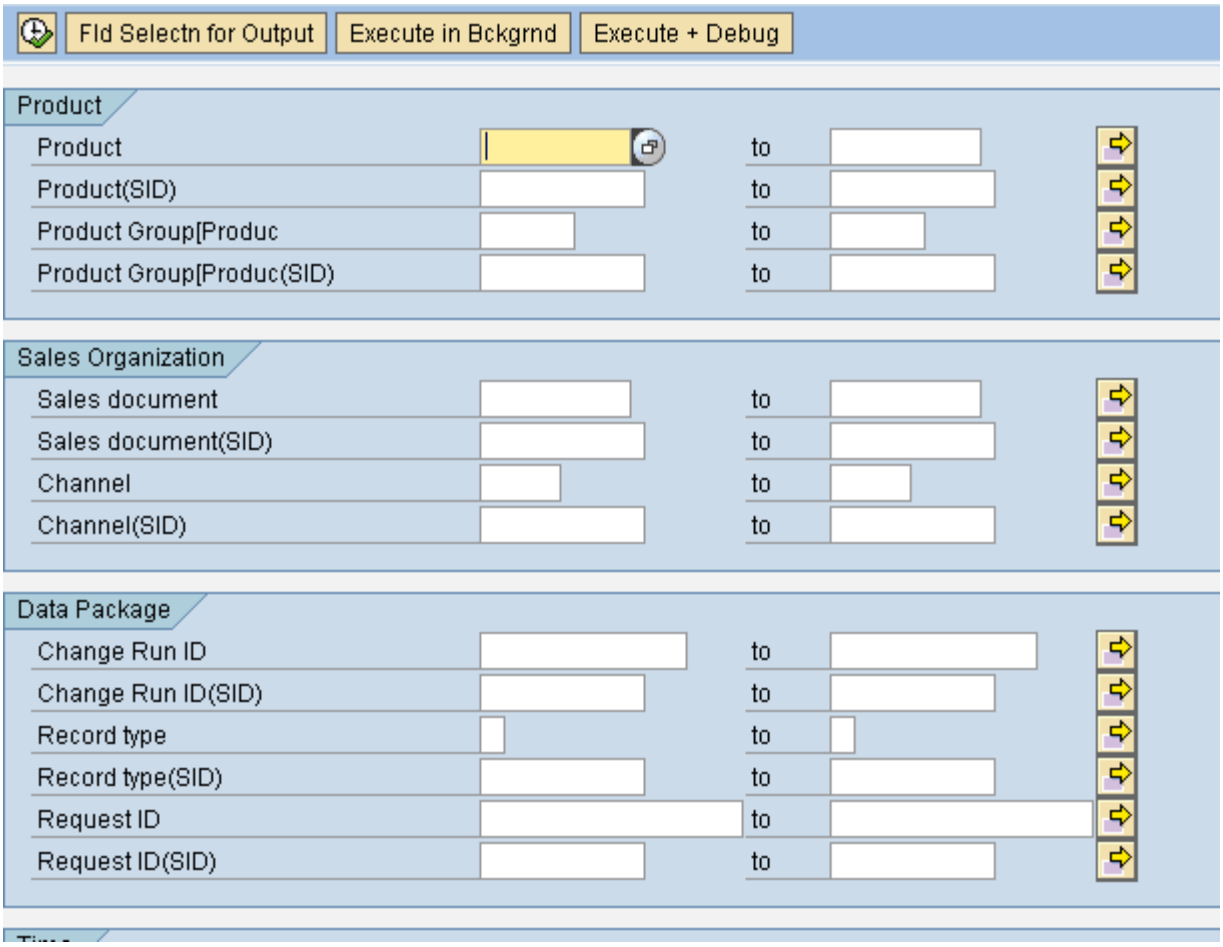
You will see the following screen below.

Press Execute again to see the data.



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The output below confirms that the Direct-update to the Virtual InfoCube works.

