

BI - SAP BW + BEX Lab Book

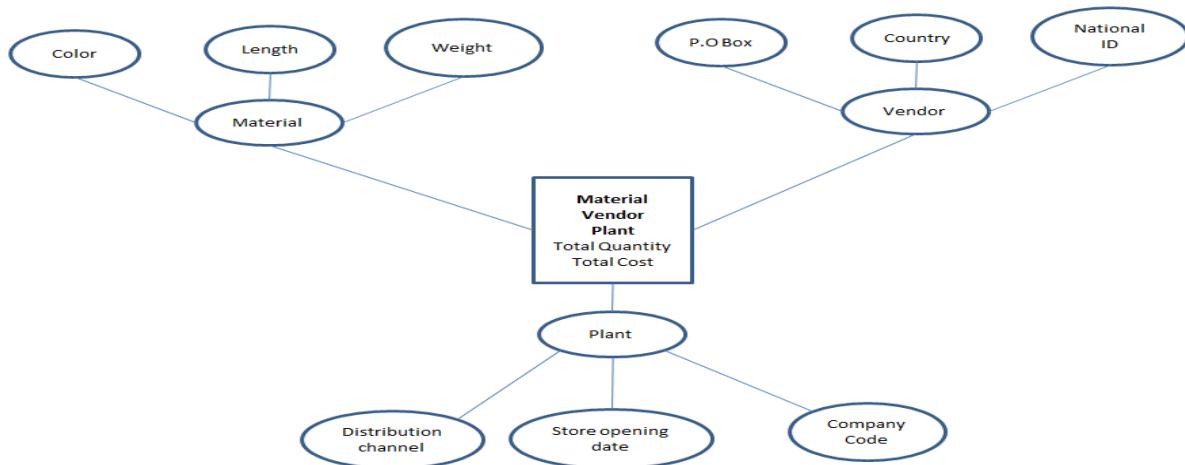
Document Revision History

Date	Revision No.	Author	Summary of Changes

ERM and star schema I

Create ER Model for below Table	
#	Field
1	P.O. Box
2	Country
3	National ID
4	Plant
5	Vendor
6	Company code
7	Total Quantity
8	Material
9	Color
10	Weight
11	Distribution channel
12	store opening date
13	Color
14	Total Cost
15	Length

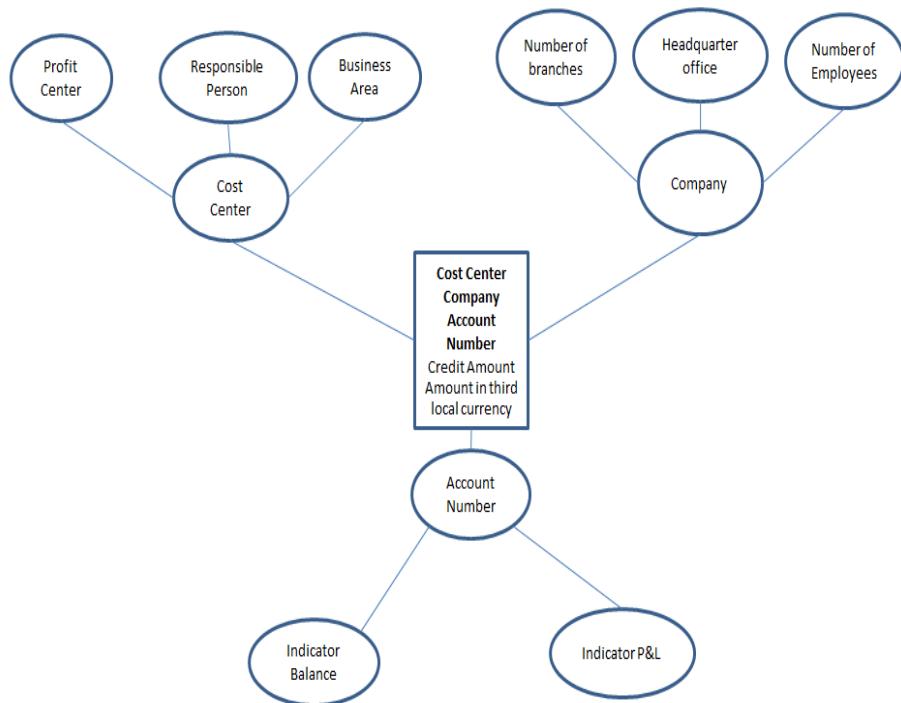
- Step1: Define Entities
- Step2: Define Attributes
- Step3: Define Relations Ship
- Step4: Optimise (if)



ERM and star schema II

Create ER Model for below Table	
#	Field
1	Profit Center
2	Indicator P&L
3	Headquarter Office
4	Cost Center
5	Business Area
6	Account Number
7	Responsible Person
8	Amount in third local currency
9	Number of branches
10	Indicator balance
11	Credit Amount
12	Company
13	Number of Employees

- Step1: Define Entities
- Step2: Define Attributes
- Step3: Define Relations Ship
- Step4: Optimise (if)

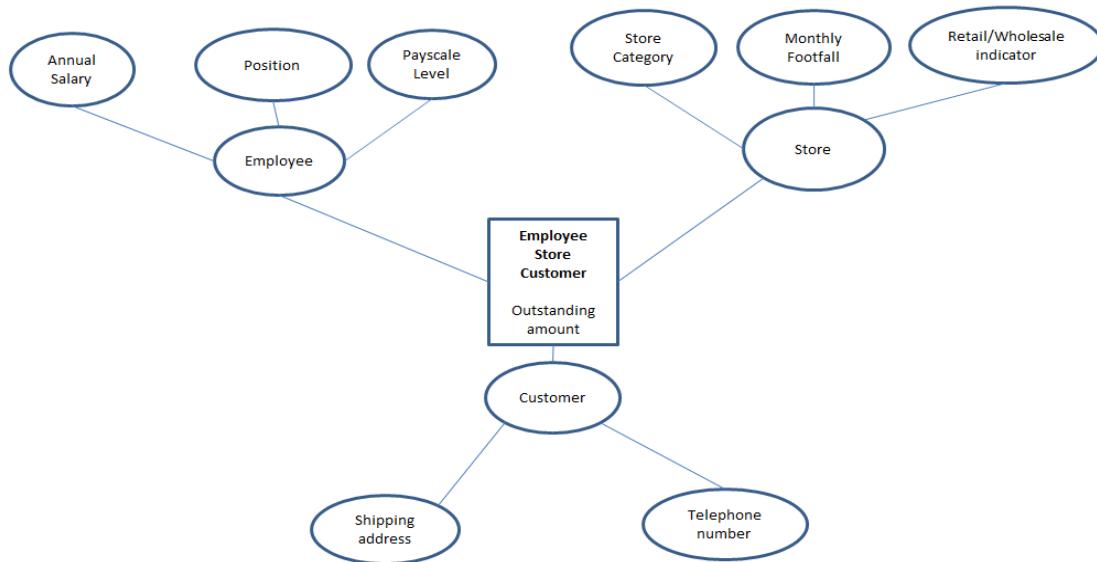


ERM and star schema III

Create ER Model for below Table	
#	Field
1	Position
2	Store
3	Employee
4	Outstanding amount
5	Annual Salary
6	Monthly footfall
7	Telephone Number
8	Retail/wholesale indicator
9	Payscale level
10	shipping address
11	Customer

12	Store category

- Step1: Define Entities
- Step2: Define Attributes
- Step3: Define Relations Ship
- Step4: Optimise (if)



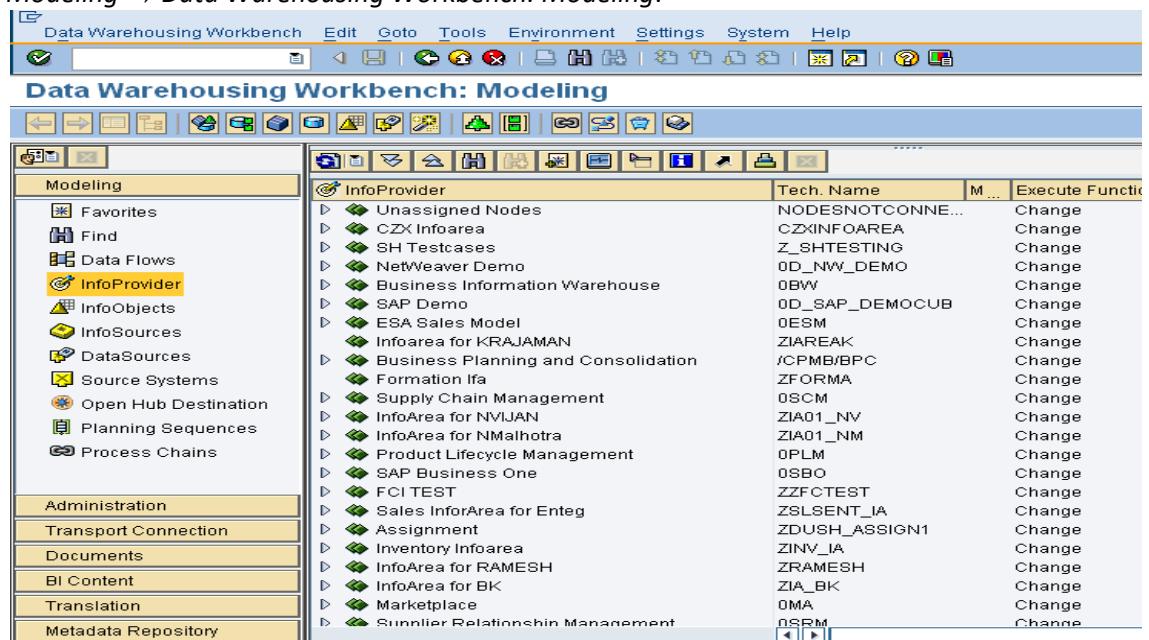
Creation of Info Area, IO Catalog for Characteristics and Key Figures

Use:

Info Area is used to group various InfoObject catalogues and sub InfoAreas whereas InfoObject catalogues for grouping various InfoObjects (characteristics and key figures).

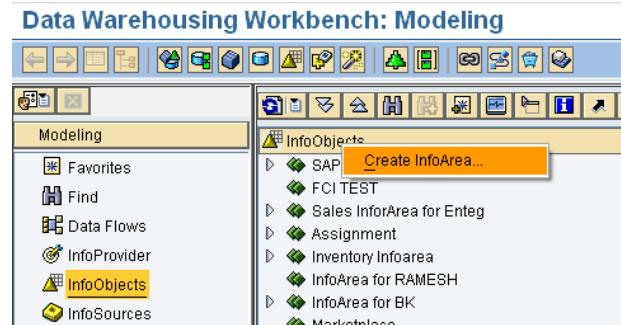
Procedure:

1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.

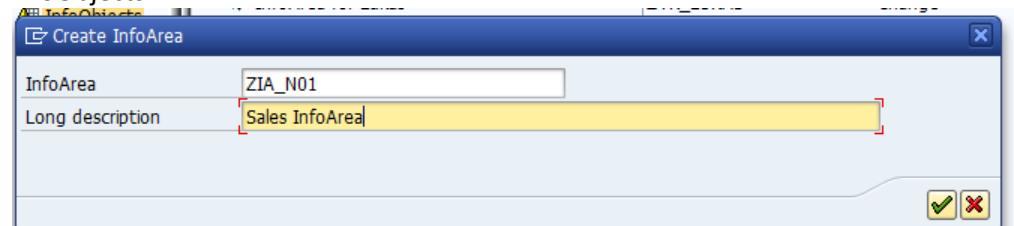


Various areas are displayed at the left in the Data Warehousing Workbench. In the area *Modeling* you can display different views on the objects used in the Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree.

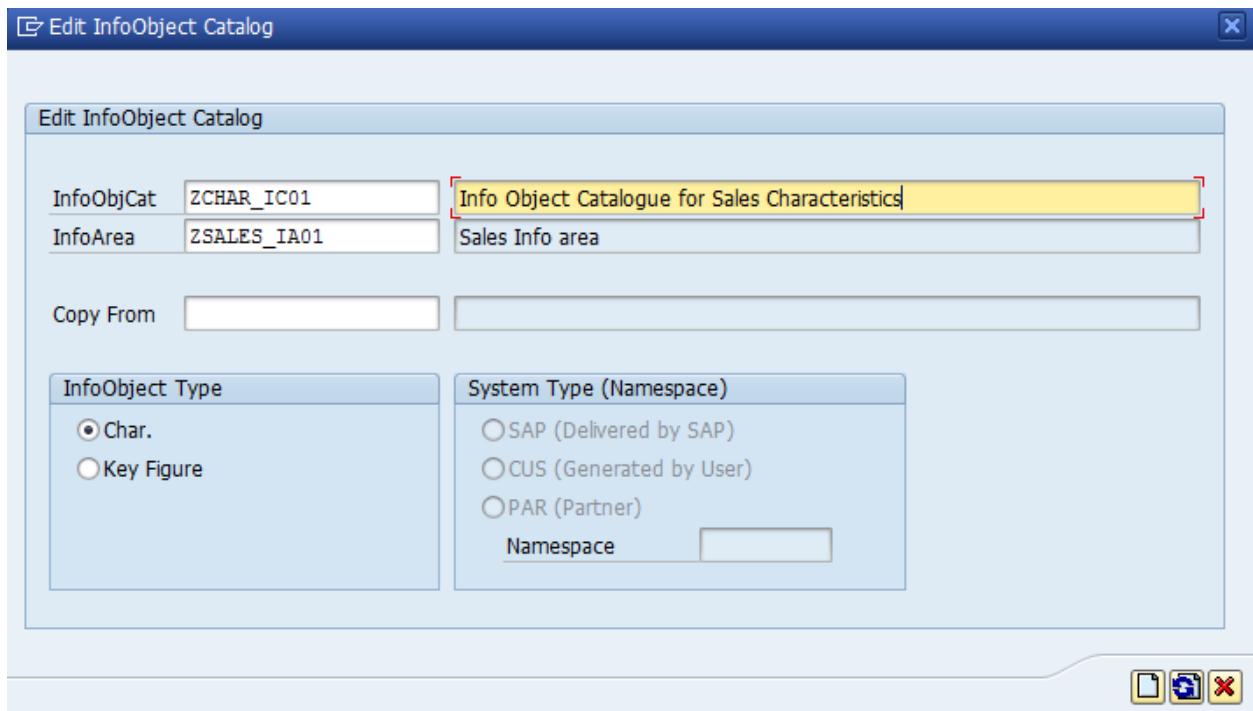
3. Under modeling, choose *InfoObjects*. The InfoObjects Tree is displayed.
4. From the context menu(Right Click) at the root node *InfoObjects* of the InfoObject tree, choose *Create InfoArea*.



5. On the next screen, enter a technical name ZIA_nn (nn – User Number) and a description for the InfoArea. The InfoArea is displayed in the InfoObject tree. It is used to group your InfoObjects.



6. In the context menu of InfoArea, choose create InfoObject Catalog.
7. On the next screen, enter a technical name ZCHIC_nn and description, and select *Characteristics* as the *InfoObject Type*.



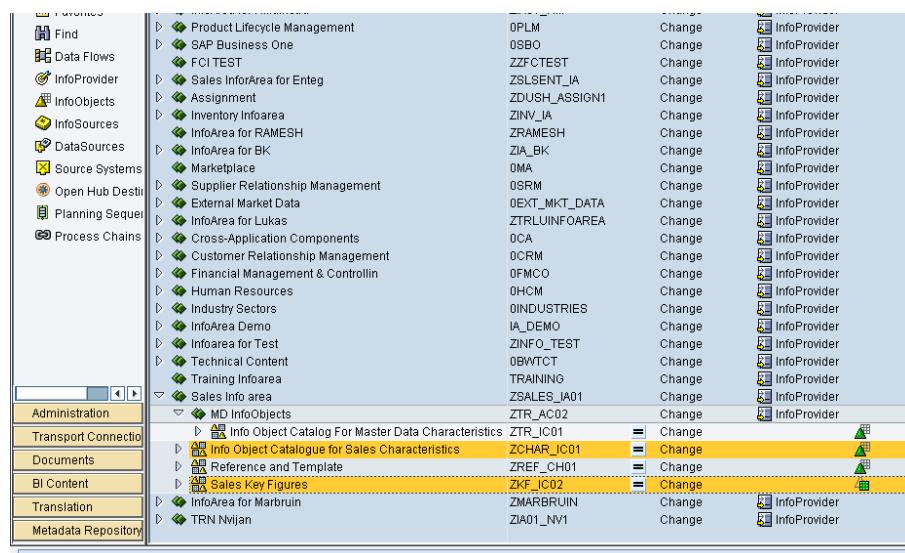
8. Choose  *Create*.
You go to the screen for InfoObject catalog editing.

9. Activate  the InfoObject Catalog.

The InfoObject catalog is displayed in your InfoArea. It is used to group your characteristics.

10. Follow the same procedure to Create InfoObject for Key figures(technical name: ZKFIC_nn and description: Sales Key Figures) in Your InfoArea.

Select key Figures in step 7



Category	Object Name	Description	Change	InfoProvider
Product Lifecycle Management	ZPLM	Change		InfoProvider
SAP Business One	ZSBO	Change		InfoProvider
FCI TEST	ZFCTEST	Change		InfoProvider
Sales InfoArea for Enteg	ZSLSENT_IA	Change		InfoProvider
Assignment	ZDUSH_ASSIGN1	Change		InfoProvider
Inventory Infoarea	ZINV_IA	Change		InfoProvider
InfoArea for RAMESH	ZRAMESH	Change		InfoProvider
InfoArea for BK	ZIA_BK	Change		InfoProvider
Marketplace	OMA	Change		InfoProvider
Supplier Relationship Management	ZSRM	Change		InfoProvider
External Market Data	OEXT_MKT_DATA	Change		InfoProvider
InfoArea for Lukas	ZTRLINFOAREA	Change		InfoProvider
Cross-Application Components	OCA	Change		InfoProvider
Customer Relationship Management	ZCRM	Change		InfoProvider
Financial Management & Controllin	ZFMCO	Change		InfoProvider
Human Resources	ZHCM	Change		InfoProvider
Industry Sectors	ZINDUSTRIES	Change		InfoProvider
InfoArea Demo	IA_DEMO	Change		InfoProvider
Infoarea for Test	ZINFO_TEST	Change		InfoProvider
Technical Content	ZBWTCT	Change		InfoProvider
Training Infoarea	ZTRAINING	Change		InfoProvider
Sales Info area	ZSALES_IA01	Change		InfoProvider
MD InfoObjects	ZTR_AC02	Change		InfoProvider
Info Object Catalog For Master Data Characteristics	ZTR_IC01	Change		InfoProvider
Info Object Catalogue for Sales Characteristics	ZCHAR_IC01	Change		InfoProvider
Reference and Template	ZREF_CH01	Change		InfoProvider
Sales Key Figures	ZKF_IC02	Change		InfoProvider
InfoArea for Marbruin	ZMARBRUIN	Change		InfoProvider
TRN Nvijan	ZIA01_NV1	Change		InfoProvider

Conclusion:

- ▶ We created InfoArea. The InfoArea is displayed in the InfoObject tree. It is used to group InfoObject catalogues.
- ▶ We created InfoObject Catalog for key figures and characteristics. The InfoObject catalog is displayed under InfoArea. It is used to group characteristics and key figures.

Creating Key Figures

Use:

Key figures are used to describe any kind of numeric information from a business process level. It can be Amount, Quantity, Number, Integer, Date or time format.

Procedure:

1. You are in the *Modeling* functional area of the Data Warehousing Workbench.(Tcode: RSA1)
2. Under Modeling, Choose InfoObjects and under InfoObjects, choose the InfoArea you created previously. Under InfoArea, choose the InfoObject Catalog for Key figures that you created previously.
3. In the context menu of InfoObject Catalog, choose create InfoObject.
Enter the required data on the next screen:
Key Figure: ZIST_nn

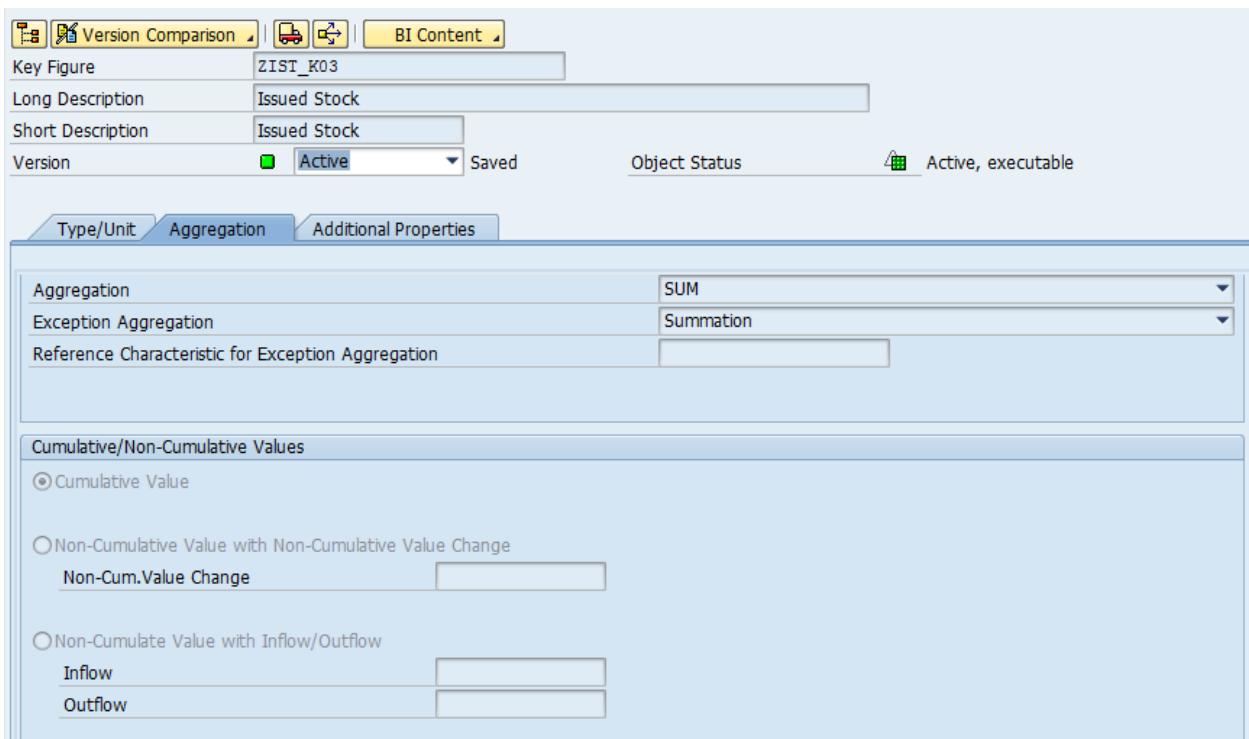


4. Choose  *Continue*.
The key figure maintenance screen appears.
5. Make the following entries on the tab page *Type/unit* and Activate the InfoObject

The information on the tab page is as follows for the key figure **Issued Stock**:

Type/Unit	Aggregation	Additional Properties
Type/Data Type <div style="display: flex; justify-content: space-around;"> <input type="radio"/> Amount <input type="radio"/> Number <input type="radio"/> Date <input checked="" type="radio"/> Quantity <input type="radio"/> Integer <input type="radio"/> Time <input type="checkbox"/> Stock Coverage </div> <div style="margin-top: 10px;"> Data Type QUAN - Quantity Field in BCD Format </div> <div style="margin-top: 10px;"> Data Element /BIC/OIZIST_K03 </div>		
Currency/Unit of Measure <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> Fixed Currency <input type="text"/> </div> <div style="width: 30%;"> Fixed Unit of Measure <input type="text"/> </div> <div style="width: 40%;"> Unit/Currency OBASE_UOM Base Unit of Measure </div> </div>		

Aggregation Tab:



The screenshot shows the SAP BI Content interface for configuring a key figure. The key figure is named ZIST_K03, with a long description of "Issued Stock" and a short description of "Issued Stock". The version is set to "Active" and the object status is "Active, executable". The aggregation type is set to "SUM" and the exception aggregation is "Summation". There are three tabs at the top: Type/Unit, Aggregation, and Additional Properties. The Aggregation tab is selected. Below it, there are sections for Cumulative/Non-Cumulative Values, Non-Cumulative Value with Non-Cumulative Value Change, and Non-Cumulative Value with Inflow/Outflow.

Aggregation:

There are four aggregation options:

- Minimum (MIN): The minimum value of all the values in this column is displayed in the results row.
- Maximum (MAX): The maximum value of all the values in this column is displayed in the results row.
- Summation (SUM): The sum of all the values in this column is displayed in the results row.
- No aggregation (X, if more than one value) (NO2): A value is only shown in the result cell if all values entered into the result cell have the same value. In the case of standard aggregation NO2, the exception aggregation must also be NO2.

Exception Aggregation

This field determines how the key figure is aggregated in the Business Explorer in relation to the exception characteristic. This reference characteristic must be unique in the query. In general, this refers to time.

Reference Characteristic for Exception Aggregation

In this field, select the characteristic in relation to which the key figure is to be aggregated with the exception aggregation. Often this is a time characteristic. However, you can use any characteristic you wish.

Cumulative Value

You can select the key figure as a Cumulative Value. Values for this key figure have to be posted in each time unit for which values for this key figure are to be reported.

Non-Cumulative with Non-Cumulative Change

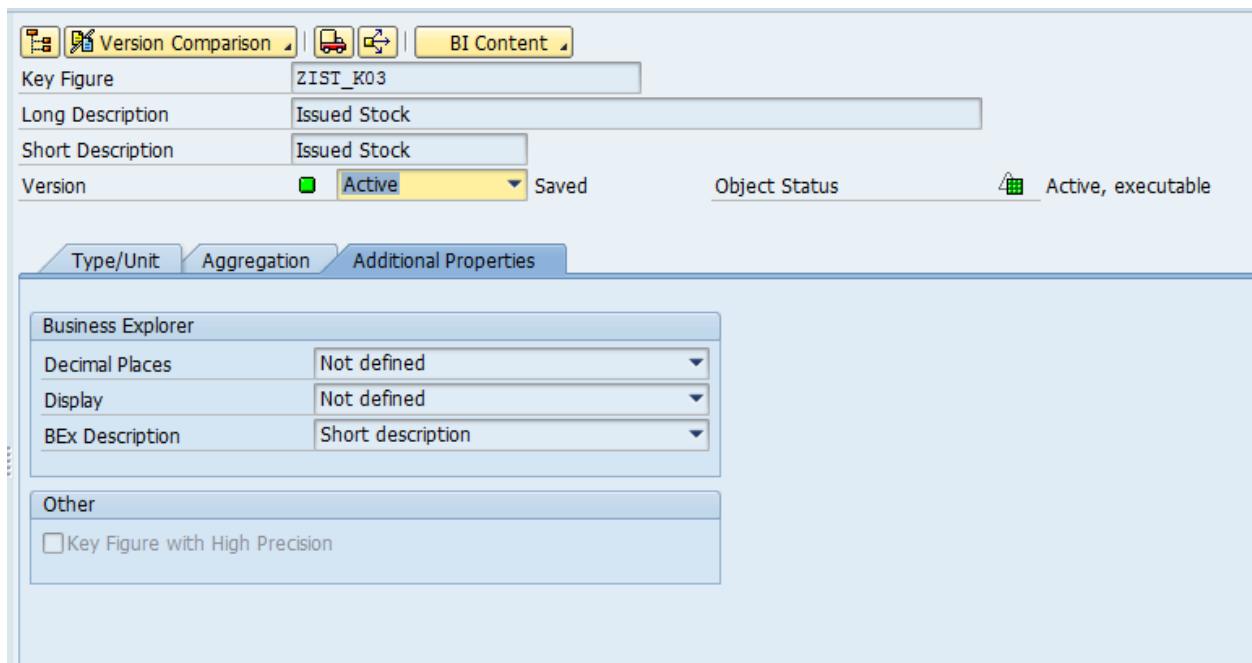
The key figure is a non-cumulative. You have to enter a key figure that represents the non-cumulative change of the non-cumulative value. There do not have to be values for this key figure in every time unit. For the non-cumulative key figure, values are only stored for selected times

(markers). The values for the remaining times are calculated from the value in a marker and the intermediary non-cumulative changes.

Non-Cumulative with Inflow and Outflow

The key figure is a non-cumulative. You have to specify two key figures that represent the inflow and outflow of a non-cumulative value.

Additional Properties Tab:



Business Explorer	
Decimal Places	Not defined
Display	Not defined
BEx Description	Short description

Key Figure with High Precision

Business Explorer :

You can make the following settings in part specific to data target for the InfoObjects contained in the data target. The settings are then only valid in the respective data target.

Decimal Places

You can determine how many decimal places the field has by default in the Business Explorer. This layout can be overwritten in queries.

Display

This field describes with which scaling the field in the Business Explorer is displayed by default. This layout can be overwritten in queries.

Other

Key figure with high precision

If you choose this indicator, then the OLAP processor calculates internally with packed numbers that have 31 decimal places. This results in greater accuracy and reduced rounding differences. Normally, the OLAP processor calculates with floating point numbers.

Follow the same procedure for following key figures:

Input Field	Issued Stock	Received Stock	Sales Amount	Sales Quantity	Total Stock
KeyFig.	ZIST_nn	ZRST_nn	ZAMT_nn	ZQUAN_nn	ZTST_nn
Long description	Issued Stock	Received Stock	Sales Amount	Sales Quantity	Total Stock

Input Field	Issued Stock	Received Stock	Sales Amount	Sales Quantity	Total Stock
KeyFig.	ZIST_nn	ZRST_nn	ZAMT_nn	ZQUAN_nn	ZTST_nn
Long description	Issued Stock	Received Stock	Sales Amount	Sales Quantity	Total Stock
Type/Data Type	Quantity	Quantity	Amount	Quantity	Quantity
Data Type	QUAN – Quantity field, points to a unit field with format UN	QUAN – Quantity field, points to a unit field with format UN	CURR – Currency field, stored as DEC	QUAN – Quantity field, points to a unit field with format UN	QUAN – Quantity field, points to a unit field with format UN
Unit/currency	OBASE_UOM	OBASE_UOM	OCURRENCY	OUNIT	OBASE_UOM
Aggregation	SUM	SUM	SUM	SUM	SUM
Exception Aggregation	Summation	Summation	Summation	Summation	Last Value

Cumulative/ Non Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Non Cumulative value with Inflow and Out flow Inflow = ZRST_nn Out flow = ZIST_nn
Decimal Places	Not defined	Not defined	0.00	0.000	Not defined
Display	Not defined	Not defined	In 1	In 1	Not defined
Bex Description	Short Description				

Result

We created following key figures for the scenario:

- Issued Stock (ZIST_nn)
- Received Stock (ZRST_nn)
- Sales Amount (ZAMT_nn)
- Sales Quantity (ZQUAN_nn)
- Total Stock (ZTST_nn)

These key figures are displayed in your Key Figure InfoObject catalog and will be used later to define the InfoCubes.

Creating Characteristics

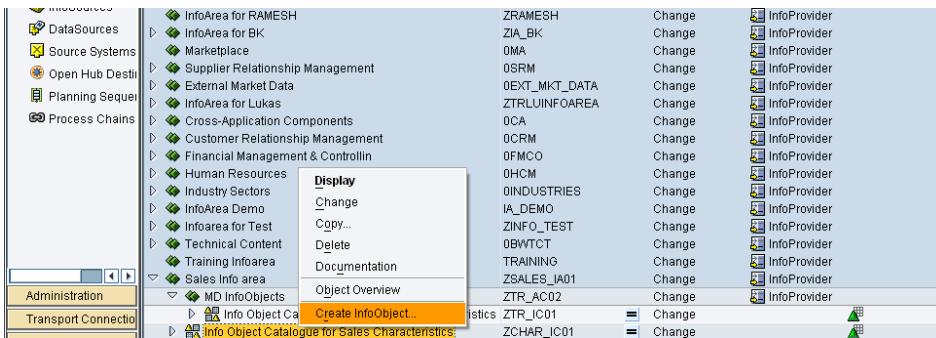
Use

The characteristics are required to define the reference when analyzing the any (in this case Sales) data. You can create characteristic (eg: Customer / Sold to Party) with several attributes. The attributes for a characteristic are InfoObjects that are used to structure and order the characteristic. In our scenario, the attributes *Address* is defined as pure display attributes that provide additional information of the customer/sold to party. On the other hand, define 'Country' as navigation attribute. It can thus be used in the query like a normal characteristic and can also be used without the characteristic Customer / Sold to Party).

Procedure

6. You are in the *Modeling* functional area of the Data Warehousing Workbench.(Tcode: RSA1)

7. Under Modeling, Choose InfoObjects and under InfoObjects, choose the InfoArea you created previously. Under InfoArea, choose the InfoObject Catalog for Characteristics that you created previously.
 8. In the context menu of InfoObject Catalog, choose create InfoObject.
- 9.



10. Enter the required data on the next screen:

We need to create the following characteristics:

Input Field	BW: Document Item Number	County	Customer / Sold to Party	Delivery Date	Document Number	Material Group	Address	Sales Item
Char.	ZITM_Nn	ZCN_Nn	ZCUS_Nn	ZDEL_Nn	ZDOC_Nn	ZMGR_Nn	ZADD_Nn	ZITM_Nn
Long description	BW: Document Item Number	Country	Customer / Sold to Party	Delivery Date	Document Number	Material Group	Address	Sales Item

Input Field	Plant	Sales Document Date	Sales Office	Sales Organisation	Sales Person	Ship to Party	Version
Char.	ZPLT_NN	ZDAT_NN	ZOFF_NN	ZORG_NN	ZSPR_NN	ZSP_NN	ZVER_NN
Long description	Plant	Sales Document Date	Sales Office	Sales Organisation	Sales Person	Ship to Party	Version

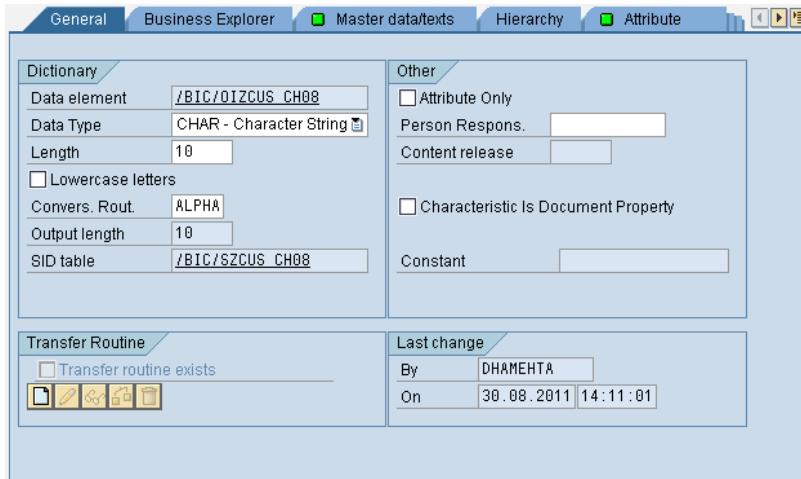
Have a look at the screenshots added below to understand the procedure.

The information on the tab page is as follows for the characteristic **Customer / Sold to Party** (ZCUS_Nn):

11. Choose  **Continue**.

The characteristic maintenance screen appears.

12. Make the following entries on the tab page **General** and the activate the InfoObject



The screenshot shows the SAP BW Characteristic Maintenance screen with the 'General' tab selected. The screen is divided into several sections:

- Dictionary:**
 - Data element: /BIC/OIZCUS_CH08
 - Data Type: CHAR - Character String
 - Length: 10
 - Lowercase letters
 - Convers. Rout.: ALPHA
 - Output length: 10
 - SID table: /BIC/SZCUS_CH08
- Other:**
 - Attribute Only
 - Person Respons. (empty field)
 - Content release (empty field)
 - Characteristic Is Document Property
 - Constant (empty field)
- Transfer Routine:**
 - Transfer routine exists
 - Icons for edit, new, delete, and search
- Last change:**
 - By: DHAMEHTA
 - On: 30.08.2011 14:11:01

Go to the Master data/texts tab page.

- i. Select With master data and With texts if they are not already selected.
- ii. In the field below Character is InfoProvider, enter the technical name of your InfoArea and confirm your entry.
The system sets the indicator Character is InfoProvider.
- iii. For the characteristic **Customer / Sold to Party**: Select the indicator Short length text exists.

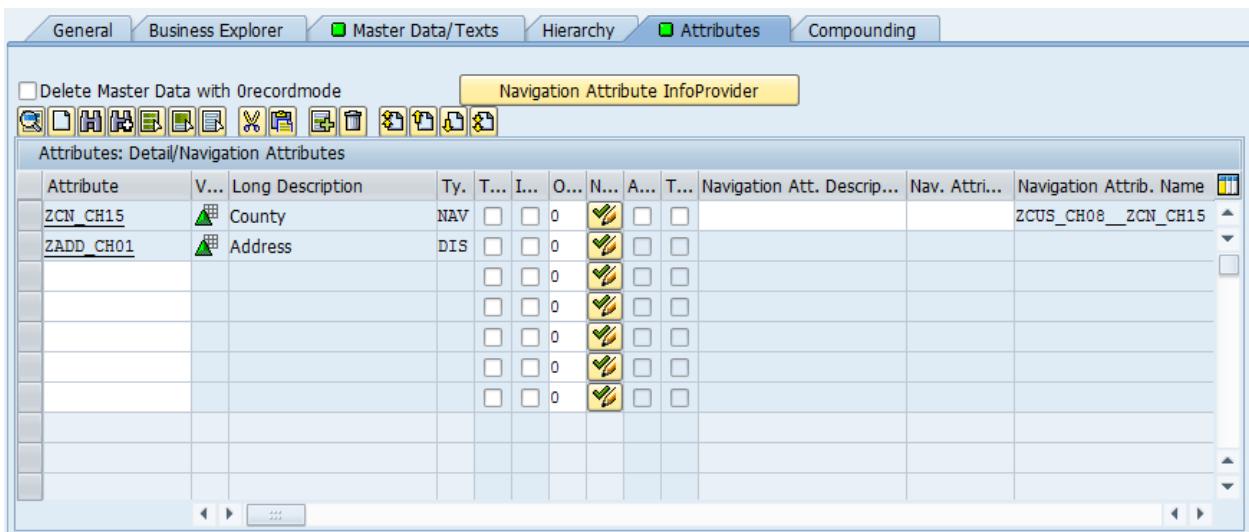
The information on the tab page is **as per the example screenshot below** for the characteristic **Customer / Sold to Party**:

For the characteristic **Customer / Sold to Party**: Go to the tab page *Attribute*.

Add the following InfoObject as attribute:

ZCN_NN – Country.

Activate the attribute ZCN_NN by choosing  *Navigation Attribute On/Off* as navigation attribute.



The screenshot shows the SAP BW Master Data/Texts interface. The top navigation bar includes tabs for General, Business Explorer, Master Data/Texts (highlighted in green), Hierarchy, Attributes, and Compounding. A toolbar below the tabs contains various icons for data management. A message box titled "Navigation Attribute InfoProvider" is displayed. The main area is titled "Attributes: Detail/Navigation Attributes" and lists two attributes: ZCN_CH15 (County) and ZADD_CH01 (Address). Each attribute has several rows of navigation information, indicated by checkmarks in the "Navigation Att. Descrip..." column.

Similarly, create all the following characteristics:

Input Field	BW: Document Item Number	County	Customer / Sold to Party	Delivery Date	Document Number	Material Group	Address	Sales item
Char.	ZDITM_Nn	ZCN_NN	ZCUS_NN	ZDEL_NN	ZDOC_NN	ZMGR_NN	ZADD_NN	ZITM_Nn
Long description	BW: Document Item Number	Country	Customer / Sold to Party	Delivery Date	Document Number	Material Group	Address	Sales item

Input Field	Plant	Sales Document Date	Sales Office	Sales Organisation	Sales Person	Ship to Party	Version
Char.	ZPLT_NN	ZDAT_NN	ZOFF_NN	ZORG_NN	ZSPR_NN	ZSP_NN	ZVER_NN
Long description	Plant	Sales Document Date	Sales Office	Sales Organisation	Sales Person	Ship to Party	Version

Please refer below table on how to change entries:

Input Field	BW: Document Item Number	Country	Customer / Sold to Party	Delivery Date	Document Number	Material Group	Address	Sales Item

Char.	ZDITM_Nn	ZCN_NN	ZCUS_NN	ZDEL_NN	ZDOC_NN	ZMGR_NN	ZADD_NN	ZITM_Nn
Long description	BW: Document Item Number	Country	Customer / Sold to Party	Delivery Date	Document Number	Material Group	Address	Sales Item
Data Type	NUMC - character string with only digits	CHAR – character string	CHAR – character string	DATS – Date Field	CHAR – character string	CHAR – character string	CHAR – character string	CHAR – character string
Length	6	3	10		10	9	10	3
Characteristic Is-Document Property						-	-	
Master Data		With Master Data	With Master Data			With Master Data		
		With Texts – Short Length Text Exists	With Texts – Short Length Text Exists			With Texts – Short Length Text Exists		
		Text language dependent	Text language dependent			Text language dependent		
Hierarchy				With hierarchy Hierarchy version Dependent Hierarchy – not time dependent		With hierarchy Hierarchy – not time dependent		
Attributes			ZCN_NN – Country Navigational attribute					
Input Field	Plant	Sales Document Date	Sales Office	Sales Organisation	Sales Person	Ship to Party	Version	
Char.	ZPLT_NN	ZDAT_NN	ZOFF_NN	ZORG_NN	ZSPR_NN	ZSP_NN	ZVER_NN	
Long description	Plant	Sales Document Date	Sales Office	Sales Organisation	Sales Person	Ship to Party	Version	

Data Type	CHAR – character string	DATS – Date Field	CHAR – character string					
Length	4	8	4	4	10	10	3	
Characteristic - Is Document Property	-						-	
Master Data			With Master Data					
			With Texts – Short Length Text Exists					
			Text language dependent					
Hierarchy		With hierarchy						
		Hierarchy – version Dependent						
		Hierarchy – not time dependent						
Attributes								

Conclusion -

Characteristic **Customer / Sold to Party** contains the navigational attribute Country that can be treated as a normal characteristic in the query.

You also have created following characteristics for the scenario:

BW: Document Item Number	County	Customer / Sold to Party	Delivery Date	Document Number	Material Group	Address	Sales Item
Plant	Sales Document Date	Sales Office	Sales Organisation	Sales Person	Ship to Party	Version	

These characteristics are displayed in your InfoObject catalog and can be used to define the InfoCube.

Reference Char and IO Template copy and compounding

Use:

Using Reference characteristic, new characteristic will always refer to the reference characteristic which means it will contain same properties, attributes, hierarchies and master data as that of the reference characteristic.

Using Template property you can make new characteristic copy of the template characteristic. This means it will copy complete structure (also properties) of the template characteristic to the new char.

Compounding is the process of combining characteristics with another characteristic to ensure the ability to uniquely define values of the InfoObject.

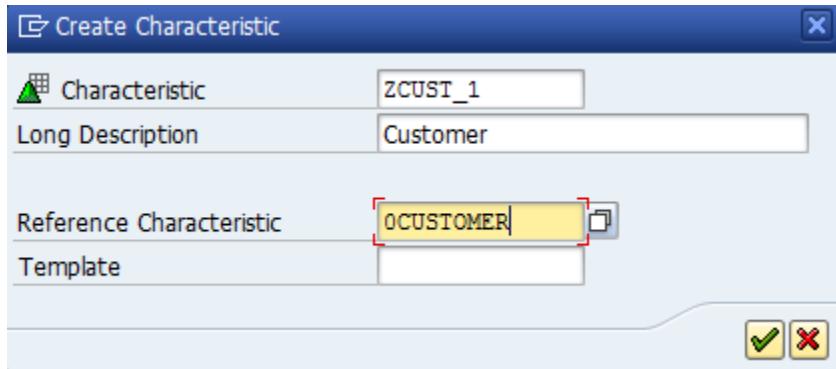
Procedure:

Reference Characteristics:

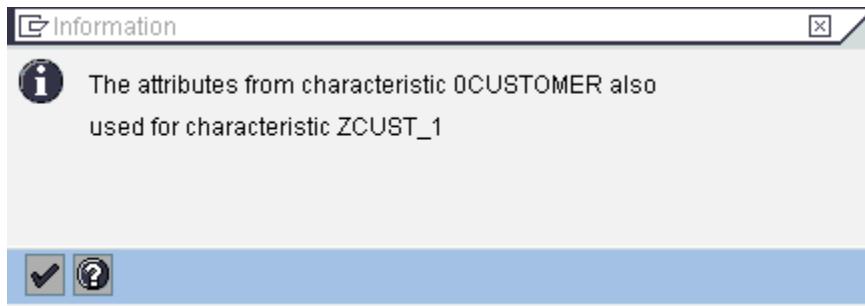
1. You are in the *Modeling* functional area of the Data Warehousing Workbench.(Tcode: RSA1). Under Modeling, Choose InfoObjects and under InfoObjects, choose the InfoArea you created

previously. Under InfoArea, choose the InfoObject Catalog for Characteristics that you created previously.(or create a new catalog if required)

2. In the context menu of InfoObject Catalog, choose create InfoObject ZCUST_nn
3. Enter OCUSTOMER as reference characteristic.



4. When you click on continue, you will get a dialog box as follows:



5. Now, the InfoObject ZCUST_nn will have the same Master data, Hierarchies and attributes as OCUSTOMER

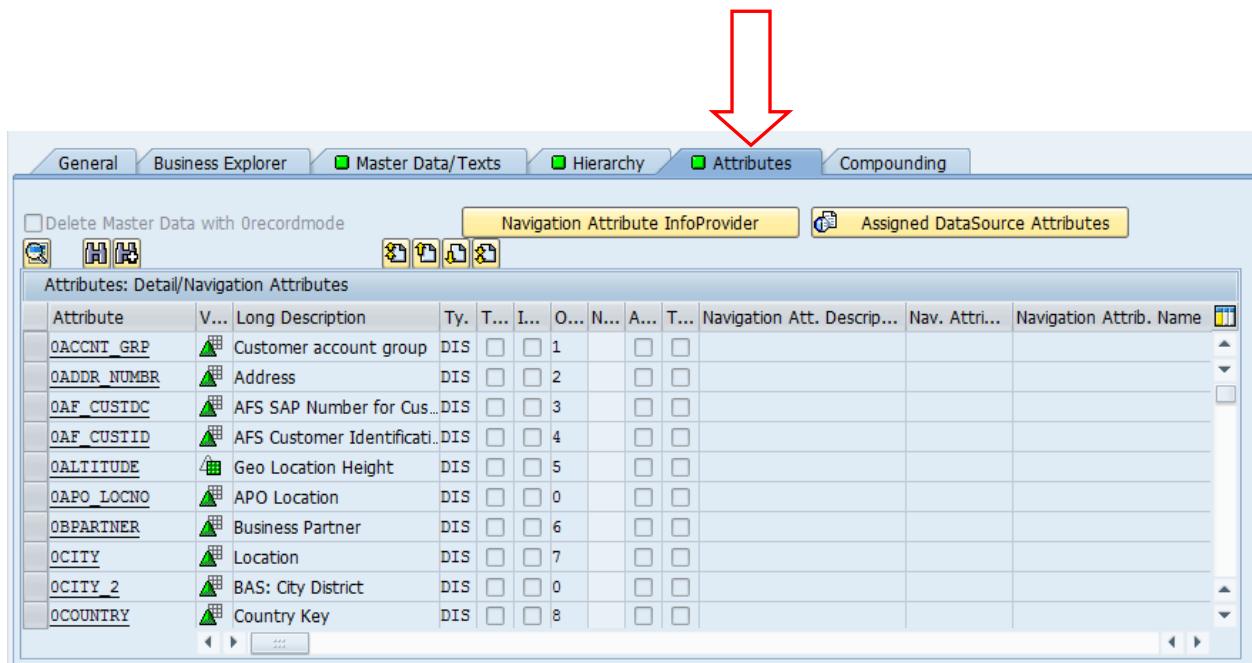
General Business Explorer Master Data/Texts Hierarchy Attributes Compounding

<input checked="" type="checkbox"/> With Master Data	<input type="checkbox"/> Supports XXL Attributes	<input checked="" type="checkbox"/> With Texts	
Master Data Tables		Text Table Properties	
Master Data View	/B10/MCUSTOMER	Text Table	/B10/TCUSTOMER
Master Data Table	/B10/ECUSTOMER	<input type="checkbox"/> Short Text	
Attribute SID Table	/B10/XCUSTOMER	<input checked="" type="checkbox"/> Medium Text	
XXL Attribute Table		<input type="checkbox"/> Long Text	
		<input type="checkbox"/> Language-Dep. Text	
		<input type="checkbox"/> Time-Dependent Text	
Master Data InfoSource / Data Target / InfoProvider			
Application Component	IO-IO	Master Data LO	
<input checked="" type="checkbox"/> InfoSource with Direct Update		Cross-Application	
InfoArea	OCA_IO	<input checked="" type="checkbox"/> Characteristic is InfoProvider	

Master Data Read Access
Master Data Access Default
Master Data Read Class
Read Class Parameters
Miscellaneous
<input type="checkbox"/> Master Data Maintenance with Authority Check
DataStore Object for Check

General Business Explorer Master Data/Texts **Hierarchy** Attributes Compounding

<input checked="" type="checkbox"/> With Hierarchies	Maintain Hierarchies
Hierarchy Properties	
Hierarchy Type Standard	
<input type="checkbox"/> Hierarchies, Version-Dependent	Tables for Hierarchies
<input type="checkbox"/> Hierarchy not time-dependent	Hierarchy Table /B10/HCUSTOMER
<input type="checkbox"/> Entire hierarchy is time-dependent	Hierarchy SID Table /B10/KCUSTOMER
<input checked="" type="checkbox"/> Time-Dependent Hierarchy Structure	SID Hierarchy Struct. /B10/ICUSTOMER
<input type="checkbox"/> Use Temporal Hierarchy Join	Hier. Interval Table
<input type="checkbox"/> Intervals Permitted in Hierarchy	BWA Status No BWA Index
<input type="checkbox"/> Reverse +/- Sign for Nodes	Remote Hierarchy Properties
 External Chars. in Hierarchies	Remote Hier. Class
	Hier. Class Parameters



The screenshot shows the SAP BW Data Warehousing Workbench interface. The top navigation bar includes tabs for General, Business Explorer, Master Data/Texts, Hierarchy, Attributes (which is highlighted with a green square), and Compounding. Below the navigation bar are two buttons: 'Delete Master Data with Orecordmode' and 'Navigation Attribute InfoProvider'. To the right of these buttons are icons for saving, deleting, and other operations. The main area is titled 'Attributes: Detail/Navigation Attributes' and contains a table with the following data:

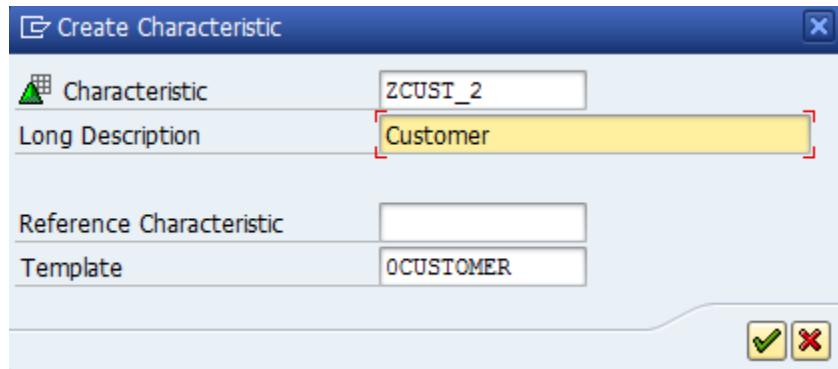
Attribute	V... Long Description	Ty.	T...	I...	O...	N...	A...	T...	Navigation Att. Descrip...	Nav. Attri...	Navigation Attrib. Name
OACCTN_GRP	Customer account group	DIS	<input type="checkbox"/>	<input type="checkbox"/>	1						
OADDR_NUMBR	Address	DIS	<input type="checkbox"/>	<input type="checkbox"/>	2						
OAF_CUSTDC	AFS SAP Number for Cus...	DIS	<input type="checkbox"/>	<input type="checkbox"/>	3						
OAF_CUSTID	AFS Customer Identificati...	DIS	<input type="checkbox"/>	<input type="checkbox"/>	4						
OALTITUDE	Geo Location Height	DIS	<input type="checkbox"/>	<input type="checkbox"/>	5						
OAPO_LOCNO	APO Location	DIS	<input type="checkbox"/>	<input type="checkbox"/>	0						
OBPARTNER	Business Partner	DIS	<input type="checkbox"/>	<input type="checkbox"/>	6						
OCITY	Location	DIS	<input type="checkbox"/>	<input type="checkbox"/>	7						
OCITY_2	BAS: City District	DIS	<input type="checkbox"/>	<input type="checkbox"/>	0						
OCOUNTRY	Country Key	DIS	<input type="checkbox"/>	<input type="checkbox"/>	8						

Template Characteristics:

1. You are in the *Modeling* functional area of the Data Warehousing Workbench.(Tcode: RSA1). Under Modeling, Choose InfoObjects and under InfoObjects, choose the InfoArea you created

previously. Under InfoArea, choose the InfoObject Catalog for Characteristics that you created previously.

2. In the context menu of InfoObject Catalog, choose create InfoObject ZCUS2_nn
3. Enter OCUSTOMER as template characteristic.
4. It will copy all the properties of OCUSTOMER to ZCUS2_nn.



Compounding Attribute:

Compounding is the process of combining characteristics InfoObject with other characteristics InfoObject to ensure the ability to uniquely define values of the InfoObject.

Example:

Storage location A for the refinery plant is a huge storage tank.

Storage location A for the frozen food manufacturing plant is a freezer.

For reporting and data loading accuracy, Storage location must be compounded with plant to establish the unique storage location in which we are interested.

1. To add the compounding attribute, Go to the 'Compounding' tab while creating the InfoObject and add the Superior InfoObject.
2. Go to RSD1 transaction. Enter ZMAT_CH05 and click on Display.

Edit InfoObjects: Start

InfoCube DataStore Object InfoObject catalog Logs... Metadata

Version Active/Revised

Type

- Characteristic
- XXL InfoObject
- Key Figure
- Unit
- Time Characteristic

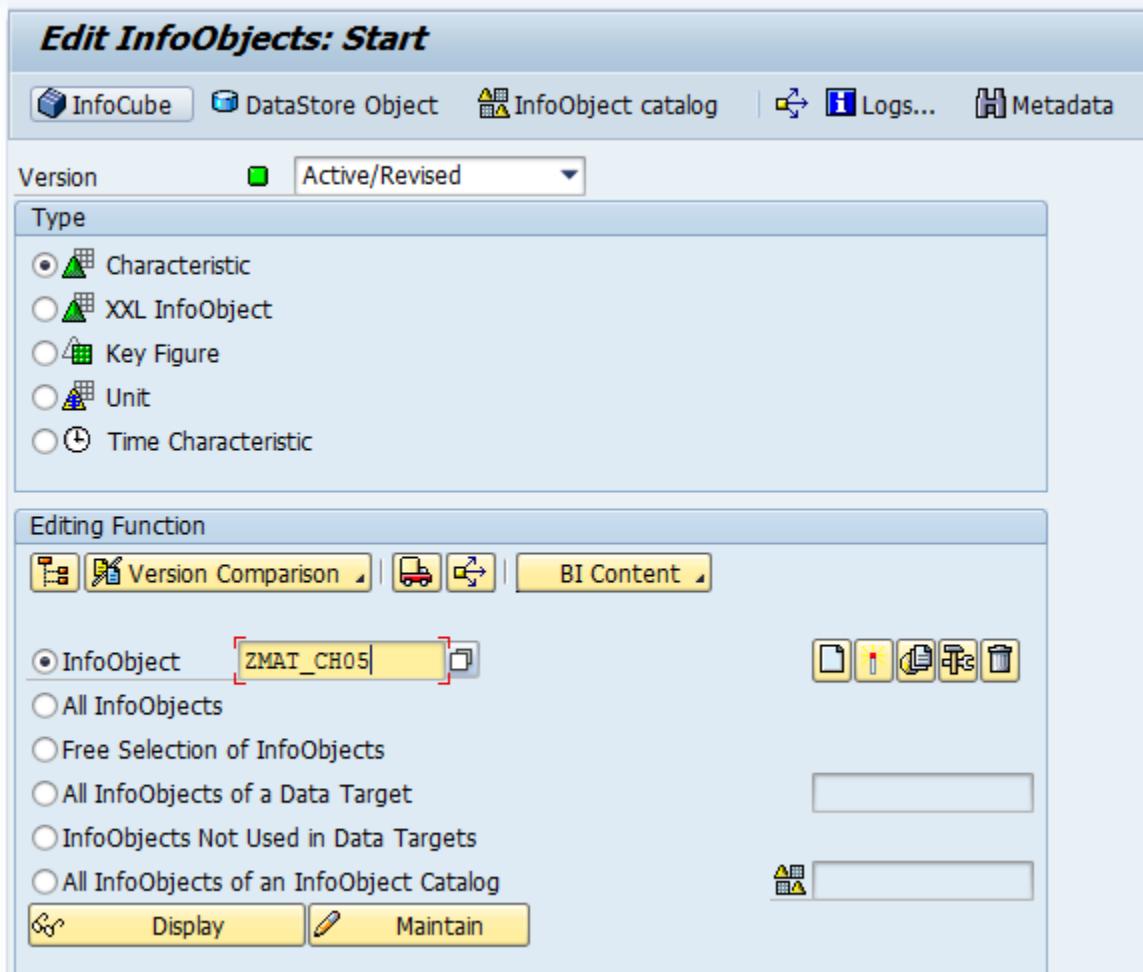
Editing Function

Version Comparison BI Content

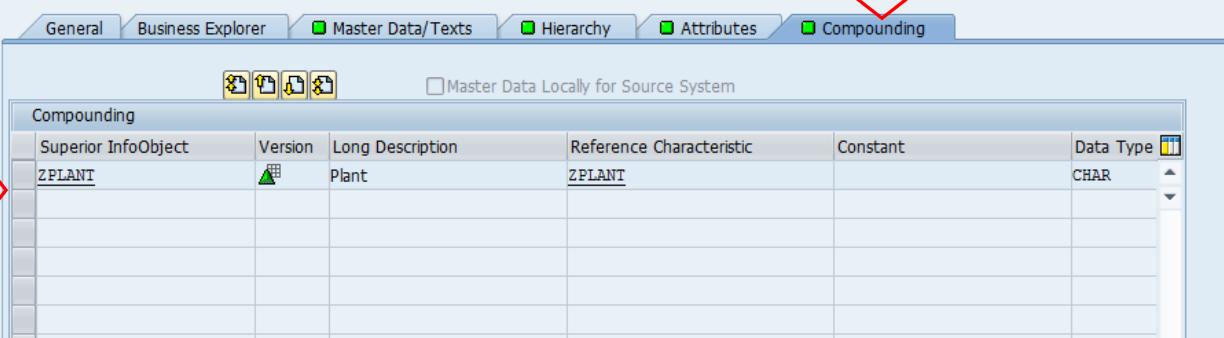
InfoObject ZMAT_CH05

All InfoObjects Free Selection of InfoObjects All InfoObjects of a Data Target InfoObjects Not Used in Data Targets All InfoObjects of an InfoObject Catalog

Display Maintain



3. Go to Compounding tab. Enter ZPLANT and activate the infoObject. Now PLANT will act as a key along with Material.



The screenshot shows the SAP BW Compounding dialog box. The 'Compounding' tab is selected. The table has the following columns: Superior InfoObject, Version, Long Description, Reference Characteristic, Constant, and Data Type. One row is visible, showing 'ZPLANT' in all columns except 'Version' which has a small icon.

Compounding					
Superior InfoObject	Version	Long Description	Reference Characteristic	Constant	Data Type
ZPLANT		Plant	ZPLANT		CHAR

Add The
Superior
InfoObject
here.

Result:

We have studied and understood reference, template and compounding characteristics.

- ▶ If an InfoObject has a reference InfoObject, it has its technical properties:
 1. For characteristics these are the data type and length as well as the master data (attributes, texts and hierarchies).
 2. For key figures these are the key figure type, data type and the definition of the currency and unit of measure.
- ▶ Compounding allows to compound characteristic to other InfoObjects.

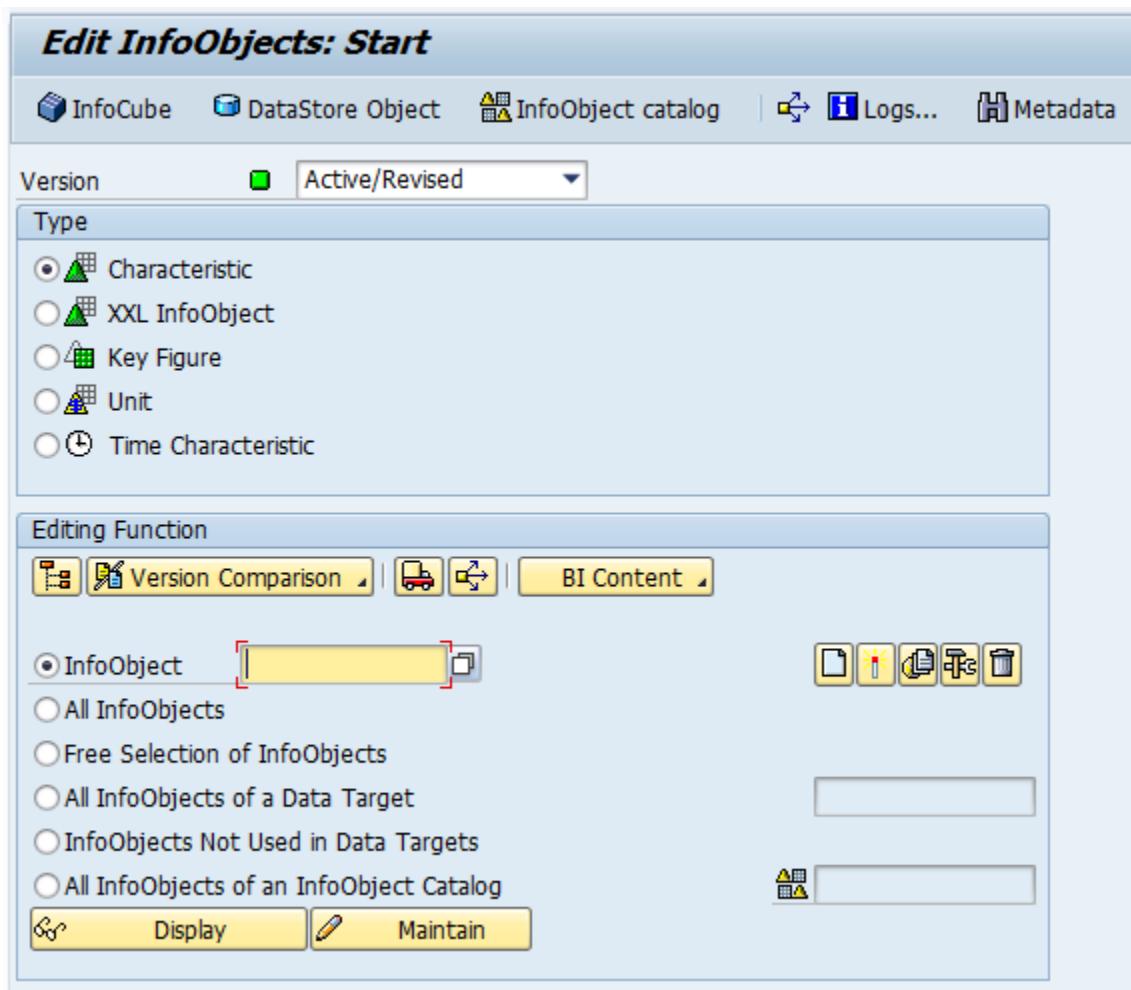
Master Data Tables

Use

Master data tables stores additional information about the characteristics such as Surrogate ID's (unique keys), Time dependent and independent texts and attributes data and Hierarchies.

Procedure:

1. Log on to the BI system.
2. Go to Tcode RSD1.



3. Under the "Editing Function" tab, enter the InfoObject name ZMAT_CH05 and click on *Display*.

Edit InfoObjects: Start

InfoCube DataStore Object InfoObject catalog Logs... Meta

Version Active/Revised

Type

- Characteristic
- XXL InfoObject
- Key Figure
- Unit
- Time Characteristic

Editing Function

Version Comparison BI Content

InfoObject ZMAT_CH05

All InfoObjects

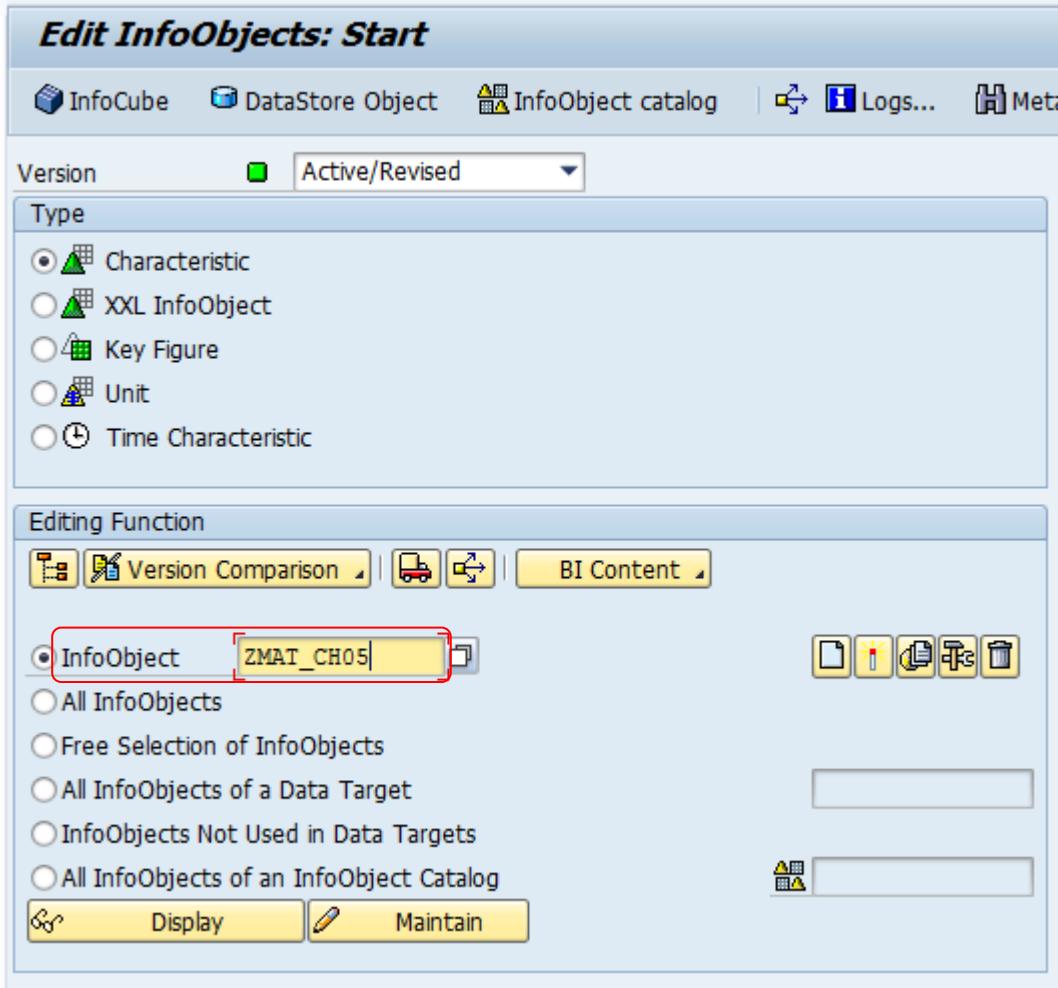
Free Selection of InfoObjects

All InfoObjects of a Data Target

InfoObjects Not Used in Data Targets

All InfoObjects of an InfoObject Catalog

Display Maintain



4. Here, go to the "Master data/texts" tab. Here you will see all the attribute and text master data tables.

Display Characteristic ZMAT_CH05: Details

Characteristic: ZMAT_CH05
Long Description: Material
Short Description: Material
Version: Active (highlighted)
Object Status: Active, executable

General Business Explorer Master Data/Texts Hierarchy Attributes Compounding

With Master Data Supports XXL Attributes With Texts

Master Data Tables

Master Data View	/BIC/MZMAT_CH05
Master Data Table	/BIC/PZMAT_CH05
Attribute SID Table	/BIC/XZMAT_CH05
XXL Attribute Table	
Time-Dep. Master Data Table	/BIC/QZMAT_CH05
Time-Dep. Attribute SID Table	/BIC/YZMAT_CH05

Text Table Properties

Text Table	/BIC/TZMAT_CH05
<input checked="" type="checkbox"/> Short Text	
<input type="checkbox"/> Medium Text	
<input type="checkbox"/> Long Text	
<input checked="" type="checkbox"/> Language-Dep. Text	
<input type="checkbox"/> Time-Dependent Text	

Master Data InfoSource / Data Target / InfoProvider

Application Component: ZTR_AC1 TR Application Compo
 InfoSource with Direct Update
InfoArea: ZSALES_IA01 Sales Info area
 Characteristic in InfoProvider

5. Double click on the “View of MstrDtaTbls” /BIC/MZMAT_CH05. It is a view of P and Q tables of the characteristics.

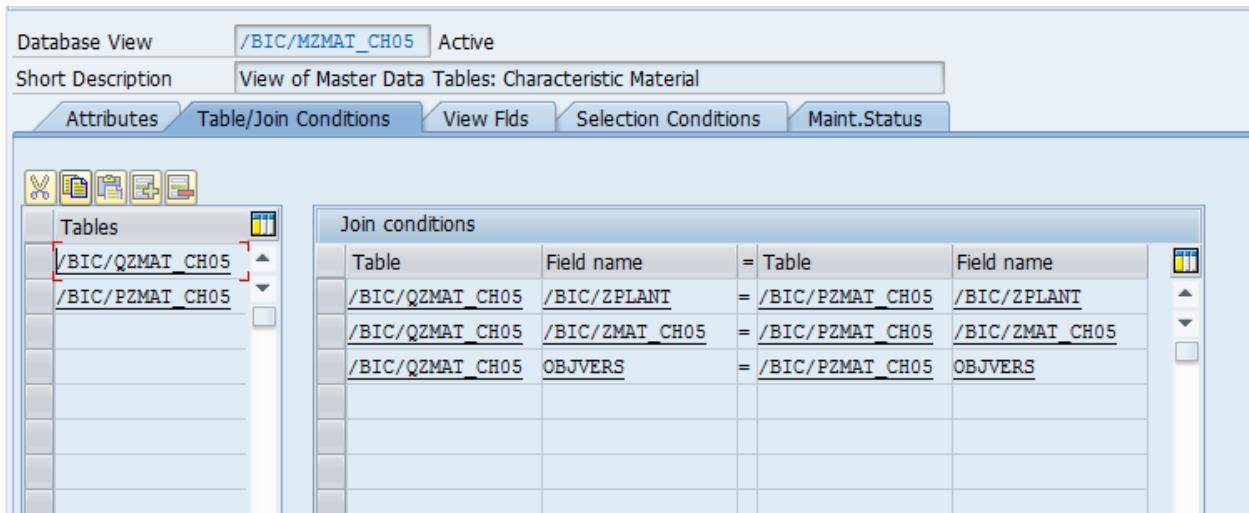
Dictionary: Display View

Database View: /BIC/MZMAT_CH05 Active
Short Description: View of Master Data Tables: Characteristic Material

Attributes Table/Join Conditions View Flds Selection Conditions Maint.Status

Table fields

View field	Table	Field	Key	Data elem.	M...	DTyp	Length	Short description
/BIC/ZPLANT	/BIC/QZMAT_CH05	/BIC/ZPLANT	<input checked="" type="checkbox"/>	/BIC/OIZPLANT	<input type="checkbox"/>	CHAR	4	Plant
/BIC/ZMAT_CH05	/BIC/QZMAT_CH05	/BIC/ZMAT_CH05	<input checked="" type="checkbox"/>	/BIC/OIZMAT_CH05	<input type="checkbox"/>	CHAR	18	Material
OBJVERS	/BIC/QZMAT_CH05	OBJVERS	<input checked="" type="checkbox"/>	RSOBJVERS	<input type="checkbox"/>	CHAR	1	Object version
DATETO	/BIC/QZMAT_CH05	DATETO	<input checked="" type="checkbox"/>	/BIO/OIDATETO	<input type="checkbox"/>	DATS	8	Valid to
DATEFROM	/BIC/QZMAT_CH05	DATEFROM	<input type="checkbox"/>	/BIO/OIDATEFROM	<input type="checkbox"/>	DATS	8	Valid from
CHANGED	/BIC/QZMAT_CH05	CHANGED	<input type="checkbox"/>	RSRCHANGEFLAG	<input type="checkbox"/>	CHAR	1	Change flag (I inserted / D deleted)
/BIC/ZMGR_CH14	/BIC/PZMAT_CH05	/BIC/ZMGR_CH14	<input type="checkbox"/>	/BIC/OIZMGR_CH14	<input type="checkbox"/>	CHAR	9	Material Group
/BIC/ZDIV_CH01	/BIC/QZMAT_CH05	/BIC/ZDIV_CH01	<input type="checkbox"/>	/BIC/OIZDIV_CH01	<input type="checkbox"/>	CHAR	2	Division
/BIC/ZEAN_CH01	/BIC/QZMAT_CH05	/BIC/ZEAN_CH01	<input type="checkbox"/>	/BIC/OIZEAN_CH01	<input type="checkbox"/>	CHAR	18	European Article Number/Universal Product Code



The screenshot shows the SAP BW Database View interface. The title bar indicates "Database View /BIC/MZMAT_CH05 Active". The short description is "View of Master Data Tables: Characteristic Material". Below the title bar are tabs: Attributes, Table/Join Conditions (selected), View Flds, Selection Conditions, and Maint.Status.

The main area has two sections: "Tables" and "Join conditions".

Tables:

- /BIC/QZMAT_CH05
- /BIC/PZMAT_CH05

Join conditions:

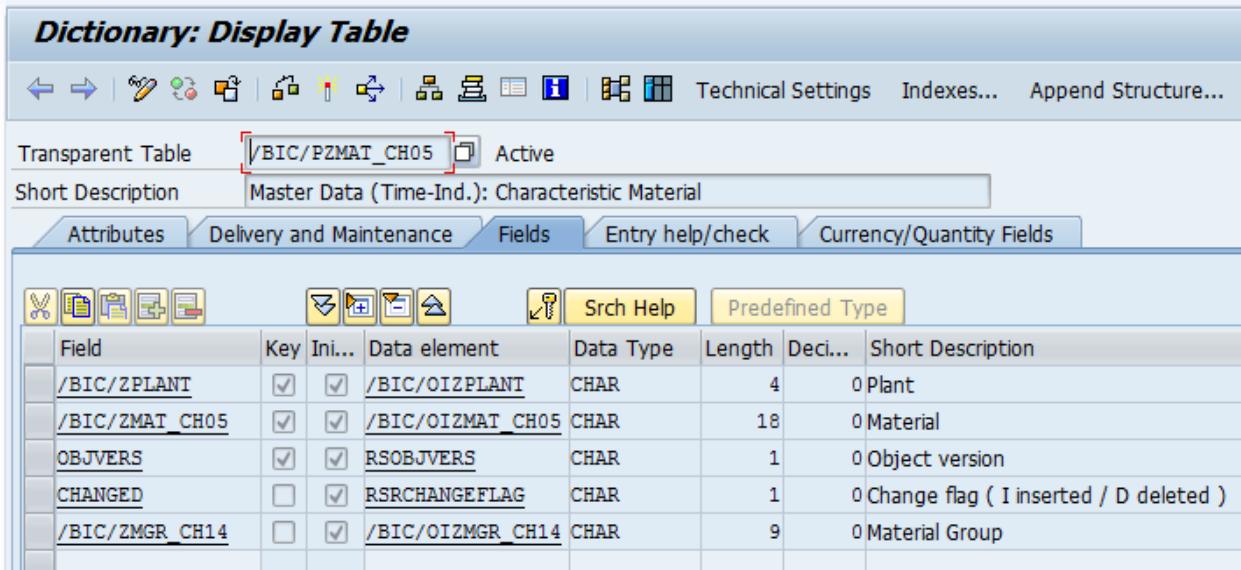
Table	Field name	= Table	Field name
/BIC/QZMAT_CH05	/BIC/ZPLANT	= /BIC/PZMAT_CH05	/BIC/ZPLANT
/BIC/QZMAT_CH05	/BIC/ZMAT_CH05	= /BIC/PZMAT_CH05	/BIC/ZMAT_CH05
/BIC/QZMAT_CH05	OBJVERS	= /BIC/PZMAT_CH05	OBJVERS

6. Follow the same procedure and view details of the P, Q, X, Y and T tables. The screenshots are shown below :

P table :

P table stores data for time independent attributes. In this case its Material group which is time independent navigation attribute and Material – Plant are primary keys.

Dictionary: Display Table



Transparent Table: /BIC/PZMAT_CH05 Active
Short Description: Master Data (Time-Ind.): Characteristic Material

Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

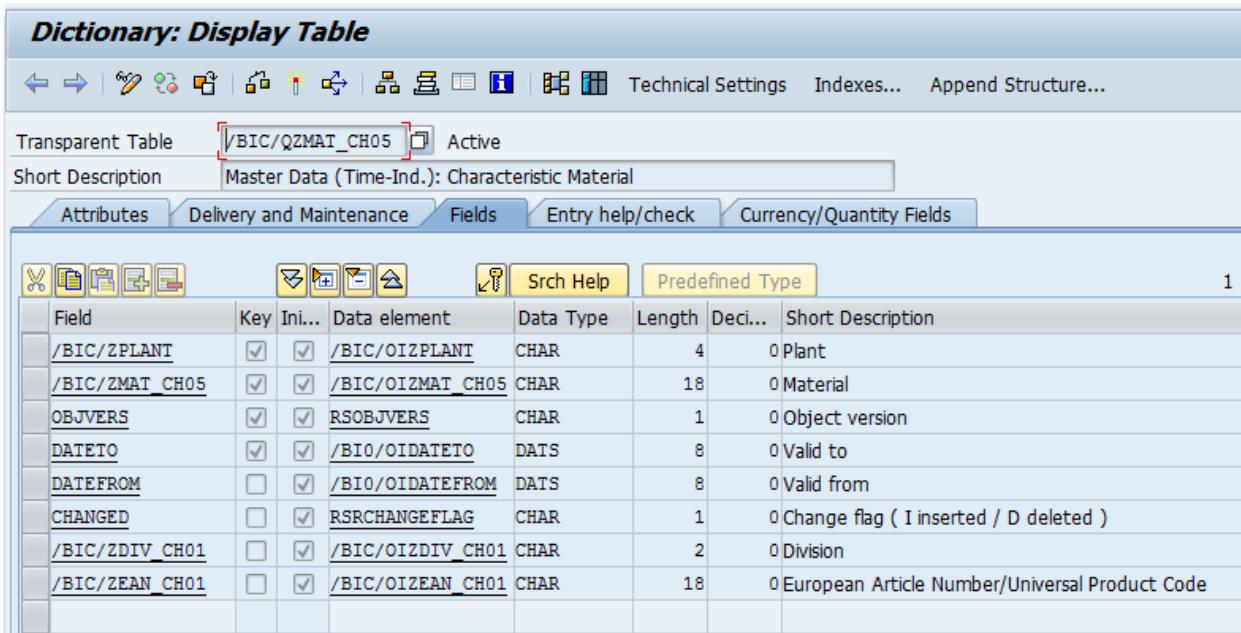
Field Key Ini... Data element Data Type Length Deci... Short Description

/BIC/ZPLANT			/BIC/OIZPLANT	CHAR	4	0	Plant
/BIC/ZMAT_CH05			/BIC/OIZMAT_CH05	CHAR	18	0	Material
OBJVERS			RSOBJVERS	CHAR	1	0	Object version
CHANGED			RSRCHANGEFLAG	CHAR	1	0	Change flag (I inserted / D deleted)
/BIC/ZMGR_CH14			/BIC/OIZMGR_CH14	CHAR	9	0	Material Group

Q table:

Q table stores data for time dependent attributes. In this case Division (navigation) and EAN (display attr) are time dependent attributes and Material – Plant are primary keys.

Dictionary: Display Table



Transparent Table: /BIC/QZMAT_CH05 Active
Short Description: Master Data (Time-Ind.): Characteristic Material

Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

Field Key Ini... Data element Data Type Length Deci... Short Description

/BIC/ZPLANT			/BIC/OIZPLANT	CHAR	4	0	Plant
/BIC/ZMAT_CH05			/BIC/OIZMAT_CH05	CHAR	18	0	Material
OBJVERS			RSOBJVERS	CHAR	1	0	Object version
DATETO			/B10/OIDATETO	DATS	8	0	Valid to
DATEFROM			/B10/OIDATEFROM	DATS	8	0	Valid from
CHANGED			RSRCHANGEFLAG	CHAR	1	0	Change flag (I inserted / D deleted)
/BIC/ZDIV_CH01			/BIC/OIZDIV_CH01	CHAR	2	0	Division
/BIC/ZEAN_CH01			/BIC/OIZEAN_CH01	CHAR	18	0	European Article Number/Universal Product Code

X table:

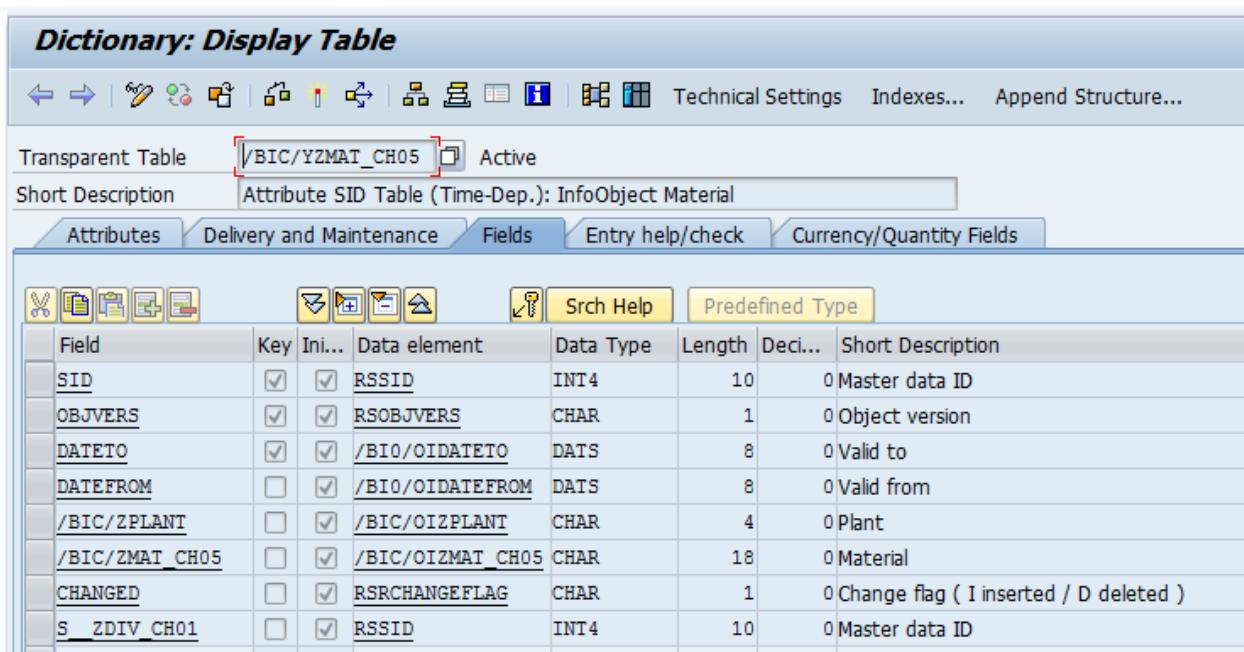
X table stores data for SID information of time independent navigation attributes. In this case it is Material Group. (S_ZMGR_CH14).

Dictionary: Display Table										
Technical Settings Indexes... Append Structure...										
Transparent Table		/BIC/XZMAT_CH05		Active						
Short Description						Attribute SID Table: InfoObject Material				
Attributes	Delivery and Maintenance	Fields	Entry help/check		Currency/Quantity Fields					
			Field	Key	Ini...	Data element	Data Type	Length	Deci...	Short Description
SID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID				INT4	10		0 Master data ID
OBJVERS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSOBJVERS				CHAR	1		0 Object version
/BIC/ZPLANT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/BIC/OIZPLANT				CHAR	4		0 Plant
/BIC/ZMAT_CH05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/BIC/OIZMAT_CH05				CHAR	18		0 Material
CHANGED	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RSRCHANGEFLAG				CHAR	1		0 Change flag (I inserted / D deleted)
S_ZMGR_CH14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID				INT4	10		0 Master data ID

Y table:

Y table stores data for SID information of time dependent navigation attributes. In this case it is Division. (S_ZDIV_CH01).

Dictionary: Display Table



Transparent Table: /BIC/Y2MAT_CH05 Active
Short Description: Attribute SID Table (Time-Dep.): InfoObject Material

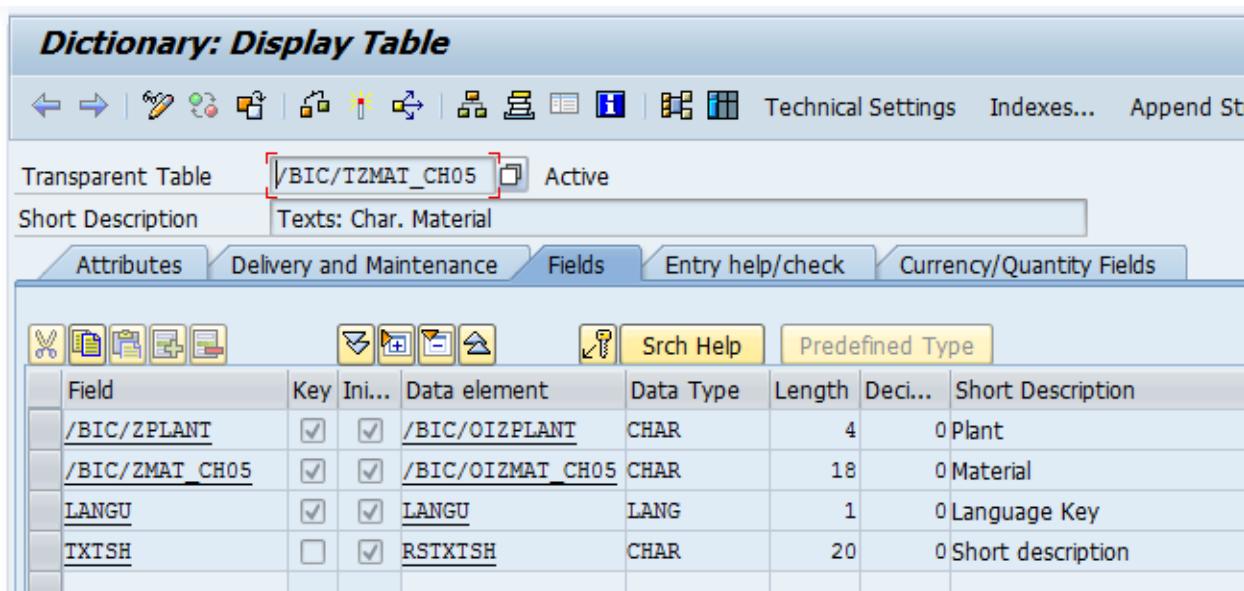
Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

Field	Key	In...	Data element	Data Type	Length	Deci...	Short Description
<u>SID</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>RSSID</u>	INT4	10	0	Master data ID
<u>OBJVERS</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>RSOBJVERS</u>	CHAR	1	0	Object version
<u>DATETO</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>/B10/OIDATETO</u>	DATS	8	0	Valid to
<u>DATEFROM</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>/B10/OIDATEFROM</u>	DATS	8	0	Valid from
<u>/BIC/ZPLANT</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>/BIC/OIZPLANT</u>	CHAR	4	0	Plant
<u>/BIC/ZMAT_CH05</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>/BIC/OIZMAT_CH05</u>	CHAR	18	0	Material
<u>CHANGED</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>RSRCHANGEFLAG</u>	CHAR	1	0	Change flag (I inserted / D deleted)
<u>S_ZDIV_CH01</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>RSSID</u>	INT4	10	0	Master data ID

T table:

Table stores short/medium/long text of the characteristic.

Dictionary: Display Table

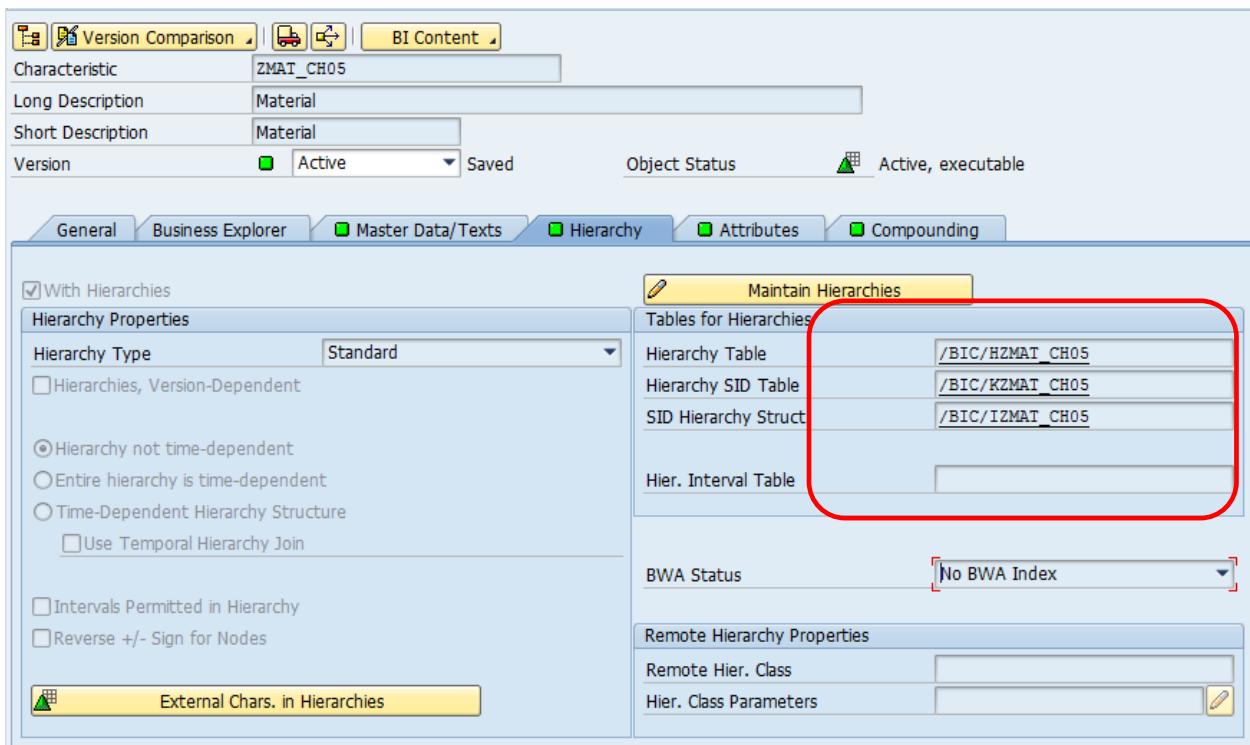


Transparent Table: /BIC/TZMAT_CH05 Active
Short Description: Texts: Char. Material

Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

Field	Key	In...	Data element	Data Type	Length	Deci...	Short Description
<u>/BIC/ZPLANT</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>/BIC/OIZPLANT</u>	CHAR	4	0	Plant
<u>/BIC/ZMAT_CH05</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>/BIC/OIZMAT_CH05</u>	CHAR	18	0	Material
<u>LANGU</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>LANGU</u>	LANG	1	0	Language Key
<u>TXTSH</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>RSTXTSH</u>	CHAR	20	0	Short description

7. Now, go to the "Hierarchy" tab. Here, we can see all the hierarchy tables.



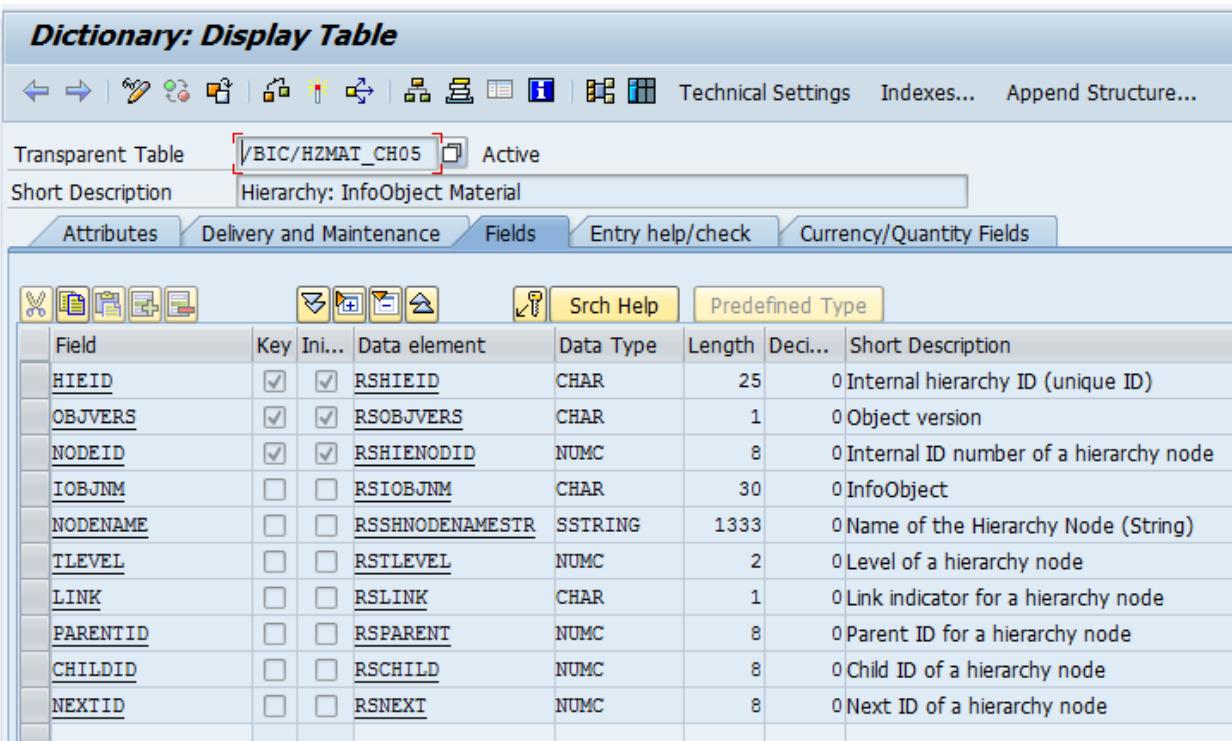
The screenshot shows the SAP BW 'Maintain Hierarchies' dialog box. At the top, there are tabs for General, Business Explorer, Master Data/Texts, Hierarchy, Attributes, and Compounding. The Hierarchy tab is selected. In the main area, there is a checkbox 'With Hierarchies' which is checked. Under 'Hierarchy Properties', the 'Hierarchy Type' is set to 'Standard'. There are several checkboxes: 'Hierarchies, Version-Dependent' (unchecked), 'Hierarchy not time-dependent' (selected), 'Entire hierarchy is time-dependent' (unchecked), 'Time-Dependent Hierarchy Structure' (unchecked), 'Use Temporal Hierarchy Join' (unchecked), 'Intervals Permitted in Hierarchy' (unchecked), and 'Reverse +/- Sign for Nodes' (unchecked). A button 'External Chars. in Hierarchies' is also present. On the right side, under 'Tables for Hierarchies', three tables are listed: 'Hierarchy Table' with value '/BIC/HZMAT_CH05', 'Hierarchy SID Table' with value '/BIC/KZMAT_CH05', and 'SID Hierarchy Struct' with value '/BIC/IZMAT_CH05'. These three entries are highlighted with a red box. Below this, there are sections for 'Hier. Interval Table', 'BWA Status' (set to 'No BWA Index'), and 'Remote Hierarchy Properties'.

8. Below are screenshots of the H, K, I and J hierarchy tables :

H table:

It is used to store the hierarchical relationships between characteristic values if external hierarchies are used for the characteristic.

Dictionary: Display Table



Transparent Table **/BIC/HZMAT_CH05** Active
Short Description Hierarchy: InfoObject Material

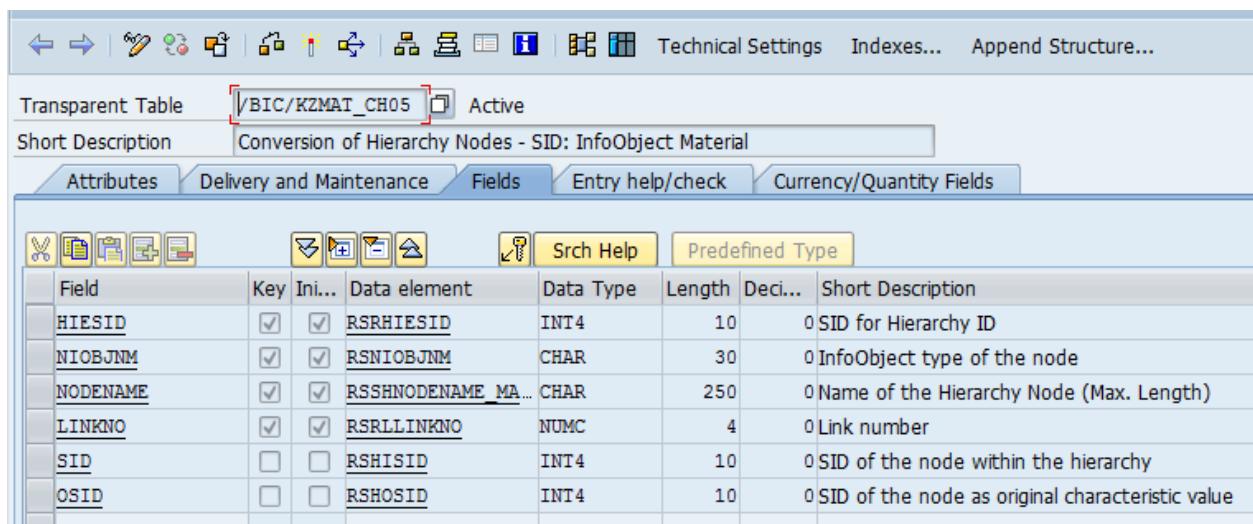
Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

Field Key Ini... Data element Data Type Length Deci... Short Description

HIEID			RSHIEID	CHAR	25	0	Internal hierarchy ID (unique ID)
OBJVERS			RSOBJVERS	CHAR	1	0	Object version
NODEID			RSHIENODID	NUMC	8	0	Internal ID number of a hierarchy node
IOBJNM			RSIOBJNM	CHAR	30	0	InfoObject
NODENAME			RSSHNODENAMESTR	SSTRING	1333	0	Name of the Hierarchy Node (String)
TLEVEL			RSTLEVEL	NUMC	2	0	Level of a hierarchy node
LINK			RSLINK	CHAR	1	0	Link indicator for a hierarchy node
PARENTID			RSPARENT	NUMC	8	0	Parent ID for a hierarchy node
CHILDid			RSCHILD	NUMC	8	0	Child ID of a hierarchy node
NEXTID			RSNEXT	NUMC	8	0	Next ID of a hierarchy node

K table:

It is hierarchy SID table. It stores SID's of hierarchy nodes.



Transparent Table **/BIC/KZMAT_CH05** Active
Short Description Conversion of Hierarchy Nodes - SID: InfoObject Material

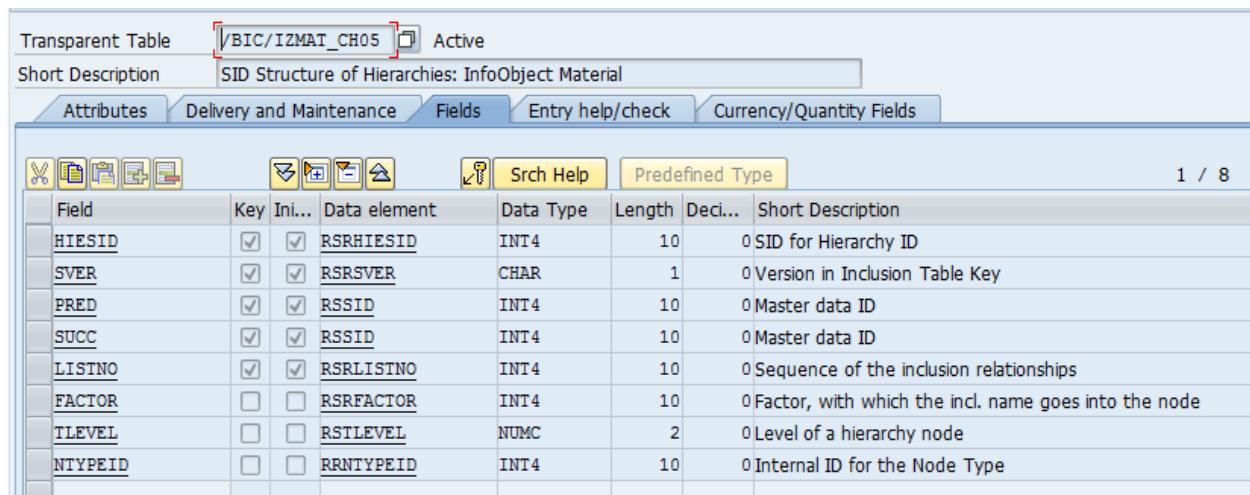
Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

Field Key Ini... Data element Data Type Length Deci... Short Description

HIESID			RSRHIESID	INT4	10	0	SID for Hierarchy ID
NIOBJNM			RSNIOBJNM	CHAR	30	0	InfoObject type of the node
NODENAME			RSSHNODENAME_MA...	CHAR	250	0	Name of the Hierarchy Node (Max. Length)
LINKNO			RSRLLINKNO	NUMC	4	0	Link number
SID			RSHISID	INT4	10	0	SID of the node within the hierarchy
OSID			RSHOSID	INT4	10	0	SID of the node as original characteristic value

I table:

It stores SID structure of hierarchies.



Field	Key	In...	Data element	Data Type	Length	Deci...	Short Description
HIESID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSRHIESID	INT4	10	0	SID for Hierarchy ID
SVER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSRSVER	CHAR	1	0	Version in Inclusion Table Key
PRED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10	0	Master data ID
SUCC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10	0	Master data ID
LISTNO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSRLISTNO	INT4	10	0	Sequence of the inclusion relationships
FACTOR	<input type="checkbox"/>	<input type="checkbox"/>	RSRFACTOR	INT4	10	0	Factor, with which the incl. name goes into the node
TLEVEL	<input type="checkbox"/>	<input type="checkbox"/>	RSTLEVEL	NUMC	2	0	Level of a hierarchy node
NTYPEDID	<input type="checkbox"/>	<input type="checkbox"/>	RRNTPEDID	INT4	10	0	Internal ID for the Node Type

J table:

It is hierarchy internal table that stores interval values in case hierarchy intervals are permitted in the hierarchy.

Summary –

List of table names:

Table	Description

/BI*/P<INFOOBJECTNAME>	Stores values of Time Independent Attributes	
/BI*/Q<INFOOBJECTNAME>	Stores Values of Time Dependent Attributes	
/BI*/T<INFOOBJECTNAME>	Stores Time Independent and Time Dependent Texts	
/BI*/X<INFOOBECTNAME>	Stores the SID Values for Time Independent Navigation Attributes (P is linked to the X table)	
/BI*/Y<INFOBJECTNAME>	Stores the SID Values for Time Dependent Navigation Attributes (Q is linked to the Y table)	
/BI*/S<INFOBJECTNAME>	Stores the SID Values for Characteristic Key Values found in the P, Q or T table	
/BI*/M<INFOOBJECTNAME>	A Database View defined as the Union of Time Dependant(Q table) and Time Independent (P table)Master Data Attributes	
/BI*/H<INFOOBJECTNAME>	Hierarchy table	
/BI*/J<INFOBJECTNAME>	Hierarchy interval table	
/BI*/K<INFOBJECTNAME>	Hierarchy SID table	
/BI*/I<INFOBJECTNAME>	SID Hierarchy structure	

Conclusion:

We learnt significance of various attribute master data tables like P, Q, X, Y text master data table T and hierarchy table J, K, I, H in BW.

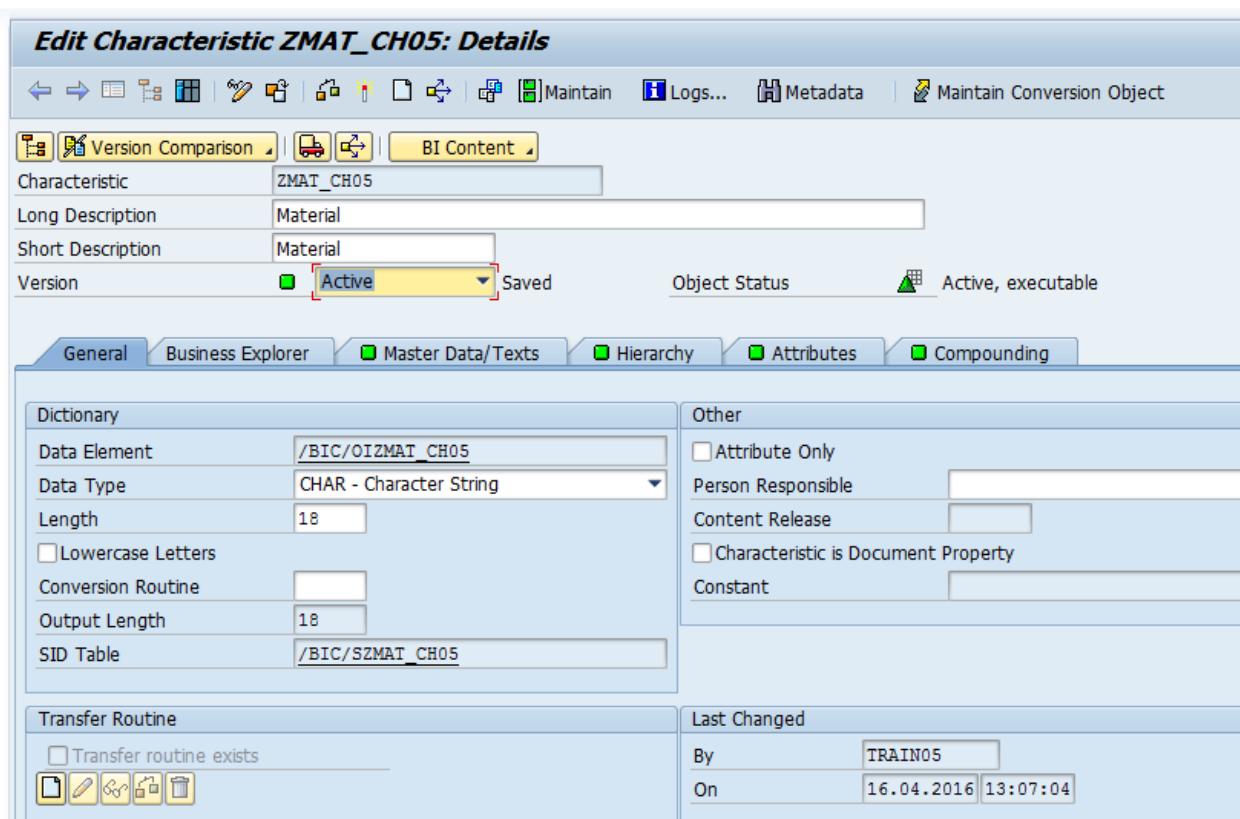
Creating Hierarchy for Characteristic

Use:

This document shows how to manually create Hierarchy for any Characteristic. Given here is the example of Material – Material Group Hierarchy.

Procedure:

Step 1: Go to T-code – RSD1 and select the characteristic for which you need to create a hierarchy and Click on **Maintain** Button.



Edit Characteristic ZMAT_CH05: Details

Characteristic: ZMAT_CH05
Long Description: Material
Short Description: Material
Version: Active (highlighted)
Object Status: Active, executable

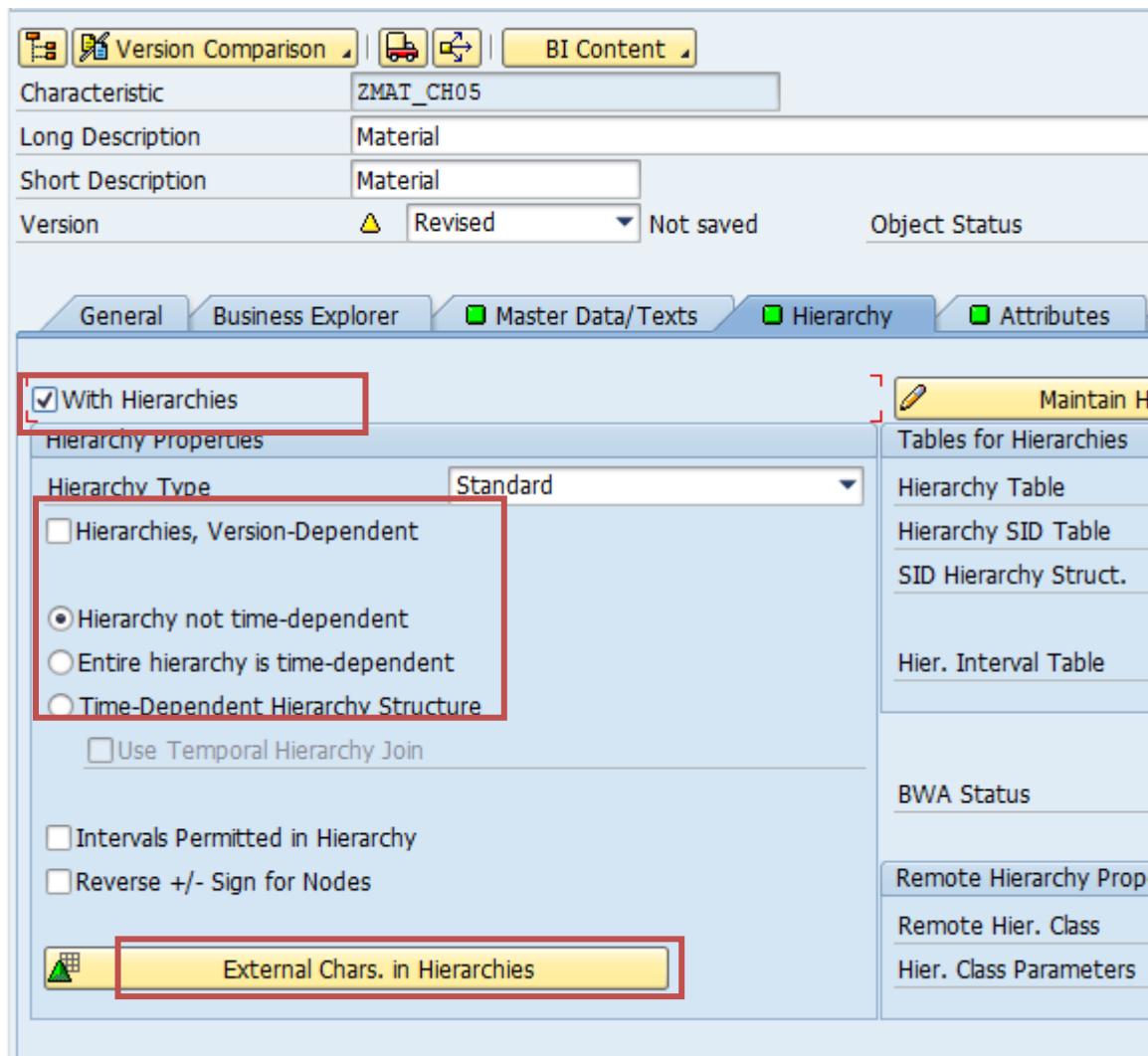
General Business Explorer Master Data/Texts Hierarchy Attributes Compounding

Dictionary	Other
Data Element: /BIC/OIZMAT_CH05 Data Type: CHAR - Character String Length: 18 <input type="checkbox"/> Lowercase Letters Conversion Routine: Output Length: 18 SID Table: /BIC/SZMAT_CH05	<input type="checkbox"/> Attribute Only Person Responsible: Content Release: <input type="checkbox"/> Characteristic is Document Property Constant:
Transfer Routine	Last Changed
<input type="checkbox"/> Transfer routine exists 	By: TRAIN05 On: 16.04.2016 13:07:04

Step 2: Go to Hierarchy Tab

Step 3:

1. Select the check box – **with Hierarchy**.
2. Select the type of hierarchy you want to create from the Radio Buttons given below – **Hierarchy not time-dependent**.



The screenshot shows the SAP BI Content interface for maintaining hierarchies. The top navigation bar includes 'Version Comparison', 'BI Content' (selected), and 'Object Status'. Below this, there are fields for 'Characteristic' (ZMAT_CH05), 'Long Description' (Material), and 'Short Description' (Material). The 'Version' field shows 'Revised' with a warning icon and 'Not saved'. The 'Hierarchy' tab is active.

In the main area, under 'Hierarchy Properties', the 'With Hierarchies' checkbox is checked. The 'Hierarchy Type' dropdown is set to 'Standard'. The 'Hierarchy not time-dependent' radio button is selected, while 'Hierarchies, Version-Dependent' and 'Entire hierarchy is time-dependent' are unselected. The 'Time-Dependent Hierarchy Structure' checkbox is also unselected. A note below states: 'Hierarchies can be created for characteristics that have been defined as time-dependent or time-independent.' The 'Use Temporal Hierarchy Join' checkbox is unselected.

On the right side, there is a sidebar titled 'Maintain H' with sections for 'Tables for Hierarchies' (Hierarchy Table, Hierarchy SID Table, SID Hierarchy Struct.), 'Hier. Interval Table', 'BWA Status', 'Remote Hierarchy Prop.', 'Remote Hier. Class', and 'Hier. Class Parameters'. The 'External Chars. in Hierarchies' button is highlighted with a red box.

Step 4: Click on **External Chars. In Hierarchies** Button. You will get a popup to select the characteristic which you need to include in the hierarchy.

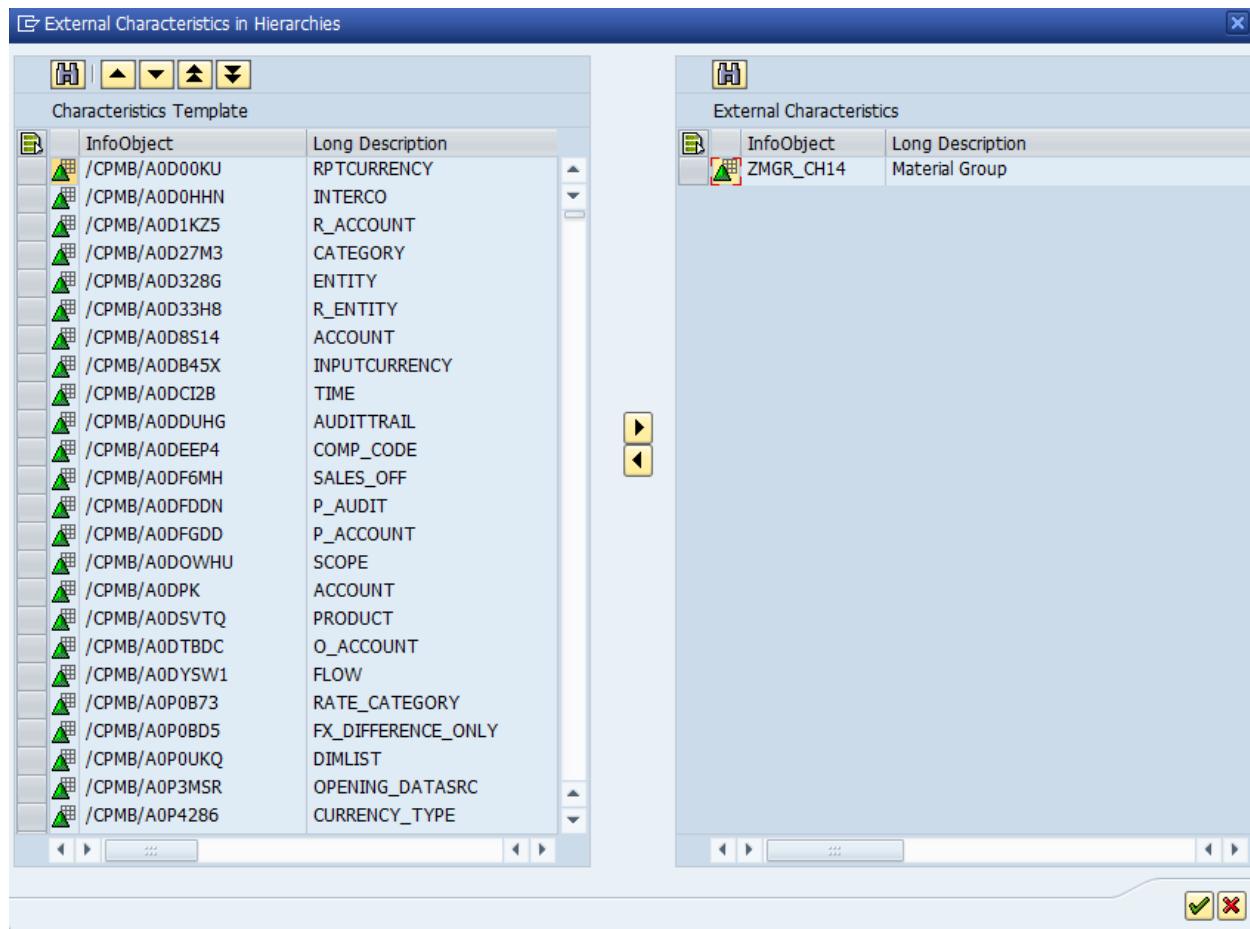
External Characteristics in Hierarchies

H	InfoObject	Long Description
	/CPMB/A0D00...	RPTCURRENCY
	/CPMB/A0D0H...	INTERCO
	/CPMB/A0D1KZ5	R_ACCOUNT
	/CPMB/A0D27...	CATEGORY
	/CPMB/A0D32...	ENTITY
	/CPMB/A0D33...	R_ENTITY
	/CPMB/A0D8S14	ACCOUNT
	/CPMB/A0DB45X	INPUTCURRENCY
	/CPMB/A0DCI2B	TIME
	/CPMB/A0DDU...	AUDITTRAIL
	/CPMB/A0DEEP4	COMP_CODE
	/CPMB/A0DF6...	SALES_OFF
	/CPMB/A0DFD...	P_AUDIT
	/CPMB/A0DFG...	P_ACCOUNT
	/CPMB/A0DO...	SCOPE
	/CPMB/A0DPK	ACCOUNT
	/CPMB/A0DSV...	PRODUCT
	/CPMB/A0DTB...	O_ACCOUNT
	/CPMB/A0DYS...	FLOW
	/CPMB/A0P0B73	RATE_CATEGORY
	/CPMB/A0P0BD5	FX_DIFFERENCE_ONLY
	/CPMB/A0POU...	DIMLIST
	/CPMB/A0P3M...	OPENING_DATASRC
	/CPMB/A0P4286	CURRENCY_TYPE

External Characteristics

InfoObject	Long Description

Select the characteristic info-object from the given list. And then enter Continue



Step 5: Then, Check, Save and Activate the Characteristic. You will see the tables automatically get created for hierarchy.

Edit Characteristic ZMAT_CH05: Details

Characteristic: ZMAT_CH05
Long Description: Material
Short Description: Material
Version: Active, Saved
Object Status: Active, executable

General Business Explorer Master Data/Texts Hierarchy Attributes Compounding

With Hierarchies

Hierarchy Properties

Hierarchy Type: Standard
 Hierarchies, Version-Dependent
 Hierarchy not time-dependent
 Entire hierarchy is time-dependent
 Time-Dependent Hierarchy Structure
 Use Temporal Hierarchy Join
 Intervals Permitted in Hierarchy
 Reverse +/- Sign for Nodes

Maintain Hierarchies

Tables for Hierarchies

Hierarchy Table: /BIC/H2MAT_CH05
Hierarchy SID Table: /BIC/K2MAT_CH05
SID Hierarchy Struct.: /BIC/I2MAT_CH05
Hier. Interval Table:

BWA Status: No BWA Index

Remote Hierarchy Properties

Remote Hier. Class:
Hier. Class Parameters:

External Chars. in Hierarchies

Step 6: Then click on **Maintain Hierarchy** Button on the same screen. The below is the initial screen.

Initial Screen Hierarchy Maintenance

Activate

With Hierarchy Basic Char.: ZMAT_CH05



Short Description Name of a hierarchy InfoObject V Ver Valid from To R...

Click on the Create Button given besides the Characteristic Name. You will get a popup screen to fill in the details.

Create Hierarchy

Hierarchy	InfoObject	Material
	Hierarchy Name	<input type="text" value="Mat-Mat Grp Hierarchy"/>
Description	Short Description	<input checked="" type="checkbox"/>
	Medium Description	<input type="text"/>
	Long Description	<input type="text"/>

With Hierarchy Basic Char. ZMAT_CH05

Short Description	Name of a hierarchy	InfoObject	V Ver	Valid from	To	R...	
Mat-Mat Grp Hierarchy	MATERIAL - MATERIAL GRP	ZMAT_CH05	M		31.12.9999	<input type="checkbox"/>	

Step 7: Create Text Node

Hierarchy 'Mat-Mat Grp Hierarchy' Change: 'Modified Version'

Maintain Level	Hierarchy Attributes												
<input checked="" type="checkbox"/> Text Node	<input type="checkbox"/> Characteristic Nodes	<input type="checkbox"/> 'Material'	<input type="checkbox"/> Interval	<input type="checkbox"/>									
Mat-Mat Grp Hierarchy	InfoObject	Node Name	L...										

Create Text Nodes:

InfoObject	Hierarchy Nodes
Hierarchy Nodes	Material Grp 1
Short description	Mat Grp 1
Medium description	Mat Grp 1
Long description	Mat Grp 1

Step 8: Then Click on **Characteristic Node** – which will be the Parent Node. Select the characteristic – Material Grp in the popup screen, and then select 1 material group value from the given master data values.

Hierarchy 'Mat-Mat Grp Hierarchy' Change: 'Modified Version'



Create Characteristic Node: Characteristic Selection

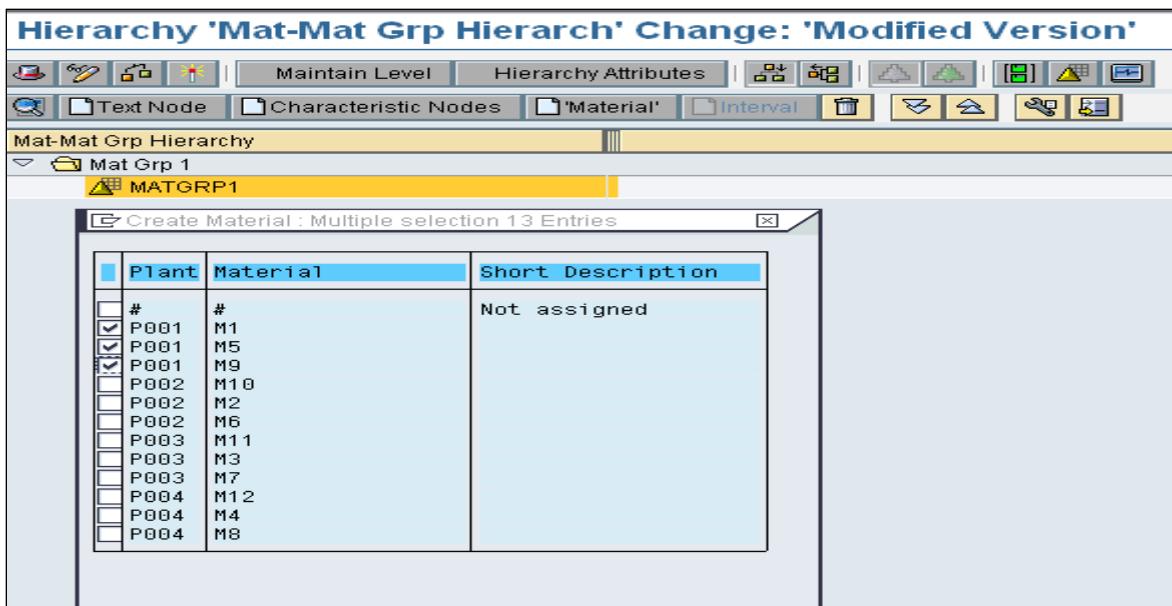
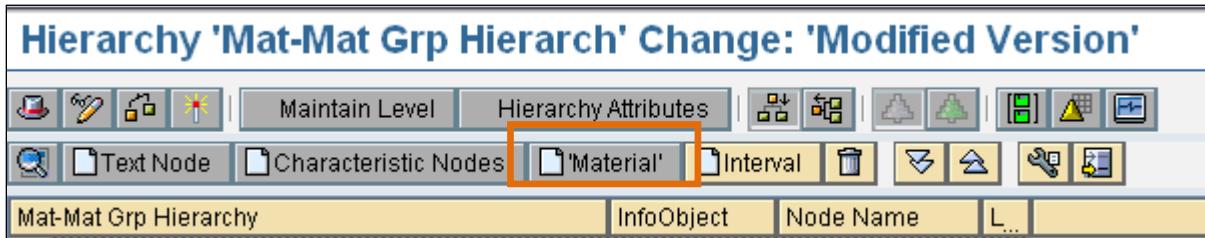
InfoObject	ZMGR_CH14	<input type="button" value=""/>
------------	-----------	---------------------------------

Create Material Group : Multiple selection 6 Entries

Material G	Short Description
#	Not assigned
ABC	
<input checked="" type="checkbox"/> MATGRP1	
<input type="checkbox"/> MATGRP2	
<input type="checkbox"/> MATGRP3	
<input type="checkbox"/> MATGRP4	

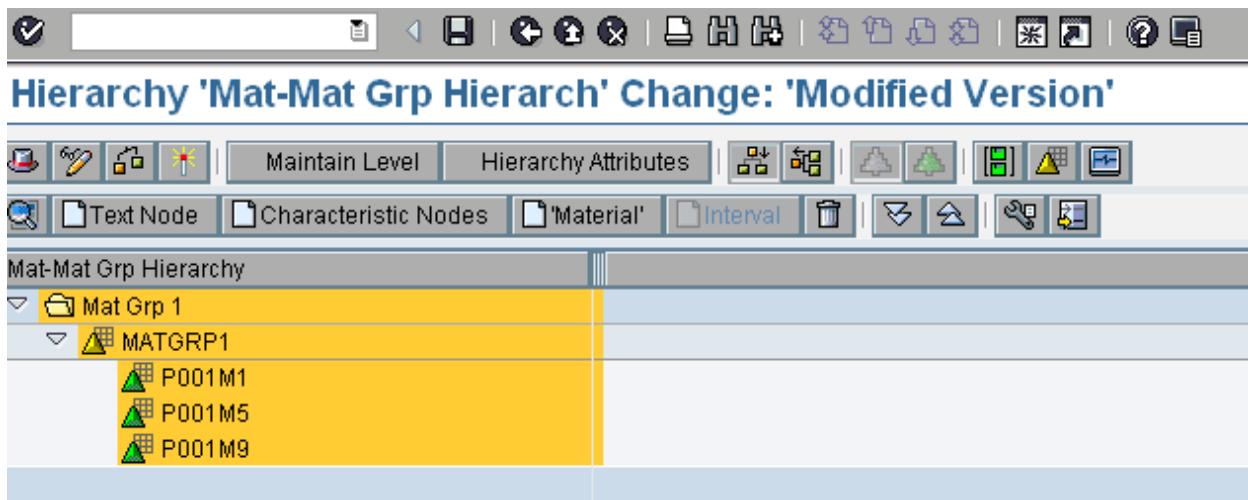
     

Step 9: Select MATGRP1 Node and then click on **Create Material** Button. Select the materials that need to be inserted under the material group 1 node.



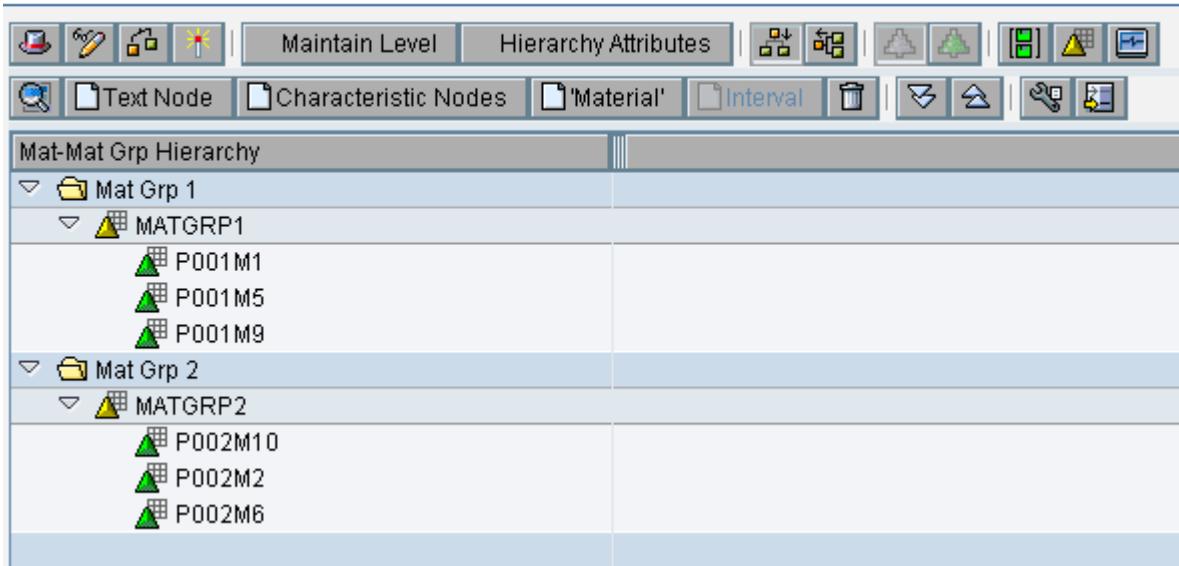
Step 10: Check, Save and Activate the Hierarchy.

This is how it looks – the parent and child nodes.



Follow the same process to create the further text nodes – and parent / child nodes.