Product	ZAD_PGRP	..._NUMBER	Channel	0CALMONTH	0CALMONTH2	0CALWEEK	0CALYEAR	Currency	0UNIT	Quantity	ZAD_REVN
PDS01	DS10	0000005527	00001	200709	9	200737	2007	USD	EA	100	549.990,00
PDS02	DS10	0000005527	00001	200709	9	200737	2007	USD	EA	90	585.891,00
PDS03	DS10	0000005527	00001	200709	9	200737	2007	USD	EA	80	480.792,00
PDS05	DS20	0000005527	00001	200709	9	200737	2007	USD	EA	60	140.994,00
PDS06	DS20	0000005527	00001	200709	9	200737	2007	USD	EA	775	309.845,00
PDS01	DS10	0000006899	00001	200708	8	200732	2007	USD	EA	12	65.998,80
PDS02	DS10	0000006845	00002	200708	8	200732	2007	USD	EA	30	195.297,00
PDS03	DS10	0000006912	00001	200708	8	200732	2007	USD	EA	250	1.502.475,00
PDS04	DS20	0000006899	00004	200708	8	200732	2007	USD	EA	55	4.884,00
PDS04	DS20	0000006900	00002	200708	8	200732	2007	USD	EA	70	6.216,00
PDS07	DS20	0000006877	00001	200708	8	200732	2007	USD	EA	800	127.920,00
PDS08	DS30	0000006877	00001	200708	8	200732	2007	USD	EA	250	57.475,00
PDS01	DS10	0000007472	00001	200707	7	200727	2007	USD	EA	110	604.989,00
PDS02	DS10	0000007472	00001	200707	7	200727	2007	USD	EA	43	279.925,70
PDS02	DS10	0000007473	00002	200707	7	200727	2007	USD	EA	55	358.044,50
PDS03	DS10	0000007472	00001	200707	7	200727	2007	USD	EA	75	450.742,50
PDS04	DS20	0000007472	00003	200707	7	200727	2007	USD	EA	339	30.103,20
PDS06	DS20	0000007472	00003	200707	7	200727	2007	USD	EA	120	47.976,00
PDS07	DS20	0000007389	00003	200707	7	200727	2007	USD	EA	95	15.190,50
PDS08	DS30	0000007389	00003	200707	7	200727	2007	USD	EA	115	26.438,50
PDS01	DS10	0000007473	00004	200707	7	200729	2007	USD	EA	55	302.494,50
PDS02	DS10	0000005431	00003	200709	9	200735	2007	USD	EA	120	781.188,00
PDS04	DS20	0000005431	00003	200709	9	200735	2007	USD	EA	700	62.160,00
PDS06	DS20	0000005073	00001	200709	9	200735	2007	USD	EA	300	119.940,00
PDS07	DS20	0000005431	00003	200709	9	200735	2007	USD	EA	425	67.957,50
PDS08	DS30	0000005073	00001	200709	9	200735	2007	USD	EA	300	68.970,00
PDS02	DS10	0000005600	00002	200709	9	200736	2007	USD	EA	15	97.648,50
PDS03	DS10	0000006830	00001	200708	8	200734	2007	USD	EA	125	751.237,50
PDS03	DS10	0000006831	00001	200708	8	200734	2007	USD	EA	15	90.148,50
PDS04	DS20	0000006831	00001	200708	8	200734	2007	USD	EA	500	44.400,00
PDS04	DS20	0000006841	00001	200708	8	200734	2007	USD	EA	53	4.706,40
PDS05	DS20	0000006841	00001	200708	8	200734	2007	USD	EA	350	822.465,00
PDS06	DS20	0000006830	00001	200708	8	200734	2007	USD	EA	400	159.920,00
PDS03	DS10	0000008911	00001	200709	9	200738	2007	USD	EA	25	150.247,50
PDS03	DS10	0000008956	00003	200709	9	200738	2007	USD	EA	100	600.990,00
PDS04	DS20	0000008911	00001	200709	9	200738	2007	USD	EA	250	22.200,00
PDS04	DS20	0000008221	00001	200709	9	200738	2007	USD	EA	100	8.880,00
PDS05	DS20	0000008221	00001	200709	9	200738	2007	USD	EA	250	587.475,00
PDS05	DS20	0000008735	00001	200709	9	200738	2007	USD	EA	600	1.409.940,00
PDS06	DS20	0000008956	00003	200709	9	200738	2007	USD	EA	150	59.970,00

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Related Content

Step-by-Step: From the Data Model to the BI Application in the Web

Virtual InfoCubes

Virtual InfoCubes with Services

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