Hierarchy 'Mat-Mat Grp Hierarchy' Change: 'Modified Version'



Conclusion:

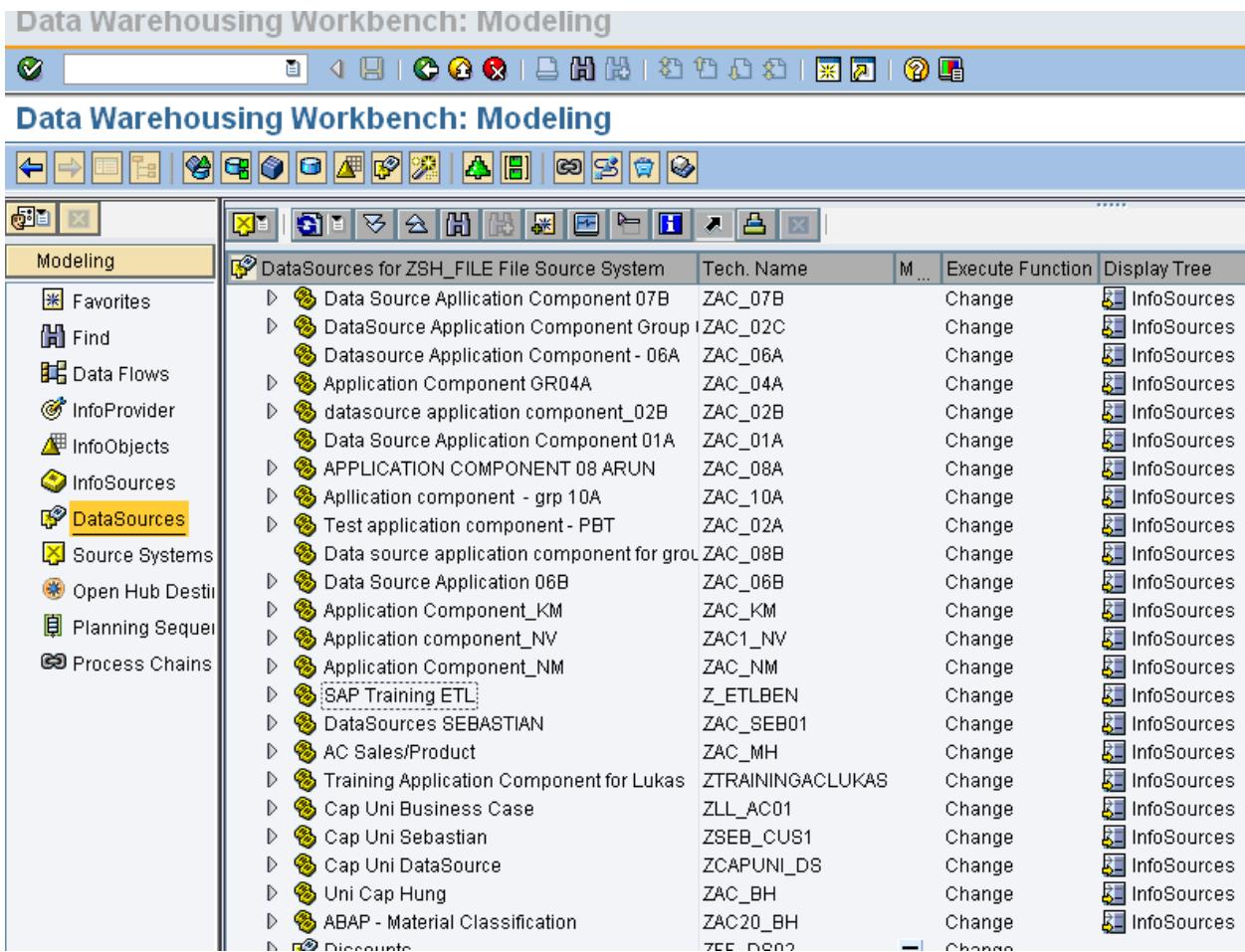
We saw how to create a simple hierarchy using Material group and Material characteristics **manually**. You can also use T-Code – RSH1 for creating Hierarchies. There is another way to create hierarchies such extracting hierarchy from ECC or Flat file source system.

5.2 Creation of Datasources- Attribute Data

Use: You can load data from flat files (CSV) into BW Info Object attributes using flat file datasource.

Procedure:

1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.

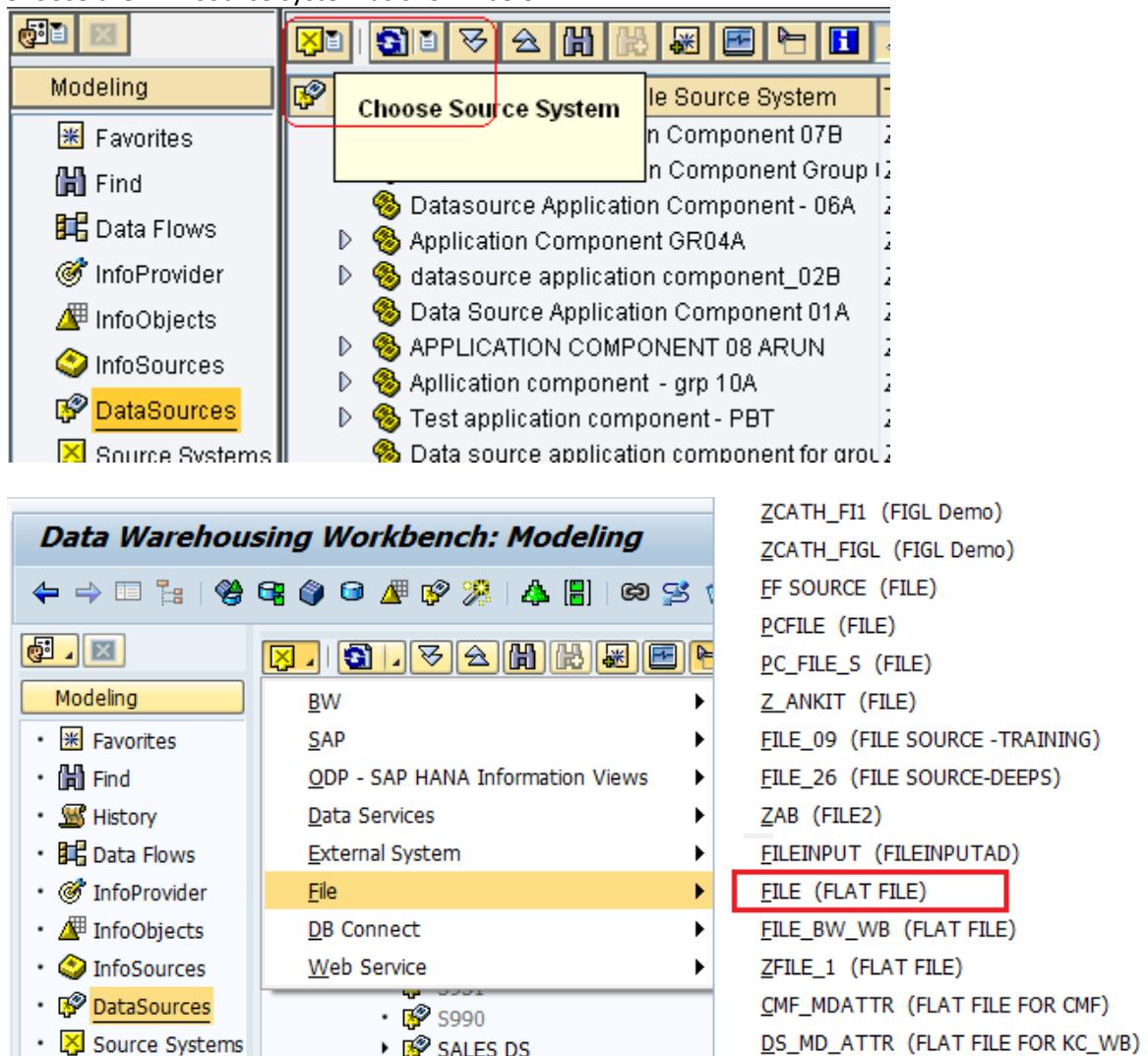


	Tech. Name	M...	Execute Function	Display Tree
▶ Data Source Application Component 07B	ZAC_07B		Change	
▶ Data Source Application Component Group 02C	ZAC_02C		Change	
▶ Datasource Application Component - 06A	ZAC_06A		Change	
▶ Application Component GR04A	ZAC_04A		Change	
▶ datasource application component_02B	ZAC_02B		Change	
▶ Data Source Application Component 01A	ZAC_01A		Change	
▶ APPLICATION COMPONENT 08 ARUN	ZAC_08A		Change	
▶ Application component - grp 10A	ZAC_10A		Change	
▶ Test application component - PBT	ZAC_02A		Change	
▶ Data source application component for gro1	ZAC_08B		Change	
▶ Data Source Application 06B	ZAC_06B		Change	
▶ Application Component_KM	ZAC_KM		Change	
▶ Application component_NV	ZAC1_NV		Change	
▶ Application Component_NM	ZAC_NM		Change	
▶ SAP Training ETL	Z_ETLBEN		Change	
▶ DataSources SEBASTIAN	ZAC_SEB01		Change	
▶ AC Sales/Product	ZAC_MH		Change	
▶ Training Application Component for Lukas	ZTRAININGACLUKAS		Change	
▶ Cap Uni Business Case	ZLL_AC01		Change	
▶ Cap Uni Sebastian	ZSEB_CUS1		Change	
▶ Cap Uni DataSource	ZCAPUNI_DS		Change	
▶ Uni Cap Hung	ZAC_BH		Change	
▶ ABAP - Material Classification	ZAC20_BH		Change	
▶ Discounts	ZEE_DIS02		Change	

1. Various functional areas are displayed at the left in the Data Warehousing Workbench.
In the functional area *Modeling* you can display different views on the objects used in

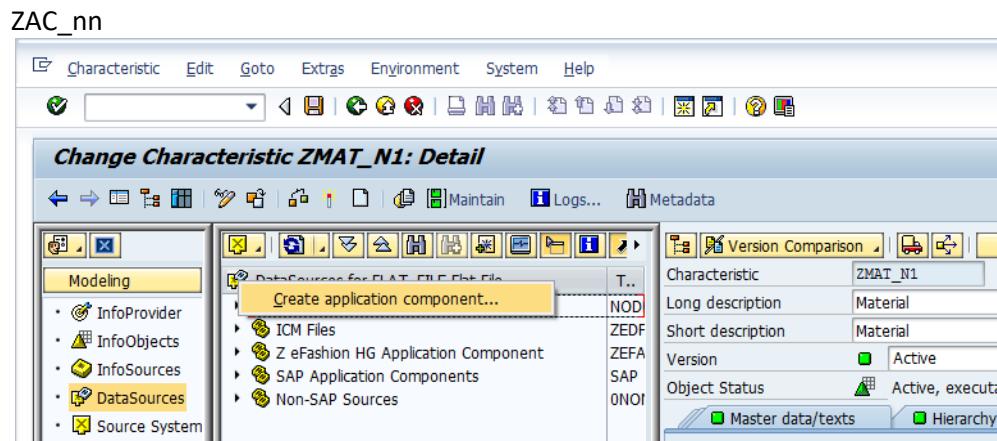
the Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree.

2. Under modeling, choose  **Datasources**. All the application components for the respective source systems are displayed.
3. Choose the FILE source system as shown below.



The screenshots illustrate the process of selecting a source system in the SAP Data Warehousing Workbench. In the top screenshot, the 'Choose Source System' dialog is open, showing a list of available components under the heading 'Available Source System'. The 'FILE' component is highlighted. In the bottom screenshot, the main modeling interface shows the 'File' source system selected in the tree view, and the specific 'FILE (FLAT FILE)' component is highlighted with a red box.

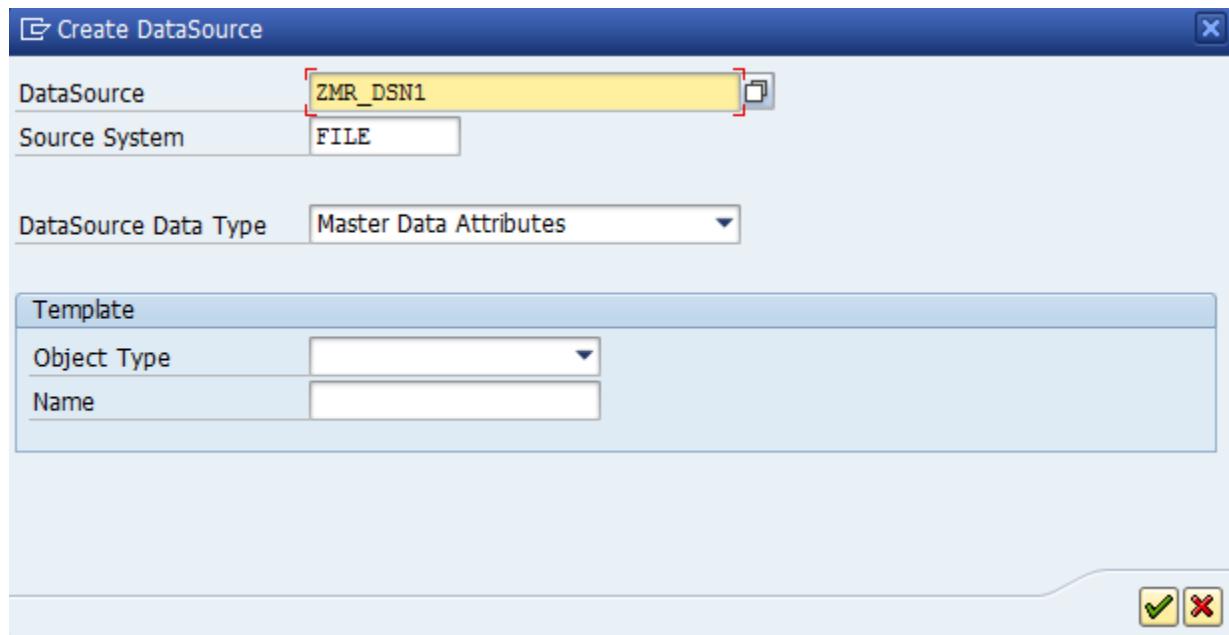
4. Create the Application component in “Data Sources”
From the context menu of Data Sources, Select “Create Application Component”



5. Right Click on the application component ZAC_nn and click on Create datasource.

DataSources for FILE FLAT FILE	Tech. Name	M..	Execute
APP COMPO FOR PROJECT E	ZAC_PROJE		Replicate
Datasource App Content	ZAC_NNN		Replicate
app comp	ZABC_10		Replicate
test application component demo	ZMKA_TEST_APPC...		Replicate
Insurance	ZINS11		Replicate
MCT Assignment 1	ZA1_APPC		Replicate
App Component for 71	ZAC_71		Replicate
zac tko	ZAC_TKO		Replicate
App. Component	ZAC_11PD		Replicate
App. component	ZAC_88		Replicate
· Change	C_H11	=	Change
· Delete	C_HR11	=	Change
· Create Application Component...	C_108	=	Change
· Create DataSource...	IAT_DS108	=	Change
· MATERIAL MASTER	IR_DS408	=	Change
· MATERIAL MASTER	MATERIALMASTER...	#	Change
	ZAC_213	#	Change

6. Following window will open up and then enter the datasource name and 'data type of the Datasource' that you want to create. In this case datasource name is ZMR_DSnn and the type of data source is 'Master Data Attributes'. The source system will be populated automatically



7. Fill the Short medium and long description on the 'General Info.' Tab.

General Info.		Extraction	Proposal	Fields	Preview
General Properties					
Short Description	Material Master				
Medium Description	Material Master				
Long Description	Material Master				
Application Comp.	ZAC_88	App component			
Last changed by	KELYANG	Changed on	01.10.2015 / 12:18:50		
<input type="checkbox"/> DS for Data Reconciliation	<input type="checkbox"/> Data is Language-Dependent				
<input type="checkbox"/> PSA in CHAR Format	<input type="checkbox"/> Data is Time-Dependent				
<input type="checkbox"/> PSA as extended table					
<input type="checkbox"/> Opening Balance					
Delivery of Duplicate Data Recs.	Undefined				

8. Go to the extraction tab
 - a. Set Adapter value as 'Load text-type from local workstation'.
 - b. Give the file location that you want to upload in the File Name section.
 - c. put '1' in the Header rows to be ignored field as this will ignore the 1 row in the flat file and load the rest.
 - d. Change the data format field to 'Separated with a separator'.
 - e. Enter comma (,) as the data separator.

SAP BusinessObjects Data Integration

General Info. Extraction Proposal Fields Preview

Delta Process: Delta only using full upload (DSO or InfoPackage selection)

Direct Access: No DTPs Allowed For Direct Access

Real Time: Real-Time Data Acquisition Is Not Supported

Adapter: Load Text-Type File from Local Workstation

File Name: D:\Users\kelyang\Desktop\1. Hands-On Exercises\Da...

Header Rows to be Ignored: 1

Character Set Settings: Default Setting

System Codepage: 4103 UTF-16LE Unicode / ISO/IEC 10646

Data Format: Separated with Separator (for Example, CSV)

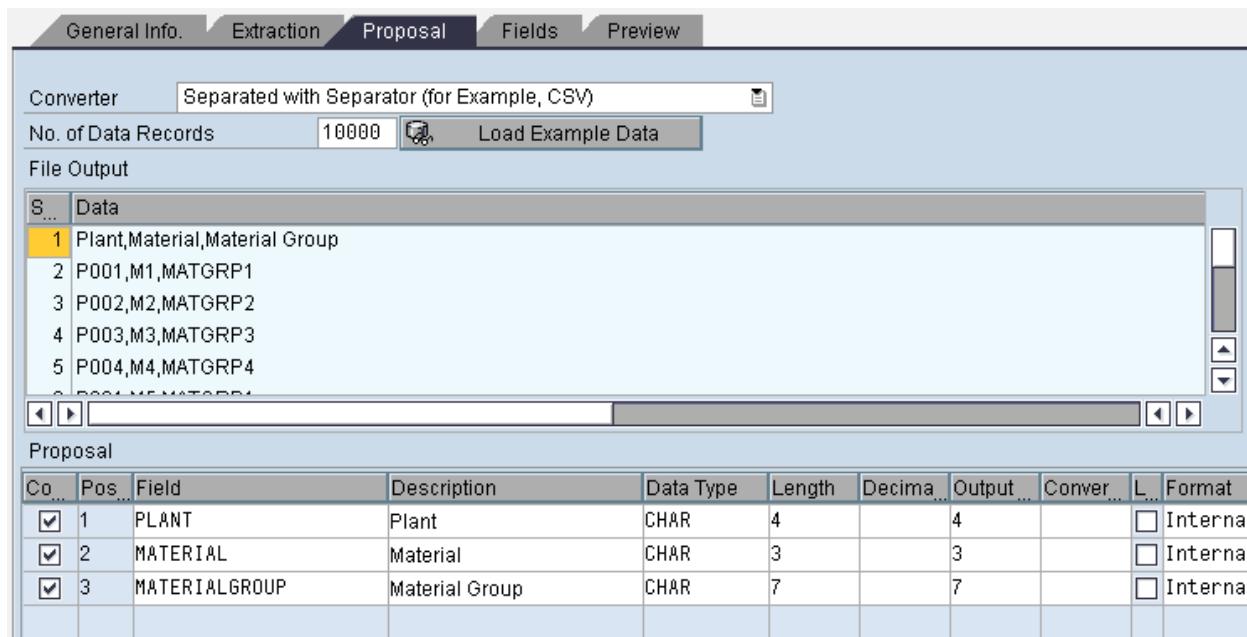
Data Separator: , Hex

Escape Sign: " Hex

Convers. Lang.: User Master Record

Number Format: User Master Record

9. Go to the proposals tab and click on Load Example data. Following screen will be displayed with the Data types and other details in the proposal area.



The screenshot shows the SAP BW Data Preview dialog. The top navigation bar includes tabs for General Info., Extraction, Proposal, Fields, and Preview. The 'Fields' tab is selected.

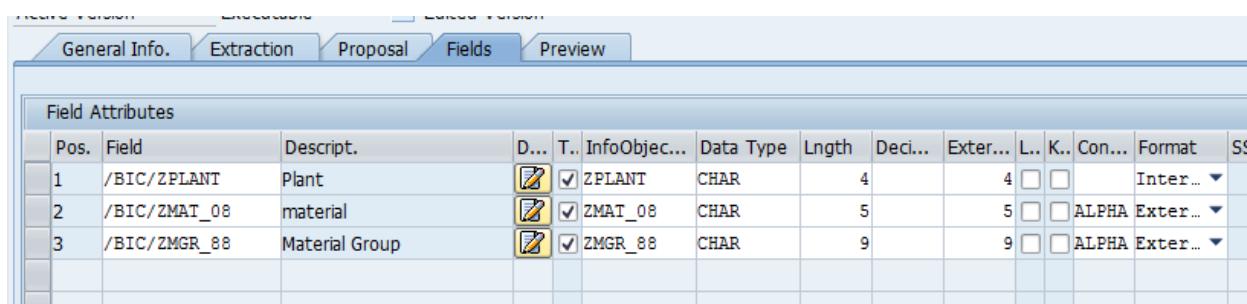
Data Tab: Shows a list of data records separated by commas. The first record is highlighted in yellow.

1	Plant,Material,Material Group
2	P001,M1,MATGRP1
3	P002,M2,MATGRP2
4	P003,M3,MATGRP3
5	P004,M4,MATGRP4
6	P001,M1,MATGRP1

Proposal Tab: Shows the mapping configuration for the fields.

Co...	Pos...	Field	Description	Data Type	Length	Decima...	Output ...	Conver...	L...	Format
<input checked="" type="checkbox"/>	1	PLANT	Plant	CHAR	4		4		<input type="checkbox"/>	Internal
<input checked="" type="checkbox"/>	2	MATERIAL	Material	CHAR	3		3		<input type="checkbox"/>	Internal
<input checked="" type="checkbox"/>	3	MATERIALGROUP	Material Group	CHAR	7		7		<input type="checkbox"/>	Internal

10. Click on the Fields tab and enter info objects ZPLANT , ZMAT_nn and ZMGR_nn for the fields 1,2 and 3 and press enter.

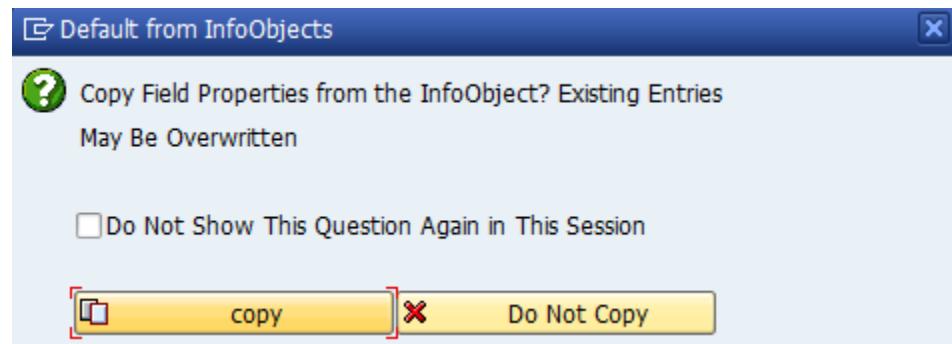


The screenshot shows the SAP BW Field Attributes dialog. The top navigation bar includes tabs for General Info., Extraction, Proposal, Fields, and Preview. The 'Fields' tab is selected.

Field Attributes Table:

Pos.	Field	Descript.	D...	T...	InfoObjec...	Data Type	Lnghth	Deci...	Exter...	L...	K...	Con...	Format	SS
1	/BIC/ZPLANT	Plant		<input checked="" type="checkbox"/>	ZPLANT	CHAR	4		4	<input type="checkbox"/>	<input type="checkbox"/>		Internal	▼
2	/BIC/ZMAT_08	material		<input checked="" type="checkbox"/>	ZMAT_08	CHAR	5		5	<input type="checkbox"/>	<input type="checkbox"/>	ALPHA	External	▼
3	/BIC/ZMGR_88	Material Group		<input checked="" type="checkbox"/>	ZMGR_88	CHAR	9		9	<input type="checkbox"/>	<input type="checkbox"/>	ALPHA	External	▼

11. Click on copy in the subsequent pop up.



12. Click on activate to activate the datasource.



13. Click on Preview tab and then read preview data.

			General Info.	Extraction	Proposal	Fields	Preview
			No. of Data Records	10000		Read Preview Data	
Plant	Material	Material Group					
P001	M1	MATGRP1					
P002	M2	MATGRP2					
P003	M3	MATGRP3					
P004	M4	MATGRP4					
P001	M5	MATGRP1					
P002	M6	MATGRP2					
P003	M7	MATGRP3					
P004	M8	MATGRP4					
P001	M9	MATGRP1					
P002	M10	MATGRP2					
P003	M11	MATGRP3					
P004	M12	MATGRP4					

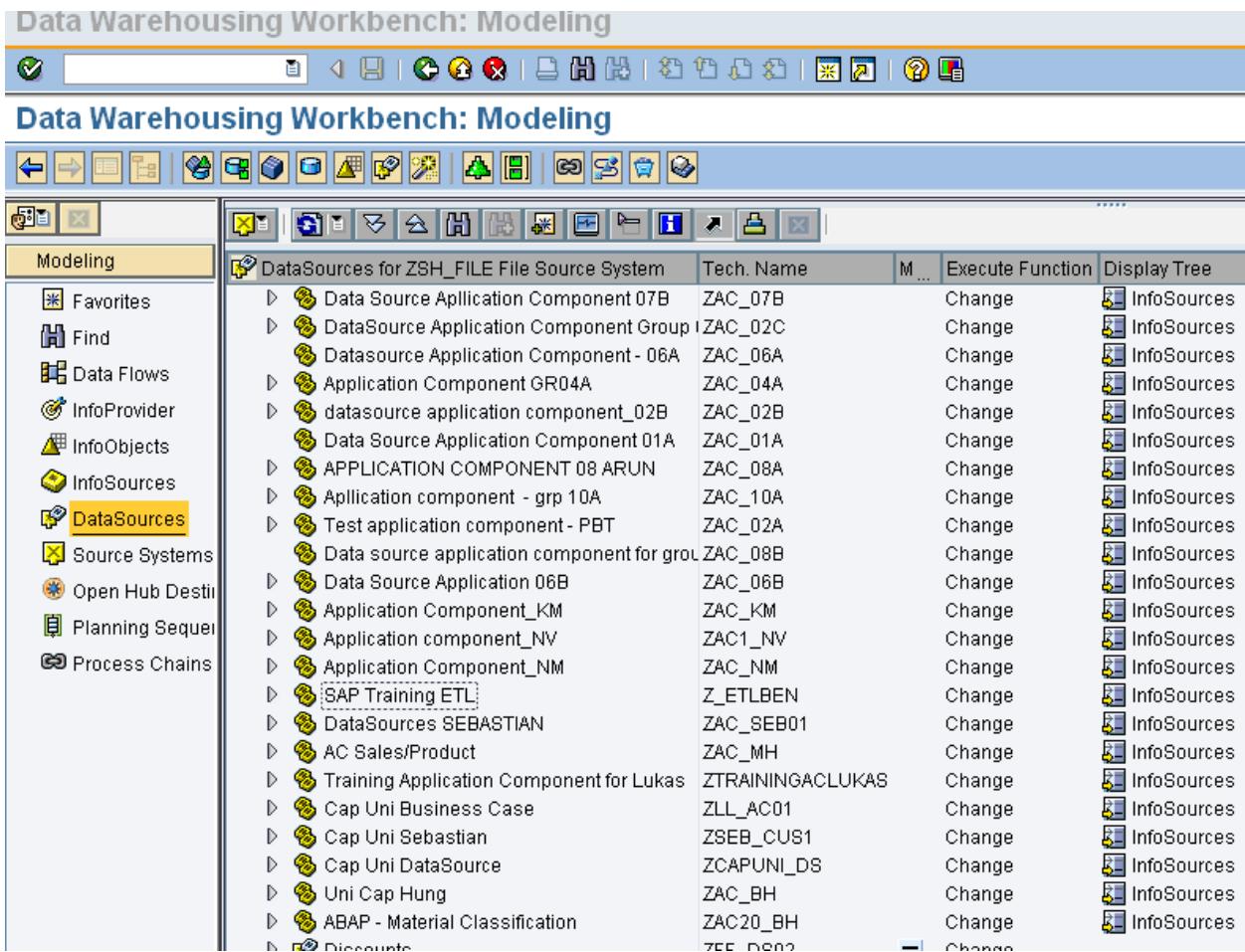
Conclusion: Datasource of type master data is created

5.2 Creation of Datasources- Text Data

Use: You can load data from flat files (CSV) into BW Info Object text using flat file datasource.

Procedure:

1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.

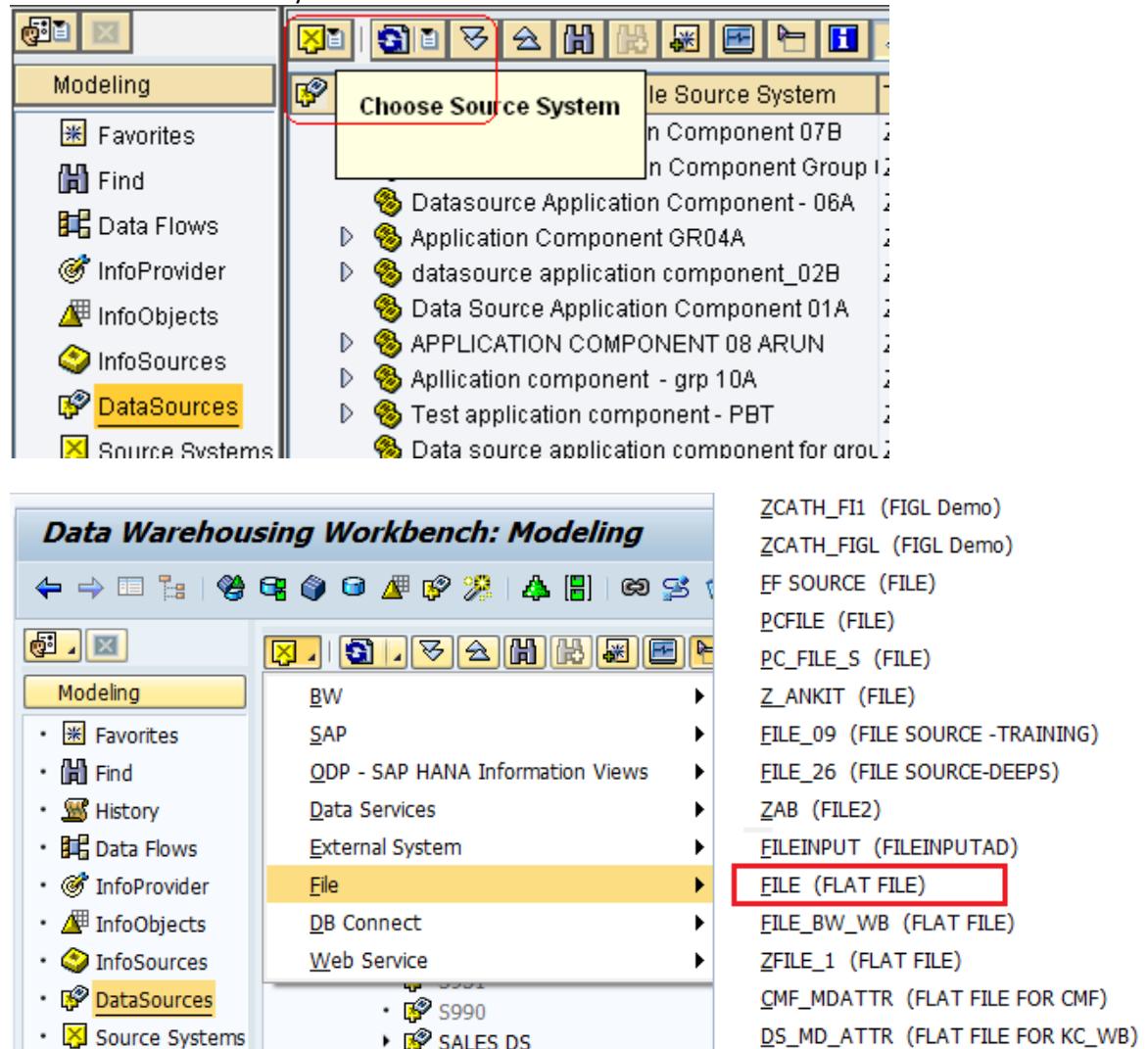


Name	Tech. Name	Execute Function	Display Tree
Data Source Application Component 07B	ZAC_07B	Change	InfoSources
DataSource Application Component Group 02C	ZAC_02C	Change	InfoSources
Datasource Application Component - 06A	ZAC_06A	Change	InfoSources
Application Component GR04A	ZAC_04A	Change	InfoSources
datasource application component_02B	ZAC_02B	Change	InfoSources
Data Source Application Component 01A	ZAC_01A	Change	InfoSources
APPLICATION COMPONENT 08 ARUN	ZAC_08A	Change	InfoSources
Application component - grp 10A	ZAC_10A	Change	InfoSources
Test application component - PBT	ZAC_02A	Change	InfoSources
Data source application component for gro1	ZAC_08B	Change	InfoSources
Data Source Application 06B	ZAC_06B	Change	InfoSources
Application Component_KM	ZAC_KM	Change	InfoSources
Application component_NV	ZAC1_NV	Change	InfoSources
Application Component_NM	ZAC_NM	Change	InfoSources
SAP Training ETL	Z_ETLBEN	Change	InfoSources
DataSources SEBASTIAN	ZAC_SEB01	Change	InfoSources
AC Sales/Product	ZAC_MH	Change	InfoSources
Training Application Component for Lukas	ZTRAININGACLUKAS	Change	InfoSources
Cap Uni Business Case	ZLL_AC01	Change	InfoSources
Cap Uni Sebastian	ZSEB_CUS1	Change	InfoSources
Cap Uni DataSource	ZCAPUNI_DS	Change	InfoSources
Uni Cap Hung	ZAC_BH	Change	InfoSources
ABAP - Material Classification	ZAC20_BH	Change	InfoSources
Discounts	ZEE_DIS02	Change	InfoSources

3. Various functional areas are displayed at the left in the Data Warehousing Workbench. In the functional area *Modeling* you can display different views on the objects used in

the Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree.

4. Under modeling, choose  **Datasources**. All the application components for the respective source systems are displayed.
5. Choose the FILE source system as shown below.



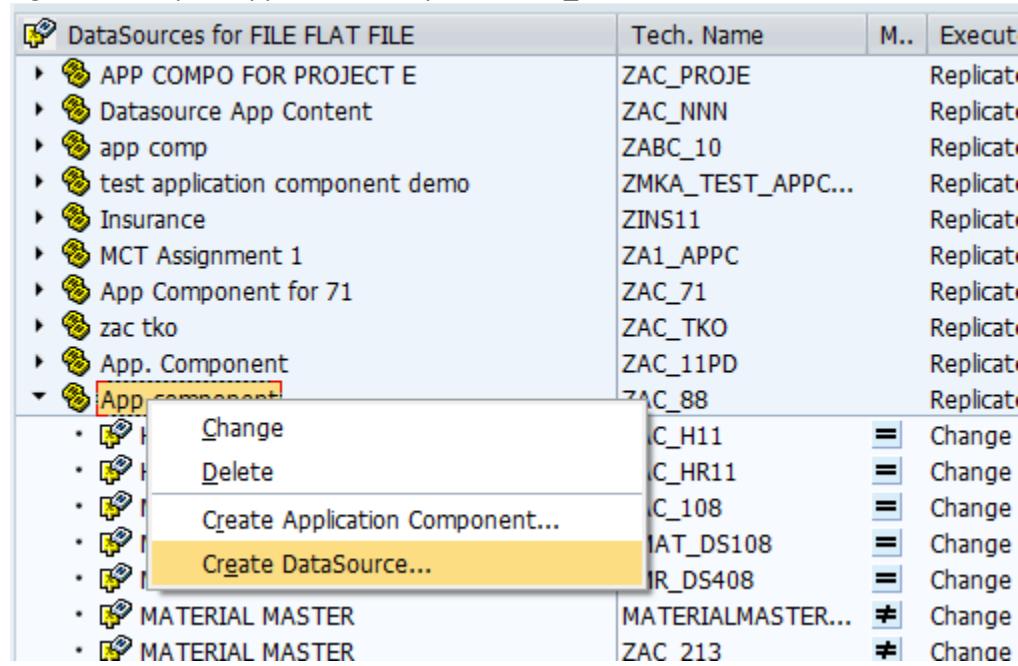
The screenshot shows two windows of the SAP Data Warehousing Workbench:

- Top Window:** A dialog titled "Choose Source System". It lists various source systems under "File Source System". One item, "FILE (FLAT FILE)", is highlighted with a red box.
- Bottom Window:** The main "Data Warehousing Workbench: Modeling" interface. The left sidebar has a "Modeling" tab selected, with "DataSources" highlighted. The right pane shows a tree view of source systems. The "File" node is expanded, and "FILE (FLAT FILE)" is also highlighted with a red box.

Right-click context menu options for "FILE (FLAT FILE)" are listed on the right side of the bottom window:

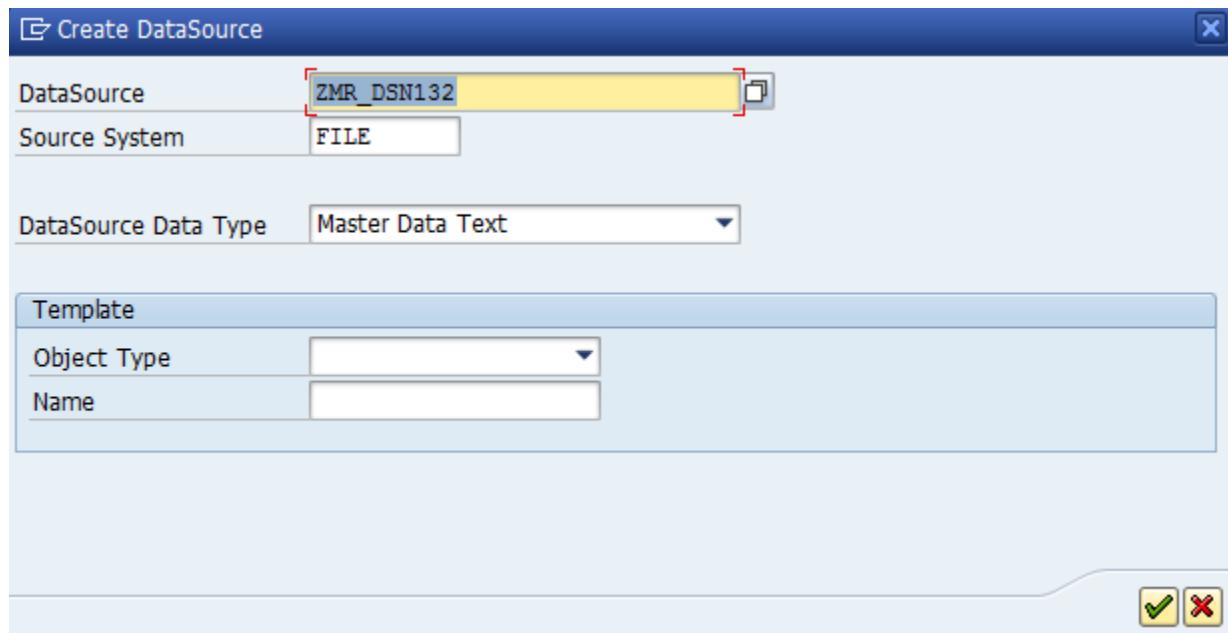
- ZCATH_FI1 (FIGL Demo)
- ZCATH FIGL (FIGL Demo)
- FF SOURCE (FILE)
- PCFILE (FILE)
- PC_FILE_S (FILE)
- Z_ANKIT (FILE)
- FILE_09 (FILE SOURCE -TRAINING)
- FILE_26 (FILE SOURCE-DEEPS)
- ZAB (FILE2)
- FILEINPUT (FILEINPUTAD)
- FILE (FLAT FILE)**
- FILE_BW_WB (FLAT FILE)
- ZFILE_1 (FLAT FILE)
- CMF_MDAATTR (FLAT FILE FOR CMF)
- DS_MD_ATTR (FLAT FILE FOR KC_WB)

6. Right Click on your application component ZAC_nn and click on Create datasource.



DataSources for FILE FLAT FILE	Tech. Name	M..	Execute
APP COMPO FOR PROJECT E	ZAC_PROJE		Replicat
Datasource App Content	ZAC_NNN		Replicat
app comp	ZABC_10		Replicat
test application component demo	ZMKA_TEST_APPC...		Replicat
Insurance	ZINS11		Replicat
MCT Assignment 1	ZA1_APPC		Replicat
App Component for 71	ZAC_71		Replicat
zac tko	ZAC_TKO		Replicat
App. Component	ZAC_11PD		Replicat
App. Component	ZAC_88		Replicat
• Change	C_H11	=	Change
• Delete	C_HR11	=	Change
• Create Application Component...	C_108	=	Change
• Create DataSource...	IAT_DS108	=	Change
• MATERIAL MASTER	IR_DS408	=	Change
• MATERIAL MASTER	MATERIALMASTER...	#	Change
	ZAC 213	#	Change

7. Following window will open up and then enter the datasource name and 'data type of the Datasource' that you want to create. In this case datasource name is ZMR_DSnn and the type of data source is 'Master Data Texts'. The source system will be populated automatically



8. Fill the Short medium and long description on the 'General Info.' Tab.

General Info.		Extraction	Proposal	Fields	Preview
General Properties					
Short Description	Material TEXT				
Medium Description	Material TEXT				
Long Description	Material TEXT				
Application Comp.	ZAC_88	App component			
Last changed by	SHJAISWA	Changed on	05.10.2015 / 12:48:09		
<input type="checkbox"/> DS for Data Reconciliation	<input type="checkbox"/> Data is Language-Dependent				
<input type="checkbox"/> PSA in CHAR Format	<input type="checkbox"/> Data is Time-Dependent				
<input type="checkbox"/> PSA as extended table					
<input type="checkbox"/> Opening Balance					
Delivery of Duplicate Data Recs.	Undefined				

9. Goto the extraction tab
 - f. Set Adapter value as 'Load text-type from local workstation'.
 - g. Give the file location that you want to upload in the File Name section.
 - h. Put '1' in the Header rows to be ignored field as this will ignore the 1 row in the flat file and load the rest.
 - i. Change the data format field to 'Separated with a separator'.
 - j. Enter comma (,) as the data separator.

SAP GUI Screen showing the 'Extraction' tab of a proposal configuration dialog.

The dialog contains the following settings:

- Delta Process:** Delta only using full upload (DSO or InfoPackage selection)
- Direct Access:** No DTPs Allowed For Direct Access
- Real Time:** Real-Time Data Acquisition Is Not Supported

Adapter: Load Text-Type File from Local Workstation

File Name: D:\Users\trainee\Desktop\SAP\1. Hands-On Exercise ...

Header Rows to be Ignored: 1

Character Set Settings: Default Setting

System Codepage: 4103 UTF-16LE Unicode / ISO/IEC 10646

Data Format: Separated with Separator (for Example, CSV)

Data Separator: , Hex

Escape Sign: " Hex

Convers. Lang.: User Master Record

Number Format: User Master Record

10. Go to the proposals tab and click on Load Example data. Following screen will be displayed with the Data types and other details in the proposal area.

Active version Executable Edited version

General Info. Extraction Proposal Fields Preview

Converter Separated with Separator (for Example, CSV)

No. of Data Records 10000 Load Example Data

File Output

S... Data

1	Material,Material Description,Plant
2	M1,Material 1,P001
3	M2,Material 2,P002
4	M3,Material 3,P003
5	M4,Material 4,P004

Proposal

Co...	Pos...	Field	Description	Data Type	Length	Decima...	Output...	Conver...	L...	Format
<input checked="" type="checkbox"/>	1	MATERIAL	Material	CHAR	3	3			<input type="checkbox"/>	Internal
<input checked="" type="checkbox"/>	2	MATERIALDESCRIPT	Material Description	CHAR	11	11			<input checked="" type="checkbox"/>	External
<input checked="" type="checkbox"/>	3	PLANT	Plant	CHAR	4	4			<input type="checkbox"/>	Internal

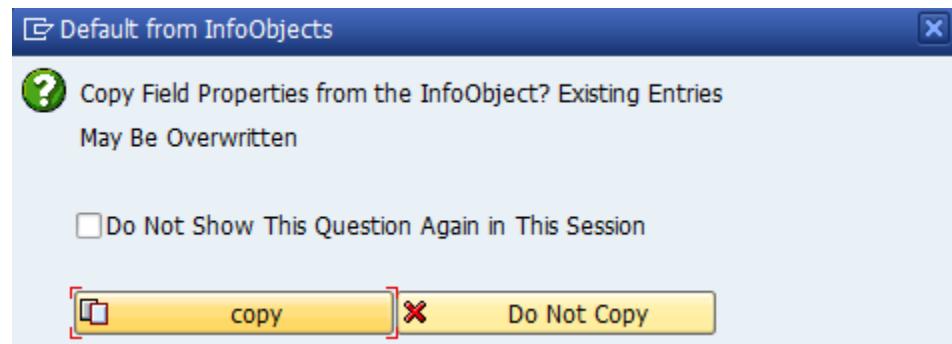
11. Click on the Fields tab and enter info objects ZMAT_nn , OTXTSH and ZPLANT for the fields 1and 2 and press enter.

General Info. Extraction Proposal Fields Preview

Field Attributes

Pos.	Field	Descript.	D...	T...	InfoObjec...	Data Type	Lngth	Deci...	Exter...	L...	K...	Con...	Format	SS
1	/BIC/ZMAT_13	Material		<input checked="" type="checkbox"/>	ZMAT_13	CHAR	10	0	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ALPHA	External	
2	/BIC/TXTSH_13	Text		<input checked="" type="checkbox"/>	TXTSH_13	CHAR	10	0	10	<input type="checkbox"/>	<input type="checkbox"/>	ALPHA	External	
3	/BIC/ZPLANT	Plant		<input checked="" type="checkbox"/>	ZPLANT	CHAR	4	0	4	<input type="checkbox"/>	<input type="checkbox"/>	Inter...		

12. Click on copy in the subsequent pop up.



13. Click on activate to activate the datasource.



14. Click on Preview tab and then read preview data.

No. of Data Records 10000			Read Preview Data
Material	Short description	Plant	
M1	Material 1	P001	
M2	Material 2	P002	
M3	Material 3	P003	
M4	Material 4	P004	
M5	Material 5	P001	
M6	Material 6	P002	
M7	Material 7	P003	
M8	Material 8	P004	
M9	Material 9	P001	
M10	Material 10	P002	
M11	Material 11	P003	
M12	Material 12	P004	

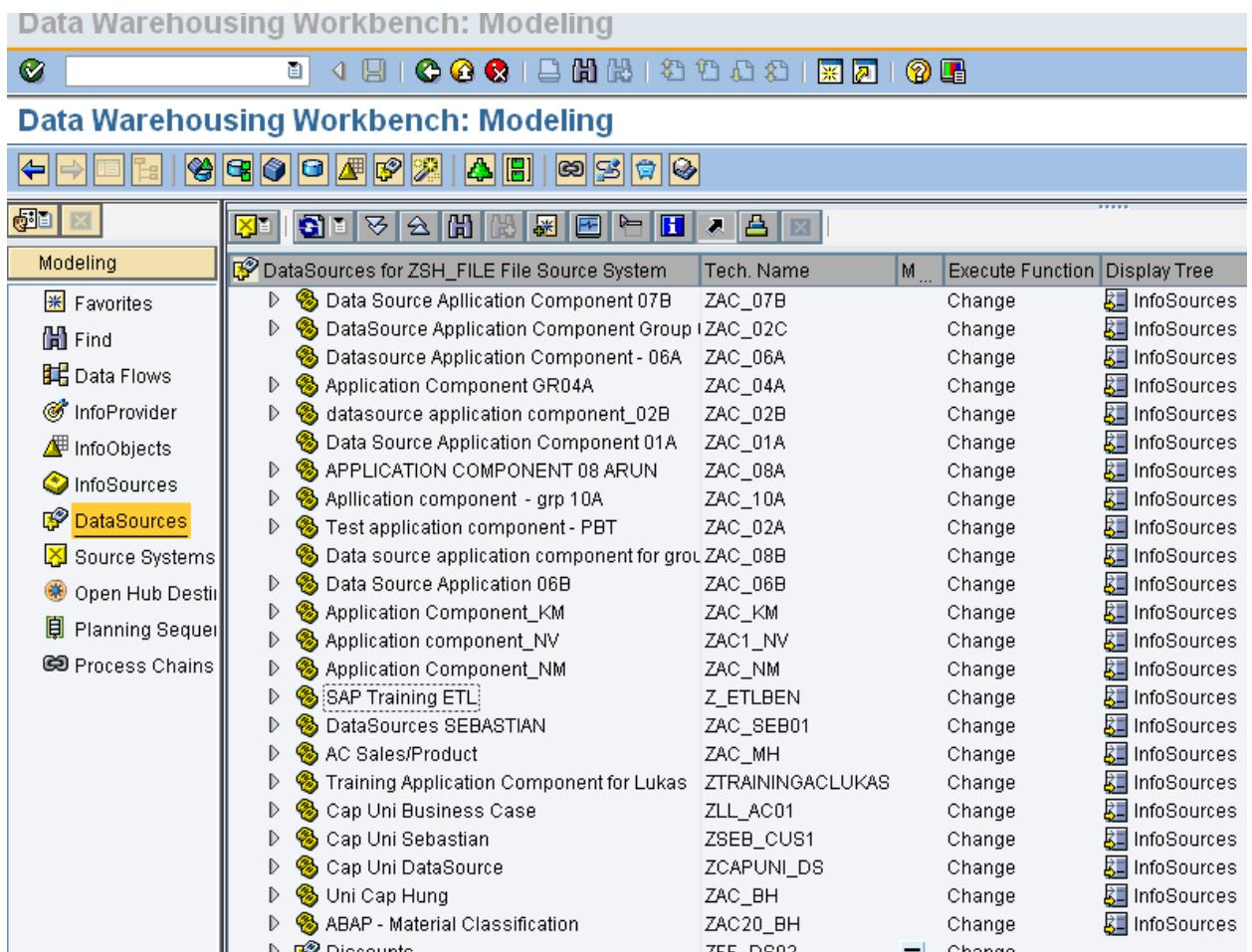
Conclusion: Datasource of type text data is created

5.2 Creation of Datasources- Hierarchy Data

Use: You can load data from flat files (CSV) into BW Info Object hierarchy using flat file datasource.

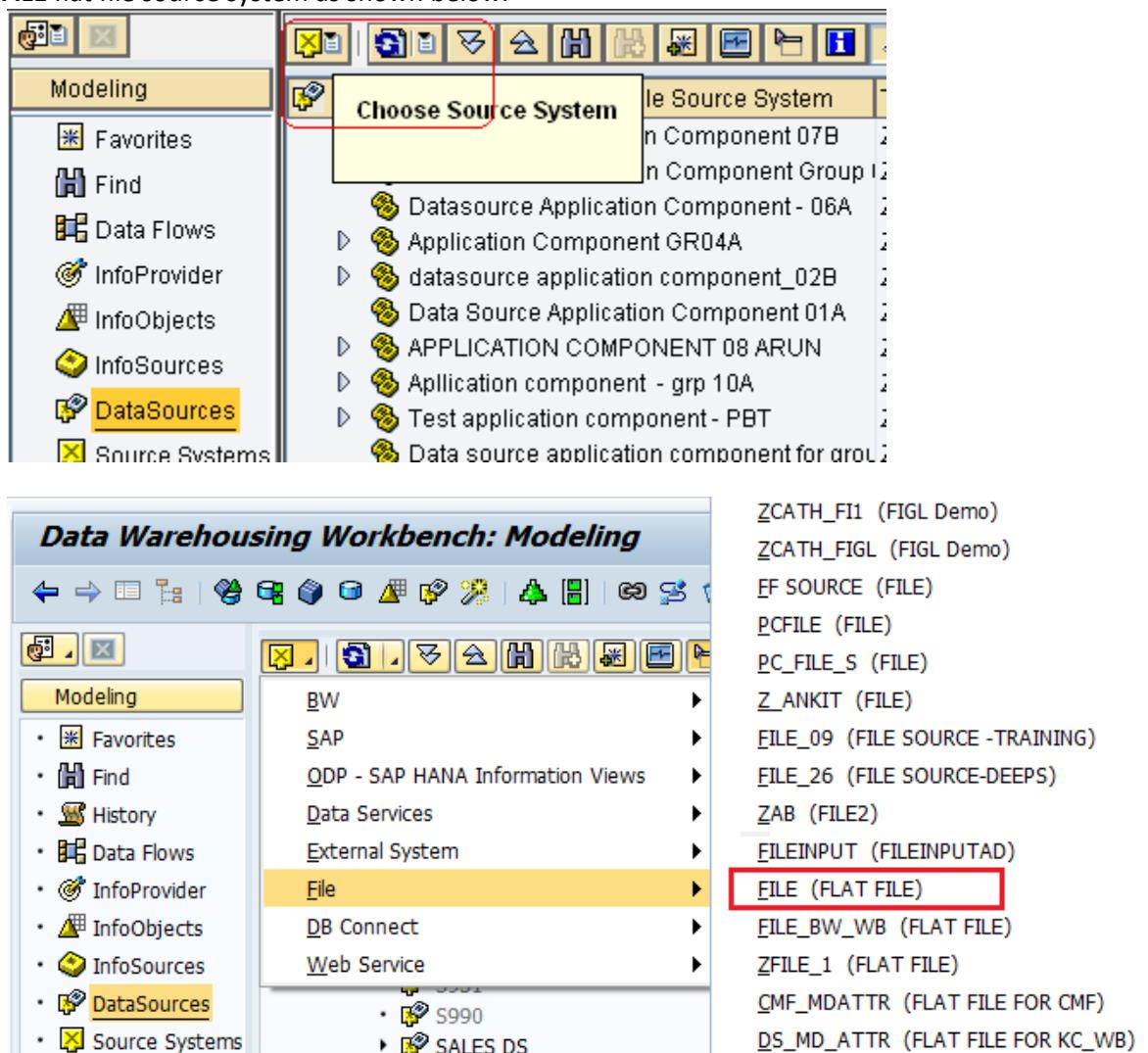
Procedure:

1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling* → *Data Warehousing Workbench: Modeling*.



	Tech. Name	M...	Execute Function	Display Tree
▶ Data Source Application Component 07B	ZAC_07B		Change	
▶ Data Source Application Component Group 02C	ZAC_02C		Change	
▶ Datasource Application Component - 06A	ZAC_06A		Change	
▶ Application Component GR04A	ZAC_04A		Change	
▶ datasource application component_02B	ZAC_02B		Change	
▶ Data Source Application Component 01A	ZAC_01A		Change	
▶ APPLICATION COMPONENT 08 ARUN	ZAC_08A		Change	
▶ Application component - grp 10A	ZAC_10A		Change	
▶ Test application component - PBT	ZAC_02A		Change	
▶ Data source application component for gro1	ZAC_08B		Change	
▶ Data Source Application 06B	ZAC_06B		Change	
▶ Application Component_KM	ZAC_KM		Change	
▶ Application component_NV	ZAC1_NV		Change	
▶ Application Component_NM	ZAC_NM		Change	
▶ SAP Training ETL	Z_ETLBEN		Change	
▶ DataSources SEBASTIAN	ZAC_SEB01		Change	
▶ AC Sales/Product	ZAC_MH		Change	
▶ Training Application Component for Lukas	ZTRAININGACLUKAS		Change	
▶ Cap Uni Business Case	ZLL_AC01		Change	
▶ Cap Uni Sebastian	ZSEB_CUS1		Change	
▶ Cap Uni DataSource	ZCAPUNI_DS		Change	
▶ Uni Cap Hung	ZAC_BH		Change	
▶ ABAP - Material Classification	ZAC20_BH		Change	
▶ Discounts	ZEE_DIS02		Change	

3. Various functional areas are displayed at the left in the Data Warehousing Workbench. In the functional area *Modeling* you can display different views on the objects used in the Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree.
4. Under modeling, choose  **Datasources**. All the application components for the respective source systems are displayed.
5. Choose the **FILE** flat file source system as shown below.



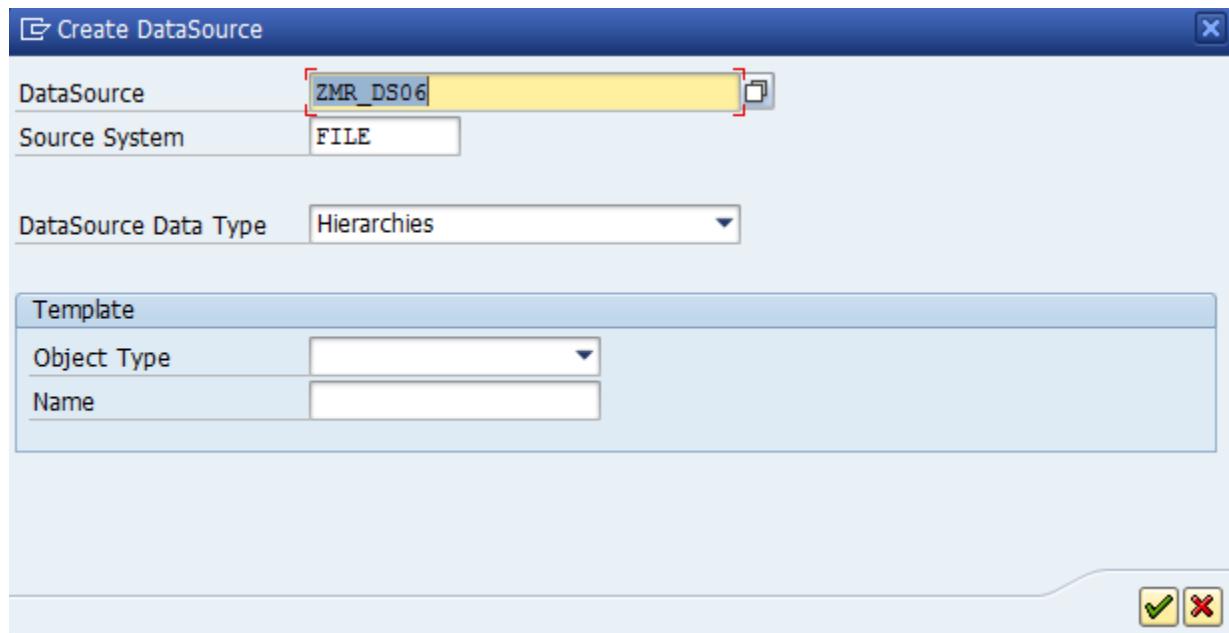
The screenshot displays two windows of the SAP Data Warehousing Workbench:

- Choose Source System Dialog:** This window shows a list of available source systems under the heading "Choose Source System". The list includes:
 - Datasource Application Component - 06A
 - Application Component GR04A
 - datasource application component_02B
 - Data Source Application Component 01A
 - APPLICATION COMPONENT 08 ARUN
 - Application component - grp 10A
 - Test application component - PBT
 - Data source application component for group 10A
- Data Warehousing Workbench: Modeling Window:** This window shows the "Modeling" view with a sidebar and a main content area. The sidebar lists various modeling components. The main content area shows a tree structure of source systems:
 - File** is selected and highlighted in yellow.
 - Under File, there are sub-options: **FILE (FLAT FILE)**, **FILE_BW_WB (FLAT FILE)**, **ZFILE_1 (FLAT FILE)**, **CMF_MDATTR (FLAT FILE FOR CMF)**, and **DS_MD_ATTR (FLAT FILE FOR KC_WB)**.

6. Right Click on the application component ZTR_AC1 and click on Create datasource.

DataSources for FILE FLAT FILE	Tech. Name	M..	Execution
APP COMPO FOR PROJECT E	ZAC_PROJE		Replicat
Datasource App Content	ZAC_NNN		Replicat
app comp	ZABC_10		Replicat
test application component demo	ZMKA_TEST_APPC...		Replicat
Insurance	ZINS11		Replicat
MCT Assignment 1	ZA1_APPC		Replicat
App Component for 71	ZAC_71		Replicat
zac tko	ZAC_TKO		Replicat
App. Component	ZAC_11PD		Replicat
ZTR_AC1	ZAC_88		Replicat
• Change	C_H11	=	Change
• Delete	C_HR11	=	Change
• Create Application Component...	C_108	=	Change
• Create DataSource...	IAT_DS108	=	Change
• MATERIAL MASTER	IR_DS408	=	Change
• MATERIAL MASTER	MATERIALMASTER...	#	Change
• MATERIAL MASTER	ZAC 213	#	Change

7. Following window will open up and then enter the datasource name and 'data type of the Datasource' that you want to create. In this case datasource name is ZMR_DS06 and the type of data source is 'Master Data Texts'. The source system will be populated automatically

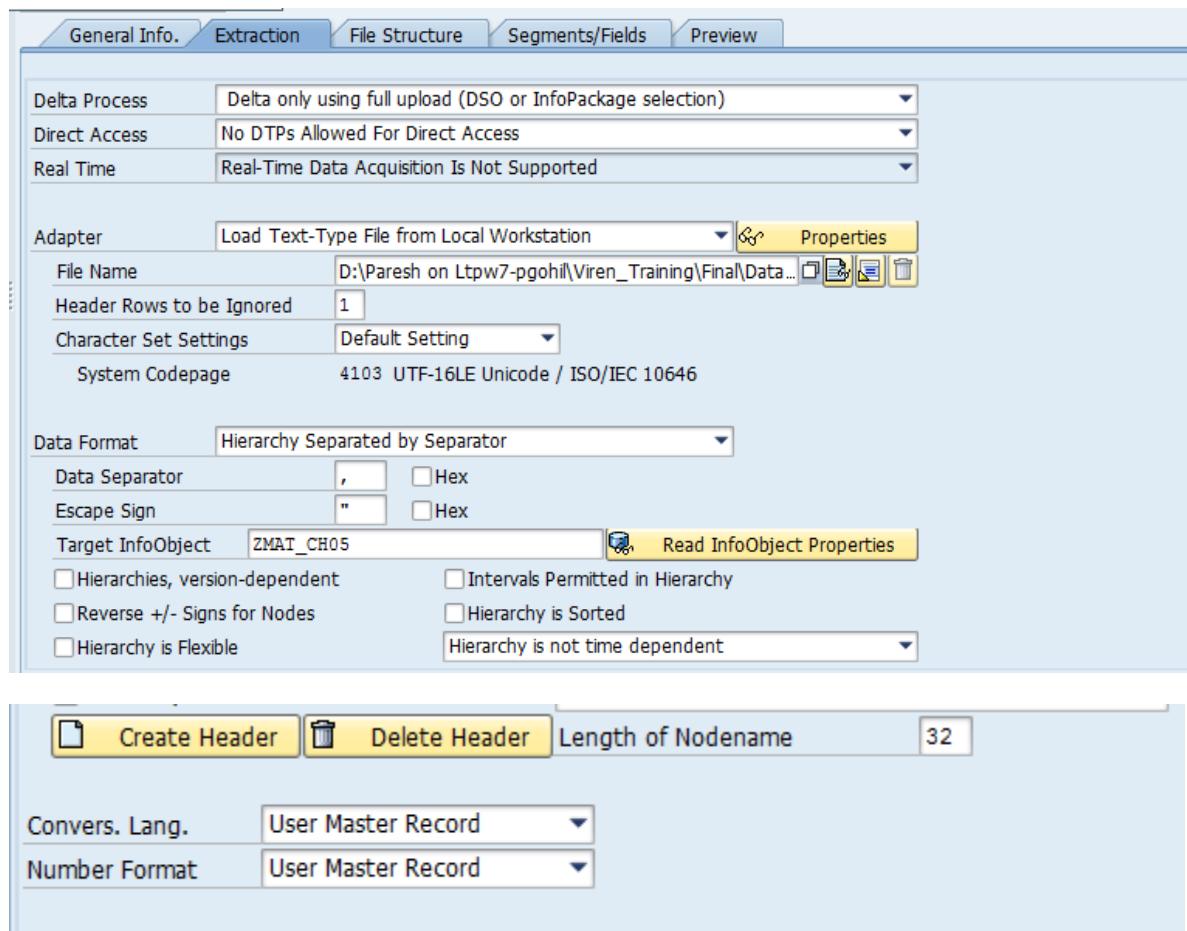


8. Fill the Short medium and long description on the 'General Info.' Tab.

General Info.		Extraction	File Structure	Segments/Fields	Preview
General Properties					
Short Description	Material Hier				
Medium Description	Material Hierarchy				
Long Description	Material Hierarchy				
Application Comp.	ZAC_88	App component			
Last changed by	TRAIN06	Changed on	29.06.2016 / 12:29:27		
<input type="checkbox"/> DS for Data Reconciliation	<input type="checkbox"/> Data is Language-Dependent				
<input type="checkbox"/> PSA in CHAR Format	<input type="checkbox"/> Data is Time-Dependent				
<input type="checkbox"/> PSA as extended table					
<input type="checkbox"/> Opening Balance					
Delivery of Duplicate Data Recs.	Undefined				

9. Go to the extraction tab

- k. Set Adapter value as 'Load text-type from local workstation'.
- l. Give the file name that you want to upload in the File Name section.
- m. Put '1' in the Header rows to be ignored field as this will ignore the 1 row in the flat file and load the rest.
- n. Change the data format field to 'Separated with a separator'.
- o. Enter comma (,) as the data separator.
- p. Put target infoobject as ZMAT_CH05 and click on read infoobject properties.
- q. Activate the datasource.



General Info. Extraction File Structure Segments/Fields Preview

Delta Process: Delta only using full upload (DSO or InfoPackage selection)
Direct Access: No DTPs Allowed For Direct Access
Real Time: Real-Time Data Acquisition Is Not Supported

Adapter: Load Text-Type File from Local Workstation Properties

File Name: D:\Paresh on Ltpw7-pgohil\Viren_Training\Final\Data...

Header Rows to be Ignored: 1

Character Set Settings: Default Setting

System Codepage: 4103 UTF-16LE Unicode / ISO/IEC 10646

Data Format: Hierarchy Separated by Separator

Data Separator: , Hex
Escape Sign: " Hex

Target InfoObject: ZMAT_CH05

Hierarchies, version-dependent Intervals Permitted in Hierarchy
 Reverse +/- Signs for Nodes Hierarchy is Sorted
 Hierarchy is Flexible Hierarchy is not time dependent

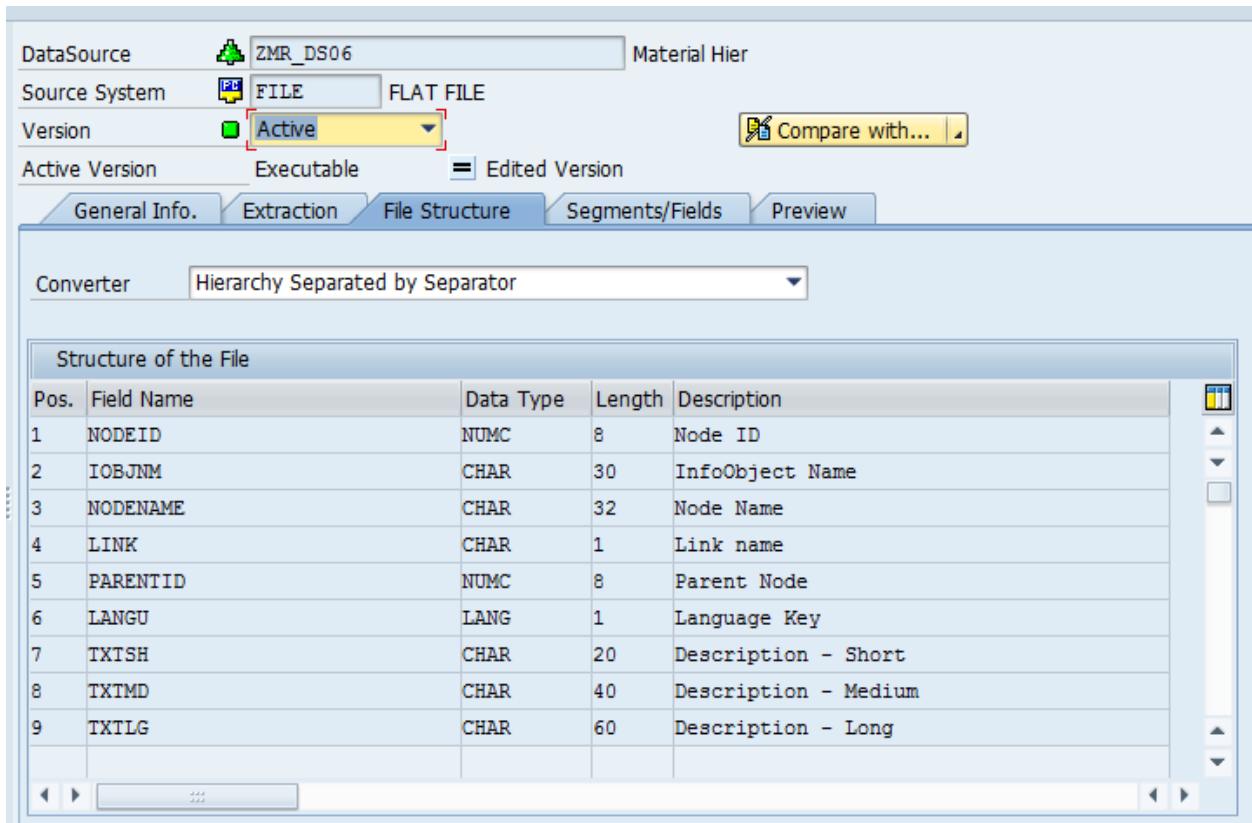
Create Header Delete Header Length of Nodename: 32

Convers. Lang.: User Master Record

Number Format: User Master Record

10. File structure Tab:

In the File Structure tab, we can see the structure of the file to be created.

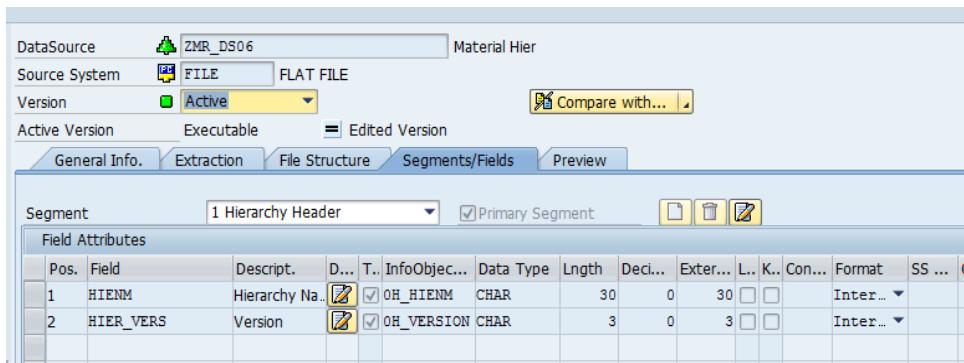


The screenshot shows the SAP BW interface for defining a flat file structure. The 'Segments/Fields' tab is active. The 'Converter' dropdown is set to 'Hierarchy Separated by Separator'. The 'Structure of the File' table lists the following fields:

Pos.	Field Name	Data Type	Length	Description
1	NODEID	NUMC	8	Node ID
2	IOBJNM	CHAR	30	InfoObject Name
3	NODENAME	CHAR	32	Node Name
4	LINK	CHAR	1	Link name
5	PARENTID	NUMC	8	Parent Node
6	LANGU	LANG	1	Language Key
7	TXTSH	CHAR	20	Description - Short
8	TXTMD	CHAR	40	Description - Medium
9	TXTLG	CHAR	60	Description - Long

11. Segments/Fields Tab:

In Segments/Fields, we can see the different segments. Hierarchy Header is the primary segment. The screenshot of 'Hierarchy Header' is given below:



The screenshot shows the SAP BW interface for defining a flat file structure. The 'Segments/Fields' tab is active. The 'Segment' dropdown is set to '1 Hierarchy Header'. The 'Primary Segment' checkbox is checked. The 'Field Attributes' table lists the following fields:

Pos.	Field	Descript.	D..	T..	InfoObject...	Data Type	Lngth	Deci...	Exter...	L..	K..	Con...	Format	SS ...	C...
1	HIENM	Hierarchy Na...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OH_HIENM	CHAR	30	0	30	<input type="checkbox"/>	<input type="checkbox"/>		Inter...		
2	HIER_VERS	Version	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OH_VERSION	CHAR	3	0	3	<input type="checkbox"/>	<input type="checkbox"/>		Inter...		

The screenshot of ‘Hierarchy Description’ segment is given below:

DataSource Material Hier

Source System FLAT FILE

Version Active

Active Version Executable Edited Version

Segment		2 Hierarchy Descriptio		<input type="checkbox"/> Primary Segment		<input type="button" value="New"/> <input type="button" value="Delete"/> <input type="button" value="Edit"/>									
Field Attributes		Pos.	Field	Descript.	D...	T...	InfoObjec...	Data Type	Lnghth	Deci...	Exter...	L...	K...	Con...	Format
1	LANGU		Language K...	<input type="button" value="Edit"/>	<input checked="" type="checkbox"/>	0LANGU	LANG		1	0	1	<input type="checkbox"/>	<input type="checkbox"/>		Inter... ▾
2	TXTSH		Description - ..	<input type="button" value="Edit"/>	<input checked="" type="checkbox"/>	0TXTSH	CHAR		20	0	20	<input type="checkbox"/>	<input type="checkbox"/>		Inter... ▾
3	TXTMD		Description - ..	<input type="button" value="Edit"/>	<input checked="" type="checkbox"/>	0TXTMD	CHAR		40	0	40	<input type="checkbox"/>	<input type="checkbox"/>		Inter... ▾
4	TXTLG		Description - ..	<input type="button" value="Edit"/>	<input checked="" type="checkbox"/>	0TXTLG	CHAR		60	0	60	<input type="checkbox"/>	<input type="checkbox"/>		Inter... ▾

The screenshot of ‘Hierarchy Structure’ is given below:

DataSource ZMR_DS06 Material Hier

Source System FILE FLAT FILE

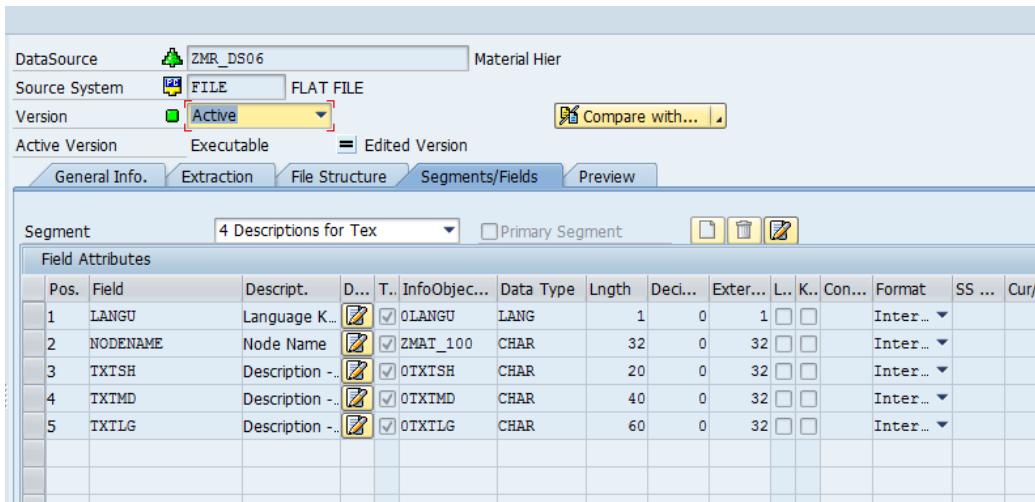
Version Active Compare with...

Active Version Executable Edited Version

General Info Extraction File Structure Segments/Fields Preview

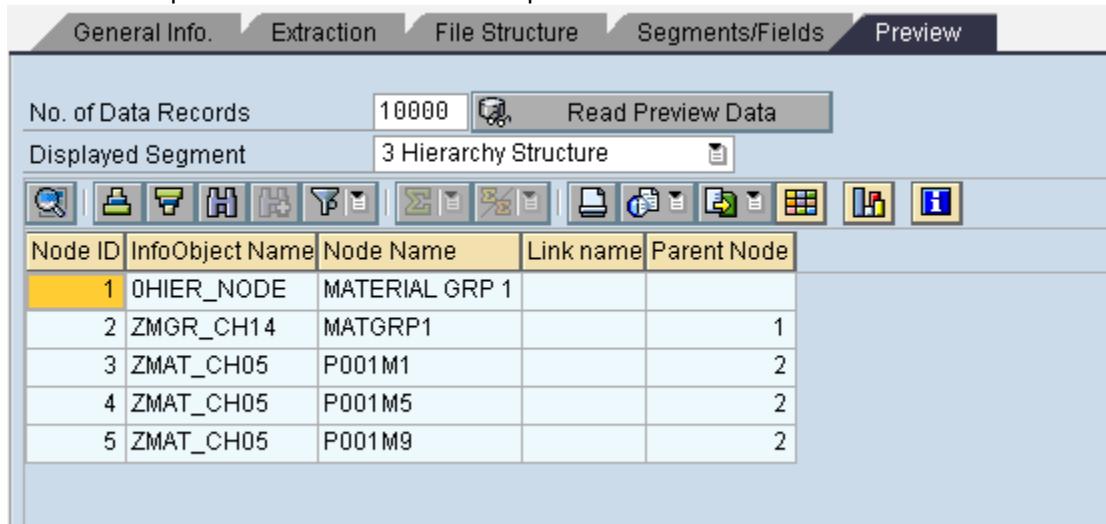
Segment		3 Hierarchy Structure			<input type="checkbox"/> Primary Segment		<input type="button"/> <input type="button"/> <input type="button"/>											
Field Attributes		Pos.	Field	Descript.	D...	T...	InfoObjec...	Data Type	Lngth	Deci...	Exter...	L...	K...	Con...	Format	SS ...	Cur/Unit	S... Se
1	NODEID		Node ID	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OH_NODEID	NUMC	8	0	8	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	<input type="button"/>	0	
2	IOBJNM		InfoObject ...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OH_IOBJNM	CHAR	30	0	30	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	<input type="button"/>	0	
3	NODENAME		Node Name	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ZMAT_100	CHAR	32	0	32	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	<input type="button"/>	0	
4	LINK		Link name	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OH_LINK	CHAR	1	0	1	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	<input type="button"/>	0	
5	PARENTID		Parent Node	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OH_PARENT...	NUMC	8	0	8	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	<input type="button"/>	0	

The screenshot of ‘Descriptions for Text’ is given below:



Pos.	Field	Description	Data Type	Length	Decimals	External	Language	Con...	Format	SS ...	Cur/L
1	LANGU	Language K...	OLANGU	LANG	1	0	1		Inter...		
2	NODENAME	Node Name	ZMAT_100	CHAR	32	0	32		Inter...		
3	TXTSH	Description -	OTXTSH	CHAR	20	0	32		Inter...		
4	TXTMD	Description -	OTXTMD	CHAR	40	0	32		Inter...		
5	TXTLG	Description -	OTXTLG	CHAR	60	0	32		Inter...		

12. Go to the preview tab and click on read preview data.



Node ID	InfoObject Name	Node Name	Link name	Parent Node
1	OHIER_NODE	MATERIAL GRP 1		
2	ZMGR_CH14	MATGRP1		1
3	ZMAT_CH05	P001M1		2
4	ZMAT_CH05	P001M5		2
5	ZMAT_CH05	P001M9		2

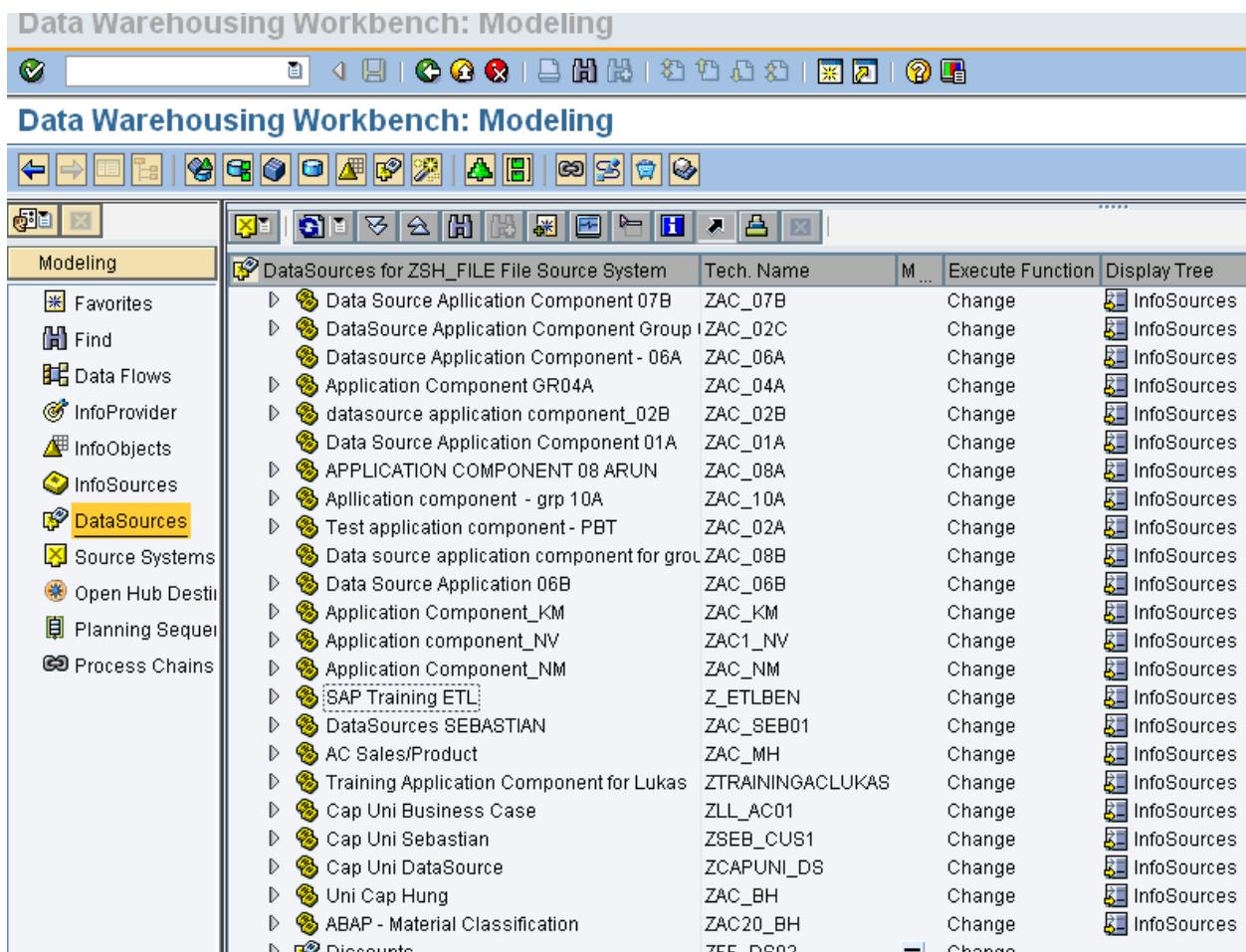
Conclusion: Datasource of type hierarchy data is created.

5.2 Creation of Datasources- Transaction Data

Use: You can load data from flat files (CSV) into BW Transaction data using flat file datasource.

Procedure:

1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.

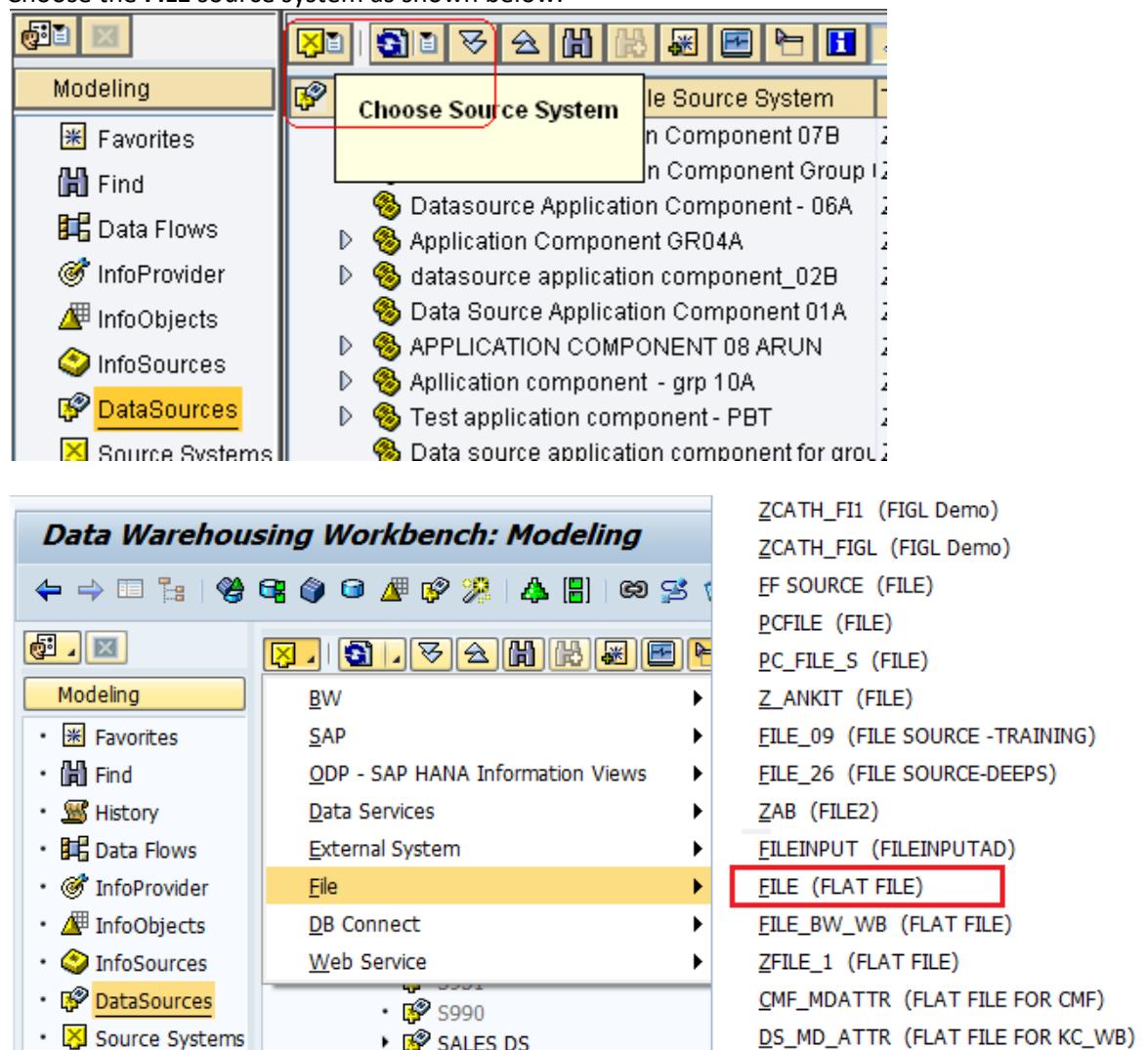


	Tech. Name	M...	Execute Function	Display Tree
▶	Data Source Application Component 07B	ZAC_07B	Change	
▶	DataSource Application Component Group	ZAC_02C	Change	
▶	Datasource Application Component - 06A	ZAC_06A	Change	
▶	Application Component GR04A	ZAC_04A	Change	
▶	datasource application component_02B	ZAC_02B	Change	
▶	Data Source Application Component 01A	ZAC_01A	Change	
▶	APPLICATION COMPONENT 08 ARUN	ZAC_08A	Change	
▶	Application component - grp 10A	ZAC_10A	Change	
▶	Test application component - PBT	ZAC_02A	Change	
▶	Data source application component for gro1	ZAC_08B	Change	
▶	Data Source Application 06B	ZAC_06B	Change	
▶	Application Component_KM	ZAC_KM	Change	
▶	Application component_NV	ZAC1_NV	Change	
▶	Application Component_NM	ZAC_NM	Change	
▶	SAP Training ETL	Z_ETLBEN	Change	
▶	DataSources SEBASTIAN	ZAC_SEB01	Change	
▶	AC Sales/Product	ZAC_MH	Change	
▶	Training Application Component for Lukas	ZTRAININGACLUKAS	Change	
▶	Cap Uni Business Case	ZLL_AC01	Change	
▶	Cap Uni Sebastian	ZSEB_CUS1	Change	
▶	Cap Uni DataSource	ZCAPUNI_DS	Change	
▶	Uni Cap Hung	ZAC_BH	Change	
▶	ABAP - Material Classification	ZAC20_BH	Change	
▶	Discounts	ZEE_DE02	Change	

3. Various functional areas are displayed at the left in the Data Warehousing Workbench. In the functional area *Modeling* you can display different views on the objects used in

the Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree.

4. Under modeling, choose  **Datasources**. All the application components for the respective source systems are displayed.
5. Choose the **FILE** source system as shown below.



The screenshot shows two windows of the SAP Data Warehousing Workbench: Modeling.

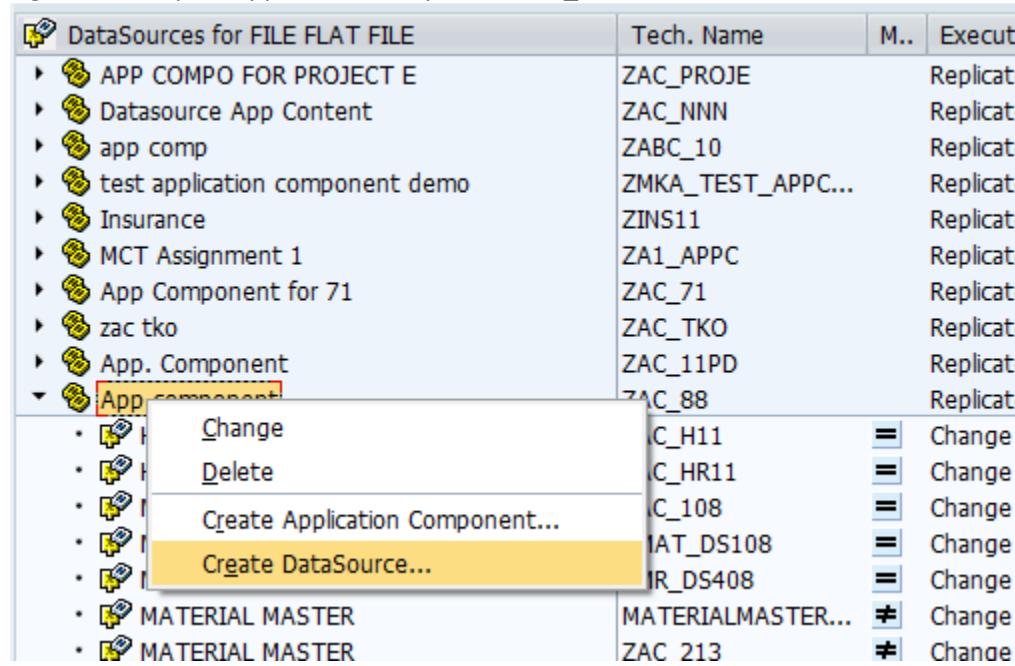
Top Window: A dialog titled "Choose Source System" is displayed. It lists various source systems under "Source System". The "FILE" source system is highlighted with a red box. The list includes:

- File Component 07B
- File Component Group 1
- Datasource Application Component - 06A
- Application Component GR04A
- datasource application component_02B
- Data Source Application Component 01A
- APPLICATION COMPONENT 08 ARUN
- Aplication component - grp 10A
- Test application component - PBT
- Data source application component for drol

Bottom Window: The main interface shows the "Data Warehousing Workbench: Modeling" title bar. The left sidebar has a "Modeling" tab selected, with "DataSources" highlighted. The right pane shows a tree view of source systems. The "File" node is selected and highlighted with a yellow box. The "FILE (FLAT FILE)" entry under "File" is also highlighted with a red box. Other entries in the "File" node include "S990" and "SALES DS". To the right of the tree, a list of source systems is shown, with "FILE (FLAT FILE)" highlighted with a red box again.

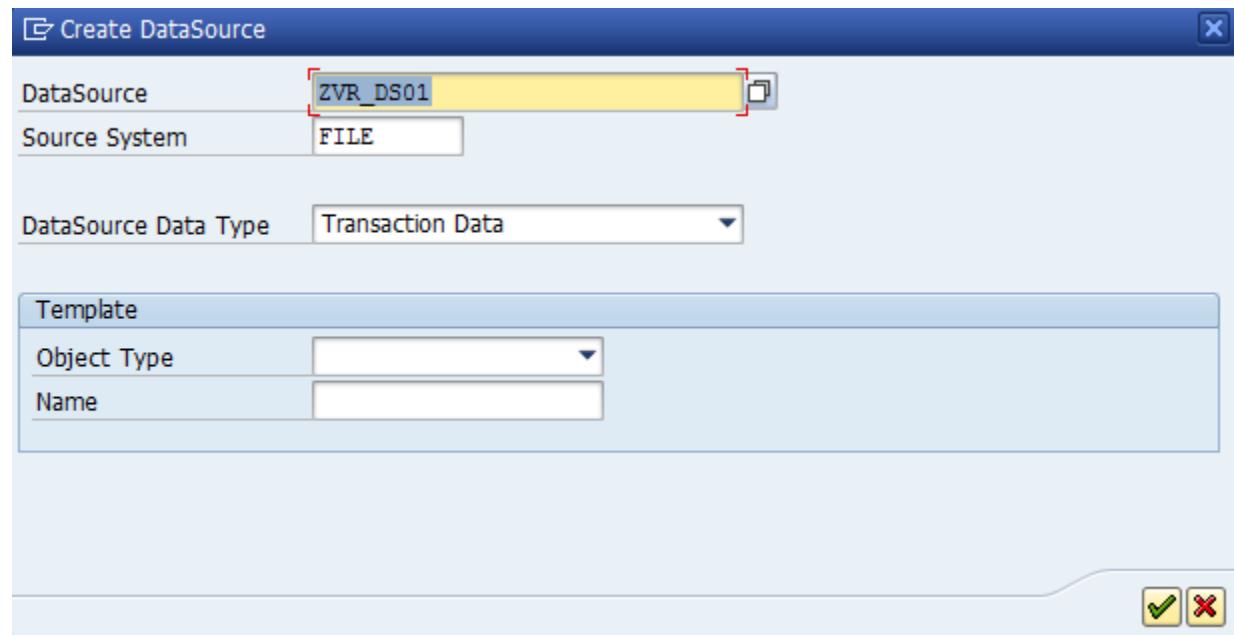
Source System
ZCATH_FI1 (FIGL Demo)
ZCATH FIGL (FIGL Demo)
FF SOURCE (FILE)
PCFILE (FILE)
PC_FILE_S (FILE)
Z_ANKIT (FILE)
FILE_09 (FILE SOURCE -TRAINING)
FILE_26 (FILE SOURCE-DEEPS)
ZAB (FILE2)
FILEINPUT (FILEINPUTAD)
FILE (FLAT FILE)
FILE_BW_WB (FLAT FILE)
ZFILE_1 (FLAT FILE)
CMF_MDAATTR (FLAT FILE FOR CMF)
DS_MD_ATTR (FLAT FILE FOR KC_WB)

6. Right Click on your application component ZAC_nn and click on Create datasource.



DataSources for FILE FLAT FILE	Tech. Name	M..	Execute
APP COMPO FOR PROJECT E	ZAC_PROJE		Replicat
Datasource App Content	ZAC_NNN		Replicat
app comp	ZABC_10		Replicat
test application component demo	ZMKA_TEST_APPC...		Replicat
Insurance	ZINS11		Replicat
MCT Assignment 1	ZA1_APPC		Replicat
App Component for 71	ZAC_71		Replicat
zac tko	ZAC_TKO		Replicat
App. Component	ZAC_11PD		Replicat
App component	ZAC_88		Replicat
• Change	C_H11	=	Change
• Delete	C_HR11	=	Change
• Create Application Component...	C_108	=	Change
• Create DataSource...	IAT_DS108	=	Change
• MATERIAL MASTER	IR_DS408	=	Change
• MATERIAL MASTER	MATERIALMASTER...	#	Change
	ZAC 213	#	Change

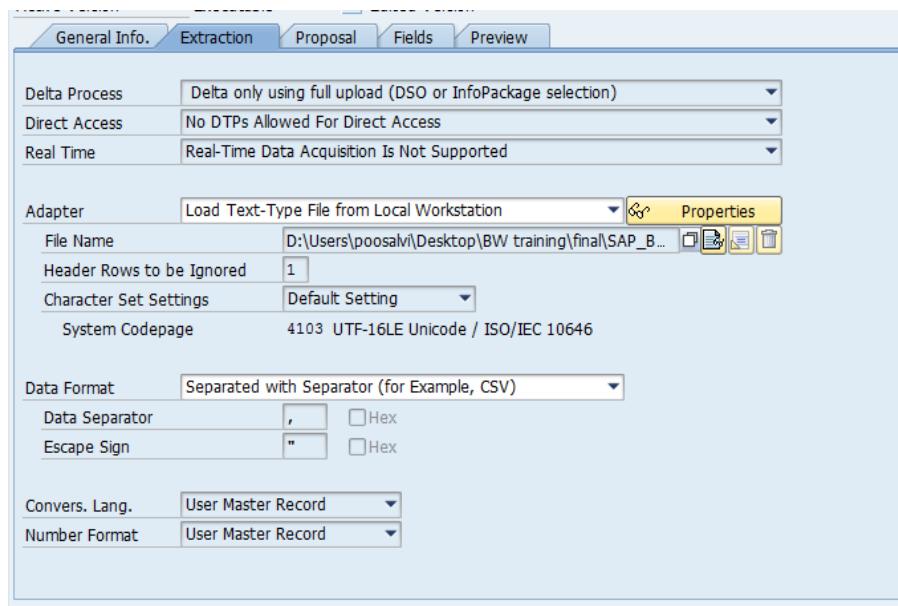
7. Following window will open up and then enter the datasource name and 'data type of the Datasource' that you want to create. In this case datasource name is ZVR_DS01 and the type of data source is Transaction data. The source system will be populated automatically



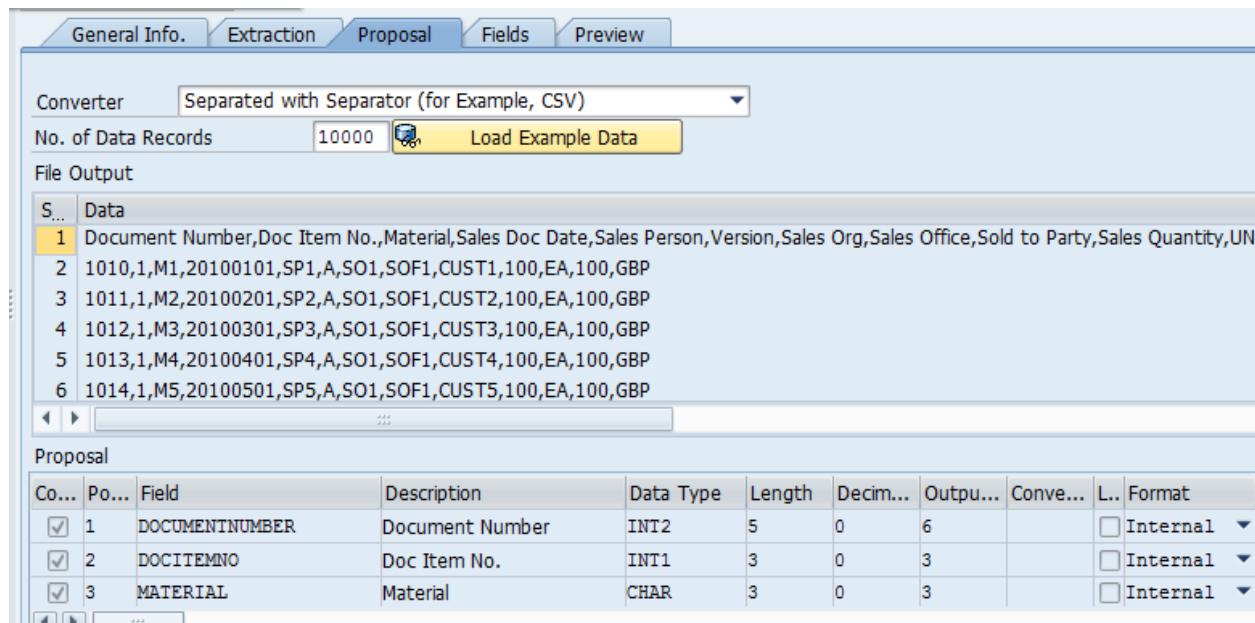
8. Fill the Short medium and long description on the 'General Info.' Tab.

General Properties	
Short Description	Sales Transaction
Medium Description	Sales Transaction Data
Long Description	Sales Transaction Data
Application Comp.	ZAC_88 App component
Last changed by	TRAIN06
Changed on	29.06.2016 / 13:04:01
<input type="checkbox"/> DS for Data Reconciliation	<input type="checkbox"/> Data is Language-Dependent
<input type="checkbox"/> PSA in CHAR Format	<input type="checkbox"/> Data is Time-Dependent
<input type="checkbox"/> PSA as extended table	
<input type="checkbox"/> Opening Balance	
Delivery of Duplicate Data Recs.	Undefined

9. Goto the extraction tab
 - r. Set Adapter value as 'Load text-type from local workstation'.
 - s. Give the file location that you want to upload in the File Name section.
 - t. put '1' in the Header rows to be ignored field as this will ignore the 1 row in the flat file and load the rest.
 - u. Change the data format field to 'Separated with a separator'.
 - v. Enter comma (,) as the data separator.



10. Go to the proposals tab and click on Load Example data. Following screen will be displayed with the Data types and other details in the proposal area.



Co...	Po...	Field	Description	Data Type	Length	Decim...	Outpu...	Conve...	L...	Format
<input checked="" type="checkbox"/>	1	DOCUMENTNUMBER	Document Number	INT2	5	0	6		<input type="checkbox"/>	Internal
<input checked="" type="checkbox"/>	2	DOCITEMNO	Doc Item No.	INT1	3	0	3		<input type="checkbox"/>	Internal
<input checked="" type="checkbox"/>	3	MATERIAL	Material	CHAR	3	0	3		<input type="checkbox"/>	Internal

11. Click on the Fields tab a pop up will be displayed to copy changes. Click on 'Yes'.

Sales Transaction

DataSource: ZVR_DS01
Source System: FILE FLAT FILE
Version: In Processing Not Saved
Active Version: Executable Edited Version

General Info. Extraction Proposal Fields Preview

Copy changes?

Field list no longer corresponds to proposal Copy changes?

Do Not Show This Question Again in This Session

Yes No

	Material Text	ZM	1	1011,1,M2,20100201,SP1,A,SO1,SOF1,CUST1,100,EA,100,GBP
	Material Text	ZA	2	1012,1,M3,20100301,SP2,A,SO1,SOF1,CUST2,100,EA,100,GBP
	Material Text	ZM	3	1013,1,M4,20100401,SP3,A,SO1,SOF1,CUST3,100,EA,100,GBP
	Material Text	ZM	4	1014,1,M5,20100501,SP4,A,SO1,SOF1,CUST4,100,EA,100,GBP
	Material Text	ZM	5	1015,1,M6,20100601,SP5,A,SO1,SOF1,CUST5,100,EA,100,GBP
	Material Text	ZM	6	1016,1,M7,20100701,SP6,A,SO1,SOF1,CUST6,100,EA,100,GBP

Load Example Data

Doc Item No.,Material,Sales Doc Date,Sales Person,Version
1,SP1,A,SO1,SOF1,CUST1,100,EA,100,GBP
2,SP2,A,SO1,SOF1,CUST2,100,EA,100,GBP
3,SP3,A,SO1,SOF1,CUST3,100,EA,100,GBP
4,SP4,A,SO1,SOF1,CUST4,100,EA,100,GBP
5,SP5,A,SO1,SOF1,CUST5,100,EA,100,GBP
6,SP6,A,SO1,SOF1,CUST6,100,EA,100,GBP

General Info. Extraction Proposal Fields Preview

Field Attributes

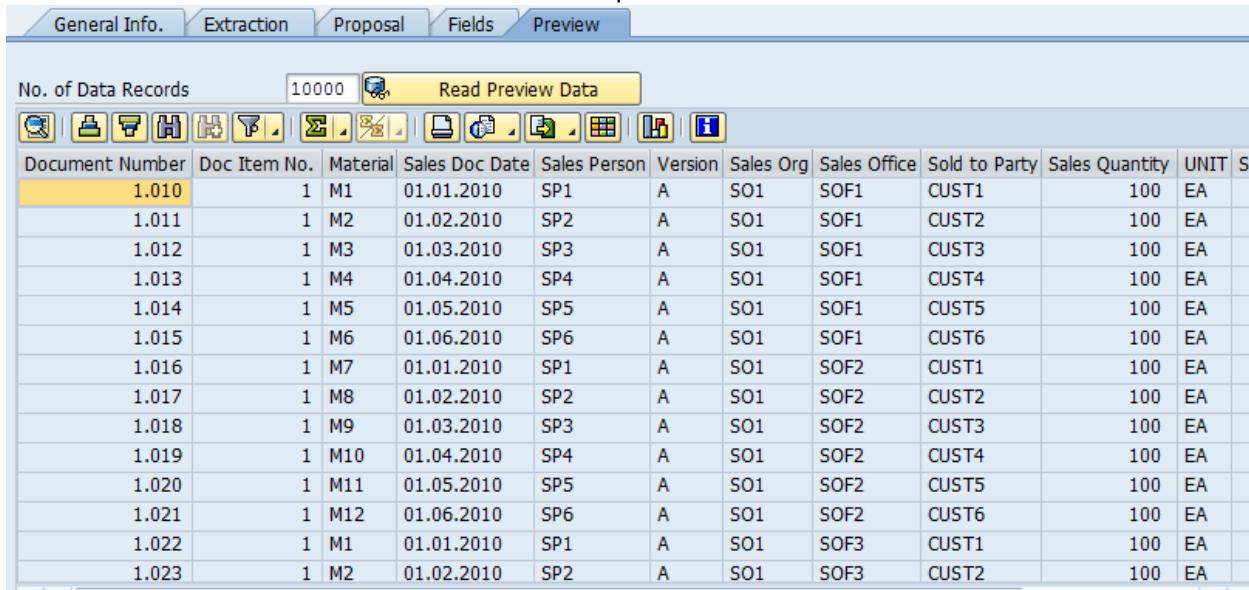
Pos.	Field	Descript.	D...	T..	InfoObjec...	Data Type	Lngth	Deci...	Exter...	L..	K..	Con...	Format	SS
1	DOCUMENTNUMBER	Document Number	<input type="button"/>	<input checked="" type="checkbox"/>		INT2	5	0	6	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
2	DOCITEMNO	Doc Item No.	<input type="button"/>	<input checked="" type="checkbox"/>		INT1	3	0	3	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
3	MATERIAL	Material	<input type="button"/>	<input checked="" type="checkbox"/>		CHAR	3	0	3	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
4	SALESDOCDATE	Sales Doc Date	<input type="button"/>	<input checked="" type="checkbox"/>		DATS	8	0	8	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
5	SALESPERSON	Sales Person	<input type="button"/>	<input checked="" type="checkbox"/>		CHAR	3	0	3	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
6	VERSION	Version	<input type="button"/>	<input checked="" type="checkbox"/>		UNIT	3	0	3	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
7	SALESORG	Sales Org	<input type="button"/>	<input checked="" type="checkbox"/>		CHAR	3	0	3	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
8	SALESOFFICE	Sales Office	<input type="button"/>	<input checked="" type="checkbox"/>		CHAR	4	0	4	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
9	SOLDTOPARTY	Sold to Party	<input type="button"/>	<input checked="" type="checkbox"/>		CHAR	5	0	5	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
10	SALESQUANTITY	Sales Quantity	<input type="button"/>	<input checked="" type="checkbox"/>		QUAN	5	0	6	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
11	UNIT	UNIT	<input type="button"/>	<input checked="" type="checkbox"/>		UNIT	3	0	3	<input type="checkbox"/>	<input type="checkbox"/>		Inter...	
12	SALESAMOUNT	Sales Amount	<input type="button"/>	<input checked="" type="checkbox"/>		CURR	7	2	5	<input type="checkbox"/>	<input type="checkbox"/>		Exter...	

12. Click on activate to activate the datasource.

Display DataSource ZVR_DS01(FILE)

Activate

13. Click on Preview tab and then read preview data.



The screenshot shows the SAP BW Preview interface. At the top, there are tabs: General Info, Extraction, Proposal, Fields, and Preview. The Preview tab is selected. Below the tabs, there is a header row with the text "No. of Data Records" and a value of "10000". To the right of this is a button labeled "Read Preview Data". The main area is a grid of data with the following columns: Document Number, Doc Item No., Material, Sales Doc Date, Sales Person, Version, Sales Org, Sales Office, Sold to Party, Sales Quantity, UNIT, and Sales. The data consists of 23 rows, each representing a transaction record. The first row, with Document Number 1.010 and Doc Item No. M1, is highlighted with a yellow background.

No. of Data Records		10000		Read Preview Data							
Document Number	Doc Item No.	Material	Sales Doc Date	Sales Person	Version	Sales Org	Sales Office	Sold to Party	Sales Quantity	UNIT	S
1.010	1	M1	01.01.2010	SP1	A	SO1	SOF1	CUST1	100	EA	
1.011	1	M2	01.02.2010	SP2	A	SO1	SOF1	CUST2	100	EA	
1.012	1	M3	01.03.2010	SP3	A	SO1	SOF1	CUST3	100	EA	
1.013	1	M4	01.04.2010	SP4	A	SO1	SOF1	CUST4	100	EA	
1.014	1	M5	01.05.2010	SP5	A	SO1	SOF1	CUST5	100	EA	
1.015	1	M6	01.06.2010	SP6	A	SO1	SOF1	CUST6	100	EA	
1.016	1	M7	01.01.2010	SP1	A	SO1	SOF2	CUST1	100	EA	
1.017	1	M8	01.02.2010	SP2	A	SO1	SOF2	CUST2	100	EA	
1.018	1	M9	01.03.2010	SP3	A	SO1	SOF2	CUST3	100	EA	
1.019	1	M10	01.04.2010	SP4	A	SO1	SOF2	CUST4	100	EA	
1.020	1	M11	01.05.2010	SP5	A	SO1	SOF2	CUST5	100	EA	
1.021	1	M12	01.06.2010	SP6	A	SO1	SOF2	CUST6	100	EA	
1.022	1	M1	01.01.2010	SP1	A	SO1	SOF3	CUST1	100	EA	
1.023	1	M2	01.02.2010	SP2	A	SO1	SOF3	CUST2	100	EA	

Conclusion: Datasource of type transaction data is created.

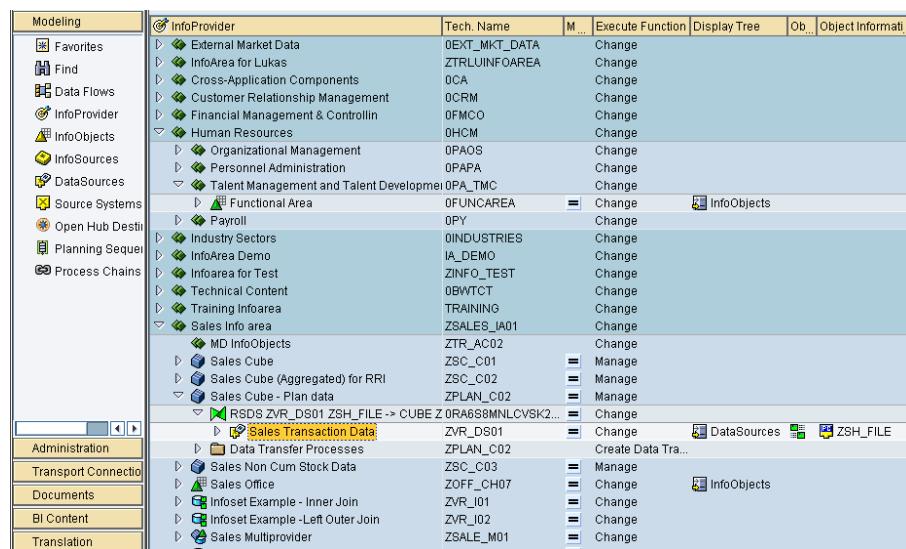
Creation of Info package - Transaction Data

Use :

With the Info package you can determine the selection conditions in BW for the data request from a source system. It is the first step in the extraction process that loads data from source system to BW.

Procedure:

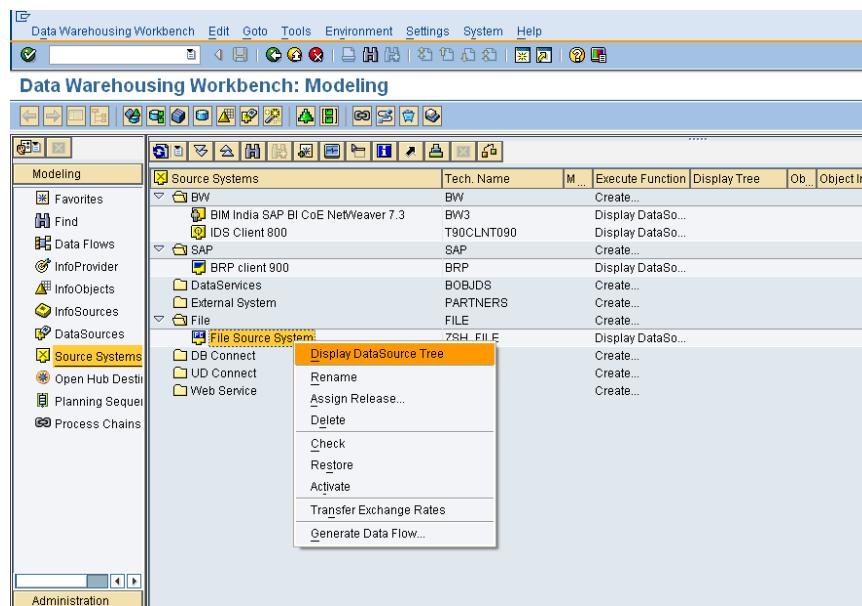
1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing Modeling → Info providers. On right hand side you will see various info providers. Select ZPLAN_C02 info cube and drill down till data source level.



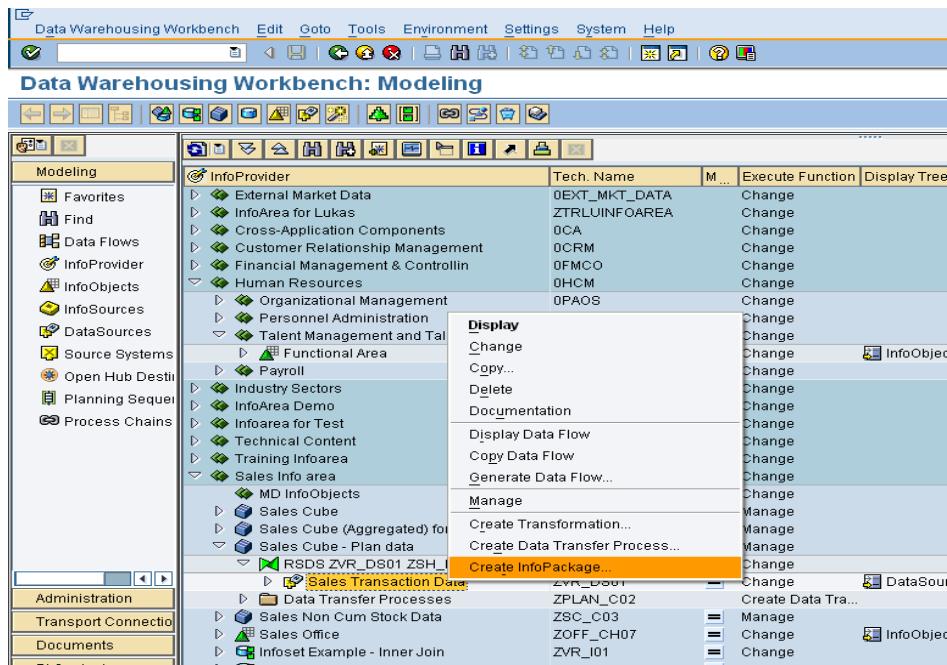
InfoProvider	Tech. Name	M...	Execute Function	Display Tree	Ob...	Object Informati...
External Market Data	OEXT_MKT_DATA	=	Change			
ZTRLUINFOAREA						
Cross-Application Components	OCA	=	Change			
Customer Relationship Management	OCRM	=	Change			
Financial Management & Controllin	OFMCO	=	Change			
Human Resources	OHCM	=	Change			
Organizational Management	OPOAS	=	Change			
Personnel Administration	OPOPA	=	Change			
Talent Management and Talent Developmen	OFTA_TMC	=	Change			
Functional Area	OFUNCAREA	=	Change			
Payroll	OPY	=	Change			
Industry Sectors	OINDUSTRIES	=	Change			
InfoArea Demo	IA_DEMO	=	Change			
Infoarea for Test	ZINFO_TEST	=	Change			
Technical Content	OBWTCT	=	Change			
Training Infoarea	TRAINING	=	Change			
Sales Info area	ZSALES_JA01	=	Change			
MD InfoObjects	ZTR_AC02	=	Change			
Sales Cube	ZSC_C01	=	Manage			
Sales Cube (Aggregated) for RRI	ZSC_C02	=	Manage			
Sales Cube - Plan data	ZPLAN_C02	=	Manage			
RSDS_ZVR_DS01 ZSH_FILE -> CUBE Z 0RA680MNLCVSK2...		=	Change			
Sales.Transaction Data	ZVR_DS01	=	Change			
Data Transfer Processes	ZPLAN_C02	=	Create Data Tra...			
Sales Non Cum Stock Data	ZSC_C03	=	Manage			
Sales Office	ZOFF_CH07	=	Change			
InfoSet Example - Inner Join	ZVR_I01	=	Change			
InfoSet Example - Left Outer Join	ZVR_I02	=	Change			
Sales Multiprovider	ZSALE_M01	=	Change			

OR

Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing Modeling → source system. Right click on FILE source system and click display data source tree. Search for ZVR_DS01 data source.

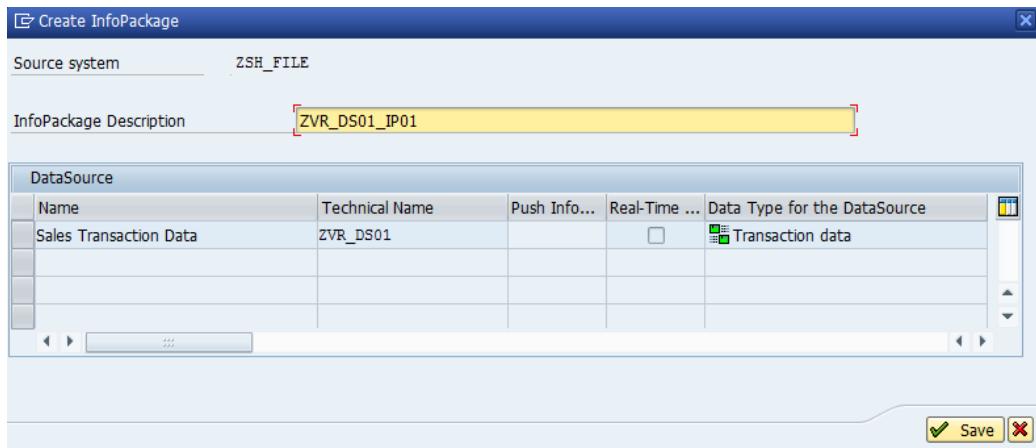


3. Right click on ZVR_DS01 datasource. -> Create Info package.

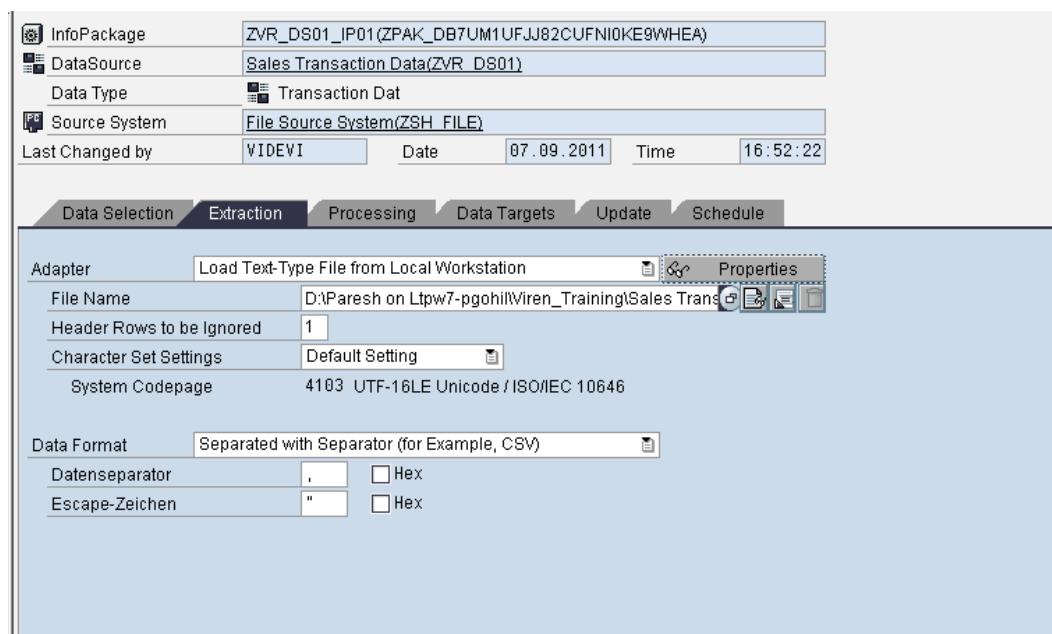


4. Put
description

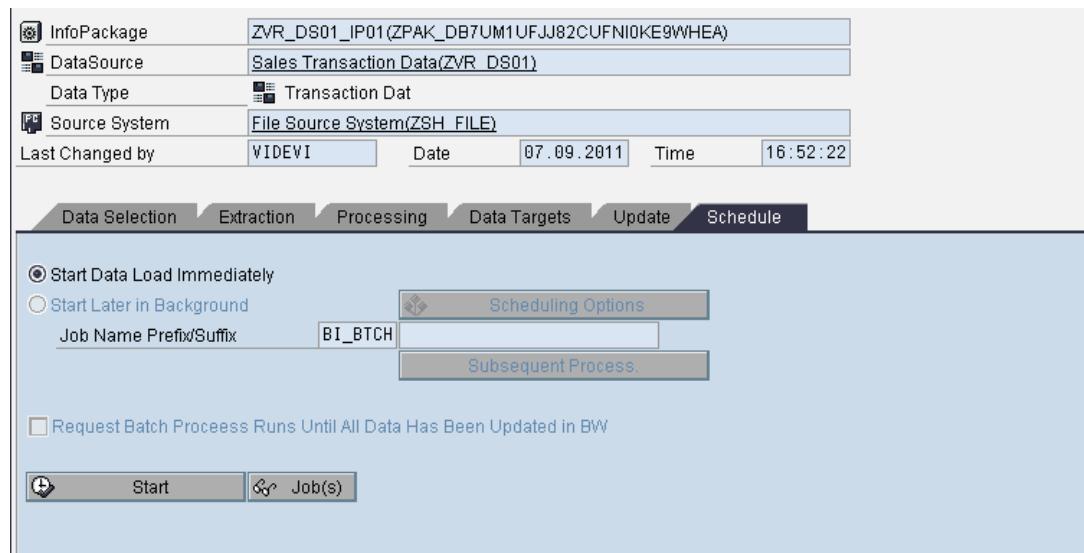
as ZVR_DS01_IP01.



5. Go to Extraction tab. Select adapter as 'load text-type file from local workstation'.
6. Select File name as "Sales Transaction Data_plan" from desktop.

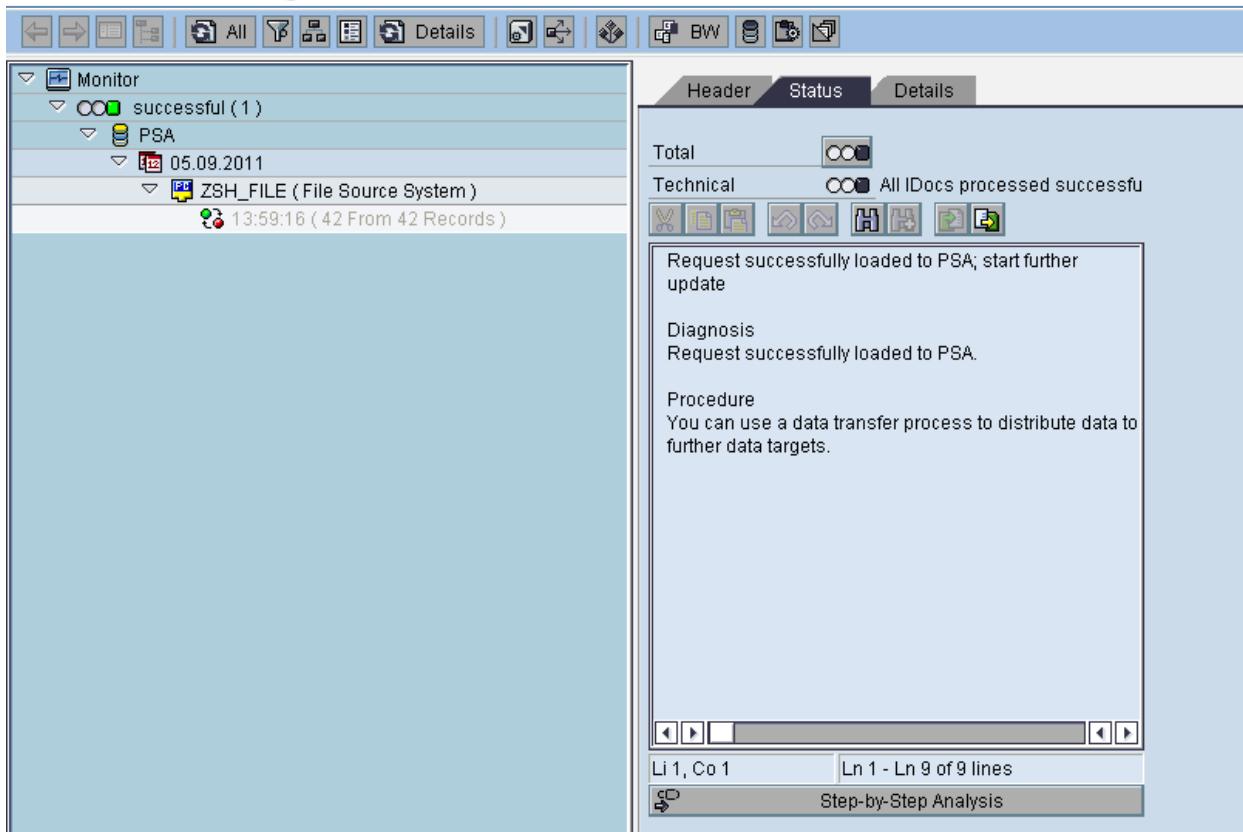


7. Go to schedule tab. Click on 'Start' button.



8. Go to monitor shown by  symbol on left top corner. It will show status of the data load initiated from the info package.

Monitor InfoPackage

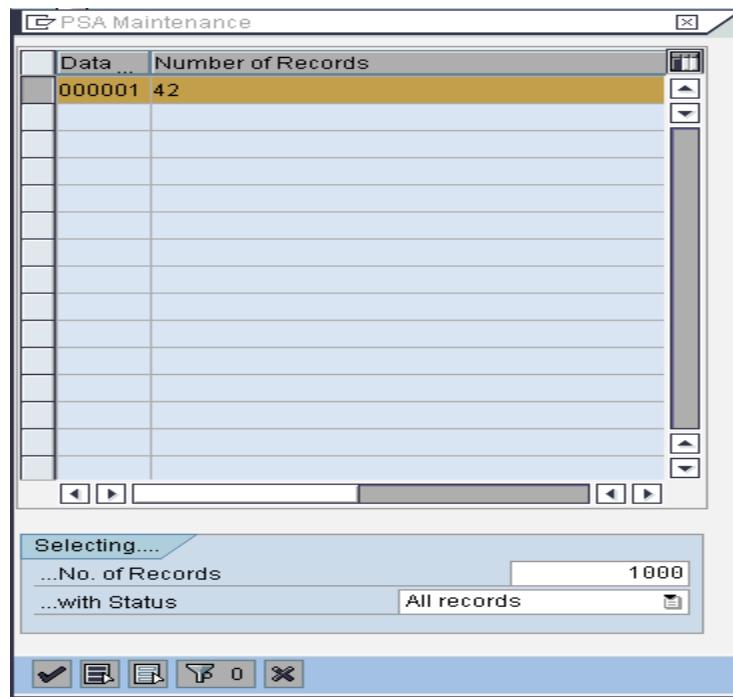


The screenshot shows the SAP Monitor InfoPackage interface. On the left, a tree view under 'Monitor' shows a successful ZSH_FILE load to PSA on 05.09.2011. The main area displays a summary of the load:

Total	COO
Technical	COO All IDocs processed successfully

Below the summary, there is a message: "Request successfully loaded to PSA; start further update". The Diagnosis section states: "Request successfully loaded to PSA." The Procedure section suggests: "You can use a data transfer process to distribute data to further data targets." At the bottom, there is a step-by-step analysis section.

9. It loads data to PSA .To check data n PSA click on  in top area. It will open PSA maintenance screen.



10. Click on . You will see data loaded by the infopackage.

PSA Maintenance



The screenshot shows a SAP BI interface titled "PSA Maintenance". At the top, there is a toolbar with various icons and a message "Data records to be edited". Below the toolbar is a table with 29 rows and 11 columns. The columns are labeled: Status, DataPacket, Data Rec., Version, Sales Org, Sales Off, Sales Quan, UNIT, Sales Amou, Currency, and Cal.year. The data in the table consists of 29 rows of sales records, each with a status indicator (yellow square), a data packet number (1), data record numbers (1-29), sales organization (SO1), sales office (SOF1-SOF5), sales quantity (100 EA), sales amount (200.00 GBP), and a calendar year (201007-201011).

	Status	DataPacket	Data Rec.	Version	Sales Org	Sales Off	Sales Quan	UNIT	Sales Amou	Currency	Cal.year
	■	1	1	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	2	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	3	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	4	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	5	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	6	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	7	A	SO1	SOF2	100	EA	200.00	GBP	201007
	■	1	8	A	SO1	SOF2	100	EA	200.00	GBP	201008
	■	1	9	A	SO1	SOF2	100	EA	200.00	GBP	201009
	■	1	10	A	SO1	SOF2	100	EA	200.00	GBP	201010
	■	1	11	A	SO1	SOF2	100	EA	200.00	GBP	201011
	■	1	12	A	SO1	SOF2	100	EA	200.00	GBP	201012
	■	1	13	A	SO1	SOF3	100	EA	200.00	GBP	201007
	■	1	14	A	SO1	SOF3	100	EA	200.00	GBP	201008
	■	1	15	A	SO1	SOF3	100	EA	200.00	GBP	201009
	■	1	16	A	SO1	SOF3	100	EA	200.00	GBP	201010
	■	1	17	A	SO1	SOF3	100	EA	200.00	GBP	201011
	■	1	18	A	SO1	SOF3	100	EA	200.00	GBP	201012
	■	1	19	A	SO1	SOF4	100	EA	200.00	GBP	201007
	■	1	20	A	SO1	SOF4	100	EA	200.00	GBP	201008
	■	1	21	A	SO1	SOF4	100	EA	200.00	GBP	201009
	■	1	22	A	SO1	SOF4	100	EA	200.00	GBP	201010
	■	1	23	A	SO1	SOF4	100	EA	200.00	GBP	201011
	■	1	24	A	SO1	SOF4	100	EA	200.00	GBP	201012
	■	1	25	A	SO1	SOF5	100	EA	200.00	GBP	201007
	■	1	26	A	SO1	SOF5	100	EA	200.00	GBP	201008
	■	1	27	A	SO1	SOF5	100	EA	200.00	GBP	201009
	■	1	28	A	SO1	SOF5	100	EA	200.00	GBP	201010
	■	1	29	A	SO1	SOF5	100	EA	200.00	GBP	201011

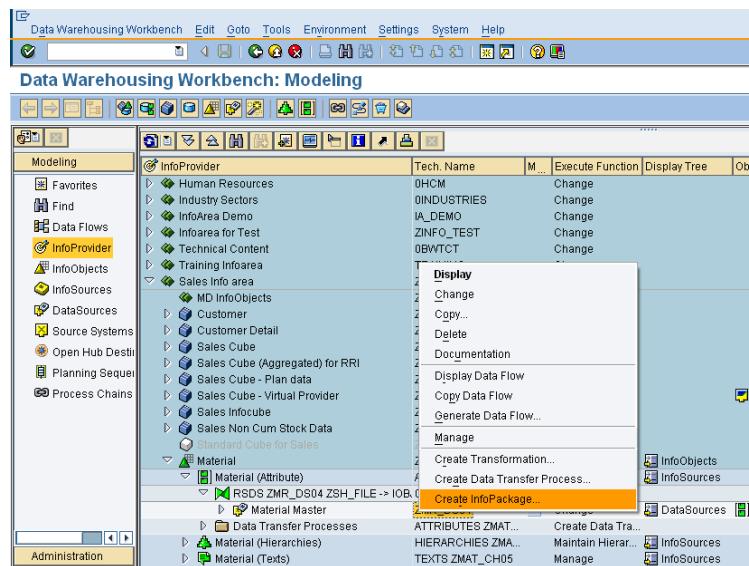
Creation of Info package - Master Data

Procedure:

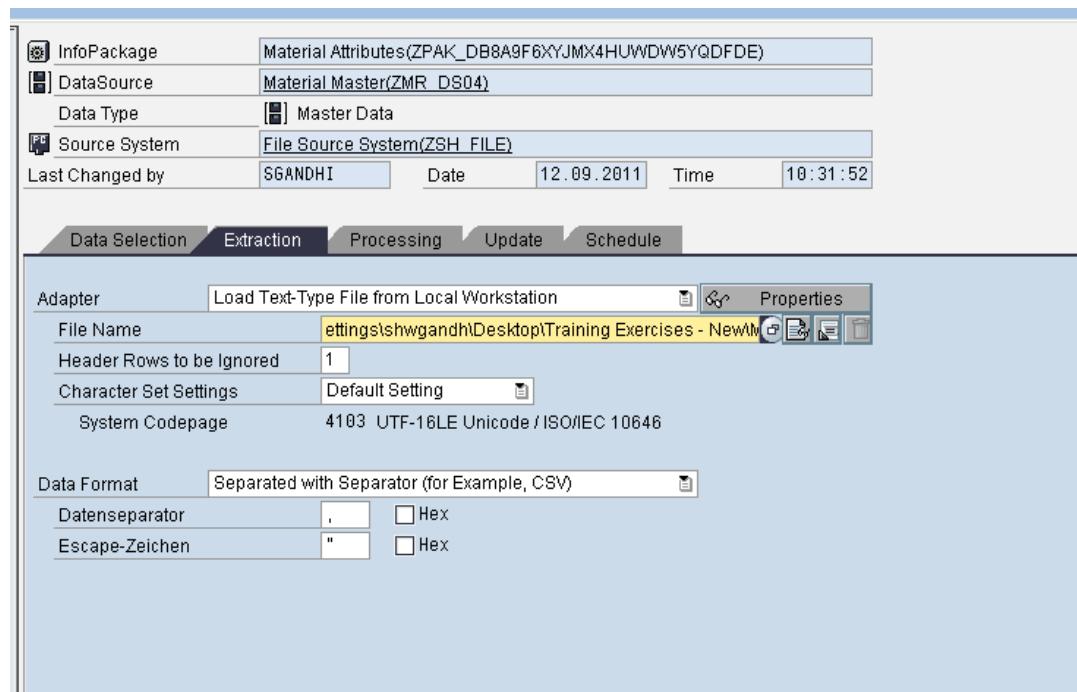
1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing Modeling → Info providers. On right hand side you will see various info providers. Select ZMAT_CH05 info object and drill down till attribute data source level.

MATERIAL	ZMAT_549	= Change	InfoObjects
Material	ZMAT_564	= Change	InfoObjects
Material	ZMAT_89	= Change	InfoObjects
Material	ZMAT_C571	= Change	InfoObjects
Material	ZMAT_CH05	= Change	InfoObjects
Material (Attributes)	ATTRIBUTES ZMAT...	Manage	InfoSources
from Material for BIM India SAP B	B8ZMAT_CH05M ...	Change	
RSDS ZMR_DS04 ZSH_FILE -> IOBJ	OJJGNVB4R0TJ4RH...	= Change	
Material Master	ZMR_DS04	= Change	DataSources
Material Attributes	ZPAK_DB8A9F6XYJ...	Execute	DataSources
Material Attributes	ZPAK_DBAVFO097...	Execute	DataSources
Material Attributes	ZPAK_DJSKIELN2UF...	Execute	DataSources
Material Text	ZPAK_DJSKJ1V2TL...	Execute	DataSources
ZMR_DS04_IP04	ZPAK_DKYPTG9UW...	Execute	DataSources
Data Transfer Processes	ATTRIBUTES ZMAT...	Create Data Tr...	
Material (Hierarchies)	HIERARCHIES ZMA...	Maintain Hierar...	InfoSources
Material (Texts)	TEXTS ZMAT CH05	Manage	InfoSources

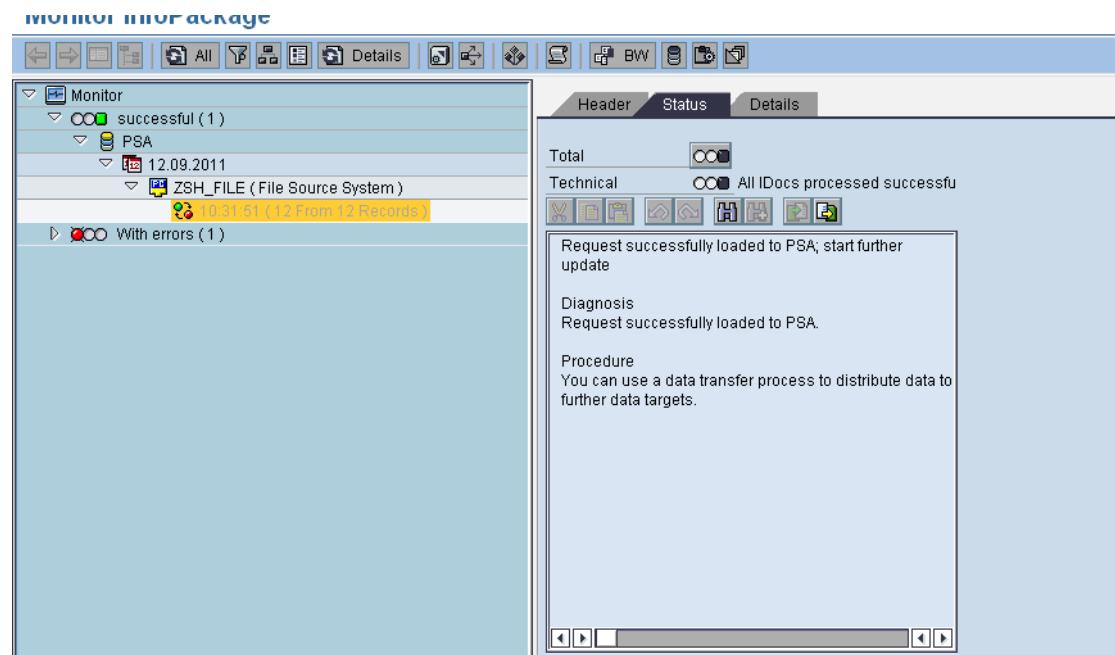
3. Right click on ZMR_DS04 datasource. -> Create Info package.



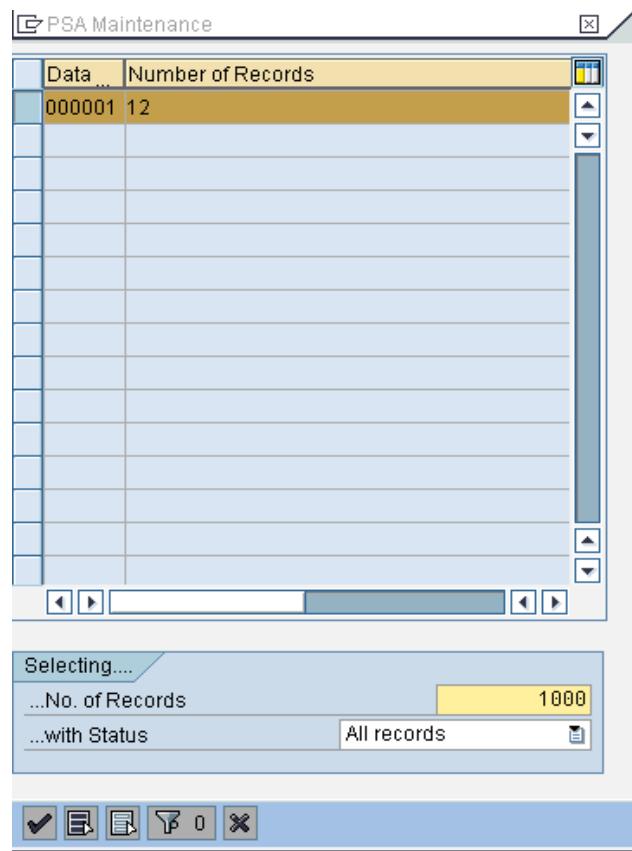
4. Put description as 'Material Attributes'.
5. Go to Extraction tab. Select adapter as 'load text-type file from local workstation'.
6. Select File name as "Material Master.csv" from desktop.



7. Go to schedule tab. Click on 'Start' button.
8. Go to monitor shown by  symbol on left top corner. It will show status of the data load initiated from the info package.

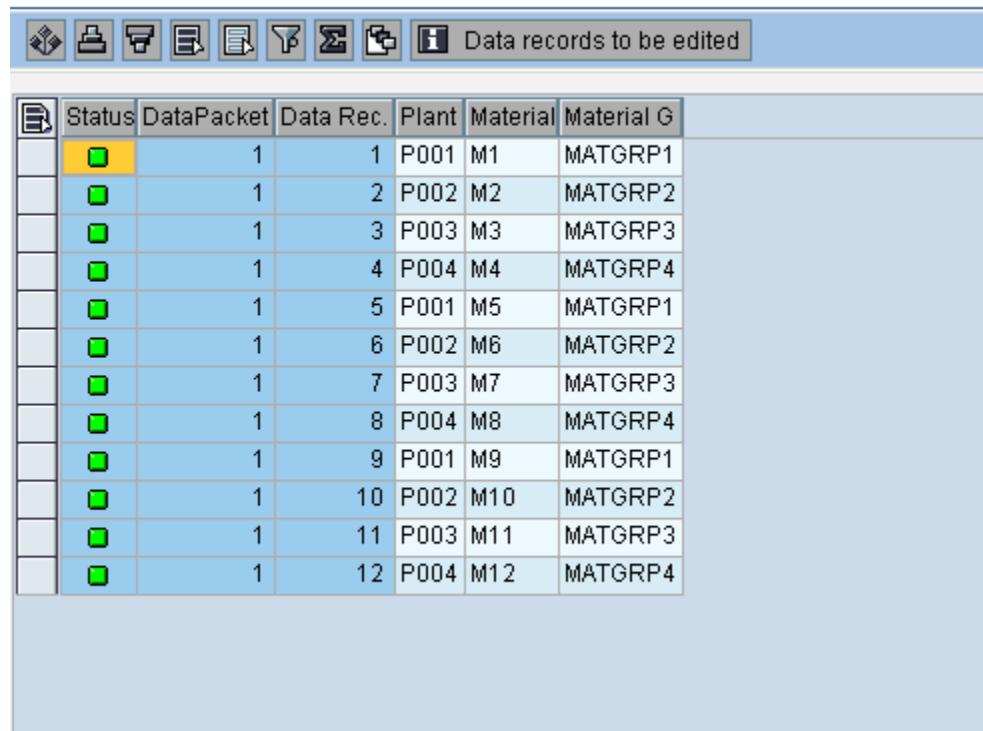


9. It loads data to PSA .To check data n PSA click on  in top area. It will open PSA maintenance screen.



10. Click on . You will see data loaded by the infopackage.

PSA Maintenance



The screenshot shows a SAP interface titled "PSA Maintenance". At the top, there is a toolbar with various icons and a status bar indicating "Data records to be edited". Below the toolbar is a table with the following columns: Status, DataPacket, Data Rec., Plant, Material, and Material G. The table contains 12 rows of data, each with a green checkmark icon in the Status column. The data is as follows:

Status	DataPacket	Data Rec.	Plant	Material	Material G
■	1	1	P001	M1	MATGRP1
■	1	2	P002	M2	MATGRP2
■	1	3	P003	M3	MATGRP3
■	1	4	P004	M4	MATGRP4
■	1	5	P001	M5	MATGRP1
■	1	6	P002	M6	MATGRP2
■	1	7	P003	M7	MATGRP3
■	1	8	P004	M8	MATGRP4
■	1	9	P001	M9	MATGRP1
■	1	10	P002	M10	MATGRP2
■	1	11	P003	M11	MATGRP3
■	1	12	P004	M12	MATGRP4

Repeat same steps for creating infopackage on **Material Text**. Use 'Material Texts.csv' file to load the data

Conclusion:

We developed ZVR_DS01_IP01 Info package to load data from flat file data source ZVR_DS01 to PSA of the data source. Same data is later pushed to above info providers by using DTPS and transformations.

Similar steps are repeated for master data. Only difference is after PSA, data is pushed to master data tables using DTP and transformations instead of infocube.

PSA - How to edit data in PSA

Use:

The PSA offers you the option of checking and changing data before you update it further from the PSA table in the data target.

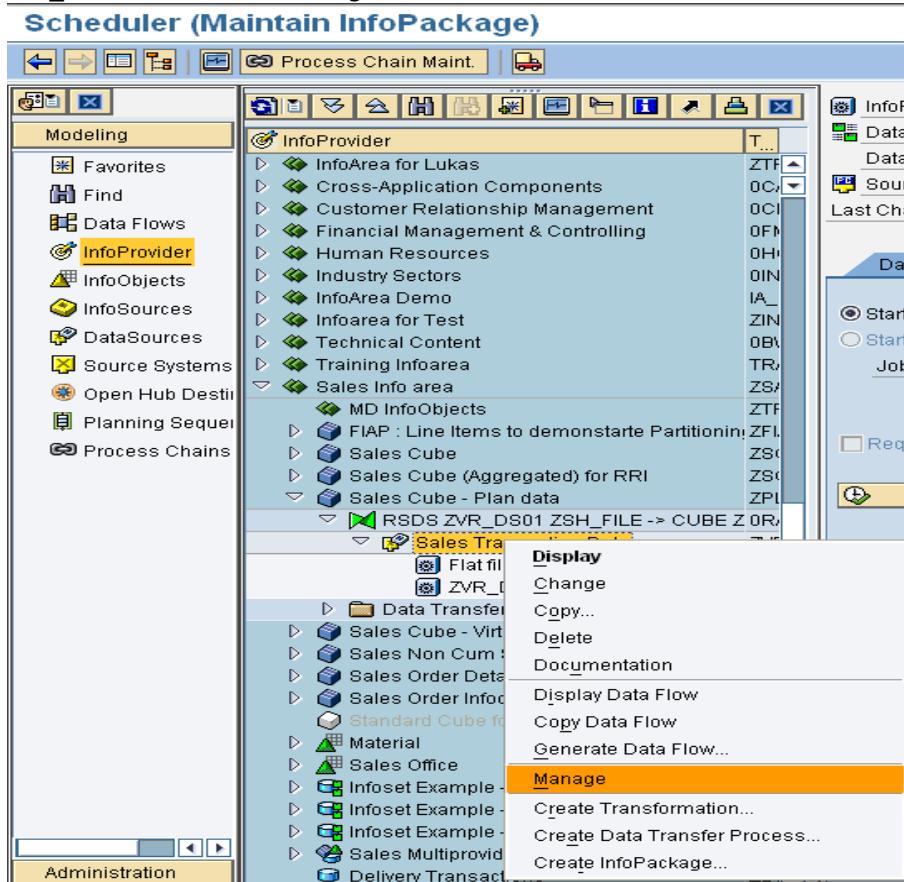
Prerequisites:

We have developed ZVR_DS01_IP01 Info package to load data from flat file datasource ZVR_DS01 to PSA of the data source.

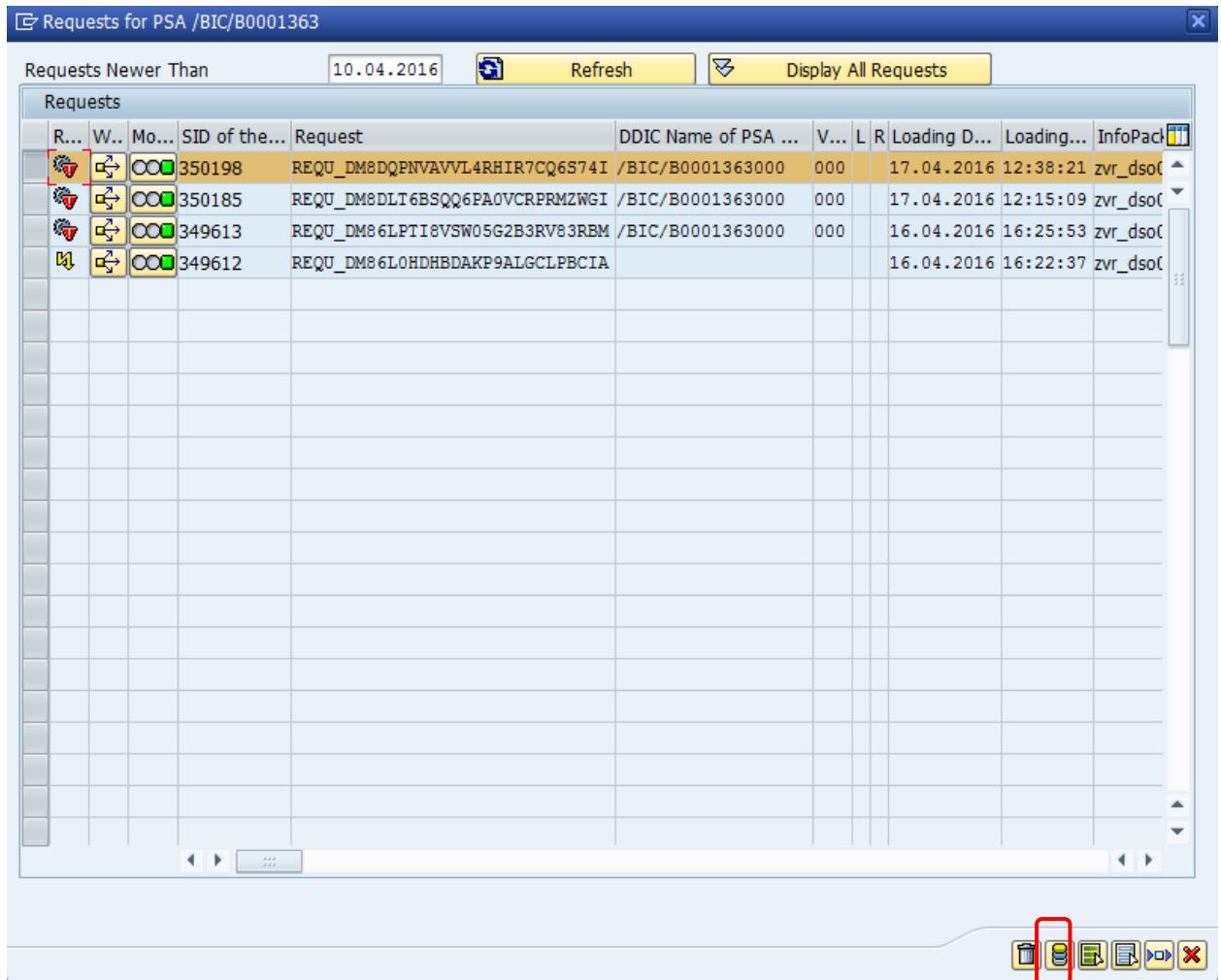
Procedure:

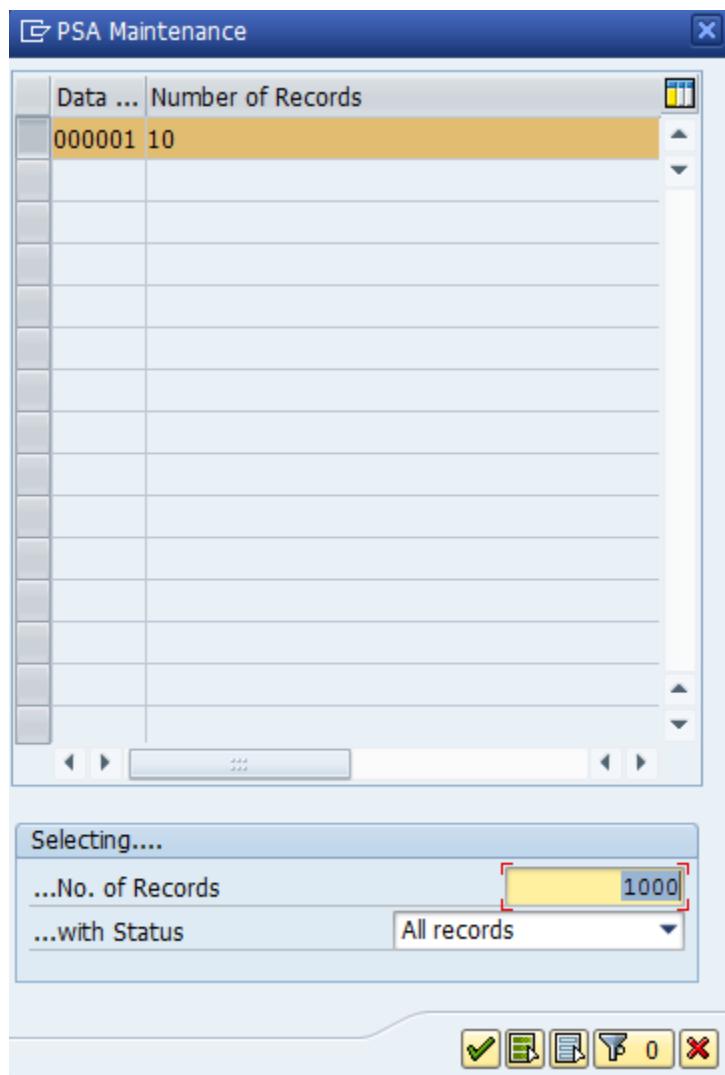
We are going to view data in PSA first. Then push it to Cube. Check data in cube. Then delete the request from cube and edit data in PSA. Send the request to Cube and then check the cube output. Notice the changed data in cube.

1. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing Modeling → Info providers. On right hand side you will see various info providers. Select ZPLAN_C02 info cube and drill down till the datasource level. Then right click on the datasource ZVR_DS01 and click on Manage.

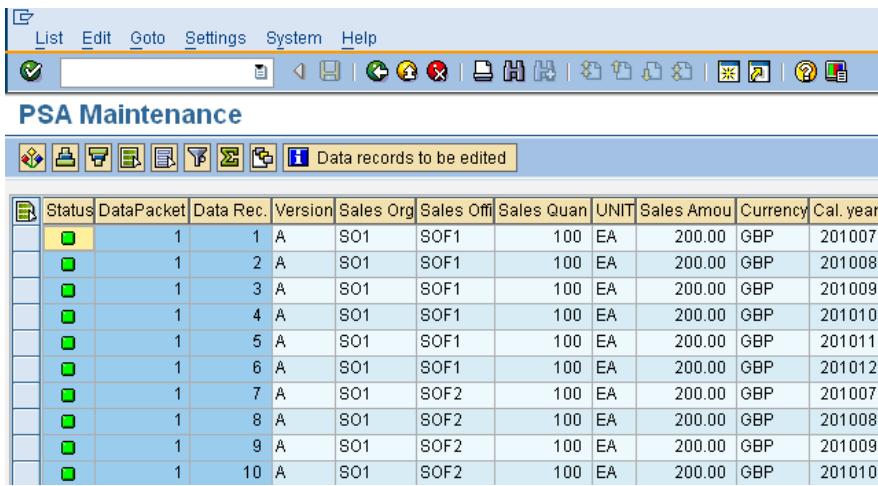


2. Select the request and click on PSA Maintenance . It will open PSA maintenance screen.





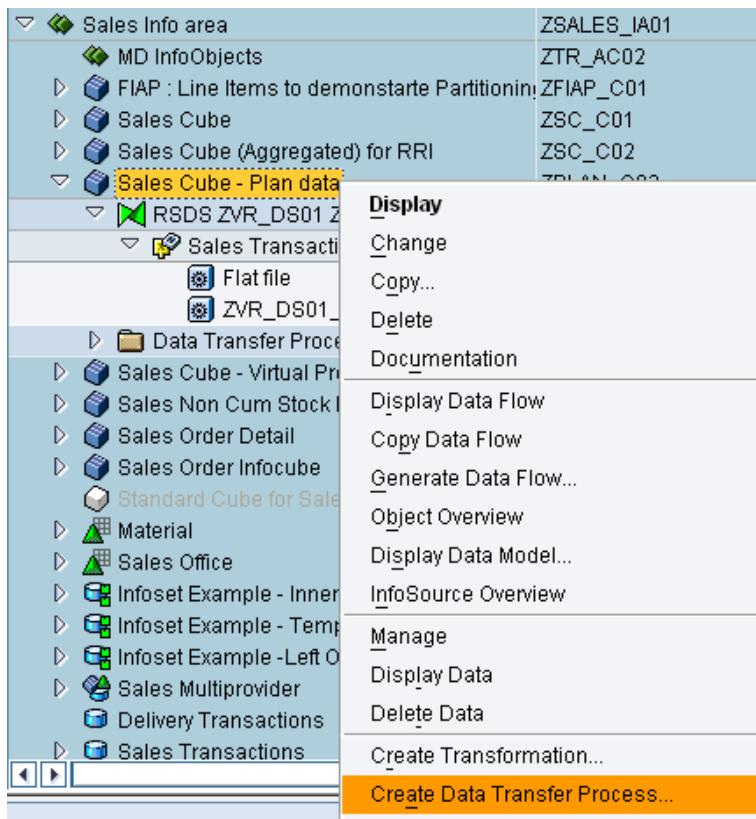
3. Click on  . You will see data loaded by the infopackage.



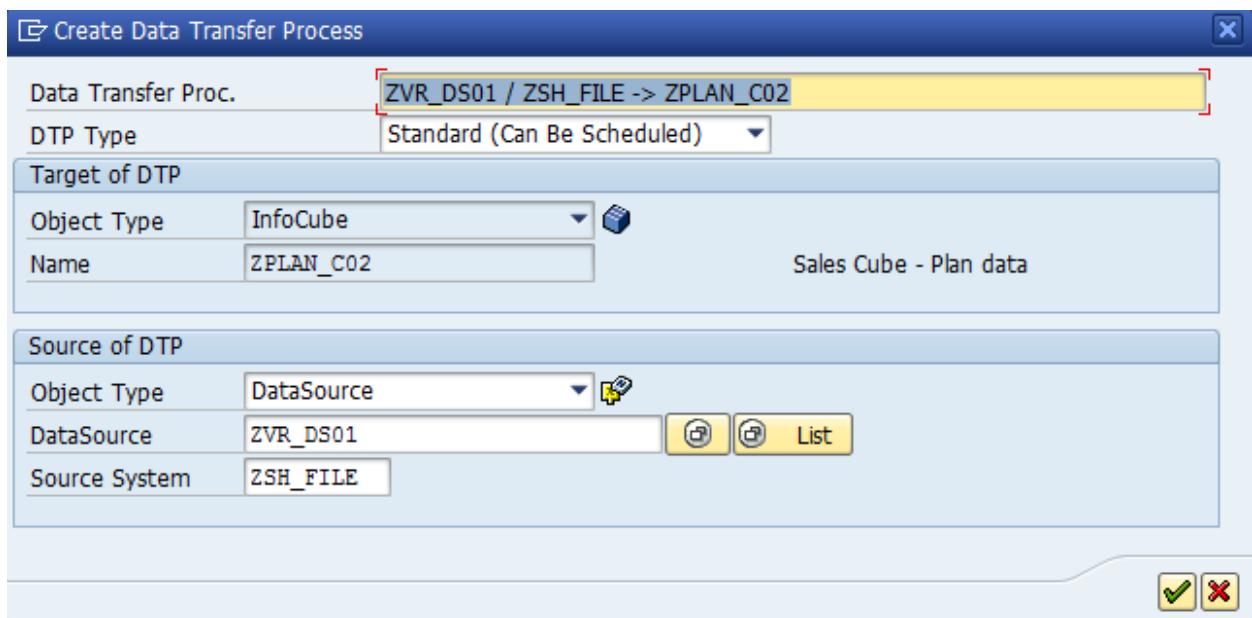
The screenshot shows the SAP PSA Maintenance interface. The title bar reads "PSA Maintenance". Below the title bar is a toolbar with various icons. The main area is titled "Data records to be edited". A table displays 10 rows of data, each with a status indicator (green square), DataPacket (1-10), Data Rec. (1-10), Version (A), Sales Org (SO1), Sales Off (SOF1/SOF2), Sales Quan (100), UNIT (EA), Sales Amou (200.00 GBP), Currency (GBP), and Cal.year (201007-201010). The first row is highlighted with a yellow background.

	Status	DataPacket	Data Rec.	Version	Sales Org	Sales Off	Sales Quan	UNIT	Sales Amou	Currency	Cal.year
		1	1	A	SO1	SOF1	100	EA	200.00	GBP	201007
		1	2	A	SO1	SOF1	100	EA	200.00	GBP	201008
		1	3	A	SO1	SOF1	100	EA	200.00	GBP	201009
		1	4	A	SO1	SOF1	100	EA	200.00	GBP	201010
		1	5	A	SO1	SOF1	100	EA	200.00	GBP	201011
		1	6	A	SO1	SOF1	100	EA	200.00	GBP	201012
		1	7	A	SO1	SOF2	100	EA	200.00	GBP	201007
		1	8	A	SO1	SOF2	100	EA	200.00	GBP	201008
		1	9	A	SO1	SOF2	100	EA	200.00	GBP	201009
		1	10	A	SO1	SOF2	100	EA	200.00	GBP	201010

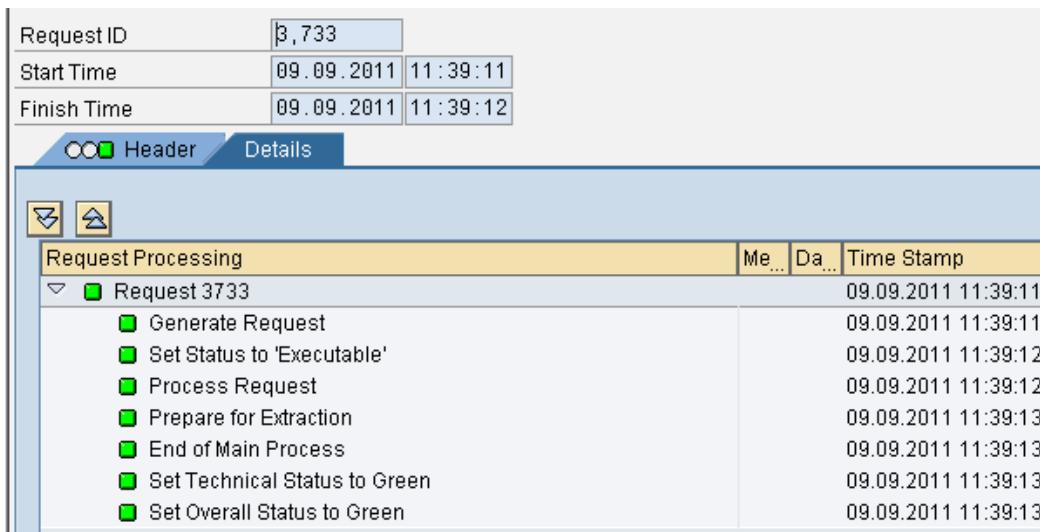
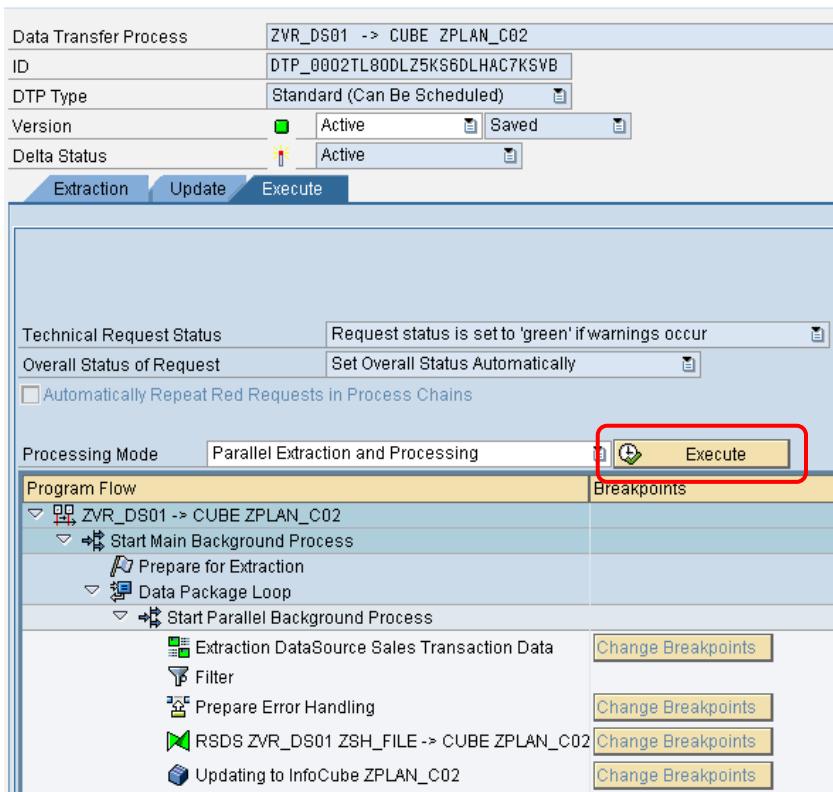
4. Now, we will execute the DTP to move the data to the Infocube ZPLAN_C02. Right click on the Infocube ZPLAN_C02 and select “Create DTP”.



5. Click on . The DTP is created. Then, click on and Activate the DTP.

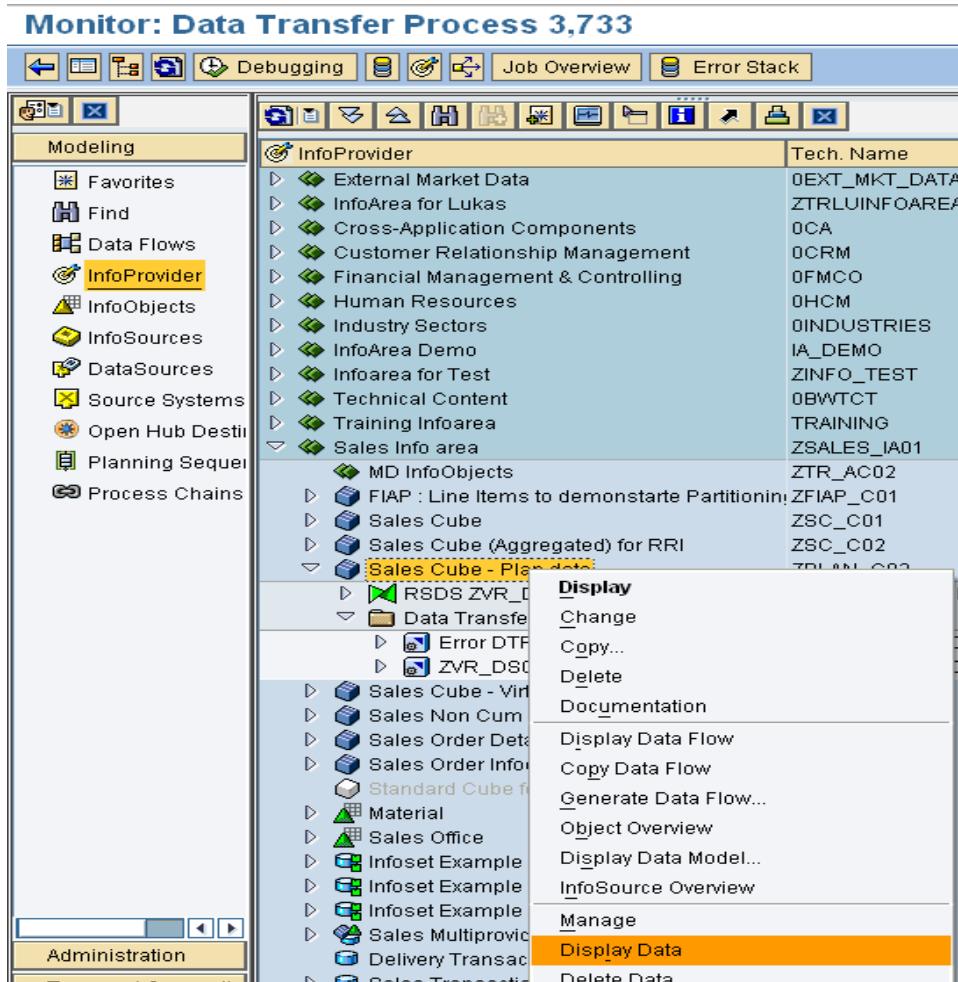


6. Now, go to the *Execute tab* and click on the Execute button as shown. If all the status of the request is green in color, that means the DTP was successful.



7. Now, right click on the Infocube ZPLAN_C02 and click on *Display Data*.

Monitor: Data Transfer Process 3.733



The screenshot shows the SAP BW Monitor interface with the title "Monitor: Data Transfer Process 3.733". The left sidebar has a "Modeling" tab selected, containing icons for Favorites, Find, Data Flows, InfoProvider (which is highlighted), InfoObjects, InfoSources, DataSources, Source Systems, Open Hub Destinations, Planning Sequences, and Process Chains. The main area displays an "InfoProvider" tree with nodes like External Market Data, InfoArea for Lukas, Cross-Application Components, Customer Relationship Management, Financial Management & Controlling, Human Resources, Industry Sectors, InfoArea Demo, Infoarea for Test, Technical Content, Training Infoarea, and Sales Info area. Under Sales Info area, there are MD InfoObjects, FIAP : Line Items to demonstrate Partitioning, Sales Cube, Sales Cube (Aggregated) for RRI, and Sales Cube - Plan data. The "Sales Cube - Plan data" node is selected and has a context menu open. The menu includes options like Display, Change, Copy..., Delete, Documentation, Display Data Flow, Copy Data Flow, Generate Data Flow..., Object Overview, Display Data Model..., InfoSource Overview, Manage, and the top item "Display Data" which is highlighted with an orange background.

8. Click on “Fld Selectn for output” and then “Select all Characteristics”. Then click on Execute twice. The data in the cube will be displayed.

'ZPLAN_C02', Selection scr.



The screenshot shows the selection screen for the cube 'ZPLAN_C02'. At the top, there are three buttons: "Fld Selectn for Output" (highlighted with a red box), "Execute in Bckgrnd", and "Execute + Debug". Below the buttons, there is a navigation bar with the text "Sales Office".

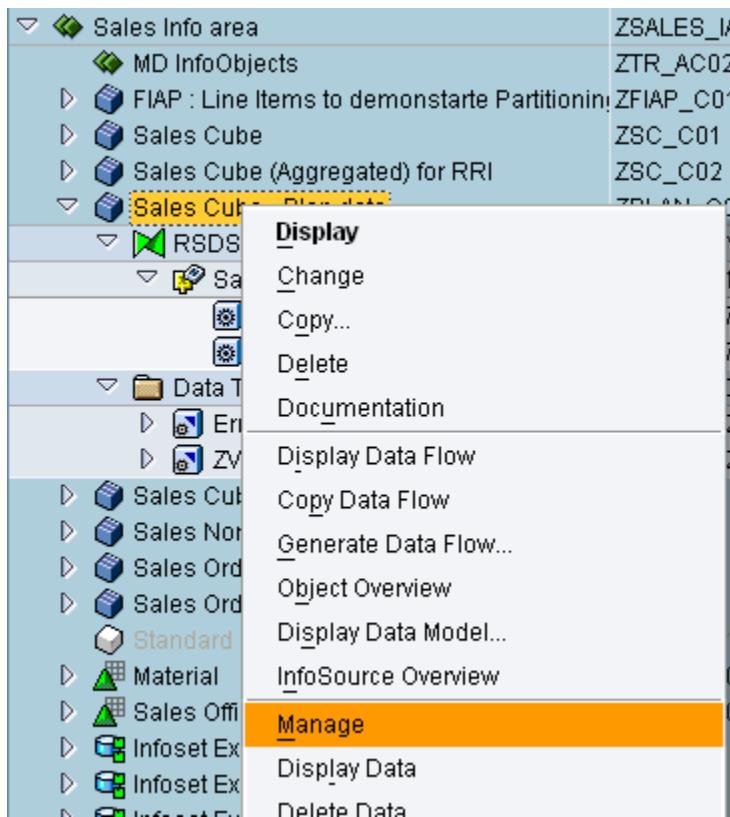
"ZPLAN_C02", Fld Selectn for Output

Select all Deselect all Highlight all key figs **Select All Characteristics** Select All SID Fields

"ZPLAN_C02", List output

Sales Office	ZORG_CH06	Version	OCHNGID	Record type	Request ID	0CALMONTH	0CALYEAR	Currency	0UNIT	ZAMT_K01	ZQUAN_K01
SOF1	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201007	2010	GBP	EA	200.00	100
SOF1	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201008	2010	GBP	EA	200.00	100
SOF1	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201009	2010	GBP	EA	200.00	100
SOF1	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201010	2010	GBP	EA	200.00	100
SOF1	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201011	2010	GBP	EA	200.00	100
SOF1	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201012	2010	GBP	EA	200.00	100
SOF2	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201007	2010	GBP	EA	200.00	100
SOF2	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201008	2010	GBP	EA	200.00	100
SOF2	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201009	2010	GBP	EA	200.00	100
SOF2	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201010	2010	GBP	EA	200.00	100
SOF2	S01	A			DTPR_0002TL80DLZ5KS6E92A8CIEJR	201011	2010	GBP	EA	200.00	100

9. Go to the Infocube and right click on *Manage*.



10. Now, select the request and click on *Delete*.

Contents Performance Requests Rollup Collapse Reconstruction

InfoCube requests for InfoCube:Sales Cube - Plan data(ZPLAN_C02)

Request ID	R...	C...	C...	D...	R...	Re...	Loa...	DTP/InfoPackage	Request D...	Update Date	S...
3733						OO	green	ZVR_DS01 -> CUBE ZPLA	09.09.2011	09.09.2011	
3239						OO	green	ZVR_DS01 -> CUBE ZPLA	05.09.2011	05.09.2011	

Request Display: Date of Update From To

Job Name: BI_DELR Selection Subsequent Proc.

 Delete  Refresh  Stop

InfoCube requests for InfoCube:Sales Cube - Plan data(ZPLAN_C02)											
Request ID	R...	C...	C...	D...	R...	Re...	Loa...	DTP/InfoPackage	Request D...	Upd...	
0											
0											
0											
0											
0											
0											
0											
0											
0											
0											
0											

This shows that the data is deleted from the cube.

11. Now, go to the PSA screen again. This time we can see the change/edit button .



PSA Maintenance

	Change (F7)	Order	Batch	Data Rec.	Version	Sales Org	Sales Offi	Sales Quan	UNIT	Sales Amou	Currency	Cal. year
	Change (F7)	1	1	A	S01	SOF1		100	EA	200.00	GBP	201007
	Change (F7)	1	2	A	S01	SOF1		100	EA	200.00	GBP	201008
	Change (F7)	1	3	A	S01	SOF1		100	EA	200.00	GBP	201009
	Change (F7)	1	4	A	S01	SOF1		100	EA	200.00	GBP	201010
	Change (F7)	1	5	A	S01	SOF1		100	EA	200.00	GBP	201011
	Change (F7)	1	6	A	S01	SOF1		100	EA	200.00	GBP	201012
	Change (F7)	1	7	A	S01	SOF2		100	EA	200.00	GBP	201007
	Change (F7)	1	8	A	S01	SOF2		100	EA	200.00	GBP	201008
	Change (F7)	1	9	A	S01	SOF2		100	EA	200.00	GBP	201009
	Change (F7)	1	10	A	S01	SOF2		100	EA	200.00	GBP	201010

12. Select the third row and click on the Change button. Now we can edit the data at the PSA level. Change the *Sales Quantity* to 200 from 100 and click on . Then save changed data by clicking on the  button.

PSA Maintenance

	Status	DataPacket	Data Rec.	Version	Sales Org	Sales Off	Sales Quan	UNIT	Sales Amou	Currency	Cal.year
	■	1	1	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	2	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	3	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	4	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	5	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	6	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	7	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	8	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	9	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	10	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	11	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	12	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	13	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	14	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	15	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	16	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	17	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	18	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	19	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	20	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	21	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	22	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	23	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	24	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	25	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	26	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	27	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	28	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	29	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	30	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	31	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	32	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	33	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	34	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	35	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	36	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	37	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	38	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	39	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	40	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	41	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	42	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	43	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	44	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	45	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	46	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	47	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	48	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	49	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	50	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	51	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	52	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	53	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	54	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	55	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	56	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	57	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	58	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	59	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	60	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	61	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	62	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	63	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	64	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	65	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	66	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	67	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	68	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	69	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	70	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	71	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	72	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	73	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	74	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	75	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	76	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	77	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	78	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	79	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	80	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	81	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	82	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	83	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	84	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	85	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	86	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	87	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	88	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	89	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	90	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	91	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	92	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	93	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	94	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	95	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	96	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	97	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	98	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	99	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	100	A	SO1	SOF1	100	EA	200.00	GBP	201010

Single record change

Request number: REQU_DBTCN43CHZL7P6NMU1UUU

Data packet number: 000001

Partition value for: 1

Data record number: 3

Version: A

Sales Org: SO1

Sales Office: SOF1

Sales Quantity: 200

UNIT: EA

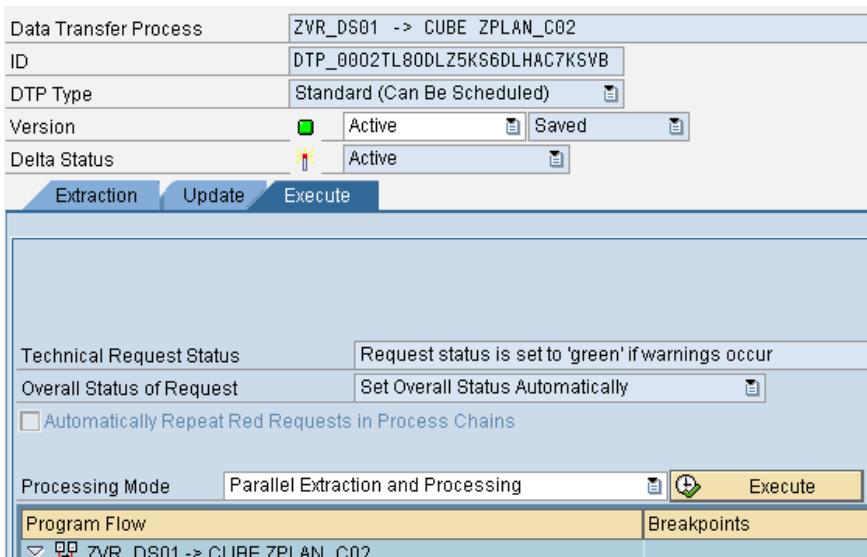
Sales Amount: 200.00

Currency: GBP

Cal. year / month: 201009

Buttons:  

	Status	DataPacket	Data Rec.	Version	Sales Org...	Sales Off...	Sales Quan...	UNIT	Sales Am...	Currency	Cal.year
	■	1	1	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	2	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	3	A	SO1	SOF1	200	EA	200.00	GBP	201009
	■	1	4	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	5	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	6	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	7	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	8	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	9	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	10	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	11	A	SO1	SOF1	100	EA	200.00	GBP	201011
	■	1	12	A	SO1	SOF1	100	EA	200.00	GBP	201012
	■	1	13	A	SO1	SOF1	100	EA	200.00	GBP	201007
	■	1	14	A	SO1	SOF1	100	EA	200.00	GBP	201008
	■	1	15	A	SO1	SOF1	100	EA	200.00	GBP	201009
	■	1	16	A	SO1	SOF1	100	EA	200.00	GBP	201010
	■	1	17	A	SO1	SOF					



14. Follow steps 8 and 9 to view the data in the infocube ZPLAN_C02. The screenshot below shows the changed data in the cube.

"ZPLAN_C02", List output											
Sales Office	ZORG_CH06	Version	DCHNGID	Record type	Request ID	DCALMONTH	DCALYEAR	Currency	OUNIT	ZAMT_K01	ZQUAN_K01
SOF1	S01	A			DTPR_0002TL80DLZ5KSNTZ0S5SMNY6	201007	2010	GBP	EA	200.00	100
SOF1	S01	A			DTPR_0002TL80DLZ5KSNTZ0S5SMNY6	201008	2010	GBP	EA	200.00	100
SOF1	S01	A			DTPR_0002TL80DLZ5KSNTZ0S5SMNY6	201009	2010	GBP	EA	200.00	200

Conclusion:

We viewed the data in the PSA before changing. Then we loaded the data in the Infocube. We then changed the data at the PSA level and viewed the changed data in the cube.

Transformation

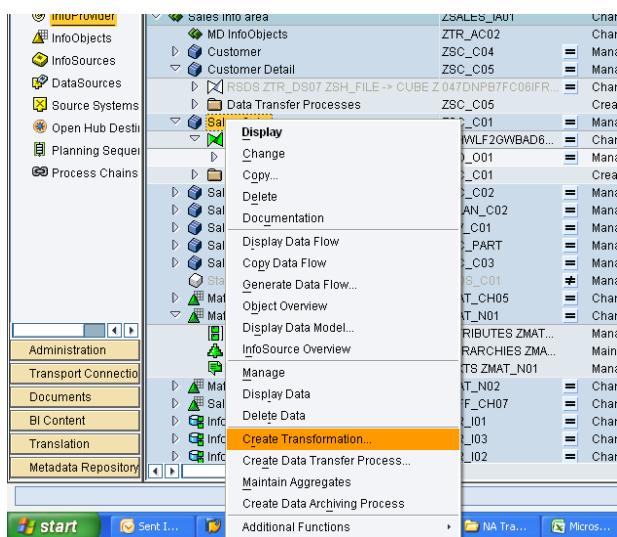
Use :

The transformation process allows you to consolidate, cleanse, and integrate data. You can semantically synchronize data from heterogeneous sources.

When you load data from one BI object into a further BI object, the data is passed through a transformation. A transformation converts the fields of the source into the format of the target.

Procedure:

- 1) Right click on ZSC_C01 cube -> Create Transformation.



- 2) Wherever technical name and field properties matches system will propose the rules automatically. If not, you can link source and target fields manually. To understand various possible rule types follow below steps. To assign rule right click on target field (right side) and click rule details.

Rule Type: Constant

Requirement: Assign a constant value of 'A' to the characteristics Version (ZVER_CHXX)

You can assign a constant value to an InfoObject. For all the records the value will be fixed to the constant value provided.

Rule Details

Description	A		
Target InfoObj.	ZVER_CH11	Version	
Rule Type	Constant	Constant Value	A
Conversion Exit	ALPHA	Perform	<input type="checkbox"/>
Referent. Integrity	<input type="checkbox"/>		<input type="checkbox"/>
Transfer Routine	<input type="checkbox"/>		

Source Fields of Rule:

Field	Long Description	Type	Ln...	Conv...	IOAssgnmnt	Long Description

Target Fields of Rule:

InfoObject	I...	Long Description	Type	Ln...	Conv...
ZVER_CH11		Version	CHAR	3	ALPHA

Check |
 Transfer Values |
 |
 |
 |
 |

Rule Type: Formula

Requirement: Populate the Sales person as a string concatenation of 'S1' and the source sales person information.

Solution: Create a Rule of type formula like below and create a formula.

Rule Window:

Rule Details

Description	'S1' & /BIC/ZSPR_CH03
Target InfoObj.	ZSPR_CH03 Sales Person
Rule Type	Formula
Conversion Exit	ALPHA Perform
Referent. Integrity	<input type="checkbox"/>
Transfer Routine	<input type="checkbox"/>

Source Fields of Rule:

Field	Long Description	Type	Ln...	Conv...	IOAssgnmnt	Long Description
/BIC/ZSPR_CH03	Sales Person	CHAR	10	ALPHA		

Target Fields of Rule:

InfoObject	I...	Long Description	Type	Ln...	Conv...
ZSPR_CH03		Sales Person	CHAR	10	ALPHA

Check |
 Transfer Values |
 |
 |
 |
 |
 |
 |

Formula Window:

Formula Type: Initial

Requirement: Assign NULL value to the Sales Organization (ZORG_CHXX)

Formula type Initial will set the values to 'Initial' or NULL. They can be populated in the End Routine.
(this rule is not implemented in system just for learning purpose)

Form. <No text available in this language> (ZSPR_CH03) Display

'S1' & /BIC/ZSPR_CH03

Show me: All Fields

Type	Field	Name	Data Type	Length
	/BIC/ZSPR_CH03	/BIC/ZSPR_CH03	CHAR	10
SYST-DATLO	Local Date	DATS	CHAR	8
SYST-DATUM	Current Date	DATS	CHAR	8
SYST-DAYST	Daylight Saving Time	CHAR	CHAR	1
SYST-DBSYS	Database System	CHAR	CHAR	10
SYST-FDAYW	Factory Calendar Day	INT1	INT1	3
SYST-HOST	AS	CHAR	CHAR	32
SYST-LANGU	Language Key	LANG	CHAR	1
SYST-MANDT	Client ID	CLNT	CHAR	3
SYST-OPSYS	Operating System	CHAR	CHAR	10
SYST-SAPRL	SAP Release	CHAR	CHAR	4
SYST-SYSID	SAP System ID	CHAR	CHAR	8
SYST-TIMLO	Local Time	TIMS	CHAR	6
SYST-TZONE	Time Zone Difference	INT4	INT4	10
SYCT-UNAME	User Name	CHAR	CHAR	10

Show me: All Functions

Function	Name
&	Concatenates two character strings
((
))
*	Multiplication
+	Addition
,	Subtraction
/	Division
<	Less than
<=	Less than or equal to
>	Not equal to
=	Equals
>=	Greater
	Greater than or equal to
ABORT_PACKAGE	General Procedure

Rule Details

Description: ZORG_CH06 Sales Organisation

Targt InfoObject: ZORG_CH06 Sales Organisation

Rule Type: Initial

Conversion Exit: ALPHA Perform

Referent. Integrity:

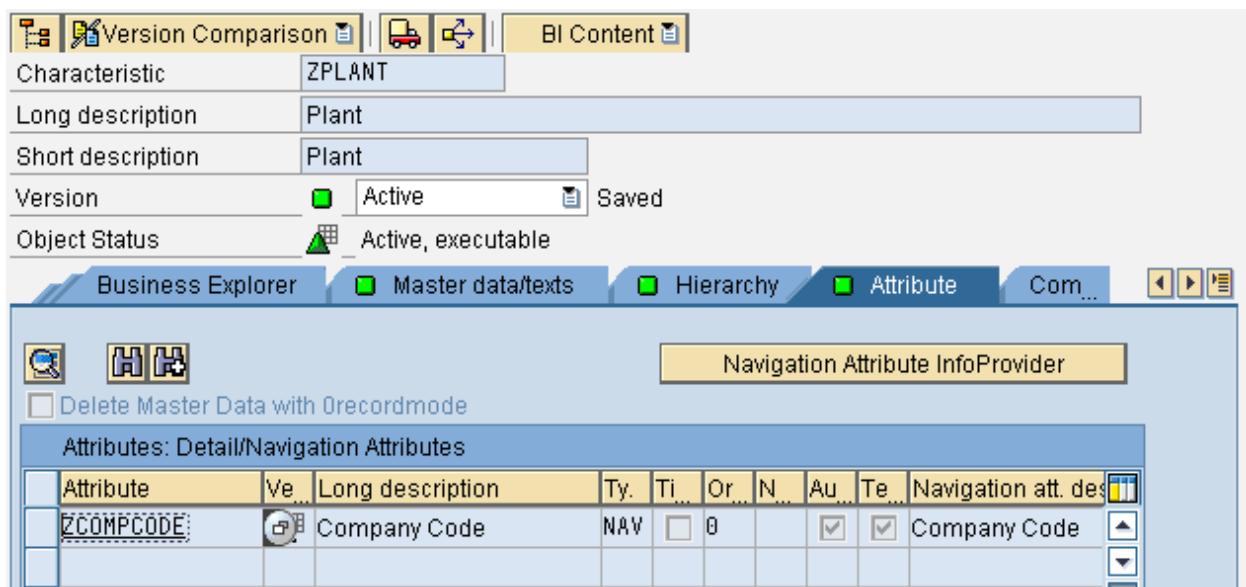
Transfer Routine:

Source Fields of Rule:

Formula Type: Read Master Data

Requirement: Populate ZCOMPCODE by reading the master data of ZPLANT.

ZPLANT has ZCOMPCODE as the attribute



The screenshot shows the SAP BW InfoProvider interface. At the top, the characteristic 'ZPLANT' is selected. Below it, the long and short descriptions are both set to 'Plant'. The version is marked as 'Active' and 'Saved'. The object status is 'Active, executable'. The navigation attribute 'ZCOMPCODE' is listed under 'Attributes: Detail/Navigation Attributes'.

Attribute	Ve...	Long description	Ty...	Ti...	Or...	N...	Au...	Te...	Navigation att. des...
ZCOMPCODE	<input checked="" type="checkbox"/>	Company Code	NAV	<input type="checkbox"/>	0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Company Code

Rule window:

Description: [Redacted]

Targt InfoObject: **ZCOMPCODE** Company Code

Rule Type: **Read Master Data** From Attr. of **ZPLANT**

Referent. Integrity:

Transfer Routine:

Source Fields of Rule:

Field	Long Description	Type	Lng...	Conv...	IOAssgnmnt	Long Description
/BIC/ZPLANT	Plant	CHAR	4			

Target Fields of Rule:

InfoObject	Ic...	Long Description	Type	Lng...	Conv...
ZCOMPCODE		Company Code	CHAR	4	

Formula Type: Routine

Requirement: Populate Z_PRICE as (ZAMT_K01/ZQUAN_K01)

Solution:

Select the Rule type as Routine and Include ZAMT_K01 and ZQUAN_K01 as the Source Fields.

Rule Details

Description	<input type="text"/>	
Target InfoObj.	Z PRICE	PRICE
Rule Type	Routine	
Aggregation	Summation	
Currency		
Target Currency	OCURRENCY	Currency Key
Currency	from Source	
Source Currency	OCURRENCY	Currency Key

Source Fields of Rule:

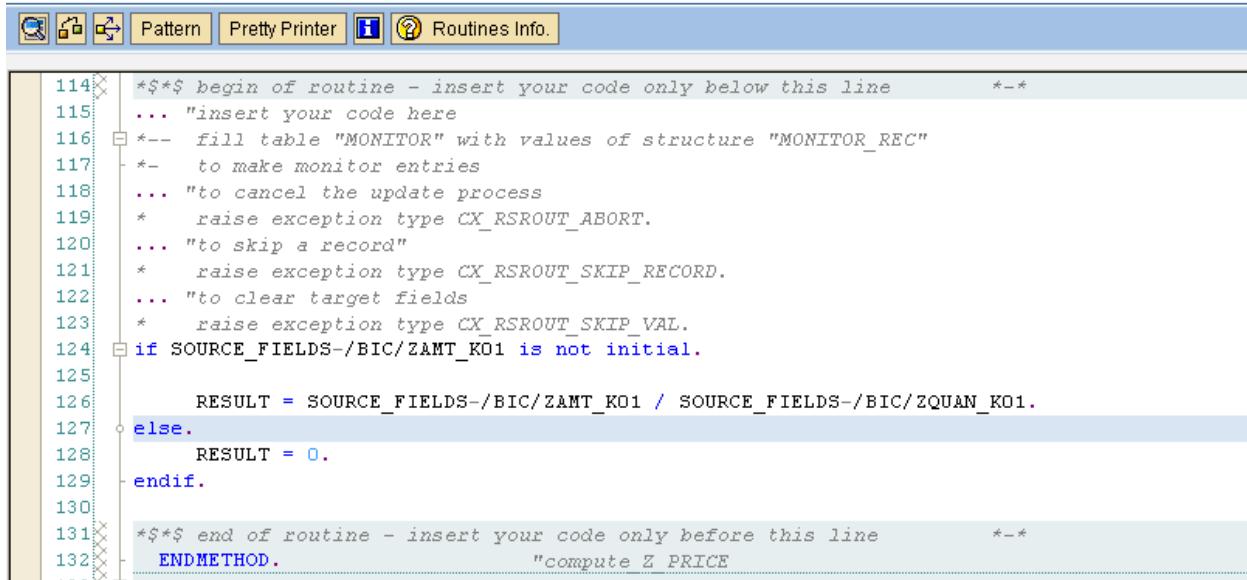
Field	Long Description	Type	Ln...	Conv...	IOAssgnmnt	Long Description
CURRENCY	Currency Key	CUKY	5			
UNIT	Unit of measure	UNIT	3	BUNITT		
/BIC/ZAMT_K01	Sales Amount	CURR	17			
/BIC/ZQUAN_K01	Sales Quantity	QUAN	17			

Target Fields of Rule:

InfoObject	I...	Long Description	Type	Ln...	Conv...	
OCURRENCY		Currency Key	CUKY	5		
Z_PRICE		PRICE	CURR	17		

Routine:

Rule Details



```

114 *$$*$ begin of routine - insert your code only below this line      *-*  

115 ... "insert your code here  

116 --- fill table "MONITOR" with values of structure "MONITOR_REC"  

117 -- to make monitor entries  

118 ... "to cancel the update process  

119 * raise exception type CX_RSRROUT_ABORT.  

120 ... "to skip a record"  

121 * raise exception type CX_RSRROUT_SKIP_RECORD.  

122 ... "to clear target fields  

123 * raise exception type CX_RSRROUT_SKIP_VAL.  

124 if SOURCE_FIELDS-/BIC/ZAMT_K01 is not initial.  

125  

126     RESULT = SOURCE_FIELDS-/BIC/ZAMT_K01 / SOURCE_FIELDS-/BIC/ZQUAN_K01.  

127 else.  

128     RESULT = 0.  

129 endif.  

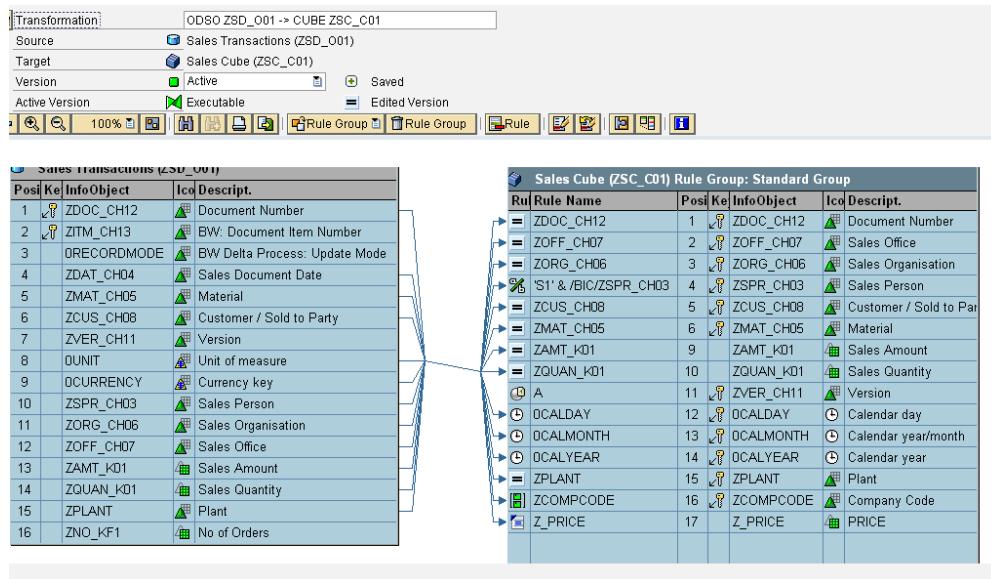
130  

131 *$$*$ end of routine - insert your code only before this line      *-*  

132 ENDMETHOD.          "compute Z PRICE

```

TRFN Screen



Transformation: ODSO_ZSD_001 -> CUBE_ZSC_C01

Source: Sales Transactions (ZSD_001)

Target: Sales Cube (ZSC_C01)

Version: Active (Saved)

Active Version: Executable (Edited Version)

Pos	Key	InfoObject	Ico	Descript.
1	ZDOC_CH12			Document Number
2	ZITM_CH13			BW Document Item Number
3	DRECORDMODE			BW Delta Process: Update Mode
4	ZDAT_CH04			Sales Document Date
5	ZMAT_CH05			Material
6	ZCUS_CH08			Customer / Sold to Party
7	ZVER_CH11			Version
8	QUNIT			Unit of measure
9	OCURRENCY			Currency key
10	ZSPR_CH03			Sales Person
11	ZORG_CH06			Sales Organisation
12	ZOFF_CH07			Sales Office
13	ZAMT_K01			Sales Amount
14	ZOUAN_K01			Sales Quantity
15	ZPLANT			Plant
16	ZNO_KF1			No of Orders

Rule Name	Pos	Key	InfoObject	Ico	Descript.
ZDOC_CH12	1		ZDOC_CH12		Document Number
ZOFF_CH07	2		ZOFF_CH07		Sales Office
ZORG_CH06	3		ZORG_CH06		Sales Organisation
'S1' & /BIC/ZSPR_CH03	4		ZSPR_CH03		Sales Person
ZCUS_CH08	5		ZCUS_CH08		Customer / Sold to Party
ZMAT_CH05	6		ZMAT_CH05		Material
ZAMT_K01	9		ZAMT_K01		Sales Amount
ZOUAN_K01	10		ZOUAN_K01		Sales Quantity
A	11		ZVER_CH11		Version
OCALDAY	12		OCALDAY		Calendar day
OCALMONTH	13		OCALMONTH		Calendar year/month
OCALYEAR	14		OCALYEAR		Calendar year
ZPLANT	15		ZPLANT		Plant
ZCOMP_CODE	16		ZCOMP_CODE		Company Code
Z_PRICE	17		Z_PRICE		PRICE

Conclusion:

Transformations acts as a intermediate layer where data can be converted from source format to target format by using different rule types.

DTP - Transfer process, Filters, temporary storage

Use :

Data transfer process loads data within BI from one object to another with respect to the transformation and filters maintained in it. DTP determines how data is transferred between two persistent objects. It is used to load data from PSA to Target OR Target to Target (Cube or DSO or Info Object), thus it replace the data mart interface and the info package.

DTP has unique delta handling mechanism, it helps in achieving

- a) Possibility of having different data selection for one data source via different DTP
- b) No DTP request exists in Reconstruct tab
- c) No Repair Full concept
- d) Deleting the data mart deletes the request itself not just the status as in IP

Note: Data Mart and Delta for DTP is handled by table **RSMDATASTATE**.

Field DMALL is used to keep track of Delta. It increases when Delta completes

Field DMEXIST is used to prevent deletion of Source request.

Deleting data request deletes the entry in table RSSTATMANREQMAP which keep tracks of data mart

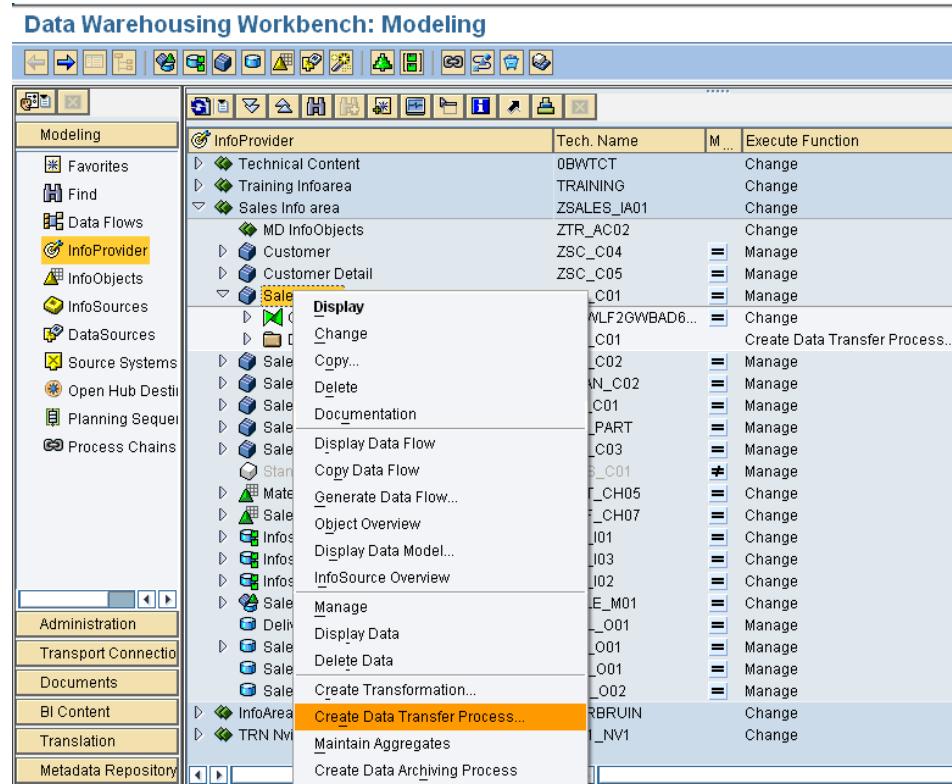
Procedure: For creating DTP

11. Log onto the BI system.
12. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing Modeling → Info providers. We can create DTP by using context menu of the source or

Target either or else from the context menu of the Data Transfer processes folder (you can see this thru drill down the transformation of the target)

Here select ZSC_C01 cube and choose create Data Transfer process for DTP creation

Data Warehousing Workbench: Modeling



The screenshot shows the SAP BW Data Warehousing Workbench. On the left, there's a navigation tree under the 'Modeling' tab. A context menu is open over the 'ZSC_C01' cube node in the 'Sale' folder. The menu items include: Display, Change, Copy..., Delete, Documentation, Display Data Flow, Copy Data Flow, Generate Data Flow..., Object Overview, Display Data Model..., InfoSource Overview, Manage, Display Data, Delete Data, Create Transformation..., Create Data Transfer Process..., Maintain Aggregates, and Create Data Archiving Process. The 'Create Data Transfer Process...' option is highlighted.

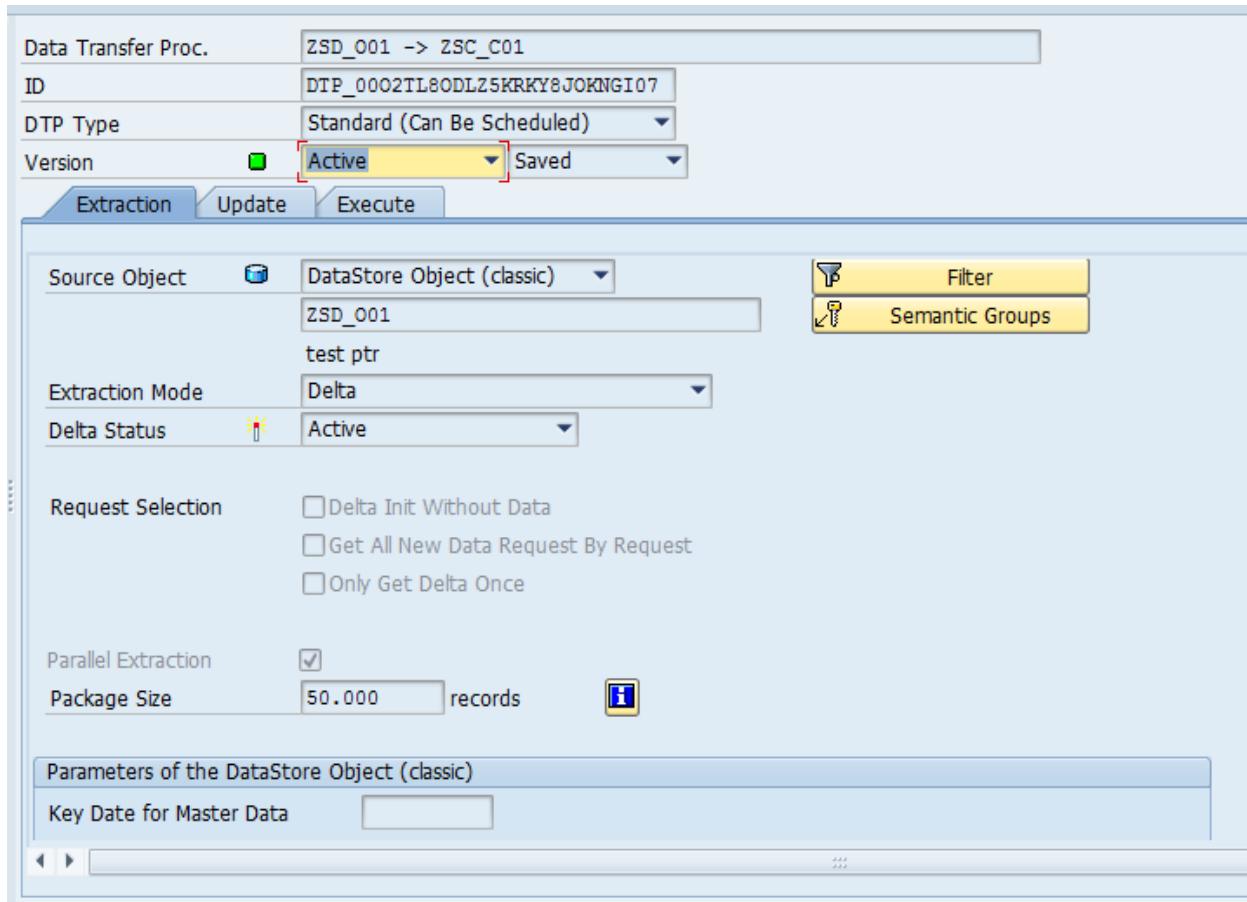
Select the source object type and source name of the DTP if you have multiple source objects, in this case it is ZSD_O01

Create Data Transfer Process

Data Transfer Proc.	ZSD_001 -> ZSC_C01
DTP Type	Standard (Can Be Scheduled)
Target of DTP	
Object Type	InfoCube
Name	ZSC_C01
Source of DTP	
Object Type	DataStore Object
Name	ZSD_001

Now it takes you to the DTP creation screen where you have Extraction, update and schedule tabs

Functions In the **Extraction** tab:



The screenshot shows the SAP BW DTP Creation screen with the Extraction tab selected. The top section displays basic details: Data Transfer Proc. (ZSD_001 -> ZSC_C01), ID (DTP_0002TL80DL25KRKY8JOKNGI07), DTP Type (Standard (Can Be Scheduled)), and Version (Active). A red box highlights the 'Active' dropdown in the Version section. Below this, there are tabs for Extraction, Update, and Execute. The Extraction tab is active.

In the Extraction tab, the Source Object is set to DataStore Object (classic) with value ZSD_001. There are buttons for Filter and Semantic Groups. The Extraction Mode is set to Delta. The Delta Status is also Active. Under Request Selection, there are three checkboxes: Delta Init Without Data, Get All New Data Request By Request, and Only Get Delta Once. The Only Get Delta Once checkbox is checked. The Parallel Extraction option is selected. The Package Size is set to 50.000 records. At the bottom, there is a section for Parameters of the DataStore Object (classic) with a Key Date for Master Data field.

Choose the mode of Extraction Delta or Full, if it is Delta

Choose either one of the check boxes

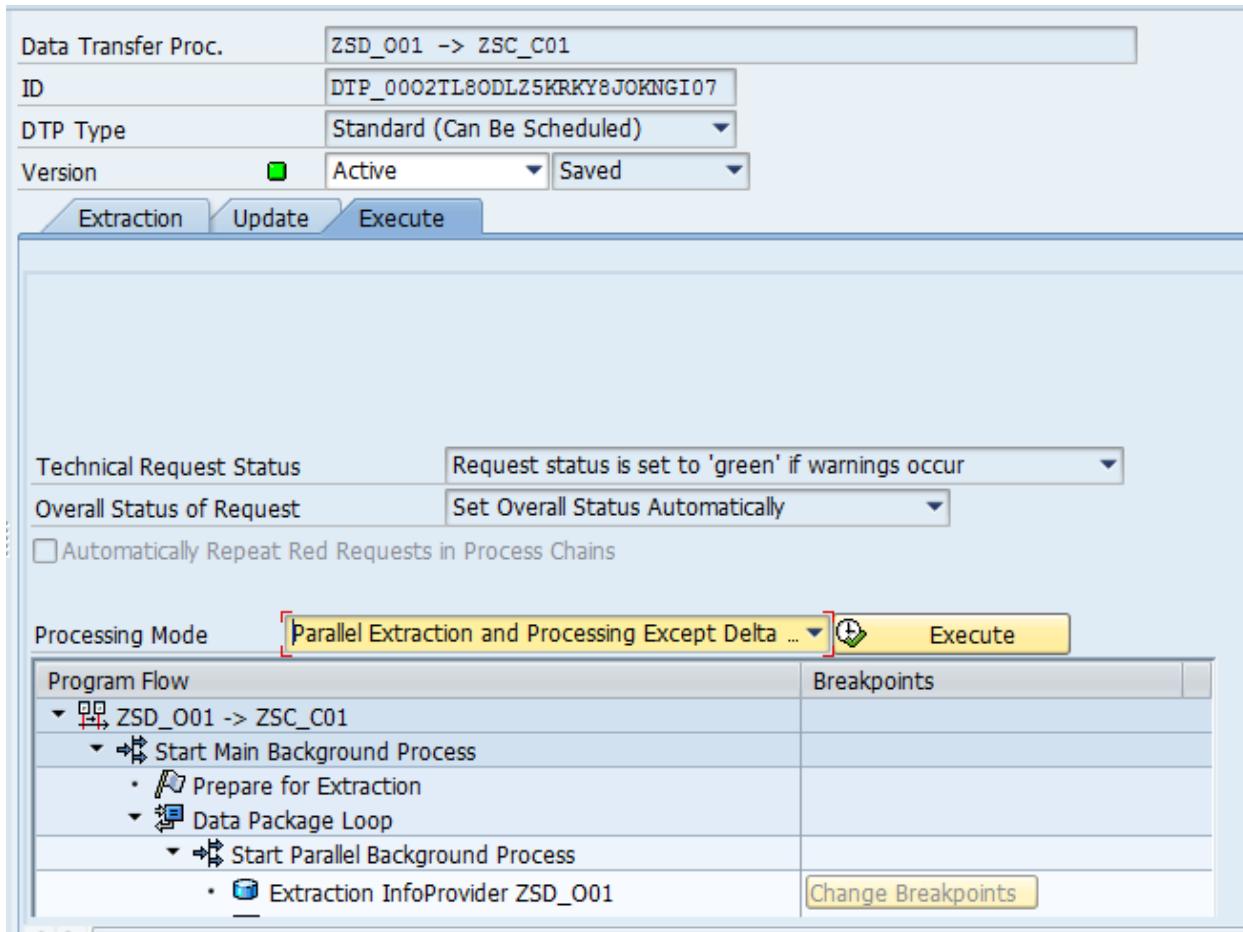
Only get Delta once: it extracts multiple delta requests from Source into a single target request

Get All new Data Request by Request: If you set this option Deltas run based on requests from the source E.g. If the source has 6 new delta requests all the 6 gets loaded as 6 separate requests to the target.

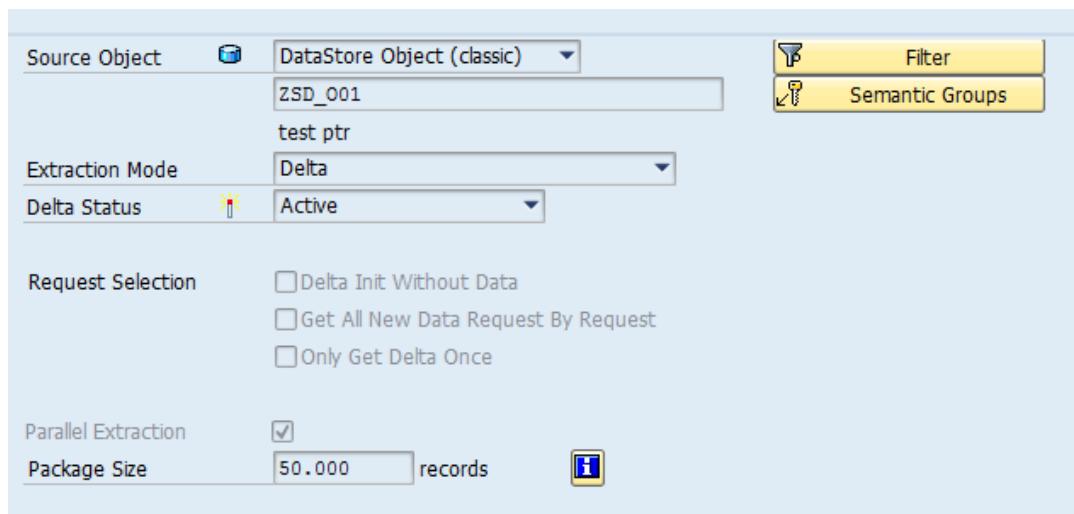
Delta Init without data: If you set this, the delta requests that are there in the source don't carry any data to target. We generally go for this option whenever we want to rebuild delta for a given data target. In general we add these kind of DTP's to adhoc process chains which we can be scheduled as per the requirement.

Note: If you want to mark source data as fetched for test purposes only, do **not** use this flag. Instead, on the tab page *Execute*, set the *processing type* to *Mark Source Data as*

Fetched. In this way you prevent a transport-relevant change to the metadata of the DTP.



Data Packet size: this controls the size of the data packet, if you specify 50,000 then only 50K records allowed for a single data packet.



Optimal Package size: This can be used when parallel extraction is set, used to combine multiple source packages of the same source request into a single data package of the DTP Request.

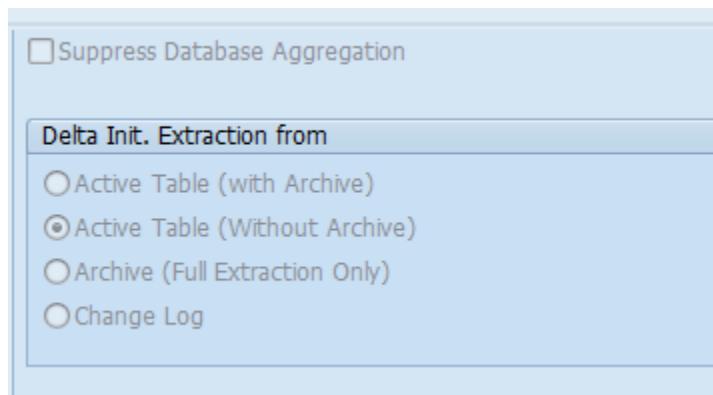
Use this option only when the source request contains small data packages compared to

DTP packet size, DTP request contains filter conditions the packet size overwrites the optimal package size so we need to increase the package size accordingly.

Parallel Extraction: This is selected by default when you create a DTP if the source of the DTP supports parallel extraction. Error handling and semantic groups are not possible in parallel extraction.

Key Date for Master data: This is used when you are looking up for time dependant master data the default value for this is current date.

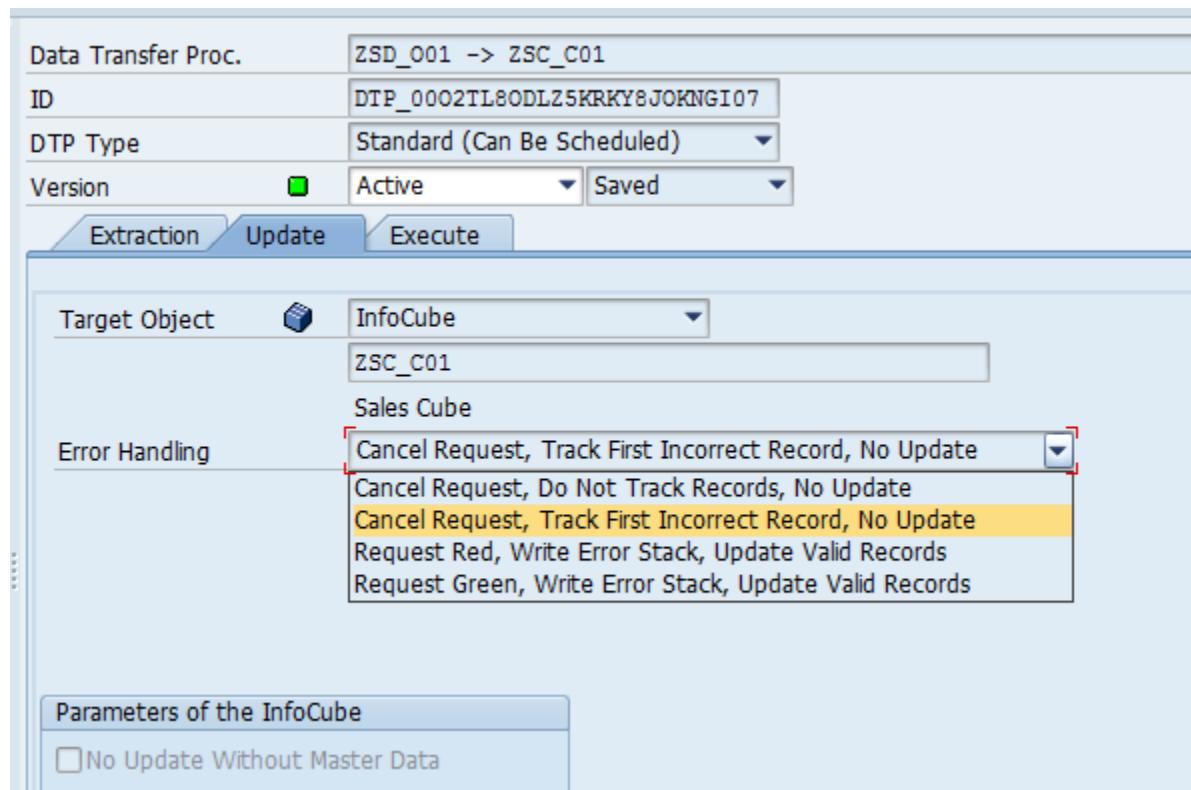
Currency Conversion: Specifies whether currency key figures requires conversion or not



Delta init Extraction From: this specifies which table should be read while loading

Suppress Database aggregation: If you set this aggregation will not have any effect and it reduces the runtime while extraction, set this if the granularity of the target is same as source.

UPDATE tab:



Error Handling:

Error handling is one of the features of DTP, where the system sends the error

The following options are possible,

Cancel Request, Do not track records, No Update: If an error occurs, the error is reported as a package error in the DTP monitor. The error is not assigned to the data record. The system does not build the cross-reference table to determine the data record number. Processing is quicker.

The incorrect records are not written to the error stack since the request is terminated and has to be updated again in its entirety.

Cancel Request, Track First Incorrect record, No Update: If errors occur, the system terminates the update of the entire data package. The request is not released for

reporting. The incorrect record is highlighted so that the error can be assigned to the data record.

The incorrect records are not written to the error stack since the request is terminated and has to be updated again in its entirety.

Request Red; Write Error Stack, Update Valid Records:

This option enables you to update valid data that is released for reporting only after the administrator has checked the incorrect, not updated records, and has manually released the request.

The incorrect records are written to a separate error stack in which the records are edited and can be updated manually using an error DTP.

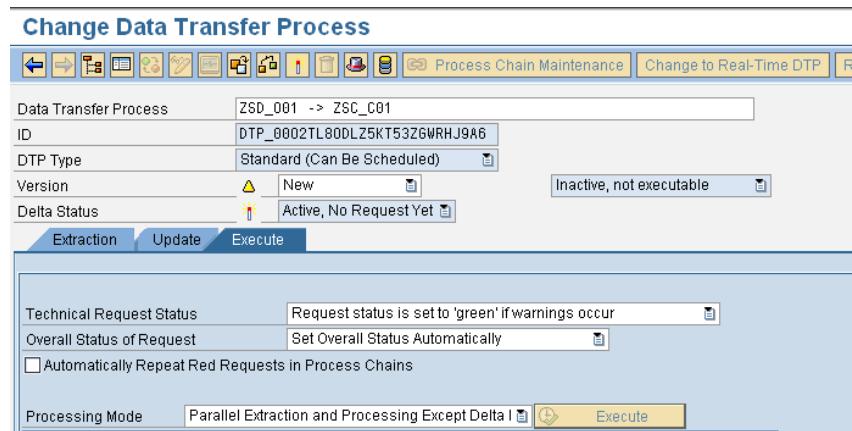
Request Green; Write Error Stack, Update Valid Records:

The valid records are available immediately for reporting and analysis purposes. Automatic follow-on activities are performed automatically (such as modifying aggregates).

The incorrect records are written to a separate error stack in which the records are edited and can be updated manually using an error DTP.

No Update without Master data: If you select this checkbox, it checks for the master data SIDs every time you load and throws an error incase master data is not available.

If the indicator *SIDs Generation upon Activation* is **not** selected in the DataStore object maintenance, the indicator *No Update without Master Data* is meaningless in the DTP.

Execute Tab:

Automatically Repeat Red Requests in Process Chains:

If a data transfer process (DTP) has produced a request containing errors during the run of a periodically scheduled process chain, this indicator is evaluated the next time the process chain is started.

If the indicator is set, the previous request that contains errors is automatically deleted and a new one is started.

If the indicator is not set, the DTP terminates and an error message appears explaining no new request can be started until the previous request is either repaired or deleted.

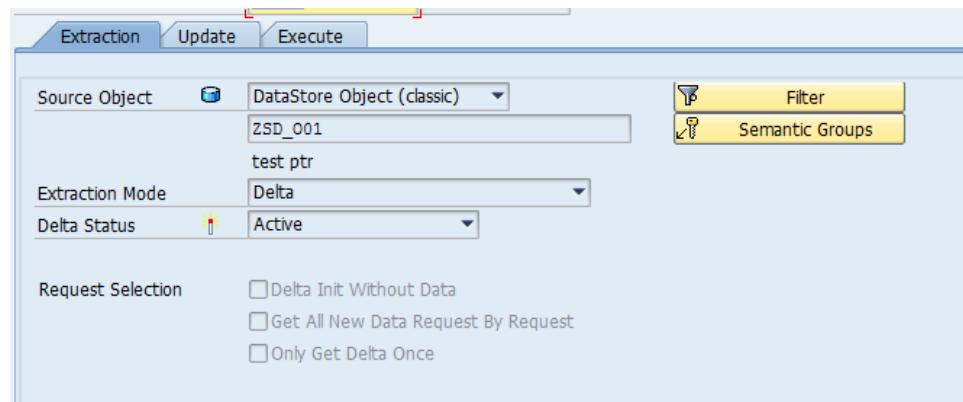
DTP – Filters

DTP filter's the data based on Semantic Key at the target level.

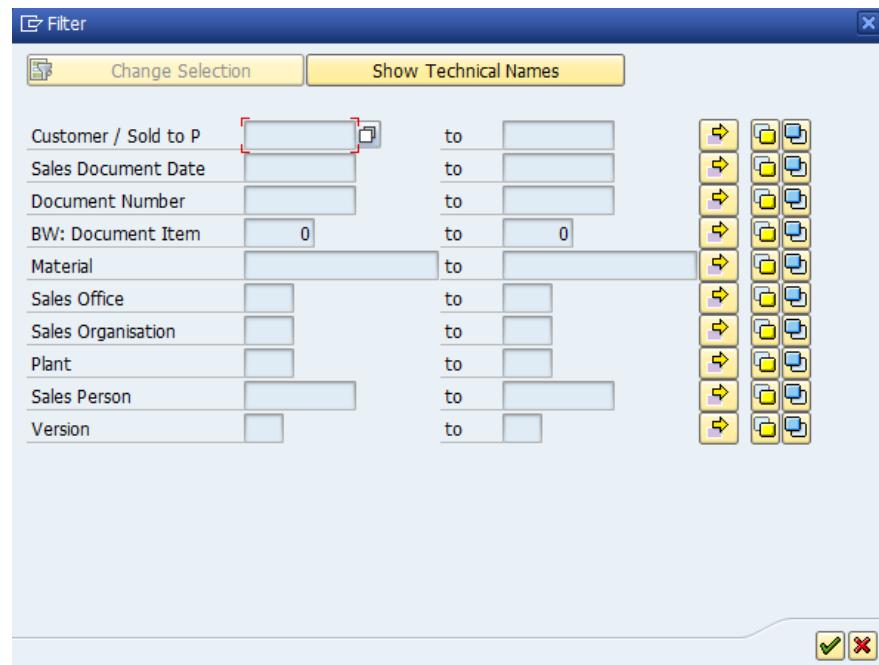
The filter thus restricts the amount of data to be copied and works like the selections in the Infopackage. You can specify single values, multiple selections, intervals, selections based on variables, or routines.

To do this,

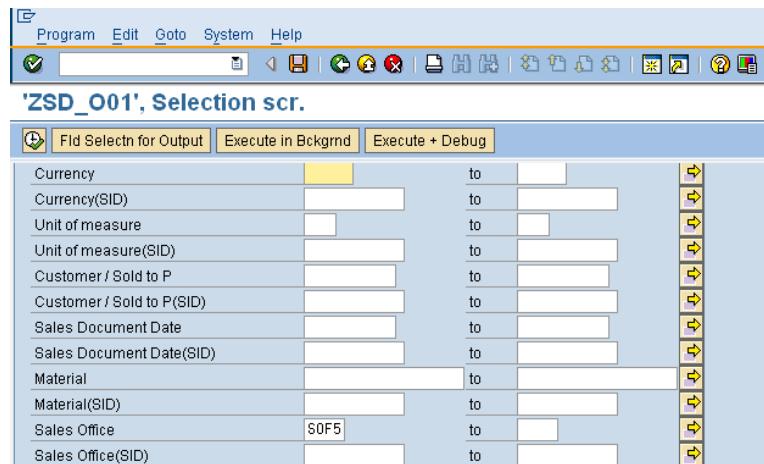
Go to DTP between ZSD_001 to ZSC_C01. Choose  Filter in the extraction tab.



Filter Sales office to SOF5, only SOF5 data will be uploaded to the target.



Check for the SOF5 data in the source ZSD_O01 (right click on ZSD_O01-> Display data-> Field selection for output->Select All characteristics and highlight all key figures-> Execute> Put the selection as shown below-> Execute.



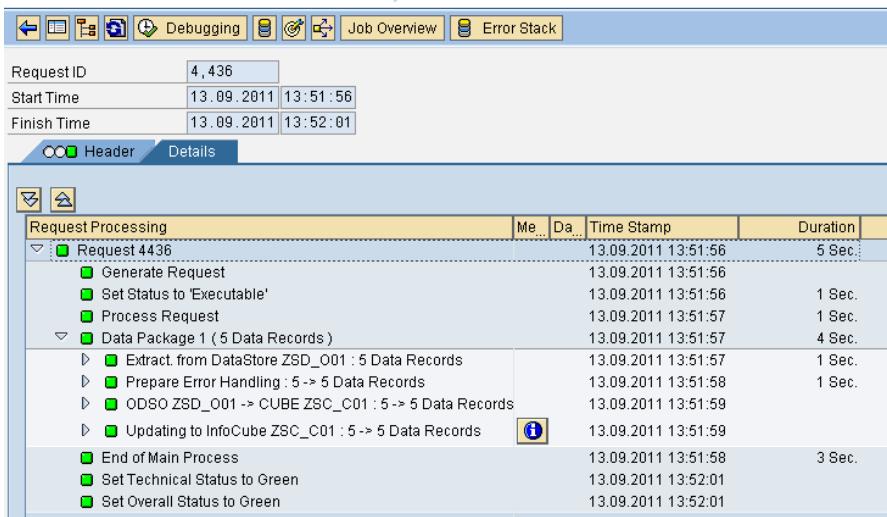
5 records found for SOF5

"ZSD_O01", List output						
Currency	DUNIT	Sales Office	ZDOC_CH12	ZITM_CH13	ZAMT_K01	ZNO_KF1
GBP	EA	SOF5	0000001034	1	100.00	0.000
GBP	EA	SOF5	0000001035	1	100.00	0.000
GBP	EA	SOF5	0000001036	1	100.00	0.000
GBP	EA	SOF5	0000001037	1	100.00	0.000
GBP	EA	SOF5	0000001038	1	100.00	0.000

If you trigger the DTP (ZSD_O01 -> ZSC_C01) from Execute tab, it updates only 5 records to the target.

Go to the DTP monitor by clicking on  on top side.

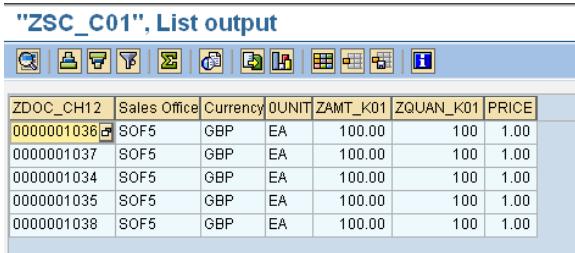
Monitor: Data Transfer Process 4.436



The screenshot shows the SAP Monitor interface for process 4.436. At the top, there are tabs for Debugging, Job Overview, and Error Stack. Below that, a table shows Request ID (4.436), Start Time (13.09.2011 13:51:56), and Finish Time (13.09.2011 13:52:01). The main area is titled "Request Processing" and lists various steps with their start and end times and durations. A tooltip icon is visible next to one of the entries.

Step	Description	Start Time	End Time	Duration
Request 4436	Generate Request, Set Status to Executable', Process Request	13.09.2011 13:51:56	13.09.2011 13:51:56	5 Sec.
Data Package 1 (5 Data Records)	Extract from DataStore ZSD_001 : 5 Data Records, Prepare Error Handling : 5 -> 5 Data Records, ODSO ZSD_001 -> CUBE ZSC_C01 : 5 -> 5 Data Records, Updating to InfoCube ZSC_C01 : 5 -> 5 Data Records	13.09.2011 13:51:57	13.09.2011 13:51:59	4 Sec.
End of Main Process		13.09.2011 13:51:58	13.09.2011 13:52:01	3 Sec.
Set Technical Status to Green		13.09.2011 13:52:01		
Set Overall Status to Green		13.09.2011 13:52:01		

Records in the target with Sales office filtered to SOF5.



The screenshot shows the SAP List output for 'ZSC_C01'. The table has the following data:

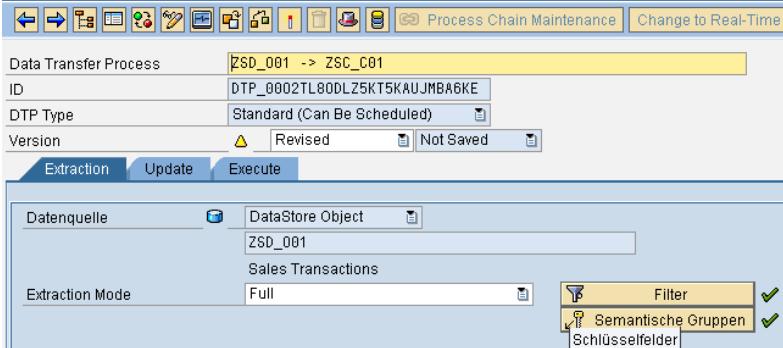
ZDOC_CH12	Sales Office	Currency	DUNIT	ZAMT_K01	ZQUAN_K01	PRICE
0000001036	SOF5	GBP	EA	100.00	100	1.00
0000001037	SOF5	GBP	EA	100.00	100	1.00
0000001034	SOF5	GBP	EA	100.00	100	1.00
0000001035	SOF5	GBP	EA	100.00	100	1.00
0000001038	SOF5	GBP	EA	100.00	100	1.00

Semantic Groups: Semantic groups specify how you want to build the data packages that are read from the source (DataSource or InfoProvider). To do this, define key fields. Data records that have the same key are combined in a single data package.

This setting is only relevant for DataStore objects with data fields that are overwritten. This setting also defines the key fields for the error stack. By defining the key for the error stack, you ensure that the data can be updated in the target in the correct order once the incorrect data records have been corrected.

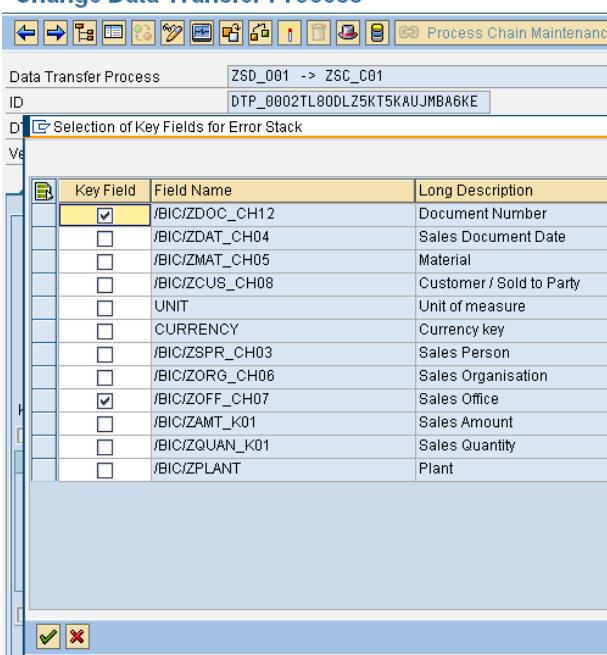
Choose  Semantic Groups

Change Data Transfer Process



The screenshot shows the 'Change Data Transfer Process' dialog for a process named 'ZSD_001 -> ZSC_C01'. Under 'Extraction', the 'Datenquelle' is set to 'DataStore Object' (ZSD_001) and 'Sales Transactions'. The 'Extraction Mode' is 'Full'. In the bottom right corner of the extraction area, there is a 'Filter' button and two checked checkboxes: 'Semantiche Gruppen' and 'Schlüsselfelder'.

Change Data Transfer Process



The screenshot shows the 'Selection of Key Fields for Error Stack' dialog. It lists various fields under 'Key Field' and their descriptions under 'Field Name' and 'Long Description'. The fields listed are: /BIC/ZDOC_CH12 (Document Number), /BIC/ZDAT_CH04 (Sales Document Date), /BIC/ZMAT_CH05 (Material), /BIC/ZCUS_CH08 (Customer / Sold to Party), UNIT (Unit of measure), CURRENCY (Currency key), /BIC/ZSPR_CH03 (Sales Person), /BIC/ZORG_CH06 (Sales Organisation), /BIC/ZOFF_CH07 (Sales Office), /BIC/ZAMT_K01 (Sales Amount), /BIC/ZQUAN_K01 (Sales Quantity), and /BIC/ZPLANT (Plant). The checkboxes for 'ZOFF_CH07' and 'ZAMT_K01' are checked.

Semantic group created with the combination of Sales office and document number and this can be used as key for error stack.

Error Handling – Error stack

Using the error handling settings on the Update tab page in the data transfer process, when data is transferred from a DTP source to a DTP target, you can specify how the system is to react if errors occur in the data records.

For a data transfer process (DTP), you can specify how you want the system to respond when data records contain errors. If you activate error handling, the records with errors are written to a request-based database table. This is the error stack. You can use a special data transfer process, the error DTP, to update the records to the target.

One error DTP is needed to load the error records from error stack to Target, this is associated with the standard DTP.

Loading data from Error Stack:

Scenario - Load a record with Currency as ABC, the data load got failed because of incorrect currency and the erroneous records written to the error stack.

- 1) Go to ZSD_O01 -> ZSC_C01 DTP.
- 2) Update tab->Select Error handling as 'Request Red, Write Error Stack, Update Valid Records' -> Creating Error DTP.

Data Transfer Proc. **ZSD_001 -> ZSC_C01**

ID **DTP_0002TL80DLZ5KRKY8JOKNGI07**

DTP Type **Standard (Can Be Scheduled)**

Version **Revised** Not Saved

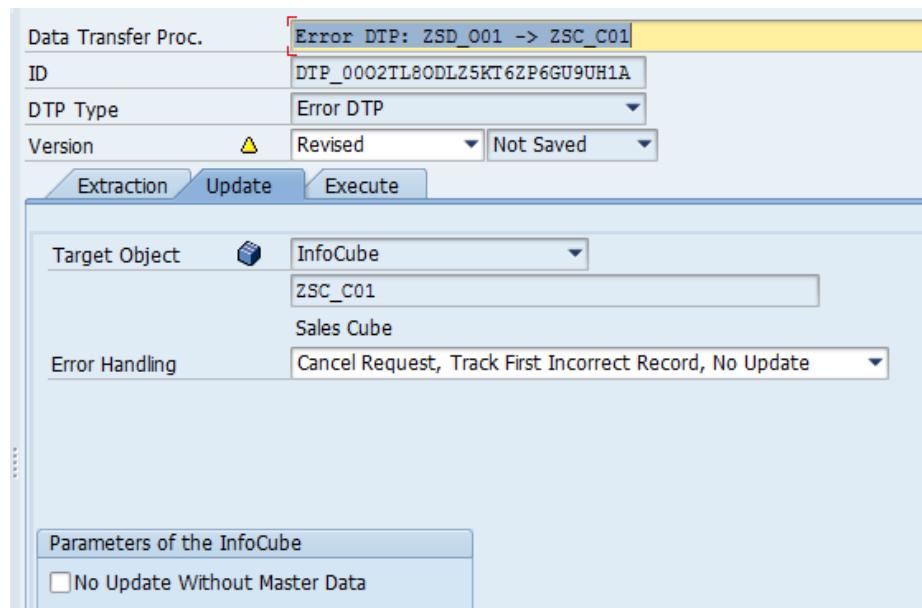
Extraction Update Execute

Target Object **InfoCube**
ZSC_C01
Sales Cube

Error Handling **Request Red, Write Error Stack, Update Valid Records**
Maximum Number of Errors per Pack. **100**
Change Error DTPs

Parameters of the InfoCube
 No Update Without Master Data

Error DTP –



- 3) Execute standard ZSD_001 -> ZSC_C01 DTP from execute tab.
- 4) Go to the DTP monitor by clicking on  on top side. See the log.

Monitor: Data Transfer Process 4.455

Debugging Job Overview Error Stack

Request ID	4,455
Start Time	13.09.2011 15:57:40
Finish Time	13.09.2011 15:57:42

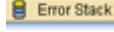
Header Details

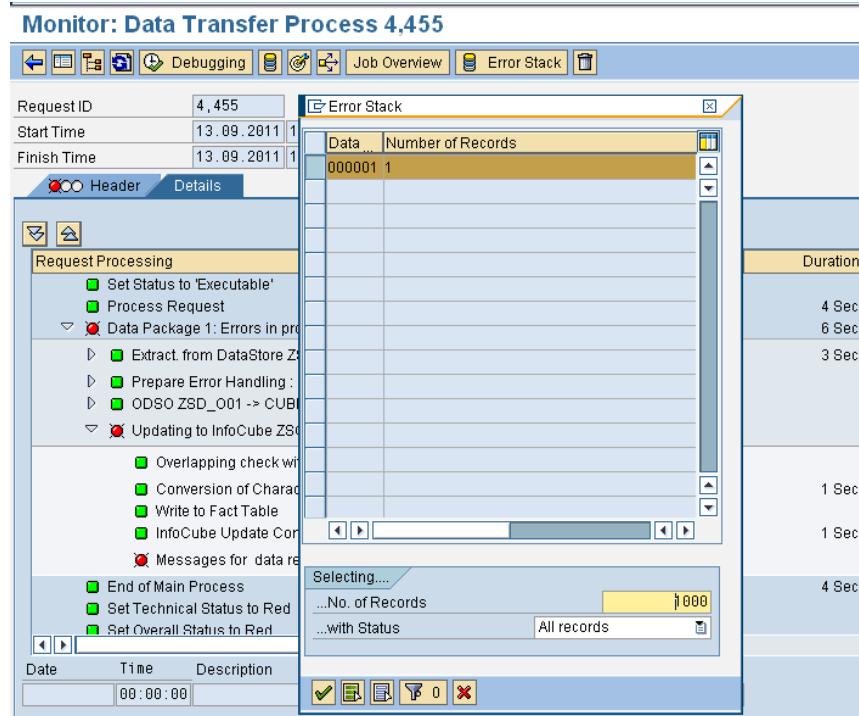
Request Processing

	Me...	Da...	Time Stamp	Duration
Set Status to 'Executable'			13.09.2011 15:57:40	
Process Request			13.09.2011 15:57:40	4 Sec.
Data Package 1: Errors in processing			13.09.2011 15:57:41	6 Sec.
Extract from DataStore ZSD_001 : 5 Data Records			13.09.2011 15:57:41	3 Sec.
Prepare Error Handling : 5 -> 5 Data Records			13.09.2011 15:57:45	
ODSO ZSD_001 -> CUBE ZSC_C01 : 5 -> 5 Data Records			13.09.2011 15:57:46	
Updating to InfoCube ZSC_C01 : 5 -> 4 Data Records			13.09.2011 15:57:46	
Overlapping check with archived data areas for InfoProv			13.09.2011 15:57:46	
Conversion of Characteristic Values to SIDs			13.09.2011 15:57:46	1 Sec.
Write to Fact Table			13.09.2011 15:57:47	
InfoCube Update Completed			13.09.2011 15:57:47	1 Sec.
Messages for data records saved; request is red acc.			13.09.2011 15:57:48	
End of Main Process			13.09.2011 15:57:44	4 Sec.
Set Technical Status to Red			13.09.2011 15:57:48	
Set Overall Status to Red			13.09.2011 15:57:48	

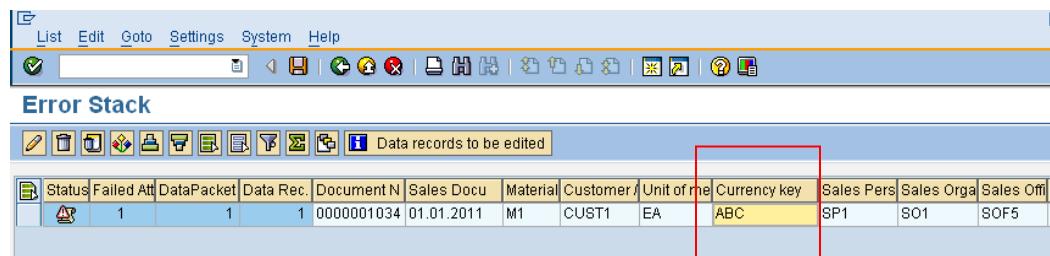
Date Time Description

00:00:00

Click on the Error stack button  on top right.



We can see 1 error record inside the error stack

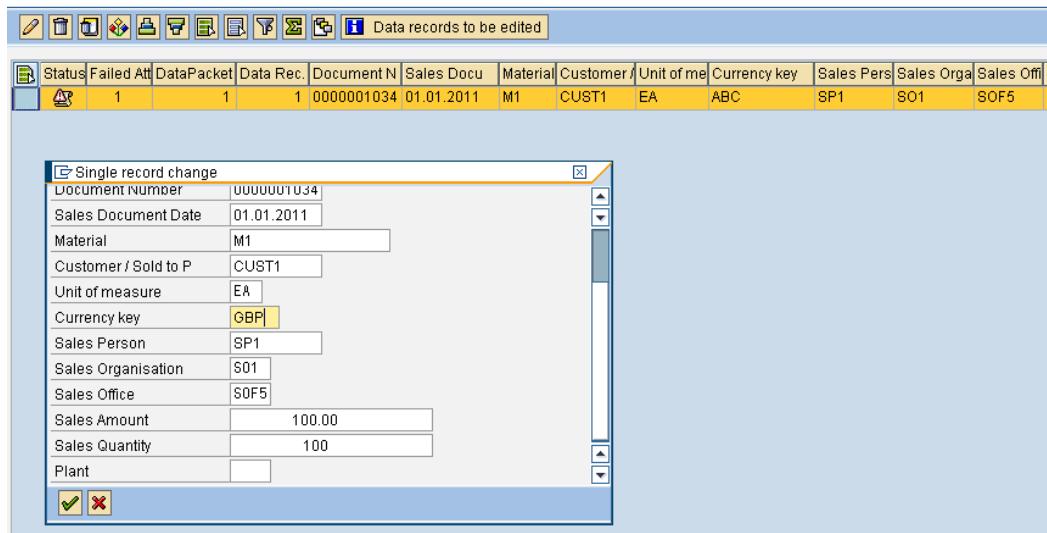


Status	Failed At	DataPacket	Data Rec.	Document N	Sales Docu	Material	Customer	Unit of me	Currency key	Sales Pers	Sales Orga	Sales Offl
	1	1	1	0000001034	01.01.2011	M1	CUST1	EA	ABC	SP1	SO1	SOF5

This is written into the error stack because of the incorrect currency key.

Select the record row and choose edit, modify the currency to GBP and save it.

Error Stack



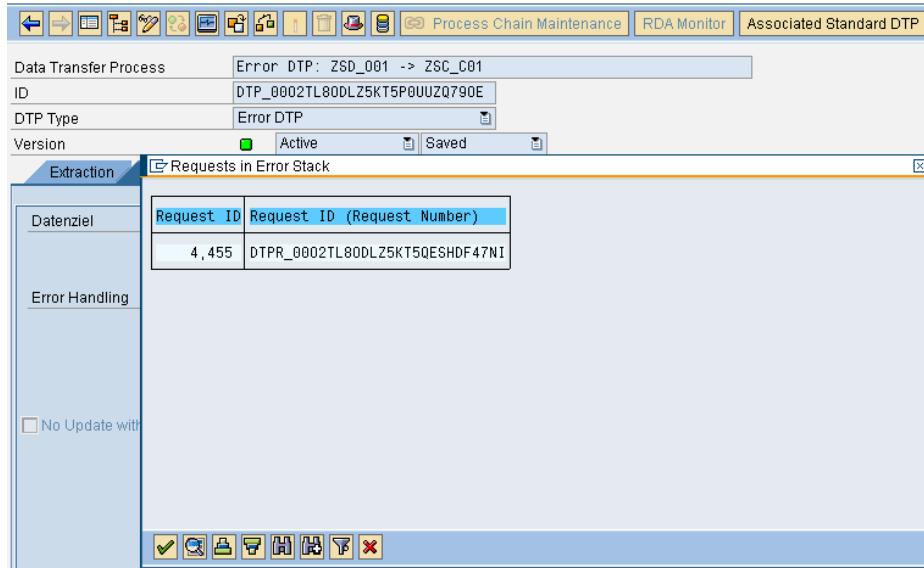
The screenshot shows the SAP BW Error Stack dialog box. It displays a single record change with the following details:

Field	Value
Document number	UUUUUUU1U34
Sales Document Date	01.01.2011
Material	M1
Customer / Sold to P	CUST1
Unit of measure	EA
Currency key	GBP
Sales Person	SP1
Sales Organisation	S01
Sales Office	S0F5
Sales Amount	100.00
Sales Quantity	100
Plant	

At the bottom of the dialog, there are two buttons: a green checkmark icon and a red X icon.

Now go to the error DTP and Click on the PSA symbol, it shows the requests in the error stack

Display Data Transfer Process



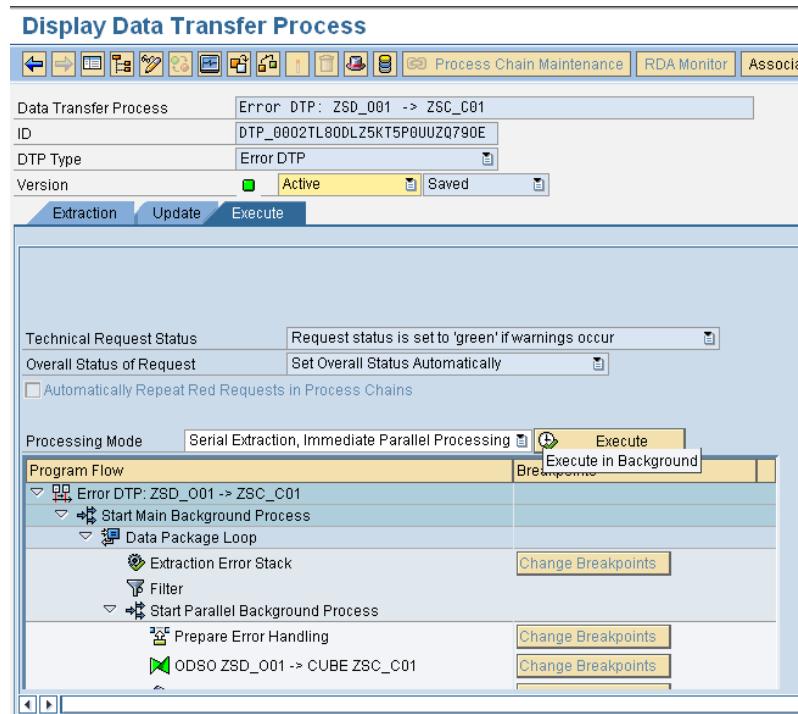
The screenshot shows the SAP BW Display Data Transfer Process (DTP) screen. The main area displays the extraction configuration for a Data Transfer Process (ZSD_001). The sub-dialog on the right, titled "Requests in Error Stack", lists the following data:

Request ID	Request ID (Request Number)
4,455	DTPR_0002TL80DL25KT5QESHDF47NI

Now go to Error DTP.

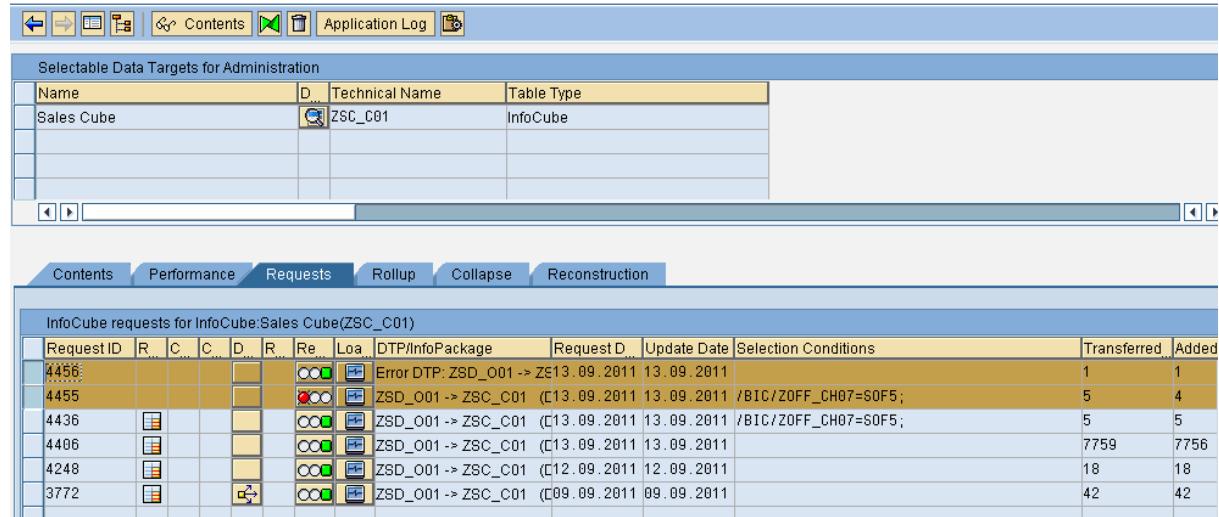
You will see error DTP (Error DTP: ZSD_O01 -> ZSC_C01) in 'Data Transfer Process' folder.

Execute the it from Execute tab to process the error record to Target.



Go to the manage of the target, here we could see two requests, red one is processed through standard DTP and the green one above it is processed through error DTP and both of these requests are not available for reporting.

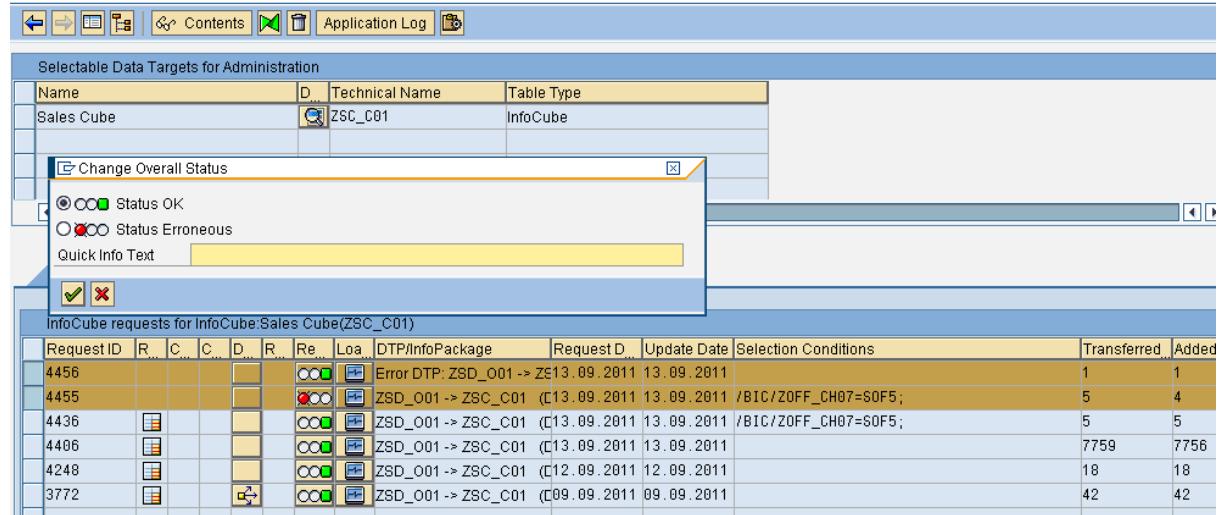
Manage InfoProvider



The screenshot shows the SAP BW 'Manage InfoProvider' interface. At the top, there is a toolbar with various icons. Below it is a table titled 'Selectable Data Targets for Administration' with columns for Name, Technical Name, and Table Type. A single row is visible for 'Sales Cube' with technical name 'ZSC_C01' and table type 'InfoCube'. Below this is another table titled 'InfoCube requests for InfoCube: Sales Cube(ZSC_C01)' with columns for Request ID, R, C, C, D, R, Re, Loa, DTP/InfoPackage, Request Date, Update Date, Selection Conditions, Transferred, and Added. Several rows are listed, including one with a red error icon and others with green success icons.

Now change the standard DTP request to Green by clicking on  and both the requests will be available for reporting. Out of 5 records only error record is loaded through error DTP remaining are through standard one.

Manage InfoProvider



The screenshot shows the SAP BW 'Manage InfoProvider' interface. It includes the same tables and toolbar as the previous screenshot. A modal dialog box titled 'Change Overall Status' is open, containing two radio buttons: 'Status OK' (selected) and 'Status Error'. Below the radio buttons is a 'Quick Info Text' input field. The 'InfoCube requests for InfoCube: Sales Cube(ZSC_C01)' table below the dialog shows the same data as the previous screenshot, with the error record now having a green success icon.

Manage InfoProvider

Selectable Data Targets for Administration

Name	D...	Technical Name	Table Type
Sales Cube		ZSC_C01	InfoCube

Contents Performance Requests Rollup Collapse Reconstruction

InfoCube requests for InfoCube: Sales Cube(ZSC_C01)

Request ID	R...	C...	C...	D...	R...	Re...	Lo...	DTP/InfoPackage	Request D...	Update Date	Selection Conditions	Transferred...	Added...
4456								Error DTP: ZSD_001 -> ZSC_C01 (C13.09.2011 13.09.2011	13.09.2011	13.09.2011	/BIC/ZOFF_CH07=SOF5;	1	1
4455								ZSD_001 -> ZSC_C01 (C13.09.2011 13.09.2011 /BIC/ZOFF_CH07=SOF5;	13.09.2011	13.09.2011		5	4
4436								ZSD_001 -> ZSC_C01 (C13.09.2011 13.09.2011 /BIC/ZOFF_CH07=SOF5;	13.09.2011	13.09.2011		5	5
4406								ZSD_001 -> ZSC_C01 (C13.09.2011 13.09.2011	13.09.2011	13.09.2011		7759	7756
4248								ZSD_001 -> ZSC_C01 (C12.09.2011 12.09.2011	12.09.2011	12.09.2011		18	18
3772								ZSD_001 -> ZSC_C01 (C09.09.2011 09.09.2011	09.09.2011	09.09.2011		42	42

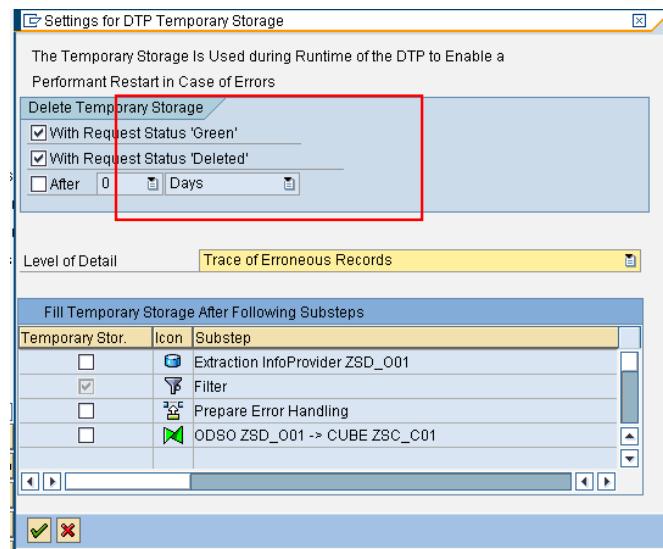
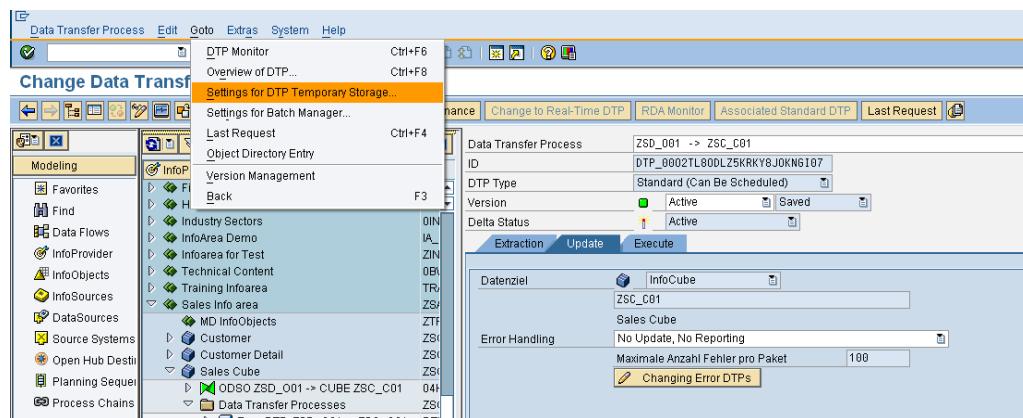
DTP – Temporary Storage

The Temporary Storage is used during runtime of the DTP to perform a restart in case of errors.

Temporary storage is available after each processing step of the DTP request. This allows you to find out which processing step the error occurred in.

To activate temporary storage,

- 1) Go to (ZSD_O01 -> ZSC_C01) DTP.
- 2) 'Goto' tab on top-> settings for dtp temporary storage.



Delete temporary Storage - Deletes the temporary storage data based on the settings provided. It clears the requests with status Green and Status deleted from the temporary storage or else we can specify the number of days for deletion.

Level of Detail:

Level of detail specifies the level of data to be stored, whether it is on Request level or record level or Erroneous record only.

We can see the records in temporary storage from DTP monitor screen

Monitor: Data Transfer Process 4,537

Request Processing		Me...	Da...	Time Stamp	Duration
Request ID	4,537			14.09.2011 07:57:31	3 Sec.
Start Time	14.09.2011 07:57:31				
Finish Time	14.09.2011 07:57:34				
Request 4537					
Generate Request				14.09.2011 07:57:31	
Set Status to Executable'				14.09.2011 07:57:31	
Process Request				14.09.2011 07:57:31	1 Sec.
Data Package 1: Errors in processing				14.09.2011 07:57:32	2 Sec.
Extract. from DataStore ZSD_001 : 7,803 Data Records				4.09.2011 07:57:32	
Start of Extraction				14.09.2011 07:57:32	
End of Extraction				14.09.2011 07:57:32	
Pass Data Package to Batch Manager				14.09.2011 07:57:32	
Batch Manager Temporarily Stored Data Package				14.09.2011 07:57:32	

Records are displayed from Temp. storage.

Display Temporary Storage

Segment	0001	RE...	Status	/BIC/ZDOC_CH12	/BIC/ZDAT_CH04	/BIC/ZMAT_CH05	/BIC/ZCUS_CH08	UNIT	CURRENCY
		1	■	1013	01.04.2011	M4	CUST4	EA	GBP
		2	■	1016	01.07.2011	M7	CUST1	EA	GBP
		3	■	1020	01.11.2011	M11	CUST5	EA	GBP
		4	■	1034	01.01.2011	M1	CUST1	EA	ABC
		5	■	1038	01.05.2011	M5	CUST5	EA	GBP
		6	■	1039	01.06.2011	M6	CUST6	EA	GBP
		7	■	1044	01.11.2011	M11	CUST5	EA	GBP
		8	■	1051	01.06.2011	M6	CUST6	EA	GBP
		9	■	5452	04.06.1998				EUR

Useful articles.

<http://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/f0ada4bf-e963-2d10-aa89-abb9eeae7723?QuickLink=index&overridelayout=true>

<http://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/007f1167-3e64-2e10-a798-e1ea456ef21b?QuickLink=index&overridelayout=true>

Master Data Attributes Load

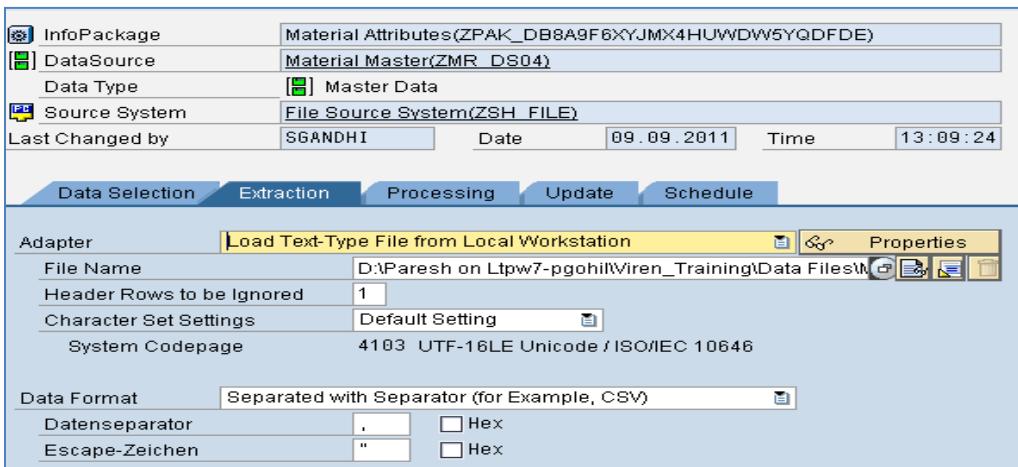
Use: This document helps you to understand how to load data for Master Data Attributes.

Process:

Step 1: Check the flat file for the attributes of the characteristics. For example, see below the master data for Material having attribute as Material Group, and compounding characteristic as Plant.

Plant	Material	Material Group
P001	M1	MATGRP1
P002	M2	MATGRP2
P003	M3	MATGRP3
P004	M4	MATGRP4
P001	M5	MATGRP1
P002	M6	MATGRP2
P003	M7	MATGRP3
P004	M8	MATGRP4
P001	M9	MATGRP1
P002	M10	MATGRP2
P003	M11	MATGRP3
P004	M12	MATGRP4

Step 2: Load file via InfoPackage.



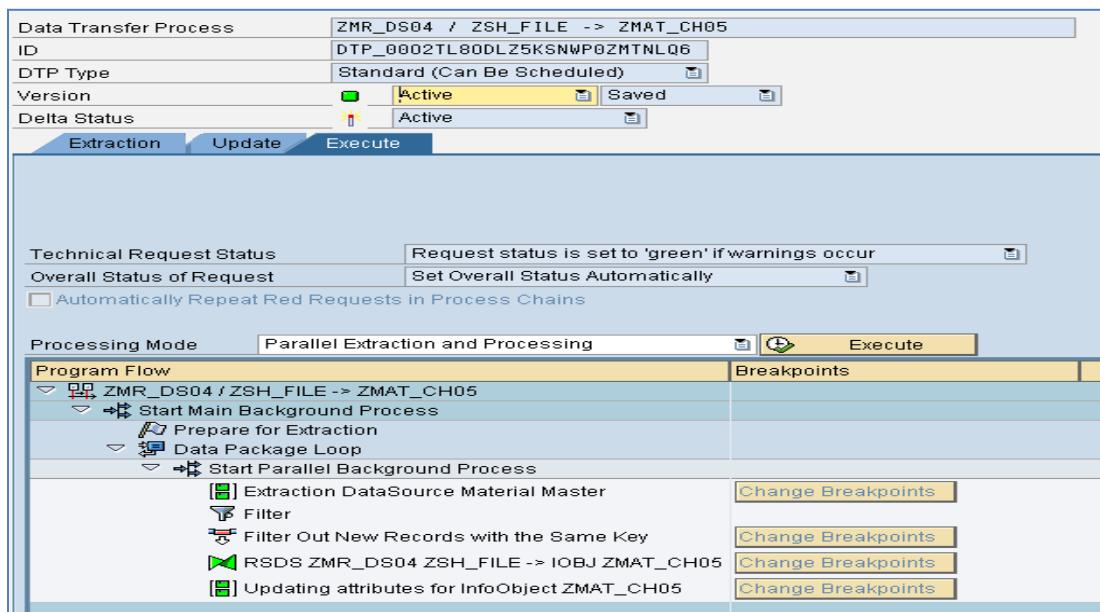
The screenshot shows the SAP BW InfoPackage configuration interface. The top section displays basic metadata: InfoPackage (Material Attributes), DataSource (Material Master), Data Type (Master Data), Source System (File Source System), and Last Changed by (SGANDHI) on 09.09.2011 at 13:09:24. Below this, the 'Extraction' tab is selected, showing the following configuration:

- Adapter:** Load Text-Type File from Local Workstation
- File Name:** D:\Paresh on Ltpw7-pgohil\Wiren_Training\Data Files\Material Attributes.txt
- Header Rows to be Ignored:** 1
- Character Set Settings:** Default Setting
- System Codepage:** 4103 UTF-16LE Unicode / ISO/IEC 10646
- Data Format:** Separated with Separator (for Example, CSV)
- Datenseparator:** ,
- Escape-Zeichen:** "

Step 3: Check data in PSA

PSA Maintenance					
	Status	DataPacket	Data Rec.	Plant	Material
	Green	1	1	P001	M1
	Green	1	2	P002	M2
	Green	1	3	P003	M3
	Green	1	4	P004	M4
	Green	1	5	P001	M5
	Green	1	6	P002	M6
	Green	1	7	P003	M7
	Green	1	8	P004	M8
	Green	1	9	P001	M9
	Green	1	10	P002	M10
	Green	1	11	P003	M11
	Green	1	12	P004	M12

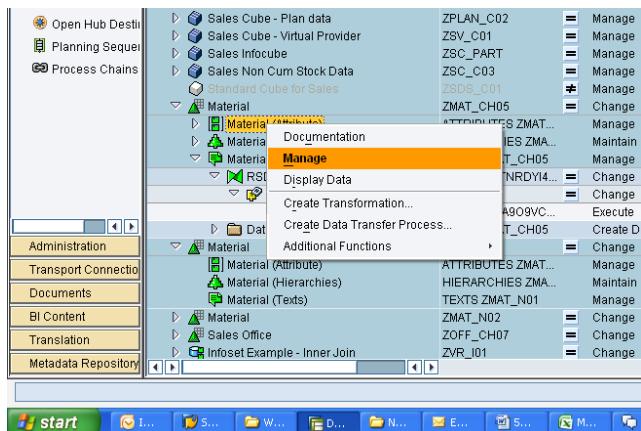
Step 4: Execute the DTP and check the data load status in Monitor.



Request ID	4,207
Start Time	12.09.2011 10:33:36
Finish Time	12.09.2011 10:33:38
OCG Header	Details

Request Processing		Me...	Da...	Time Stamp	Duration
Request 4207				12.09.2011 10:33:36	3 Sec.
Generate Request				12.09.2011 10:33:36	
Set Status to 'Executable'				12.09.2011 10:33:36	
Process Request				12.09.2011 10:33:36	1 Sec.
Prepare for Extraction				12.09.2011 10:33:37	
Data Package 1 (12 Data Records)				12.09.2011 10:33:37	
Extraction DataSource ZMR_DS04 : 12 Data Records				12.09.2011 10:33:37	
Filter Out New Records with the Same Key : 12-> 12 Data				12.09.2011 10:33:37	
RSDS ZMR_DS04 ZSH_FILE -> IOBJ ZMAT_CH05 : 12-> 1				12.09.2011 10:33:37	
Updating attributes for InfoObject ZMAT_CH05 : 12-> 12 D				12.09.2011 10:33:37	1 Sec.
End of Main Process				12.09.2011 10:33:37	2 Sec.
Set Technical Status to Green				12.09.2011 10:33:39	
Set Overall Status to Green				12.09.2011 10:33:39	

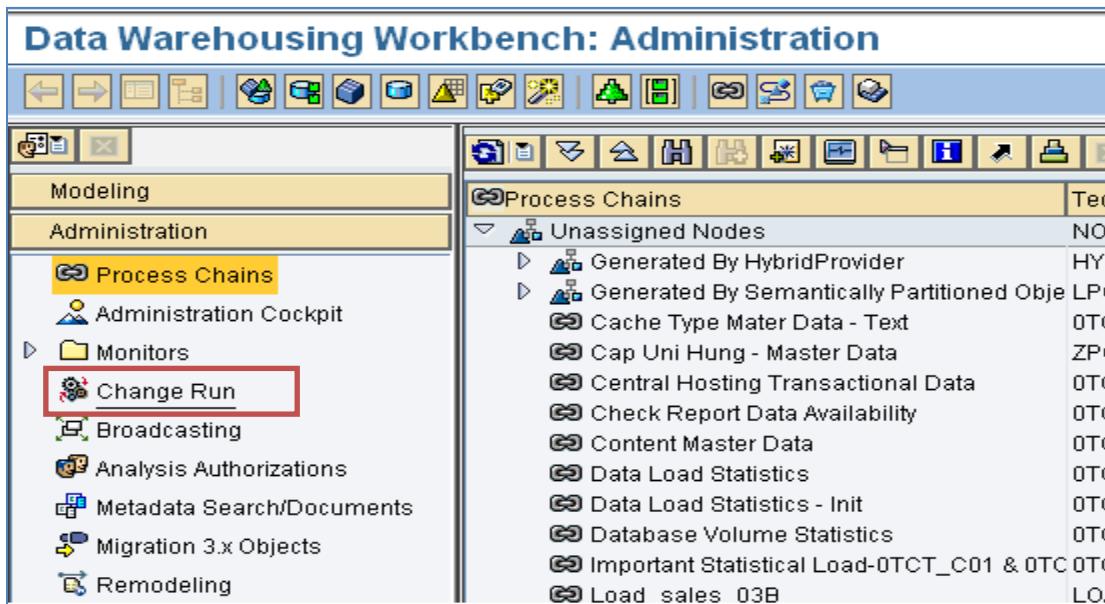
Step 5: Go to manage of 'material attribute' and check if data load request is successfully loaded.



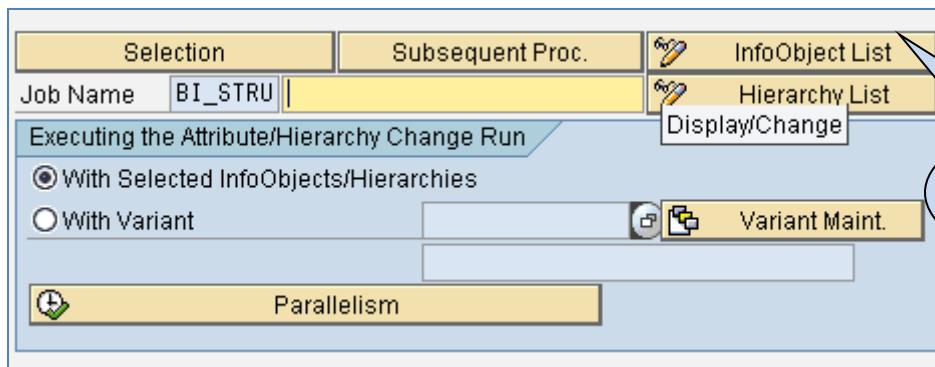
The screenshot shows the SAP BW Administration interface. On the left, there's a navigation bar with links like Open Hub Destin, Planning Sequenc, Process Chains, Administration, Transport Connectio, Documents, BI Content, Translation, and Metadata Repository. The main area displays a tree structure under 'Material'. Under 'Material', there are nodes for 'Material', 'Material (Attribute)', 'Material (Hierarchies)', and 'Material (Texts)'. Each node has several sub-options like 'Manage', 'Display Data', 'Create Transformation...', 'Create Data Transfer Process...', and 'Additional Functions'. The 'Material' node is currently selected. The status bar at the bottom shows standard Windows-style icons.

Step 6: Run Attribute change Run to activate the Master Data.

To do this, go to Administration Tab in RSA1.



Then select the Infoobject for which master data needs to be activated, from the Infoobject List options. And then Execute the run.



You can see the job status in the table given there.

Applied hierarchy/attribute change runs							
Change ID	End Date of Change	End Time	Change Status	Start Date of Change	Start Time	User who triggered	Job Name
30	12.09.2011	10:48:39	Hierarchy/Attribute Change Is Finished	12.09.2011	10:48:33	SGANDHI	BI_STRUBB8YY9MSVU1WHP0WIIT8GX0K2
24	07.09.2011	21:50:35	Hierarchy/Attribute Change Is Finished	07.09.2011	21:50:29	BWREMOTE	BI_PROCESS_ATTRIBUTECHAN
29	07.09.2011	21:50:35	Hierarchy/Attribute Change Is Scheduled	07.09.2011	21:50:29	BWREMOTE	BI_PROCESS_ATTRIBUTECHAN

Step 7: Now go to ZMAT_CH05. Right click and select 'Maintain master data' and execute to check the data.

P001	M1	EN	31.12.9999	01.01.1000	MATGRP1	
P001	M5	EN	31.12.9999	01.01.1000	MATGRP1	
P001	M9	EN	31.12.9999	01.01.1000	MATGRP1	
P002	M10	EN	31.12.9999	01.01.1000	MATGRP2	
P002	M2	EN	31.12.9999	01.01.1000	MATGRP2	
P002	M6	EN	31.12.9999	01.01.1000	MATGRP2	
P003	M11	EN	31.12.9999	01.01.1000	MATGRP3	
P003	M3	EN	31.12.9999	01.01.1000	MATGRP3	
P003	M7	EN	31.12.9999	01.01.1000	MATGRP3	
P004	M12	EN	31.12.9999	01.01.1000	MATGRP4	
P004	M4	EN	31.12.9999	01.01.1000	MATGRP4	
P004	M8	EN	31.12.9999	01.01.1000	MATGRP4	

Conclusion: Remember after every load to master data, it needs to be activated. Hence Attribute Change Run is a mandatory process of Master Data Load.

Master Data Text Load

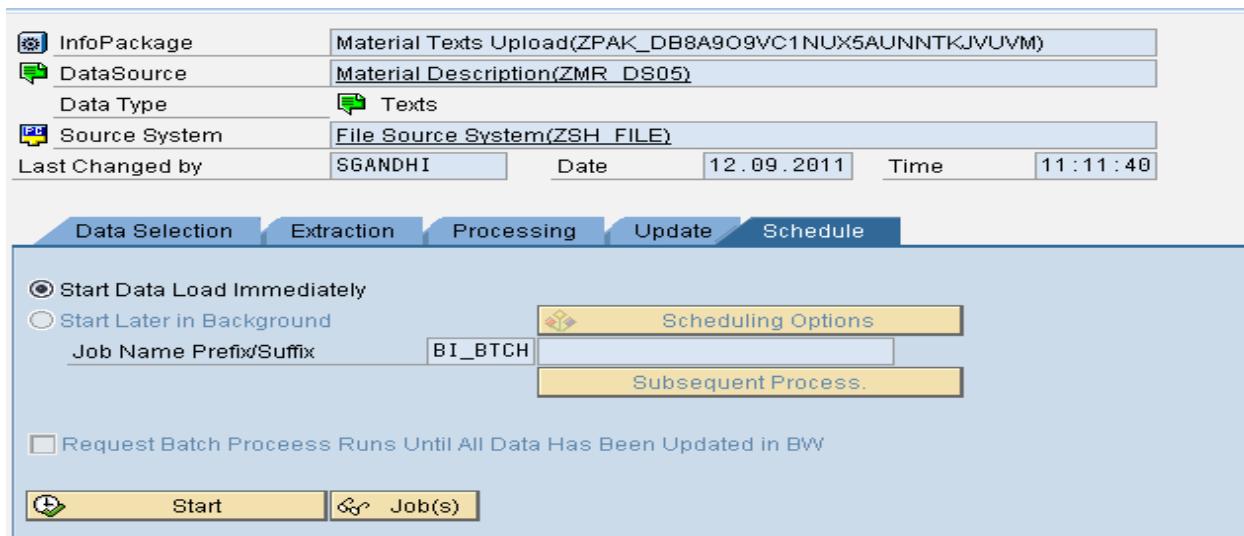
Use: This document helps you to understand how to load data for Text Master Data of a characteristic.

Process:

Step 1: Check the flat file for the texts of the characteristics. For example, see below the master data for Material having Desc as text for the material, and compounding characteristic as Plant.

Material	Desc	Plant
M1	Material 1	P001
M2	Material 2	P002
M3	Material 3	P003
M4	Material 4	P004
M5	Material 5	P001
M6	Material 6	P002
M7	Material 7	P003
M8	Material 8	P004
M9	Material 9	P001
M10	Material 10	P002
M11	Material 11	P003
M12	Material 12	P004

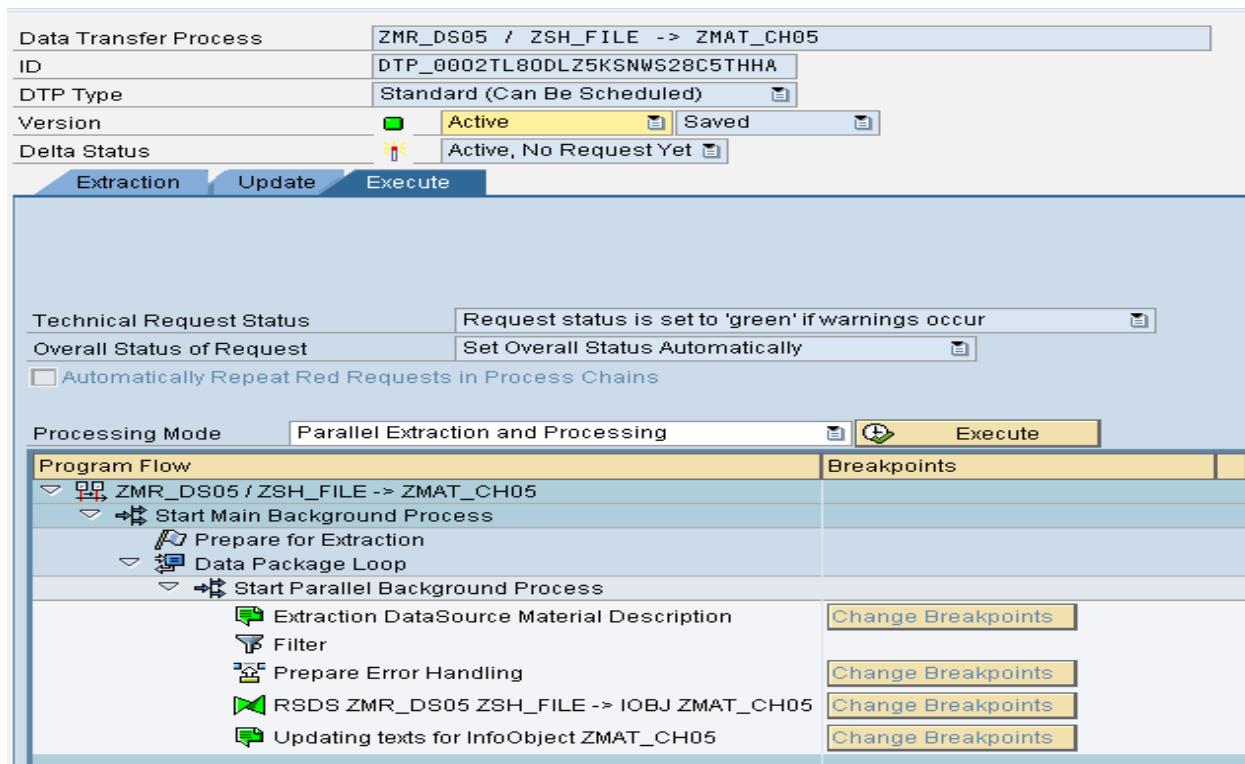
Step 2: Load file via InfoPacKage.



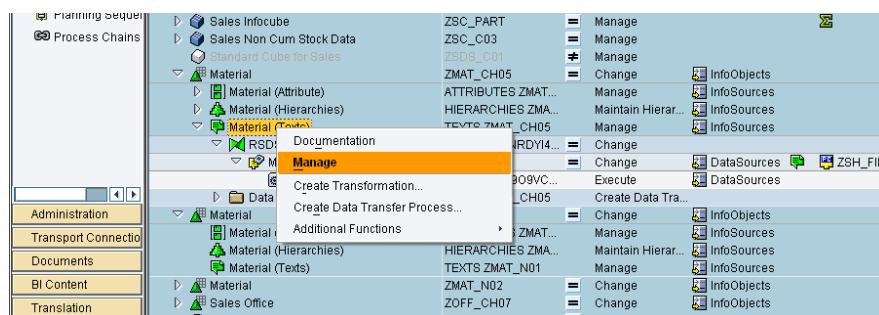
Step 3: Check data in PSA

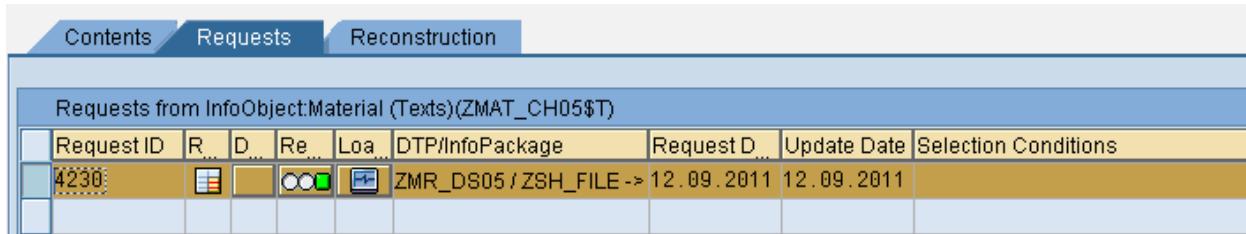
PSA Maintenance						
	Status	DataPacket	Data Rec.	Material	Medium des	Plant
	■	1	1	M1	Material 1	P001
	■	1	2	M2	Material 2	P002
	■	1	3	M3	Material 3	P003
	■	1	4	M4	Material 4	P004
	■	1	5	M5	Material 5	P001
	■	1	6	M6	Material 6	P002
	■	1	7	M7	Material 7	P003
	■	1	8	M8	Material 8	P004
	■	1	9	M9	Material 9	P001
	■	1	10	M10	Material 10	P002
	■	1	11	M11	Material 11	P003
	■	1	12	M12	Material 12	P004

Step 4: Execute the DTP and check the data load status in Monitor.



Step 5: Go to manage of 'material text' and check if data load request is successfully loaded.



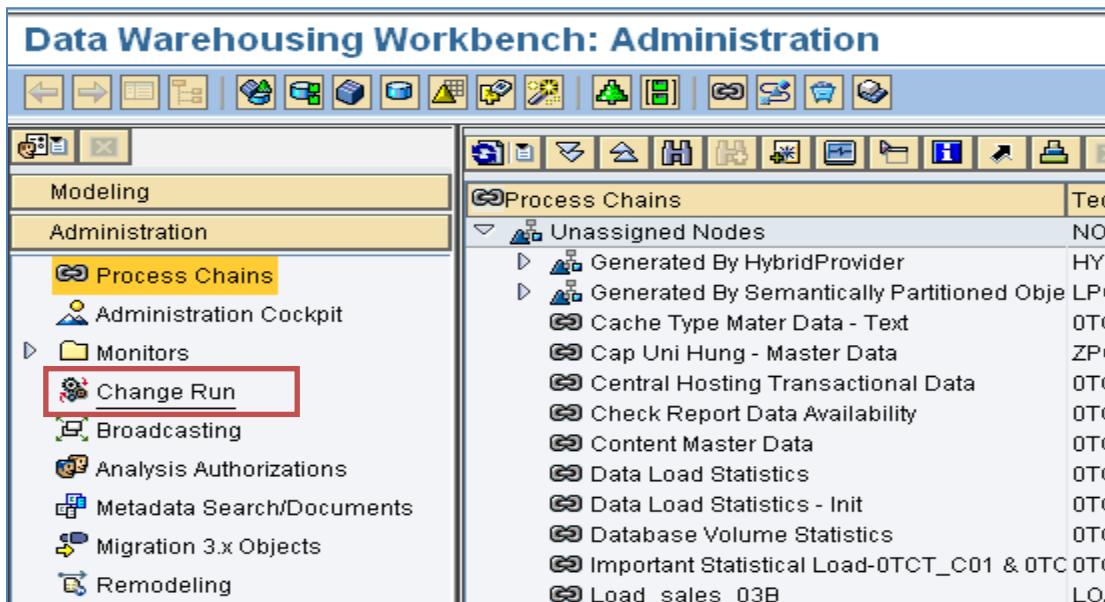


The screenshot shows the SAP BW Reconstruction interface. At the top, there are three tabs: 'Contents', 'Requests', and 'Reconstruction'. The 'Requests' tab is selected. Below the tabs, a table displays 'Requests from InfoObject:Material (Texts)(ZMAT_CH05\$T)'. The table has columns for Request ID, R..., D..., Re..., Lo..., DTP/InfoPackage, Request D..., Update Date, and Selection Conditions. One row is highlighted in yellow, showing Request ID 4230, DTP/InfoPackage ZMR_DS05 / ZSH_FILE, and Request Date 12.09.2011.

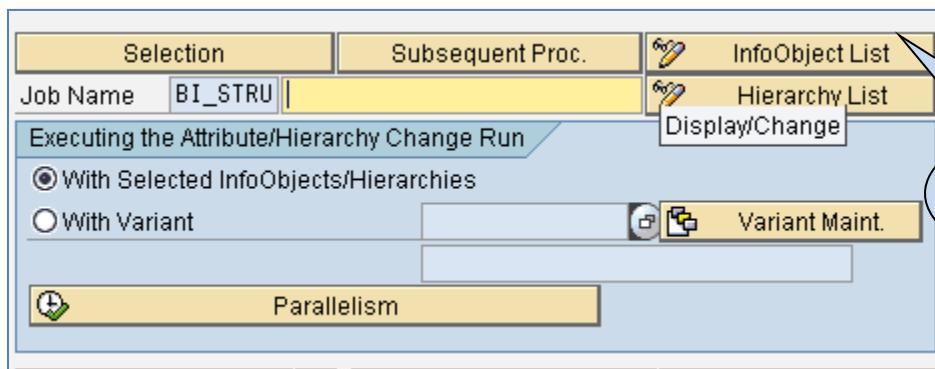
Requests from InfoObject:Material (Texts)(ZMAT_CH05\$T)								
Request ID	R...	D...	Re...	Lo...	DTP/InfoPackage	Request D...	Update Date	Selection Conditions
4230					ZMR_DS05 / ZSH_FILE ->	12.09.2011	12.09.2011	

Step 6: Run Attribute change Run to activate the Master Data.

To do this, go to Administration Tab in RSA1.



Then select the Infoobject for which master data needs to be activated, from the Infoobject List options. And then Execute the run.



You can see the job status in the table given there.

Applied hierarchy/attribute change runs						
Ch... 30	End Date of 12.09.2011	End Tim... 10:48:39	Change Status Hierarchy/Attribute Change Is Finished	Start Date o... 12.09.2011	Start Tim... 10:48:33	User wh... SGANDHI
	24	07.09.2011	21:50:35	Hierarchy/Attribute Change Is Finished	07.09.2011	21:50:29
	29	07.09.2011	21:50:35	Hierarchy/Attribute Change Is Scheduled	07.09.2011	21:50:29
				BWREMOTE	BI_PROCESS_ATTRIBCHAN	
				BWREMOTE	BI_PROCESS_ATTRIBCHAN	

Step 7: Now go to ZMAT_CH05. Right click and select 'Maintain master data' and execute to check the descriptions (text).

	Plant	Material	L	Valid To	Valid From	Material G	Division	EAN/UPC	Descript.
	P004	M12	EN	31.12.9999	01.01.1000	MATGRP4			Material 12
	P004	M4	EN	31.12.9999	01.01.1000				Material 4
	P004	M8	EN	31.12.9999	01.01.1000				Material 8
	P003	M11	EN	31.12.9999	01.01.1000	MATGRP3			Material 11
	P003	M3	EN	31.12.9999	01.01.1000				Material 3
	P003	M7	EN	31.12.9999	01.01.1000				Material 7
	P002	M10	EN	31.12.9999	01.01.1000	MATGRP2			Material 10
	P002	M2	EN	31.12.9999	01.01.1000				Material 2
	P002	M6	EN	31.12.9999	01.01.1000				Material 6
	P001	M1	EN	31.12.9999	01.01.1000	MATGRP1			Material 1
	P001	M5	EN	31.12.9999	01.01.1000				Material 5
	P001	M9	EN	31.12.9999	01.01.1000				Material 9
				31.12.9999	01.01.1000				
		3000042		31.12.9999	01.01.1000				
		3000051		31.12.9999	01.01.1000				

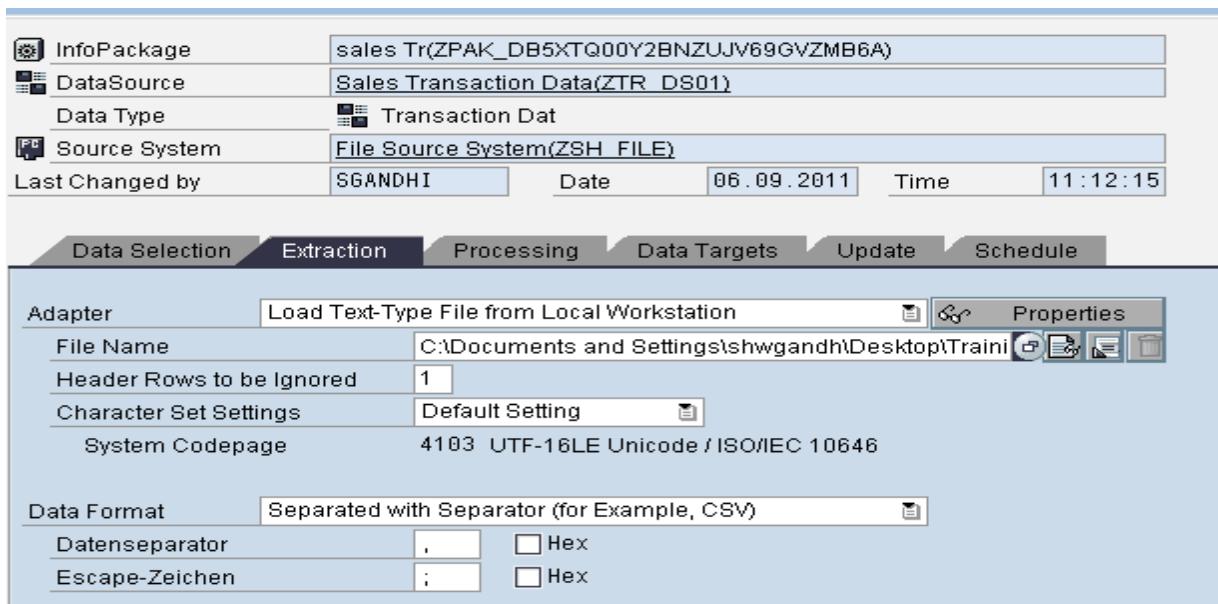
Conclusion: Remember after every load to master data, it needs to be activated. Hence Attribute Change Run is a mandatory process of Master Data Load.

Transaction Data Load

Use : This document helps you understand the process of loading data from flat file to Data Target.

Process :

Step 1: Execute InfoPackage for details shown in below screenshot. Goto Schedule tab of the Infopackage and click on **Execute** Button.



Step 2: Check the values in PSA.

PSA Maintenance

Data records to be edited

	Status	DataPacket	Data Rec.	Document N	Doc Item N	Material	Sales Doc	Sales Pers	Version	Sales Org	Sales Off	Sold to Pa	Sales Quan	UNIT	Sales Amou	Currency
	■	1	1	1,601	1	M16	01.01.2007	SP1	A	S01	SOF1	CUST1	100	EA	50.00	GBP
	■	1	2	1,602	1	M16	01.01.2008	SP1	A	S01	SOF1	CUST1	100	EA	100.00	GBP
	■	1	3	1,603	1	M16	01.01.2009	SP1	A	S01	SOF1	CUST1	100	EA	150.00	GBP
	■	1	4	1,604	1	M16	01.01.2010	SP1	A	S01	SOF1	CUST1	100	EA	1,000.00	GBP
	■	1	5	1,605	1	M16	01.01.2011	SP1	A	S01	SOF1	CUST1	100	EA	100.00	GBP
	■	1	6	1,701	1	M17	01.01.2007	SP1	A	S01	SOF1	CUST1	100	EA	200.00	GBP
	■	1	7	1,702	1	M17	01.01.2008	SP1	A	S01	SOF1	CUST1	100	EA	200.00	GBP
	■	1	8	1,703	1	M17	01.01.2009	SP1	A	S01	SOF1	CUST1	100	EA	300.00	GBP
	■	1	9	1,704	1	M17	01.01.2010	SP1	A	S01	SOF1	CUST1	100	EA	400.00	GBP
	■	1	10	1,705	1	M17	01.01.2011	SP1	A	S01	SOF1	CUST1	100	EA	500.00	GBP

Step 3: Execute DTP to load data from PSA to Data Target.

Data Transfer Proc. **ZTR_DS01 / ZSH_FILE -> ZSD_001**

ID **DTP_0002TL8ODLZ5KRL0OKTW60YSN**

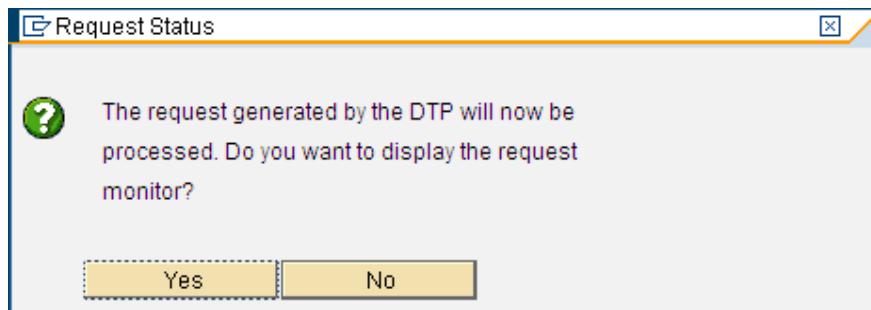
DTP Type **Standard (Can Be Scheduled)**

Version **Active** **Saved** **Inactive, not executable**

Extraction Update Execute

Source Object	DataSource	Filter
ZTR_DS01	ZSH_FILE	Semantic Groups
Material Master		
Extraction Mode	Delta	
Delta Status	Active	
Request Selection		
<input type="checkbox"/> Delta Init Without Data <input type="checkbox"/> Get All New Data Request By Request <input type="checkbox"/> Only Get Delta Once		
Parallel Extraction	<input checked="" type="checkbox"/>	
Package Size	0	

Monitor the data load done by DTP and check the status should be all GREEN.



Monitor: Data Transfer Process 4,240

Debugging Job Overview Error Stack

Request ID	4,240
Start Time	12.09.2011 13:20:15
Finish Time	12.09.2011 13:20:20

Header Details

Request Processing

	Me...	Da...	Time Stamp	Duration
Request 4240			12.09.2011 13:20:15	5 Sec.
Generate Request			12.09.2011 13:20:15	1 Sec.
Set Status to 'Executable'			12.09.2011 13:20:16	
Process Request			12.09.2011 13:20:16	1 Sec.
Prepare for Extraction			12.09.2011 13:20:17	
Data Package 1 (10 Data Records)			12.09.2011 13:20:17	
End of Main Process			12.09.2011 13:20:17	2 Sec.
Set Technical Status to Green			12.09.2011 13:20:19	
Set Overall Status to Green			12.09.2011 13:20:19	

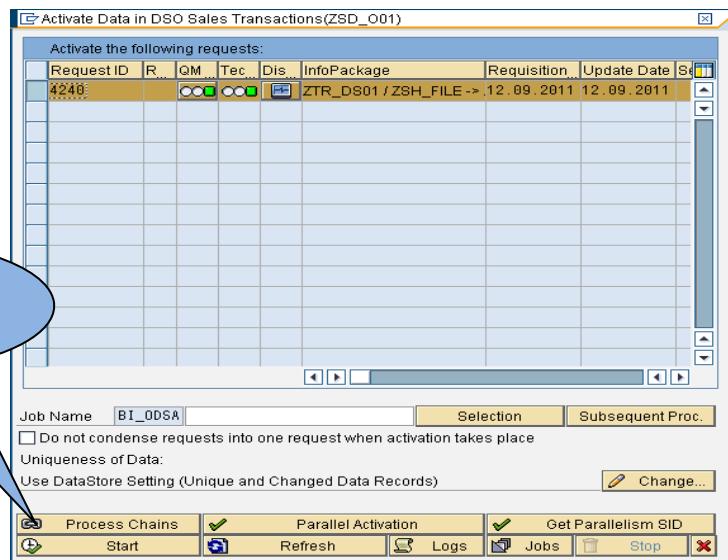
Step 4: Check the Request in the Data Target. If the data target is a DSO, then activate the new request and then load further to Infocube or any other data target. If it is an Info Cue, request need not be activated.

Contents Requests Reconstruction

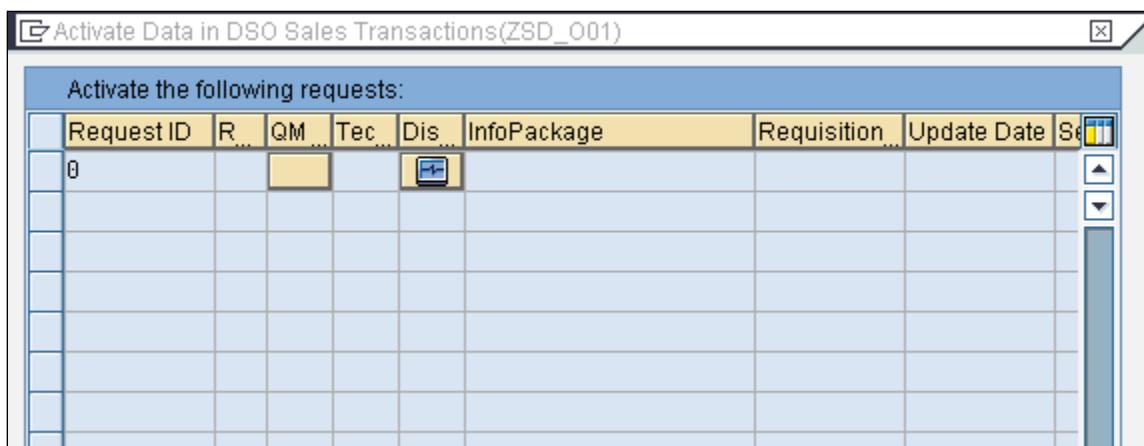
Requests from DataStore Object: Sales Transactions(ZSD_001)

Request ID	R...	D...	ID of Re...	Re...	Lo...	Log...	DTP/InfoPackage	Request D...	Update Date	Select...	Transferr...	Added R...
4240			0	OO	IS	LS	ZTR_DS01 / ZSH_FILE ->	12.09.2011	12.09.2011	10	10	
3791			3792	OO	IS	LS	ZTR_DS0->ZSD_0001	(09.09.2011	09.09.2011	8	8	
3769			3771	OO	IS	LS	ZTR_DS01 / ZSH_FILE ->	09.09.2011	09.09.2011	42	42	

Step 5: Activated the request.



Once the request gets activated, it gets removed from this list, as shown below.



Step 6: Now to load data from DSO to further Data Target – InfoCube, execute DTP that loads data to further data targets.

Data Transfer Proc. ZSD_001 -> ZSC_C01

ID DTP_0002TL80DLZ5KRKY8JOKNGI07

DTP Type Standard (Can Be Scheduled)

Version Active Saved

Extraction Update Execute

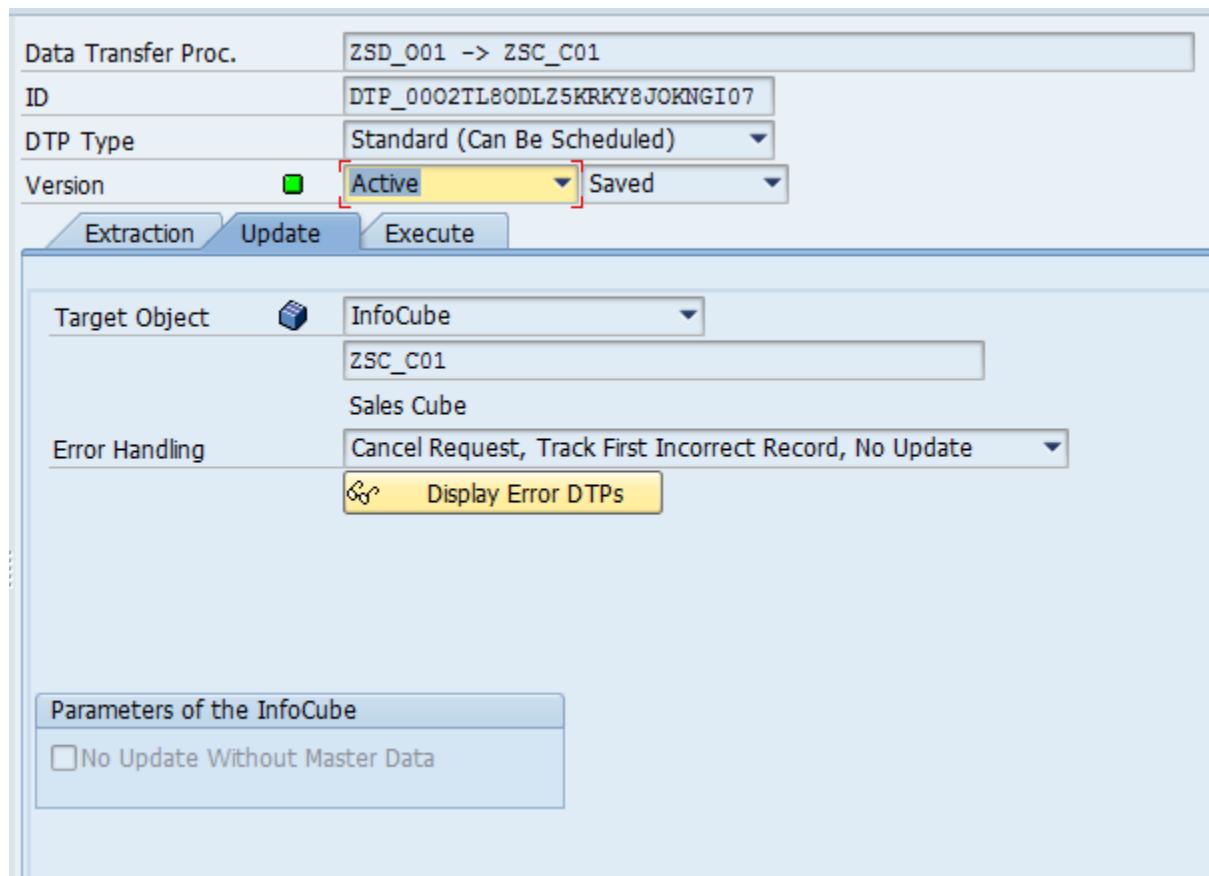
Target Object InfoCube ZSC_C01
Sales Cube

Error Handling Cancel Request, Track First Incorrect Record, No Update

Display Error DTPs

Parameters of the InfoCube

No Update Without Master Data



Step 7: Check the data in Data Target.

"ZSC_C01", List output


ZDOC_CH12	Sales Office	ZORG_CH06	ZSPR_C...	ZCUS_C...	ZCN...	Material	Plant	Version	Request ID	Calendar day	OCALMONT...	OCALYEAR	Currency	OUNIT	ZAMT_K...	ZQUAN_K01	PRICE
0000001605	SOF1	S01	SP1	CUST1		M16		A	DTPR_0002	01.01.2011	201101	2011	GBP	EA	100.00	100	1.00
0000001601	SOF1	S01	SP1	CUST1		M16		A	DTPR_0002	01.01.2007	200701	2007	GBP	EA	50.00	100	0.50
0000001602	SOF1	S01	SP1	CUST1		M16		A	DTPR_0002	01.01.2008	200801	2008	GBP	EA	100.00	100	1.00
0000001603	SOF1	S01	SP1	CUST1		M16		A	DTPR_0002	01.01.2009	200901	2009	GBP	EA	150.00	100	1.50
0000001604	SOF1	S01	SP1	CUST1		M16		A	DTPR_0002	01.01.2010	201001	2010	GBP	EA	1,000.00	100	10.00
0000001705	SOF1	S01	SP1	CUST1		M17		A	DTPR_0002	01.01.2011	201101	2011	GBP	EA	500.00	100	5.00
0000001701	SOF1	S01	SP1	CUST1		M17		A	DTPR_0002	01.01.2007	200701	2007	GBP	EA	200.00	100	2.00
0000001702	SOF1	S01	SP1	CUST1		M17		A	DTPR_0002	01.01.2008	200801	2008	GBP	EA	200.00	100	2.00
0000001703	SOF1	S01	SP1	CUST1		M17		A	DTPR_0002	01.01.2009	200901	2009	GBP	EA	300.00	100	3.00
0000001704	SOF1	S01	SP1	CUST1		M17		A	DTPR_0002	01.01.2010	201001	2010	GBP	EA	400.00	100	4.00

Conclusion: The general scenario of data load is, data extracted from R/3 or ECC System, taken to PSA, and then through DTP, loaded to DSO, new request is activated in DSO and then loaded to InfoCube.

RFC Connection - SM59

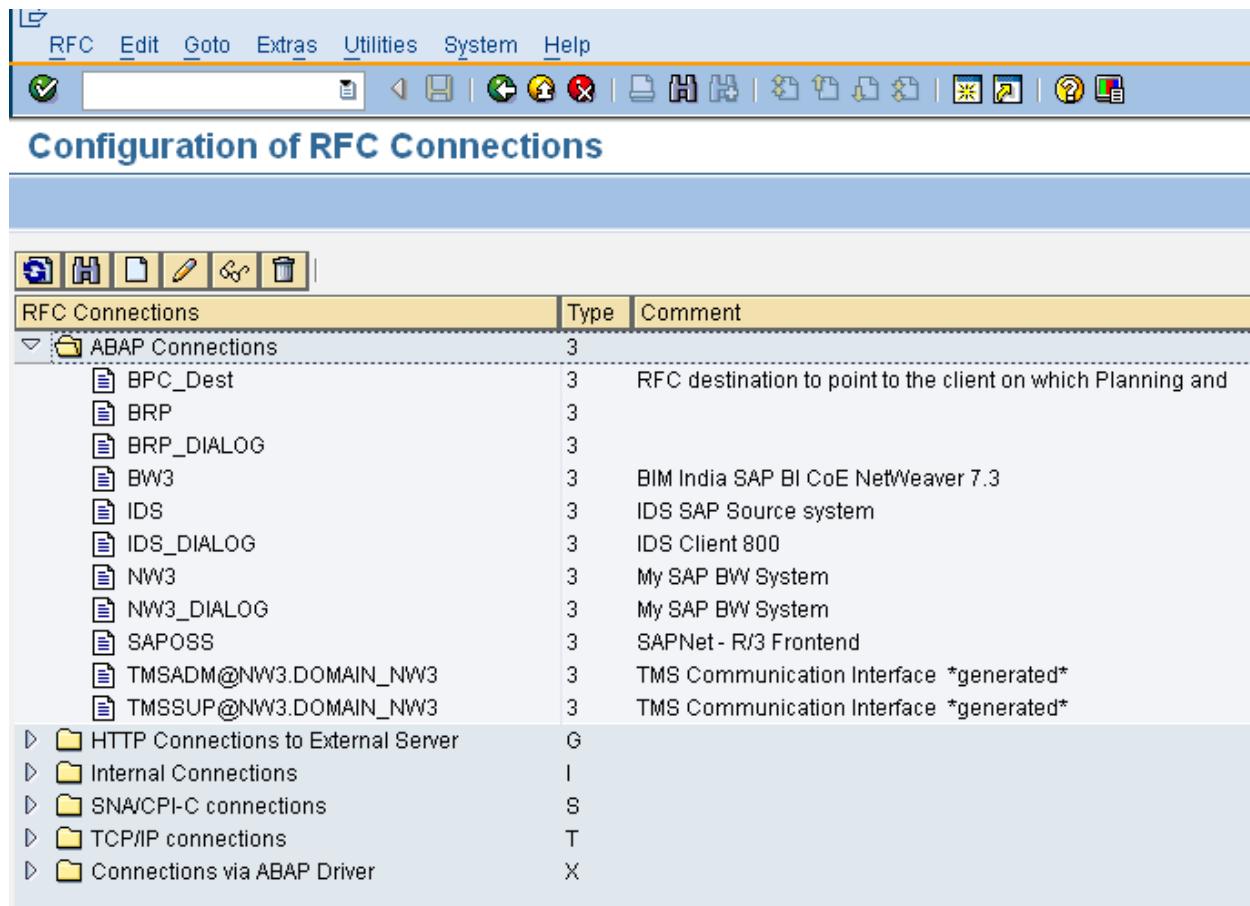
Use:

We need RFC destination to connect either to non-SAP or SAP data externally from our existing system. To make other systems available for the access, we need to provide an RFC destination in our SAP such that it accesses the external system.

To summarise you can communicate via RFC:

1. R/3 → R/3
2. Legacy → R/3
3. R/3 → Legacy

Procedure:



RFC Connections	Type	Comment
ABAP Connections	3	
BPC_Dest	3	RFC destination to point to the client on which Planning and
BRP	3	
BRP_DIALOG	3	
BW3	3	BIM India SAP BI CoE NetWeaver 7.3
IDS	3	IDS SAP Source system
IDS_DIALOG	3	IDS Client 800
NW3	3	My SAP BW System
NW3_DIALOG	3	My SAP BW System
SAPOSS	3	SAPNet - R/3 Frontend
TMSADM@NW3.DOMAIN_NW3	3	TMS Communication Interface *generated*
TMSSUP@NW3.DOMAIN_NW3	3	TMS Communication Interface *generated*
HTTP Connections to External Server	G	
Internal Connections	I	
SNA/CPI-C connections	S	
TCP/IP connections	T	
Connections via ABAP Driver	X	

Navigate to below link to understand the steps of creating RFC connection,

http://help.sap.com/saphelp_nw04/helpdata/en/26/64f62cfa8911d386e70000e82011b8/content.htm

sm59-> R/3 connections -> create

1) Give RFC destination name.

2) Connection type - 3.

3) Technical settings tab -> Target Host - give the Application Server name -> press enter.

The IP address automatically gets filled up.

4) Logon security tab -> Assign the Logon details.

Conclusion –

RFC connection is necessary to be created if you want to send data or structure definitions from,

1) External system to SAP system

2) SAP to External system

3) SAP to SAP.

4.2 Generic Data source Create, Activate, Replicate and Enhance

Use:

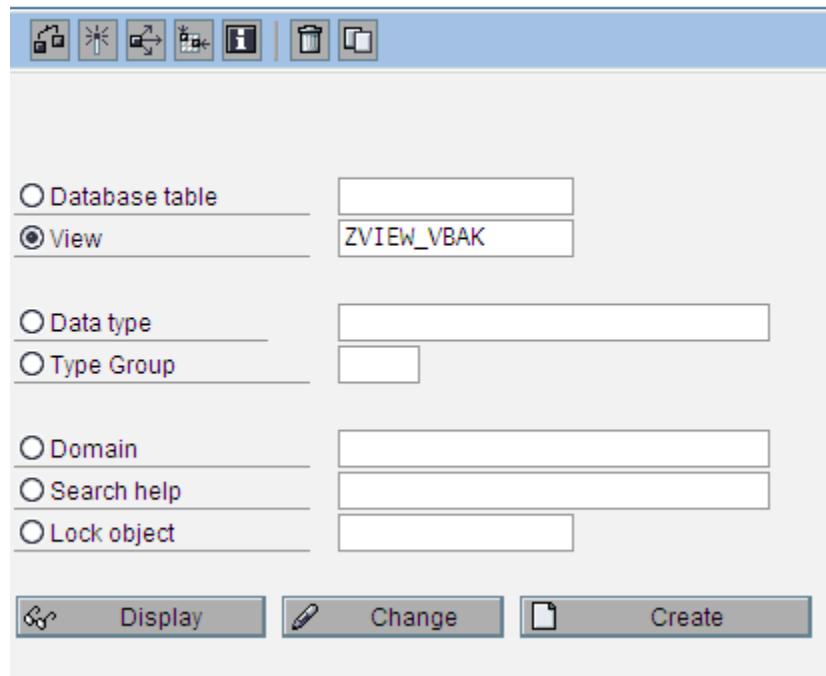
In cases where you want to analyze certain kind of data from SAP BI system and standard business content does not include a data source for this purpose, you would need to create a generic data source. Generic data source can be built on following base components,

- a) Database table
- b) Database View
- c) Infoset (different than BW infoset)
- d) Function Module

Procedure:

1. Log onto the ECC system.
2. Goto transaction SE11 and in the field View enter name of View as ZVIEW_VBAK. Click Create.

ABAP Dictionary: Initial Screen



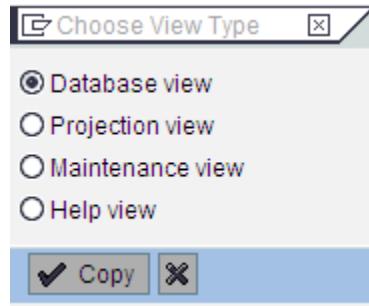
The screenshot shows the initial screen of the ABAP Dictionary. At the top, there is a toolbar with several icons: a magnifying glass, a double arrow, a left arrow, a right arrow, a search icon, a trash can, and a refresh/copy icon. Below the toolbar, there is a list of selection options:

- Database table
- View
- Data type
- Type Group
- Domain
- Search help
- Lock object

Next to each option is a text input field. The 'View' option has the value 'ZVIEW_VBAK' entered into its field. Below the selection options is a row of buttons:

- Display (with a magnifying glass icon)
- Change (with a pencil icon)
- Create (with a document icon)

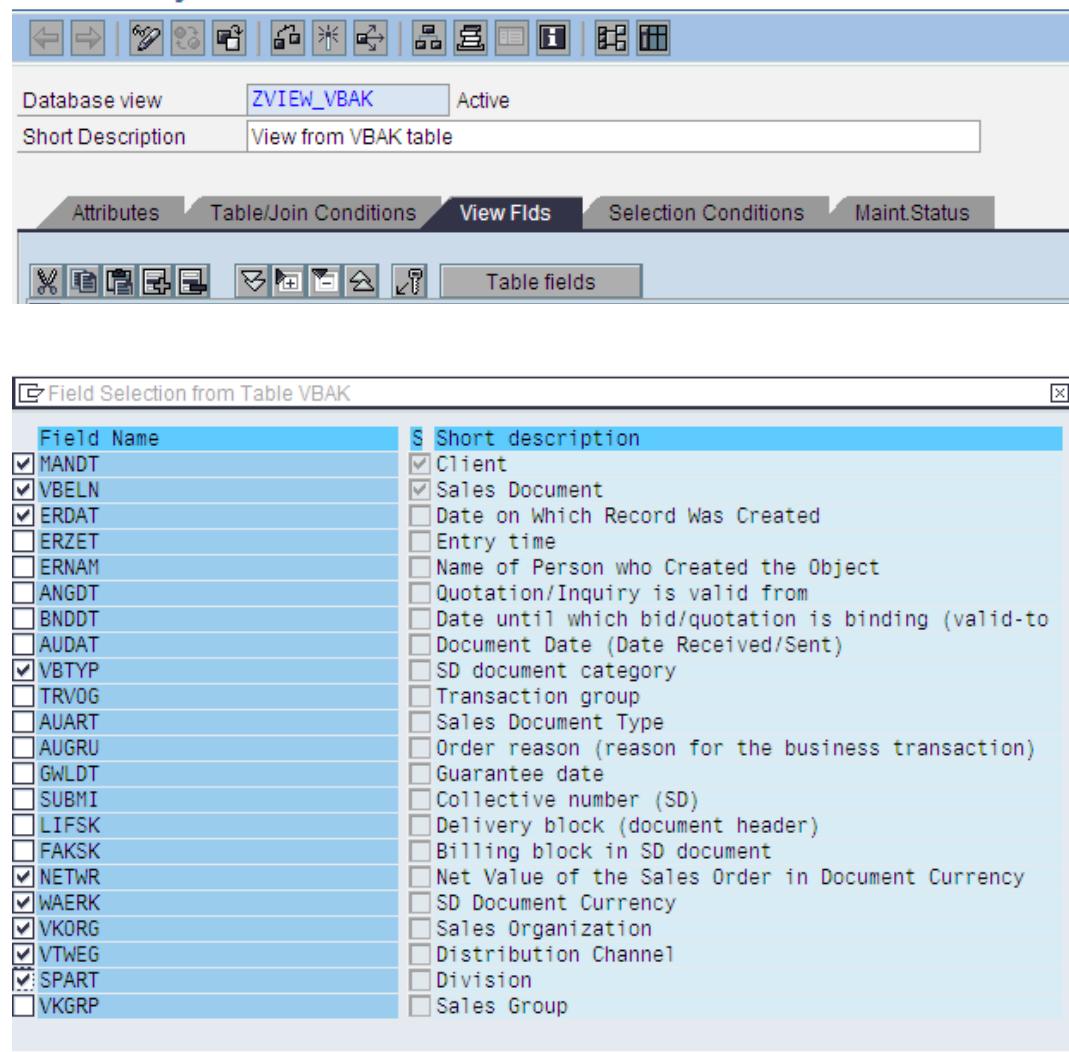
3. Choose Database View from the dropdown that appears and click Copy.



4. Enter short description as *View from VBAK table* and in column tables enter table name as VBAK. Click on View Fields tab.

5. Click the *Table Fields* Button and Choose following fields from the list and click Copy.

Dictionary: Maintain View



Field Name	Short description
<input checked="" type="checkbox"/> MANDT	<input checked="" type="checkbox"/> Client
<input checked="" type="checkbox"/> VBELN	<input checked="" type="checkbox"/> Sales Document
<input checked="" type="checkbox"/> ERDAT	<input type="checkbox"/> Date on Which Record Was Created
<input type="checkbox"/> ERZET	<input type="checkbox"/> Entry time
<input type="checkbox"/> ERNAM	<input type="checkbox"/> Name of Person who Created the Object
<input type="checkbox"/> ANGDT	<input type="checkbox"/> Quotation/Inquiry is valid from
<input type="checkbox"/> BNDDT	<input type="checkbox"/> Date until which bid/quotation is binding (valid-to)
<input type="checkbox"/> AUDAT	<input type="checkbox"/> Document Date (Date Received/Sent)
<input checked="" type="checkbox"/> VBTYP	<input type="checkbox"/> SD document category
<input type="checkbox"/> TRVOG	<input type="checkbox"/> Transaction group
<input type="checkbox"/> AUART	<input type="checkbox"/> Sales Document Type
<input type="checkbox"/> AUGRU	<input type="checkbox"/> Order reason (reason for the business transaction)
<input type="checkbox"/> GWLDT	<input type="checkbox"/> Guarantee date
<input type="checkbox"/> SUBMI	<input type="checkbox"/> Collective number (SD)
<input type="checkbox"/> LIFSK	<input type="checkbox"/> Delivery block (document header)
<input type="checkbox"/> FAKSK	<input type="checkbox"/> Billing block in SD document
<input checked="" type="checkbox"/> NETWR	<input type="checkbox"/> Net Value of the Sales Order in Document Currency
<input checked="" type="checkbox"/> WAERK	<input type="checkbox"/> SD Document Currency
<input checked="" type="checkbox"/> VKORG	<input type="checkbox"/> Sales Organization
<input checked="" type="checkbox"/> VTWEG	<input type="checkbox"/> Distribution Channel
<input checked="" type="checkbox"/> SPART	<input type="checkbox"/> Division
<input type="checkbox"/> VKGRC	<input type="checkbox"/> Sales Group

6. You will see following Screen. Save  and activate  the View.

Dictionary: Maintain View

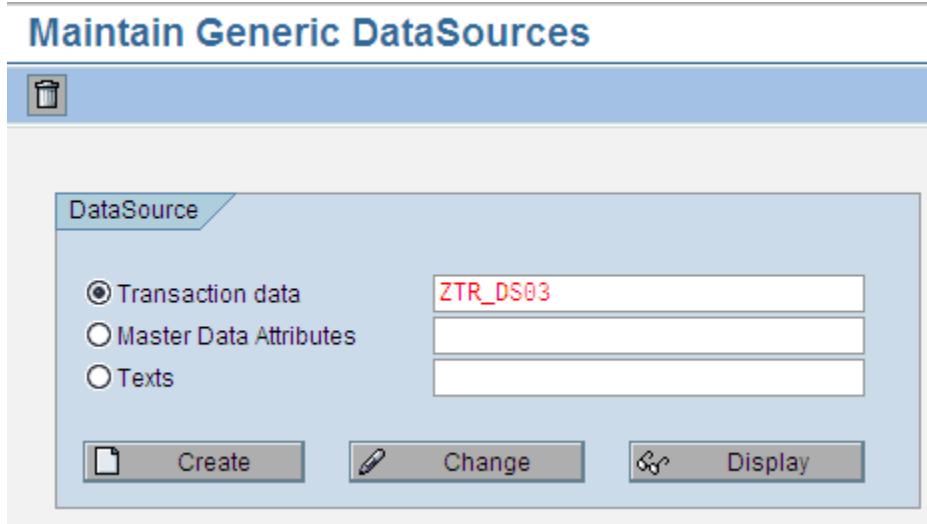
Database view **ZVIEW_VBAK** New(Revised)

Short Description **View from VBAK table**

Attributes Table/Join Conditions **View Flds** Selection Conditions Maint.Status

Table fields					
View field	Table	Field	Key	Data elem.	
MANDT	VBAK	MANDT	<input checked="" type="checkbox"/>	MANDT	
VBELN	VBAK	VBELN	<input checked="" type="checkbox"/>	VBELN VA	
ERDAT	VBAK	ERDAT	<input type="checkbox"/>	ERDAT	
VBTYPO	VBAK	VBTYPO	<input type="checkbox"/>	VBTYPO	
NETWR	VBAK	NETWR	<input type="checkbox"/>	NETWR AK	
WAERK	VBAK	WAERK	<input type="checkbox"/>	WAERK	
VKORG	VBAK	VKORG	<input type="checkbox"/>	VKORG	
VTWEG	VBAK	VTWEG	<input type="checkbox"/>	VTWEG	
SPART	VBAK	SPART	<input type="checkbox"/>	SPART	

- Once activated goto to transaction RSO2. Select the Radio button for Transaction data and enter the name as ZTR_DS03. Click on the Create Button



8. Following Screen will appear.

Create DataSource for Transactn data: ZTR_DS03

Generic Delta

DataSource	ZTR_DS03	Extraction from View
Appl. Component	<input checked="" type="checkbox"/>	Extraction from Query
Reconciliation	<input type="checkbox"/>	Extraction by FM
Obj. status	New	

Texts

Short description	<input checked="" type="checkbox"/>
Medium description	<input checked="" type="checkbox"/>
Long description	<input checked="" type="checkbox"/>

Extraction from DB View

View/Table	
ExtractStruct.	

Extraction frm SAP Query

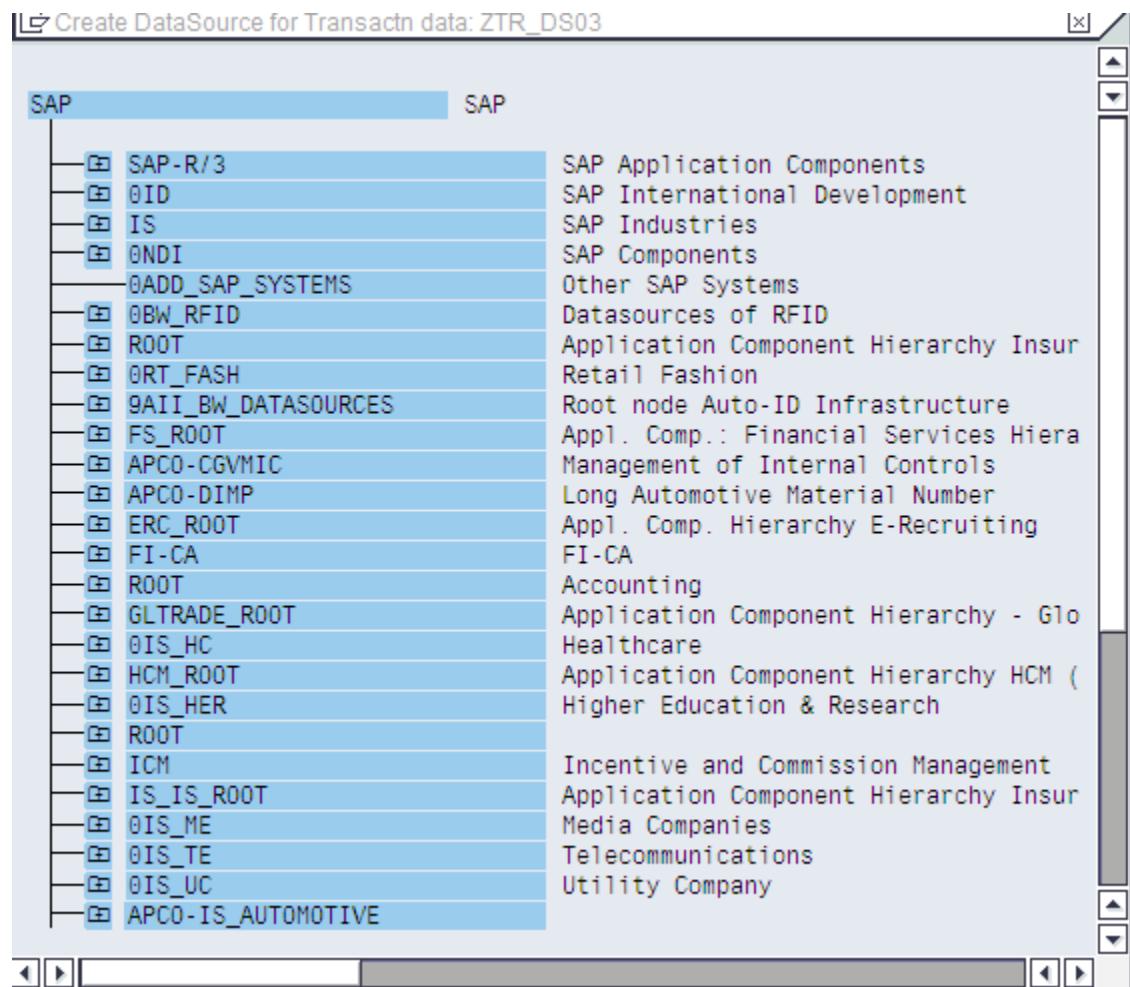
InfoSet	
---------	--

Extraction by Function Module

Function Module	
Extract.Struct.	

9. Press F4 for Application component field and Choose SAP R/3 as the application component from Hierarchy

Create DataSource for Transactn data: ZTR_DS03



The screenshot shows the SAP BW DataSources hierarchy for Transaction ZTR_DS03. The tree view on the left lists various SAP components and systems, each with a brief description on the right. The nodes are color-coded by category.

- SAP Application Components:** SAP-R/3, SAP International Development, SAP Industries, SAP Components, Other SAP Systems.
- Datasources of RFID:** OBW_RFID.
- Application Component Hierarchy Insurance:** ROOT, ORT_FASH.
- Root node Auto-ID Infrastructure:** 9AII_BW_DATASOURCES.
- Appl. Comp.: Financial Services Hierarchy:** FS_ROOT.
- Management of Internal Controls:** APC0-CGVMIC.
- Long Automotive Material Number:** APC0-DIMP.
- Appl. Comp. Hierarchy E-Recruiting:** ERC_ROOT.
- FI-CA:** FI-CA.
- Accounting:** ROOT.
- Application Component Hierarchy - Global:** GLTRADE_ROOT.
- Healthcare:** OIS_HC.
- Application Component Hierarchy HCM (Higher Education & Research):** HCM_ROOT, OIS_HER.
- Incentive and Commission Management:** ROOT.
- Application Component Hierarchy Insurance:** ICM.
- Media Companies:** IS_IS_ROOT.
- Telecommunications:** OIS_ME.
- Utility Company:** OIS_TE.
- Utility Company:** OIS_UC.
- Appl. Comp. Hierarchy IS-Automotive:** APC0-IS_AUTOMOTIVE.

Create DataSource for Transactn data: ZTR_DS03

Generic Delta

DataSource **ZTR_DS03**

Appl. Component **SAP-R/3**

Reconciliation

Obj. status **New**

Extraction from View

Extraction from Query

Extraction by FM

Texts

Short description

Medium description

Long description

Extraction from DB View

View/Table

ExtractStruct.

Extraction frm SAP Query

InfoSet

Extraction by Function Module

Function Module

Extract Struct.

10. Enter Description as *Table for Sales transactions* for all the 3 fields' short, medium and long description.

Create DataSource for Transactn data: ZTR_DS03

Generic Delta

DataSource	ZTR_DS03	Extraction from View
Appl. Component	SAP-R/3	Extraction from Query
Reconciliation	<input type="checkbox"/>	Extraction by FM
Obj. status	New	

Texts

Short description	Table for Sales tran
Medium description	Table for Sales transactions
Long description	Table for Sales transactions

Extraction from DB View

View/Table	
ExtractStruct.	

Extraction frm SAP Query

InfoSet	
---------	--

Extraction by Function Module

Function Module	
Extract.Struct.	

11. Select View created in above steps ZVIEW_VBAK as the name of the View and click on Save.

Create DataSource for Transactn data: ZTR_DS03

Generic Delta	
DataSource	ZTR_DS03
Appl. Component	SAP - R/3
Reconciliation	<input type="checkbox"/>
Obj. status	New
Texts	
Short description	Table for Sales tran
Medium description	Table for Sales transactions
Long description	Table for Sales transactions
Extraction from DB View	
View/Table	ZVIEW_VBAK
ExtractStruct.	
Extraction frm SAP Query	
InfoSet	
Extraction by Function Module	
Function Module	
Extract.Struct.	

12. Following Screen will appear. Select fields VBELN, ERDAT, VKORG and VTWEG as selection fields and Click on Save.

DataSource: Customer version Edit

Header Data					
DataSource	ZTR_DS03	Package	\$TMP		
Description	Table for Sales transactions				
Extraction					
ExtractStruct.	Z0XID30164				
Direct Access	1				
Delta Update	<input type="checkbox"/>	DataSource for Reconciliation	<input type="checkbox"/>		
Field Name	Short text	Selection	Hide field	Inversion	Field only
ERDAT	Date on Which Record Was Created	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NETWR	Net Value of the Sales Order in Document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPART	Division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VBELN	Sales Document	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VBTYPO	SD document category	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VKORG	Sales Organization	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VTWEG	Distribution Channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WAERK	SD Document Currency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. You will see the following screen again and message will appear in the message bar saying Datasource successfully saved.

Change DataSource for Transactn data: ZTR_DS03

			Generic Delta
DataSource ZTR_DS03			
Appl. Component SAP-R/3			
Reconciliation <input type="checkbox"/>			
Obj. status Saved			
Texts			
Short description		Table for Sales tran	
Medium description		Table for Sales transactions	
Long description		Table for Sales transactions	
Extraction from DB View			
View/Table		ZVIEW_VBAK	
ExtractStruct.		Z0XID30164	
Extraction frm SAP Query			
InfoSet			
Extraction by Function Module			
Function Module			
Extract.Struct.			

14. Click the Generic delta button on top of the Screen.

Change DataSource for Transactn data: ZTR_DS03

   Generic Delta

DataSource	ZTR_DS03
Applic. Component	SAP-R/3
Reconciliation	<input type="checkbox"/>
Obj. status	Saved

Texts

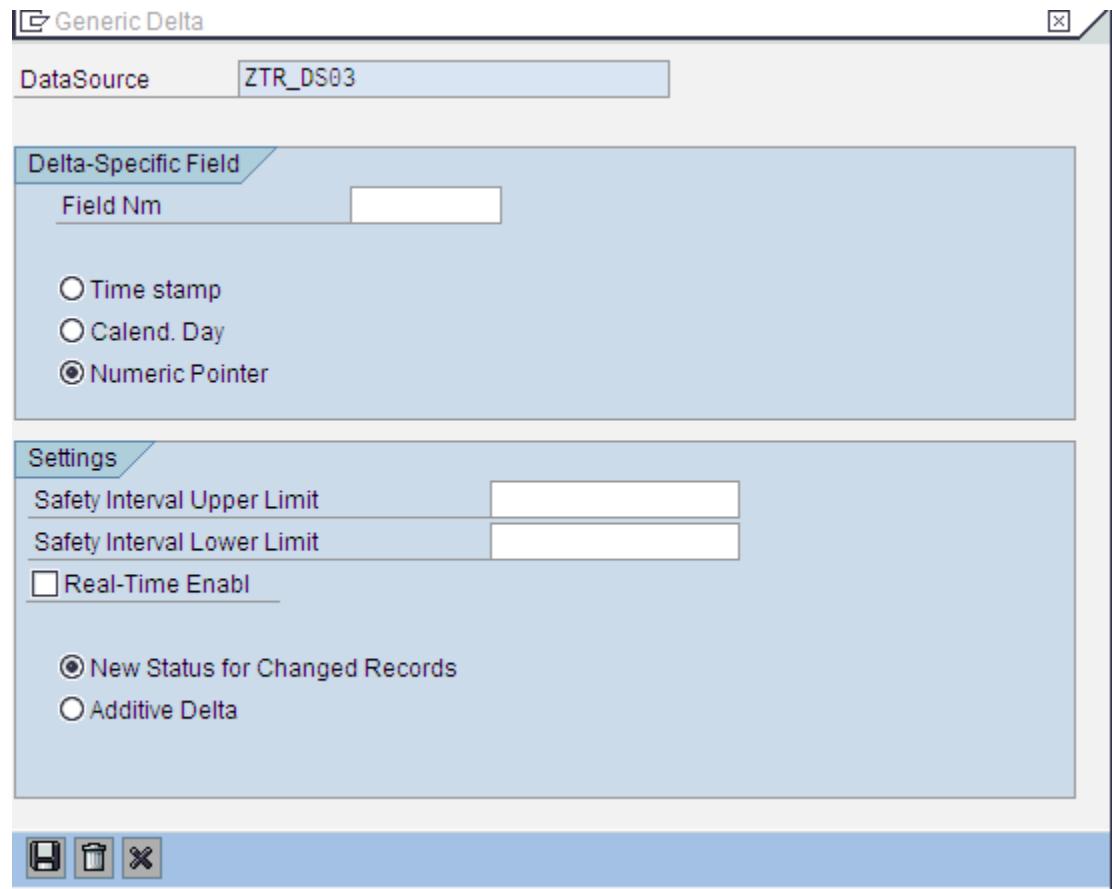
Short description	Table for Sales tran
Medium description	Table for Sales transactions
Long description	Table for Sales transactions

Extraction from DB View

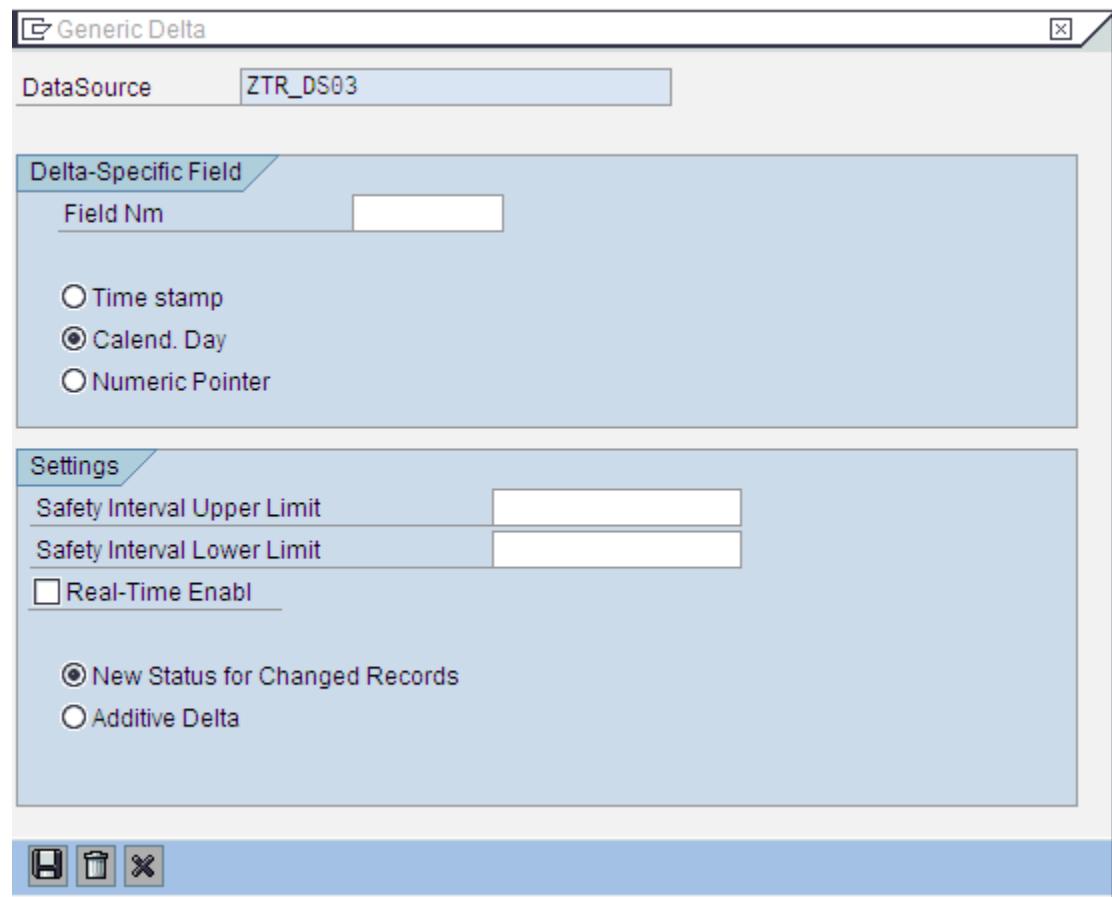
View/Table	ZVIEW_VBAK
ExtractStruct.	Z0XID30164

Extraction frm SAP Query

15. Following Screen will appear



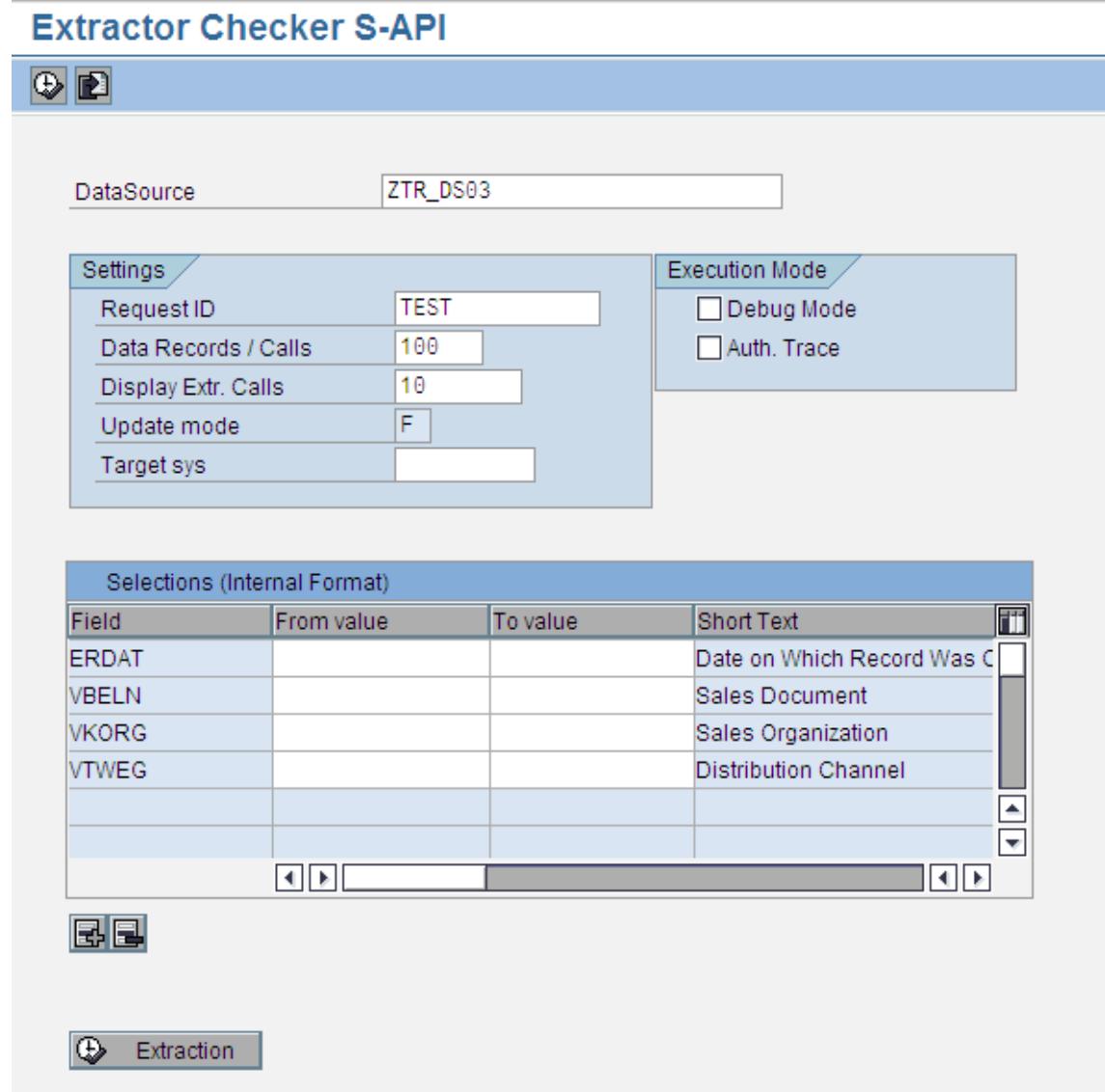
16. In Section for Delta Specific Fields Select field name as ERDAT and Change the below radio button to Calendar Day and click on Save.



17. Again Click on Save.

18. Goto transaction RSA3 and enter ZTR_DS03 in field datasource.

Extractor Checker S-API



DataSource

Settings

Request ID	TEST
Data Records / Calls	100
Display Extr. Calls	10
Update mode	F
Target sys	

Execution Mode

<input type="checkbox"/> Debug Mode
<input type="checkbox"/> Auth. Trace

Selections (Internal Format)

Field	From value	To value	Short Text
ERDAT			Date on Which Record Was C
VBELN			Sales Document
VKORG			Sales Organization
VTWEG			Distribution Channel

Extraction

19. In the Selection fields Select Sales organization as 2200 and click on execute.

Extractor Checker S-API

DataSource	ZTR_DS03																																
<div style="display: flex; justify-content: space-between;"> <div style="flex: 1;"> Settings <table border="1"> <tr> <td>Request ID</td> <td>TEST</td> </tr> <tr> <td>Data Records / Calls</td> <td>100</td> </tr> <tr> <td>Display Extr. Calls</td> <td>10</td> </tr> <tr> <td>Update mode</td> <td>F</td> </tr> <tr> <td>Target sys</td> <td></td> </tr> </table> </div> <div style="flex: 1;"> Execution Mode <table border="1"> <tr> <td><input type="checkbox"/> Debug Mode</td> </tr> <tr> <td><input type="checkbox"/> Auth. Trace</td> </tr> </table> </div> </div>		Request ID	TEST	Data Records / Calls	100	Display Extr. Calls	10	Update mode	F	Target sys		<input type="checkbox"/> Debug Mode	<input type="checkbox"/> Auth. Trace																				
Request ID	TEST																																
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Update mode	F																																
Target sys																																	
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Selections (Internal Format) <table border="1"> <thead> <tr> <th>Field</th> <th>From value</th> <th>To value</th> <th>Short Text</th> </tr> </thead> <tbody> <tr> <td>ERDAT</td> <td></td> <td></td> <td>Date on Which Record Was C</td> </tr> <tr> <td>VBELN</td> <td></td> <td></td> <td>Sales Document</td> </tr> <tr> <td>VKORG</td> <td>2200</td> <td></td> <td>Sales Organization</td> </tr> <tr> <td>VTWEG</td> <td></td> <td></td> <td>Distribution Channel</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;"> </p>		Field	From value	To value	Short Text	ERDAT			Date on Which Record Was C	VBELN			Sales Document	VKORG	2200		Sales Organization	VTWEG			Distribution Channel												
Field	From value	To value	Short Text																														
ERDAT			Date on Which Record Was C																														
VBELN			Sales Document																														
VKORG	2200		Sales Organization																														
VTWEG			Distribution Channel																														

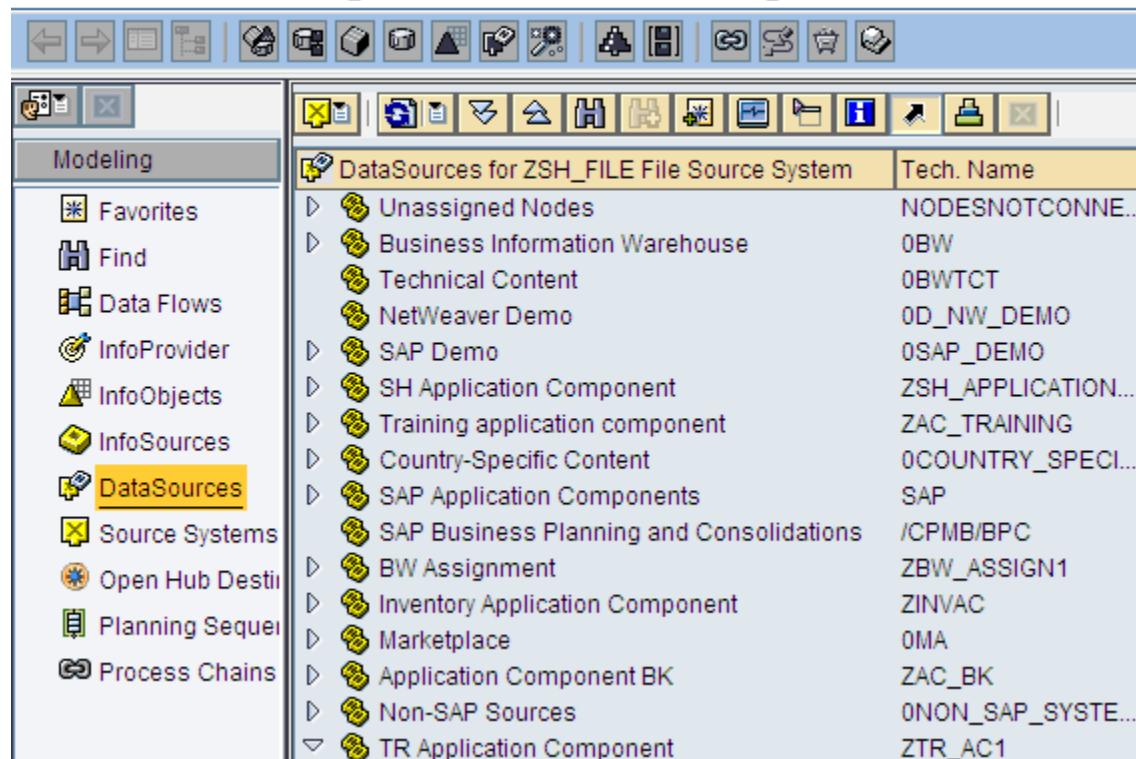
Extraction

20. 8 records will get extracted as below

Result of Extraction of DataSource ZTR_DS03								
Data Package (Number of Recs)			1 (8)					
Sales Doc.	Created on	DocCa	Netvalue	Curr.	SOrg.	DChl	Dv	
5451	04.06.1998	C	10.640,00	FRF	2200	10	00	
5452	04.06.1998	C	5.320,00	FRF	2200	10	00	
9122	27.06.2003	C	1.059,50	EUR	2200	10	00	
11675	16.01.2006	C	400,00	EUR	2200	10	00	
11676	16.01.2006	C	400,00	EUR	2200	10	00	
20000032	12.05.2008	B	0,00	EUR	2200	14	00	
20000033	12.05.2008	B	0,00	EUR	2200	14	00	
20000034	09.06.2008	B	302.160,00	EUR	2200	14	00	

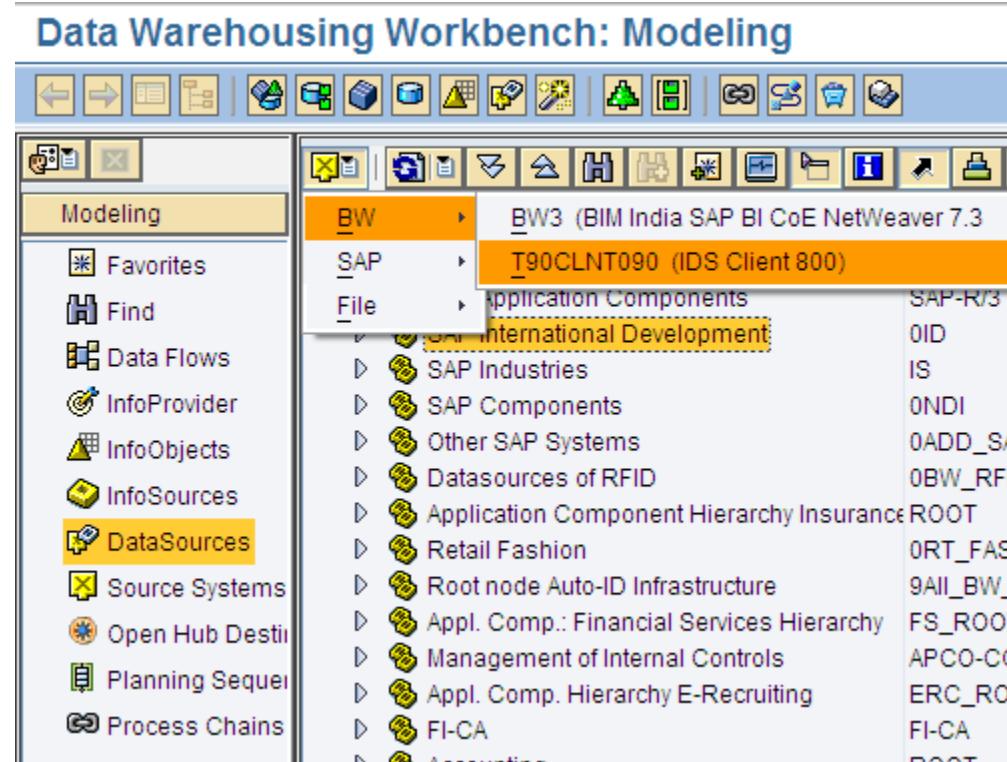
21. Login to BW system and go to transaction RSA1.

Data Warehousing Workbench: Modeling

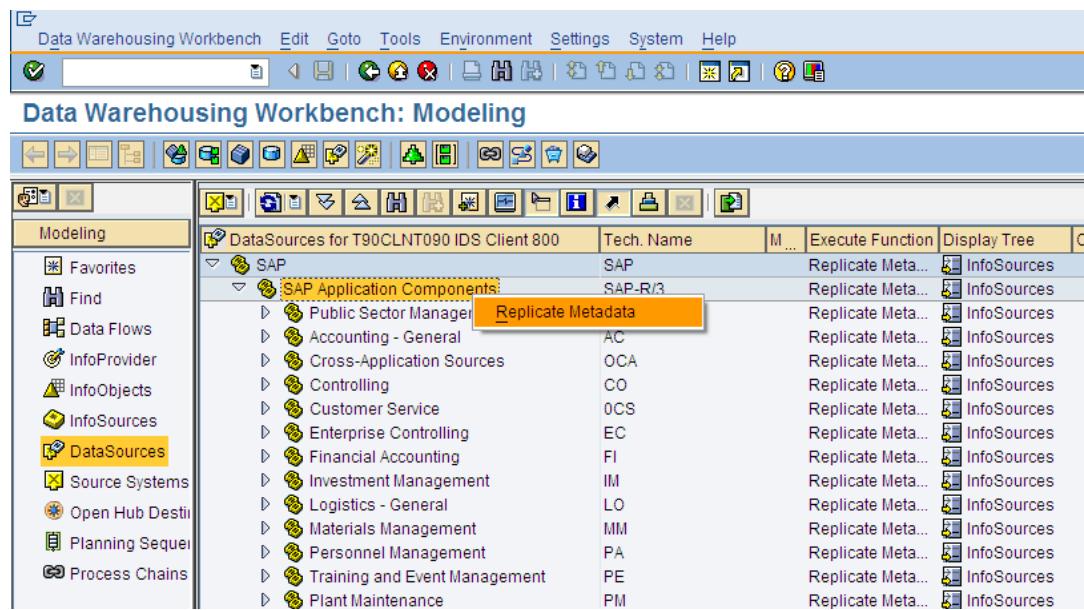


		Tech. Name
▷	Unassigned Nodes	NODESNOTCONNE...
▷	Business Information Warehouse	OBW
▷	Technical Content	OBWTCT
▷	NetWeaver Demo	OD_NW_DEMO
▷	SAP Demo	OSAP_DEMO
▷	SH Application Component	ZSH_APPLICATION...
▷	Training application component	ZAC_TRAINING
▷	Country-Specific Content	OCOUNTRY_SPECI...
▷	SAP Application Components	SAP
▷	SAP Business Planning and Consolidations	/CPMB/BPC
▷	BW Assignment	ZBW_ASSIGN1
▷	Inventory Application Component	ZINVAC
▷	Marketplace	OMA
▷	Application Component BK	ZAC_BK
▷	Non-SAP Sources	ONON_SAP_SYSTE...
▷	TR Application Component	ZTR_AC1

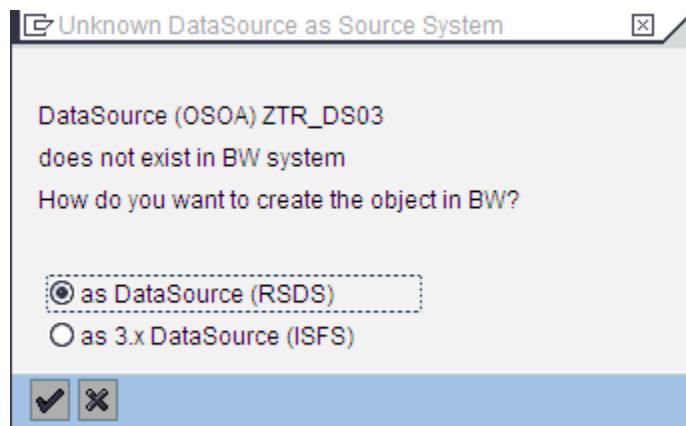
22. Choose the source system T90CLNT090 from the dropdown menu at the top left corner.



23. Right Click on SAP R/3 node and Select Replicate Metadata



24. Following message will appear. Keep the radio button as it is and Click on Continue 



25. You will see the newly created Datasource available in the node for SAP R/3. Click on the Change button on the right hand side.

SAP	SAP	Replicate Me
▷ SAP Application Components	SAP-R/3	Replicate Me
▷ Public Sector Management	PSM	Replicate Me
▷ Accounting - General	AC	Replicate Me
▷ Cross-Application Sources	OCA	Replicate Me
▷ Controlling	CO	Replicate Me
▷ Customer Service	OCS	Replicate Me
▷ Enterprise Controlling	EC	Replicate Me
▷ Financial Accounting	FI	Replicate Me
▷ Investment Management	IM	Replicate Me
▷ Logistics - General	LO	Replicate Me
▷ Materials Management	MM	Replicate Me
▷ Personnel Management	PA	Replicate Me
▷ Training and Event Management	PE	Replicate Me
▷ Plant Maintenance	PM	Replicate Me
▷ Production Planning and Control	PP	Replicate Me
▷ Project System	PS	Replicate Me
▷ Time Management	PT	Replicate Me
▷ Payroll	PY	Replicate Me
▷ Quality Management	QM	Replicate Me
▷ Real Estate Management	RE	Replicate Me
▷ Sales and Distribution	SD	Replicate Me
▷ Treasury	TR	Replicate Me
▷ SAP Application Component Master Data	SAP-R/3-IO	Replicate Me
▷ Table for Sales transactions	ZTR_DS03	 

26. Following Screen will appear

DataSource Table for Sales tran

Source System IDS Client 800

Version In Processing Not Saved

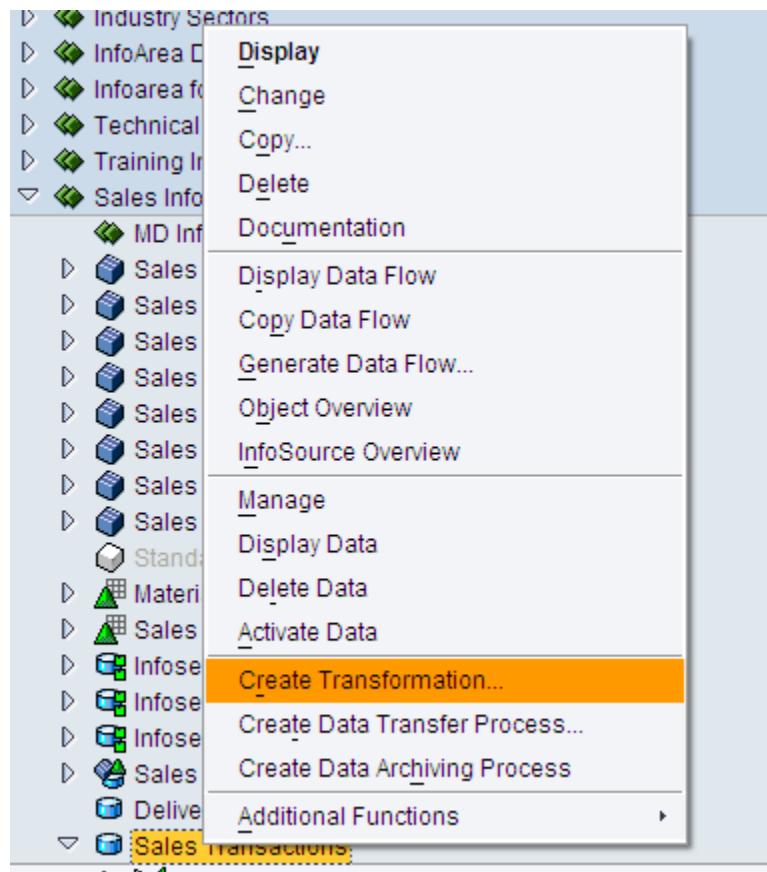
Active Version Does Not Exist

General Info. Extraction Fields

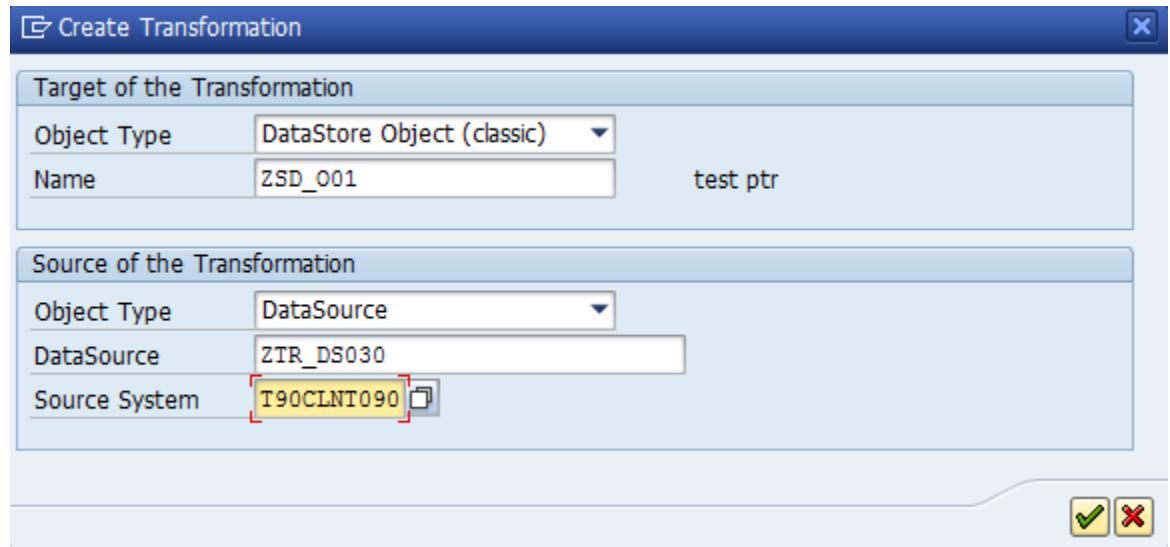
General Properties		
Short description	Table for Sales tran	
Medium description	Table for Sales transactions	
Long description	Table for Sales transactions	
Application comp.	SAP-R/3	
Last changed by	SGANDHI	Changed on 09.09.2011 / 08:48:27
<input type="checkbox"/> DS for Data Synchronization	<input type="checkbox"/> Data Is Language Dependent	
<input type="checkbox"/> PSA in CHAR Format	<input type="checkbox"/> Data Is Time Dependent	
<input type="checkbox"/> Opening balance		
Delivery of Duplicate Data Recs.	Undefined <input type="button" value=""/>	
Content Properties		
Content Release Type	R/3	
Content Version	700	

27. Activate the datasource by clicking .

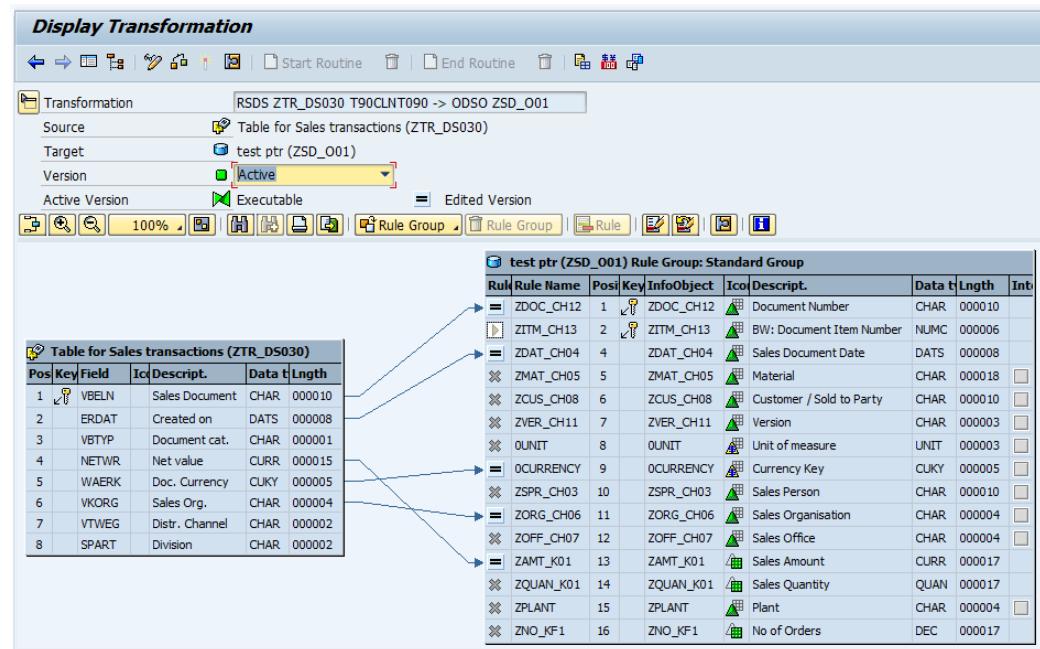
28. Right Click on the DSO ZSD_O01 and Choose Create Transformation from the dropdown menu.



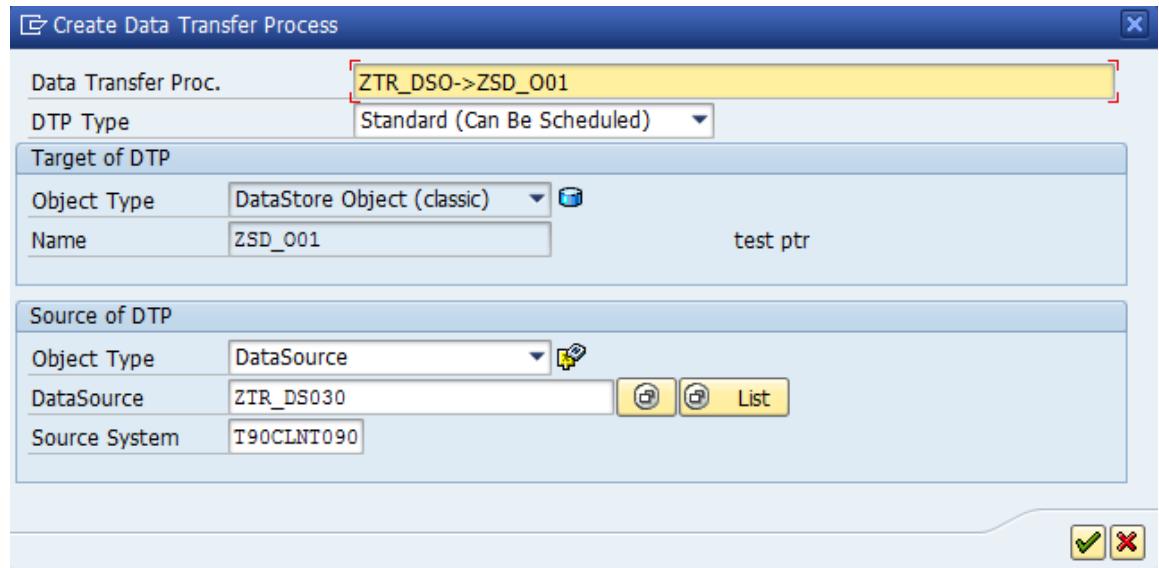
29. Enter the details for Source of transformation object type as Datasource, Datasource name as ZTR_DS030 and Source System as T90CLNT090 and click continue.



30. Carryout the transformation mapping as seen below. Once done activate the transformation.



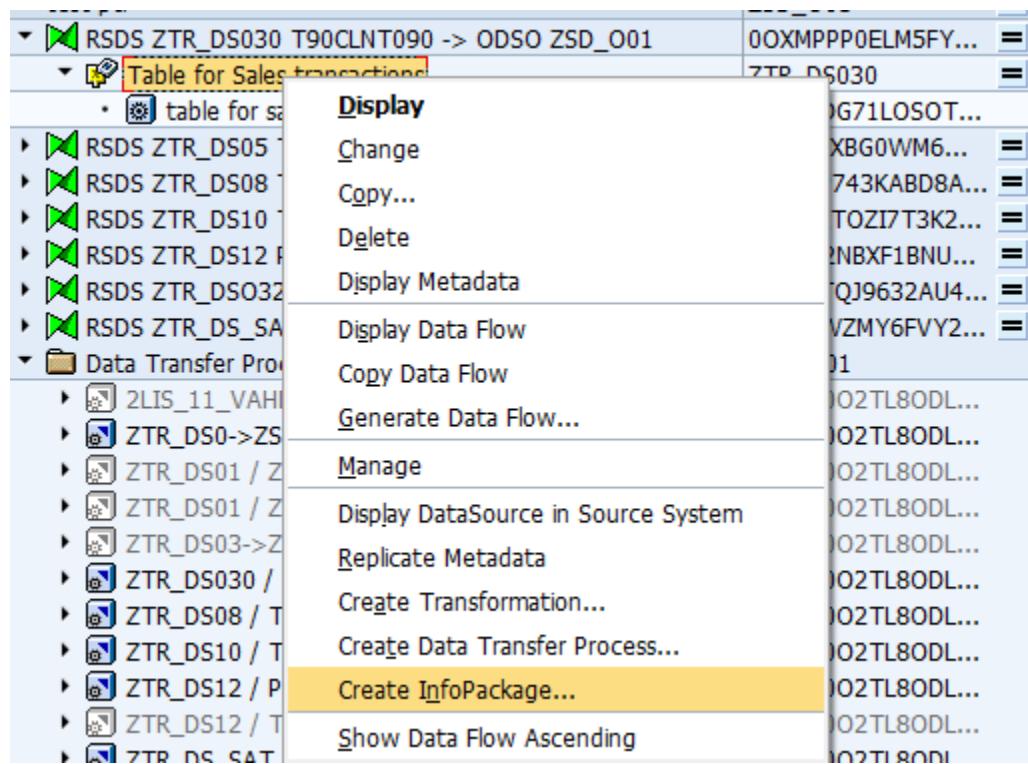
31. Right Click on the Data transfer process Folder and Create New DTP for above mapping.



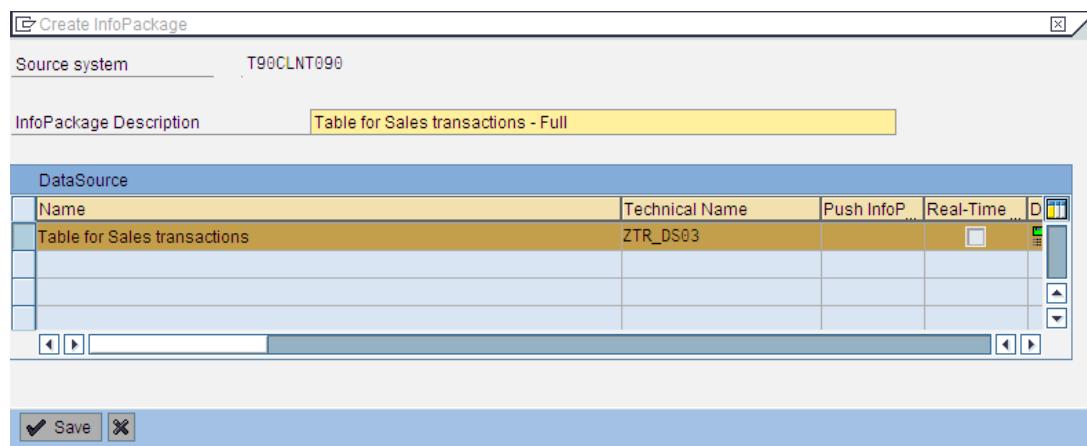
32. In the DTP settings for extraction mode select all new data request by request and activate.

Data Transfer Proc.	ZTR_DS030 / T90CLNT090 -> ZSD_001
ID	DTP_0002TL8ODL245J7G3N0JHCMF1
DTP Type	Standard (Can Be Scheduled)
Version	<input checked="" type="checkbox"/> Active <input type="checkbox"/> Saved
<input type="button" value="Extraction"/> <input type="button" value="Update"/> <input type="button" value="Execute"/>	
Source Object	<input type="button" value="DataSource"/> ZTR_DS030 T90CLNT090 Table for Sales transactions
Extraction Mode	Delta
Delta Status	Active
Request Selection	<input type="checkbox"/> Delta Init Without Data <input checked="" type="checkbox"/> Get All New Data Request By Request <input type="checkbox"/> Only Get Delta Once
Parallel Extraction	<input checked="" type="checkbox"/>
Package Size	0 records <input type="button" value="Help"/>

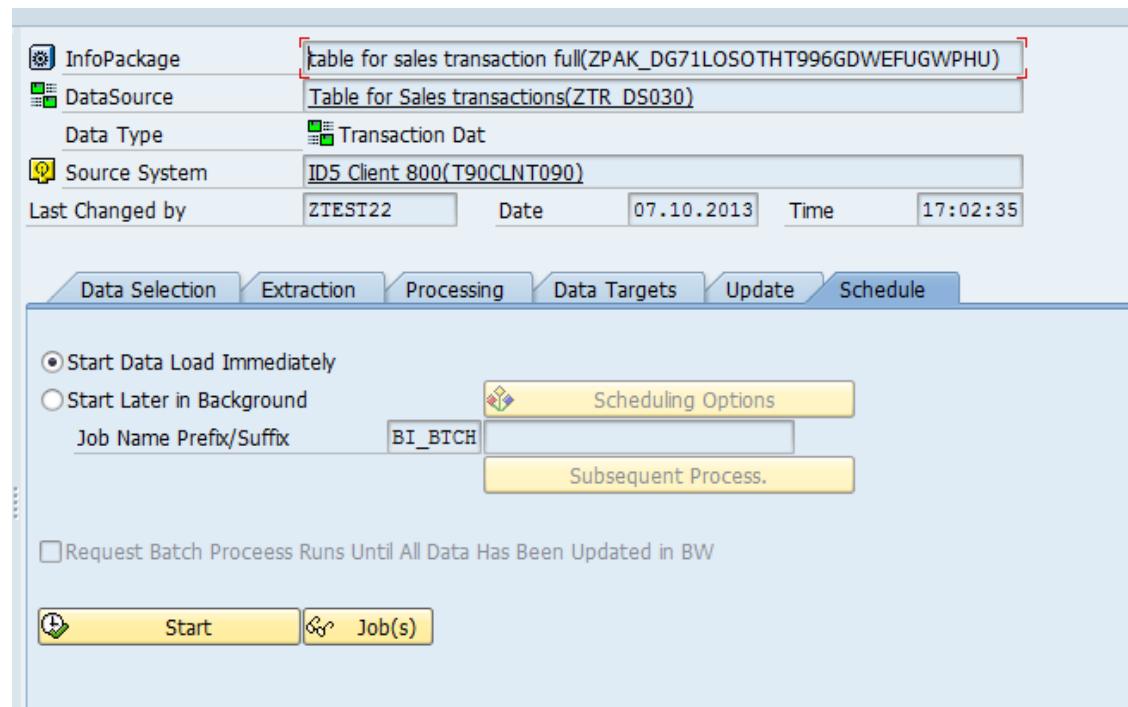
33. Right Click on the datasource ZTR_DS030 and Choose Create Infopackage



34. Give a name to the Infopackage as seen below and click on Save



35. Schedule the data load from the infopackage by clicking 'Start' button.

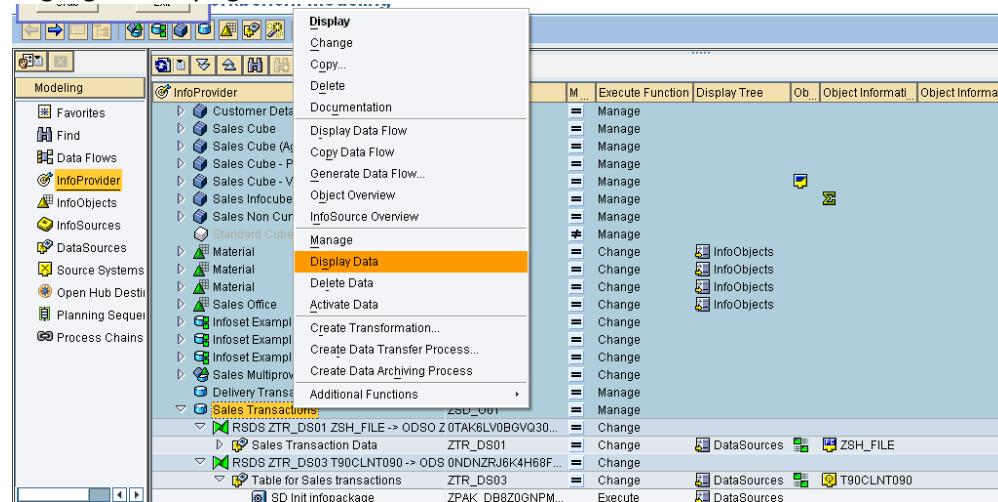


36. This will bring data to PSA. Now trigger the DTP we created earlier.

Data Transfer Proc.	ZTR_DS030 / T90CLNT090 -> ZSD_001														
ID	DTP_0002TL8ODLZ45J7G3N0JHCMF1														
DTP Type	Standard (Can Be Scheduled)														
Version	<input checked="" type="checkbox"/> Active <input type="button" value="▼"/> Saved <input type="button" value="▼"/>														
<input type="button" value="Extraction"/> <input type="button" value="Update"/> <input type="button" value="Execute"/>															
Technical Request Status	Request status is set to 'green' if warnings occur <input type="button" value="▼"/>														
Overall Status of Request	Set Overall Status Automatically <input type="button" value="▼"/>														
<input type="checkbox"/> Automatically Repeat Red Requests in Process Chains															
Processing Mode	Parallel Extraction and Processing <input type="button" value="▼"/> <input type="button" value="Execute"/>														
<table border="1"> <thead> <tr> <th>Program Flow</th> <th>Breakpoints</th> </tr> </thead> <tbody> <tr> <td>- ZTR_DS030 / T90CLNT090 -> ZSD_001</td> <td></td> </tr> <tr> <td> - Start Main Background Process</td> <td></td> </tr> <tr> <td> • Prepare for Extraction</td> <td></td> </tr> <tr> <td> - Data Package Loop</td> <td></td> </tr> <tr> <td> - Start Parallel Background Process</td> <td></td> </tr> <tr> <td> • Extraction DataSource Table for Sales transactions</td> <td><input type="button" value="Change Breakpoints"/></td> </tr> </tbody> </table>		Program Flow	Breakpoints	- ZTR_DS030 / T90CLNT090 -> ZSD_001		- Start Main Background Process		• Prepare for Extraction		- Data Package Loop		- Start Parallel Background Process		• Extraction DataSource Table for Sales transactions	<input type="button" value="Change Breakpoints"/>
Program Flow	Breakpoints														
- ZTR_DS030 / T90CLNT090 -> ZSD_001															
- Start Main Background Process															
• Prepare for Extraction															
- Data Package Loop															
- Start Parallel Background Process															
• Extraction DataSource Table for Sales transactions	<input type="button" value="Change Breakpoints"/>														

37. Finally activate the request in DSO To check the data right click on DSO and select ‘Display Data’.

38. Click Field selection for output button and click on “Select all characteristics’ and ‘Highlight all key figures’.



39. Now press Execute button. Enter 2200 against sales organization and press Execute to check the data.

'ZSD_O01', Selection scr.

Data part	
Currency	to
Currency(SID)	to
Unit of measure	to
Unit of measure(SID)	to
Customer / Sold to P	to
Customer / Sold to P(SID)	to
Sales Document Date	to
Sales Document Date(SID)	to
Material	to
Material(SID)	to
Sales Office	to
Sales Office(SID)	to
Sales Organisation	2200
Sales Organisation(SID)	to
Plant	to
Plant(SID)	to

"ZSD_O01", List output													
Currency	DUNIT	ZCUS_CH08	ZDAT_CH04	Material	Sales Office	ZORG_CH06	Plant	ZSPR_CH03	Version	ZDOC_CH12	ZITM_CH13	ZAMT_K01	ZQUAN_K01
GBP	EA	CUST1	01.01.2011	M1	SOF1	SO1	SP1	A	0000001010	1	100.00	100	
GBP	EA	CUST2	01.02.2011	M2	SOF1	SO1	SP2	A	0000001011	1	100.00	100	
GBP	EA	CUST3	01.03.2011	M3	SOF1	SO1	SP3	A	0000001012	1	100.00	100	
GBP	EA	CUST4	01.04.2011	M4	SOF1	SO1	SP4	A	0000001013	1	100.00	100	
GBP	EA	CUST5	01.05.2011	M5	SOF1	SO1	SP5	A	0000001014	1	100.00	100	
GBP	EA	CUST6	01.06.2011	M6	SOF1	SO1	SP6	A	0000001015	1	100.00	100	
GBP	EA	CUST1	01.07.2011	M7	SOF2	SO1	SP1	A	0000001016	1	100.00	100	
GBP	EA	CUST2	01.08.2011	M8	SOF2	SO1	SP2	A	0000001017	1	100.00	100	
GBP	EA	CUST3	01.09.2011	M9	SOF2	SO1	SP3	A	0000001018	1	100.00	100	
GBP	EA	CUST4	01.10.2011	M10	SOF2	SO1	SP4	A	0000001019	1	100.00	100	
GBP	EA	CUST5	01.11.2011	M11	SOF2	SO1	SP5	A	0000001020	1	100.00	100	
GBP	EA	CUST6	01.12.2011	M12	SOF2	SO1	SP6	A	0000001021	1	100.00	100	
GBP	EA	CUST1	01.01.2011	M1	SOF3	SO1	SP1	A	0000001022	1	100.00	100	
GBP	EA	CUST2	01.02.2011	M2	SOF3	SO1	SP2	A	0000001023	1	100.00	100	
GBP	EA	CUST3	01.03.2011	M3	SOF3	SO1	SP3	A	0000001024	1	100.00	100	
GBP	EA	CUST4	01.04.2011	M4	SOF3	SO1	SP4	A	0000001025	1	100.00	100	
GBP	EA	CUST5	01.05.2011	M5	SOF3	SO1	SP5	A	0000001026	1	100.00	100	
GBP	EA	CUST6	01.06.2011	M6	SOF3	SO1	SP6	A	0000001027	1	100.00	100	
GBP	EA	CUST1	01.07.2011	M7	SOF4	SO1	SP1	A	0000001028	1	100.00	100	
GBP	EA	CUST2	01.08.2011	M8	SOF4	SO1	SP2	A	0000001029	1	100.00	100	
GBP	EA	CUST3	01.09.2011	M9	SOF4	SO1	SP3	A	0000001030	1	100.00	100	
GBP	EA	CUST4	01.10.2011	M10	SOF4	SO1	SP4	A	0000001031	1	100.00	100	
GBP	EA	CUST5	01.11.2011	M11	SOF4	SO1	SP5	A	0000001032	1	100.00	100	
GBP	EA	CUST6	01.12.2011	M12	SOF4	SO1	SP6	A	0000001033	1	100.00	100	
GBP	EA	CUST1	01.01.2011	M1	SOF5	SO1	SP1	A	0000001034	1	100.00	100	
GBP	EA	CUST2	01.02.2011	M2	SOF5	SO1	SP2	A	0000001035	1	100.00	100	

Conclusion:

- We have created the generic datasource for extraction of Sales transaction from ECC system to BI system and validated with ECC system.

4.3 LO Extraction

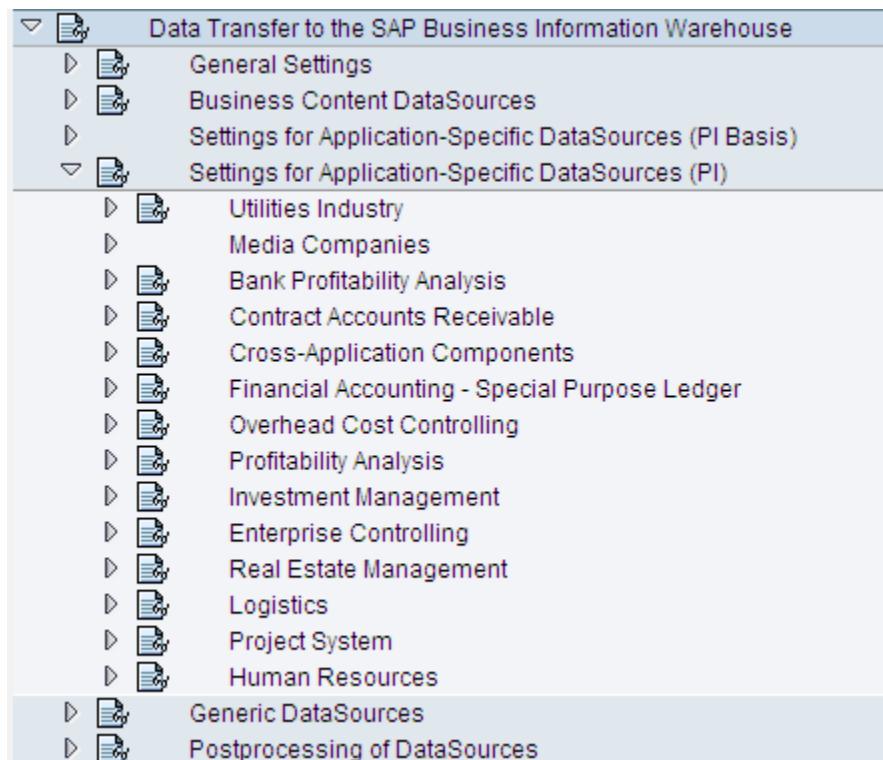
Use:

LO extraction is used only for Logistic data.

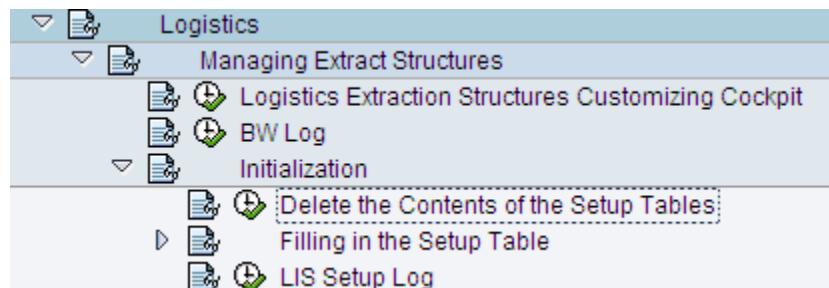
The document below shows the step by step process for LO extraction of sales orders header data (2LIS_11_VAHDR). For repeating the steps either flow for Sales order Item or delivery can be used.

Procedure:

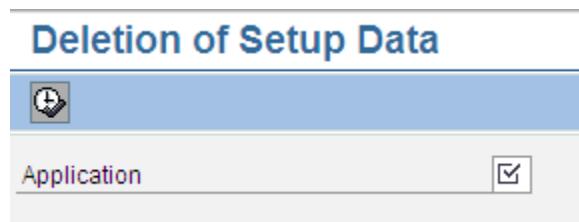
1. Log onto the ECC system.
2. **SBIW** and open the hierarchy for Settings for Application Specific Datasources(PI).



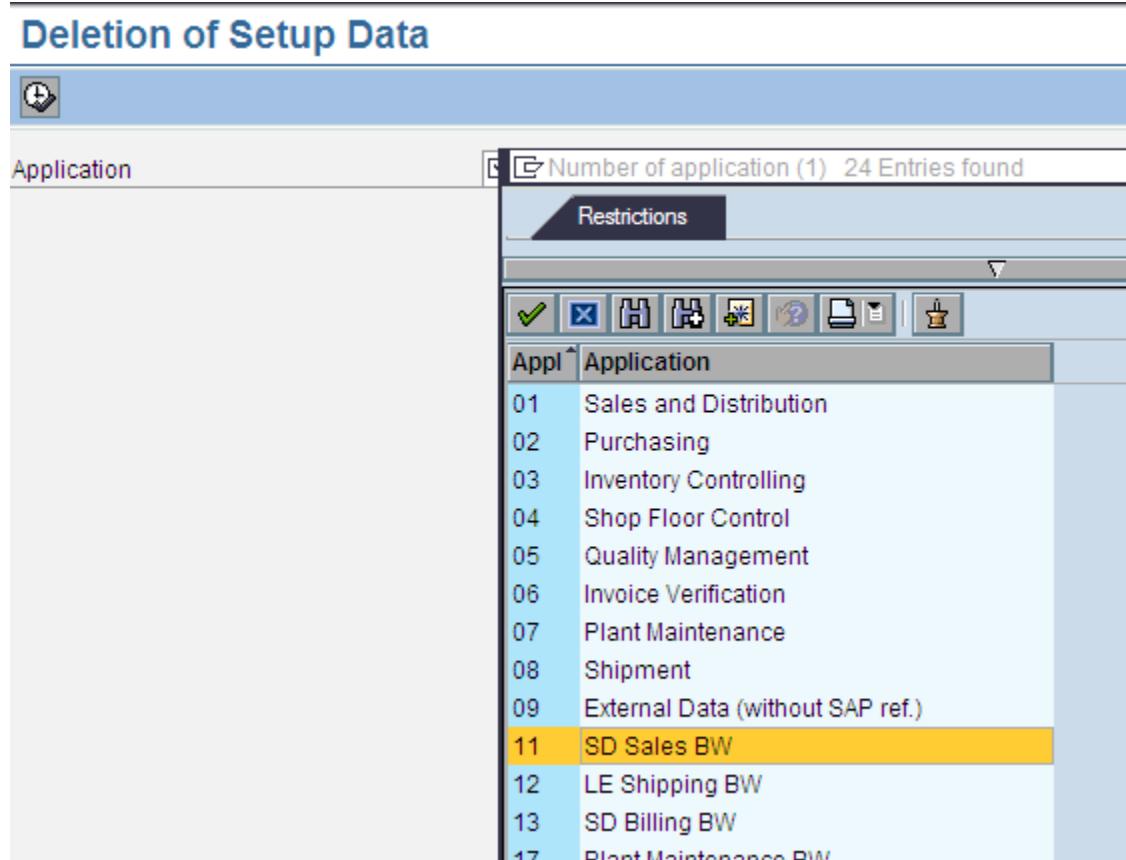
3. Open the hierarchy for Logistics. And within logistics follow the path Initialization->Delete the contents of the Setup table. There is a direct tcode for this activity, which is LBWG.



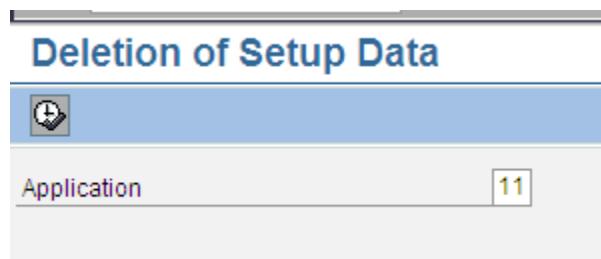
4. Following screen will appear



5. Select Application 11 from the dropdown list



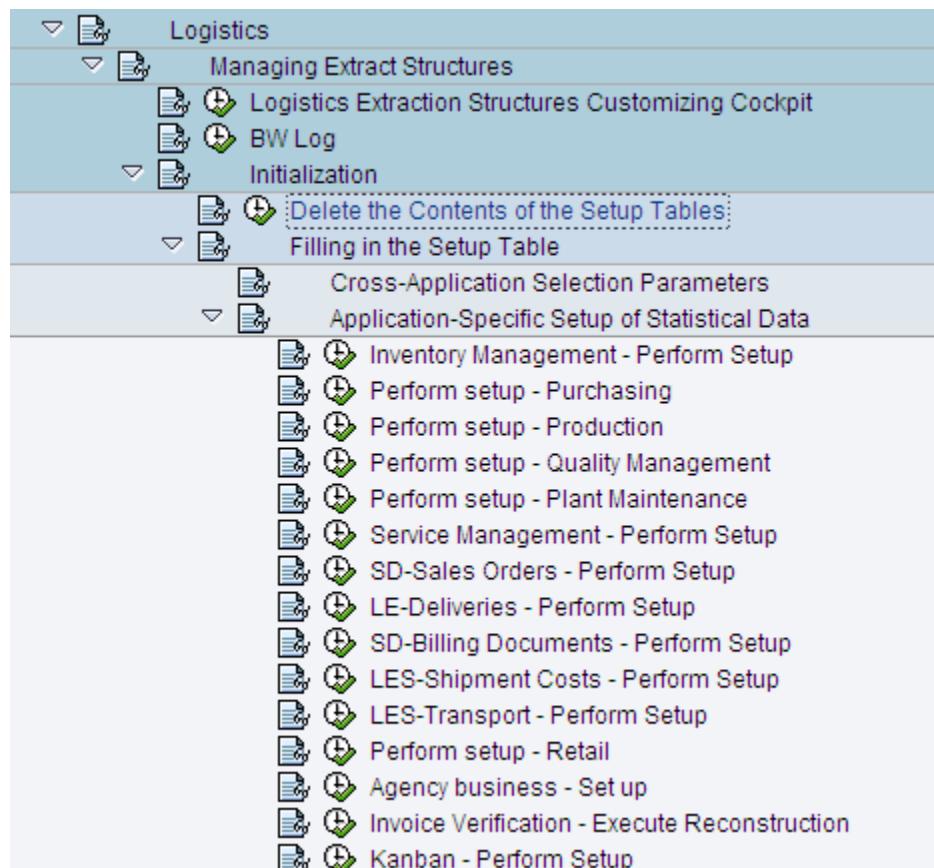
6. Click on execute.



7. Following message will pop up. Click on Yes. Once done you will see a message in the status bar *Setup tables deleted successfully.*

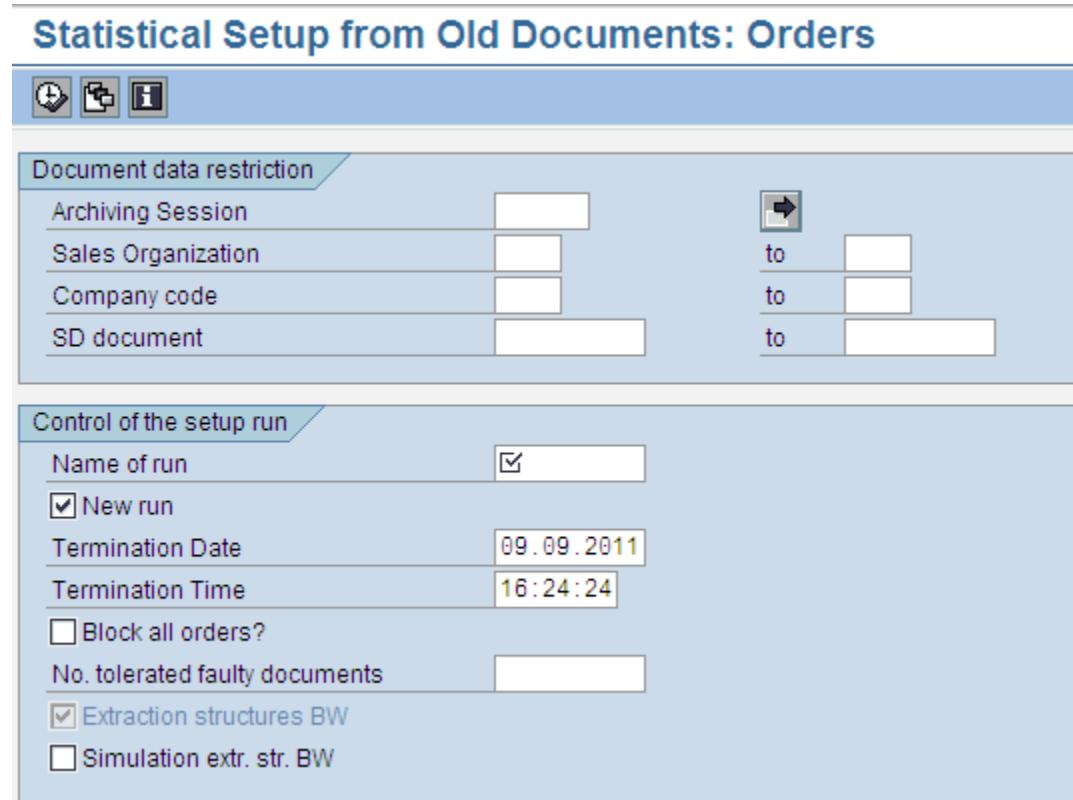


8. Go back to SBIW and follow the path Logistics->Managing Extract Structures->Initialization->Filling in the setup table->Application-Specific setup of Statistical data



9. Choose SD-Sales Orders – Perform Setup. Following screen will appear

Statistical Setup from Old Documents: Orders



Document data restriction	
Archiving Session	<input type="text"/>
Sales Organization	<input type="text"/> to <input type="text"/>
Company code	<input type="text"/> to <input type="text"/>
SD document	<input type="text"/> to <input type="text"/>

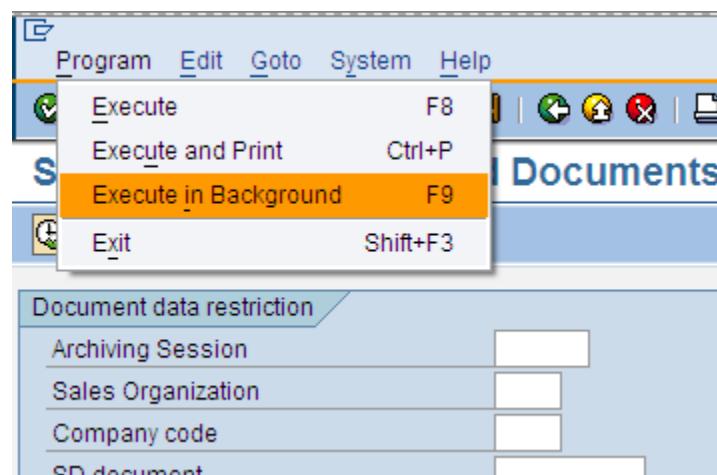
Control of the setup run	
Name of run	<input checked="" type="checkbox"/>
New run	<input checked="" type="checkbox"/>
Termination Date	09.09.2011
Termination Time	16:24:24
Block all orders?	<input type="checkbox"/>
No. tolerated faulty documents	<input type="text"/>
Extraction structures BW	<input checked="" type="checkbox"/>
Simulation extr. str. BW	<input type="checkbox"/>

10. Setup can be performed for different selections like Sales organization, Company code as seen in the screenshot above but since the data volume is low we will perform complete

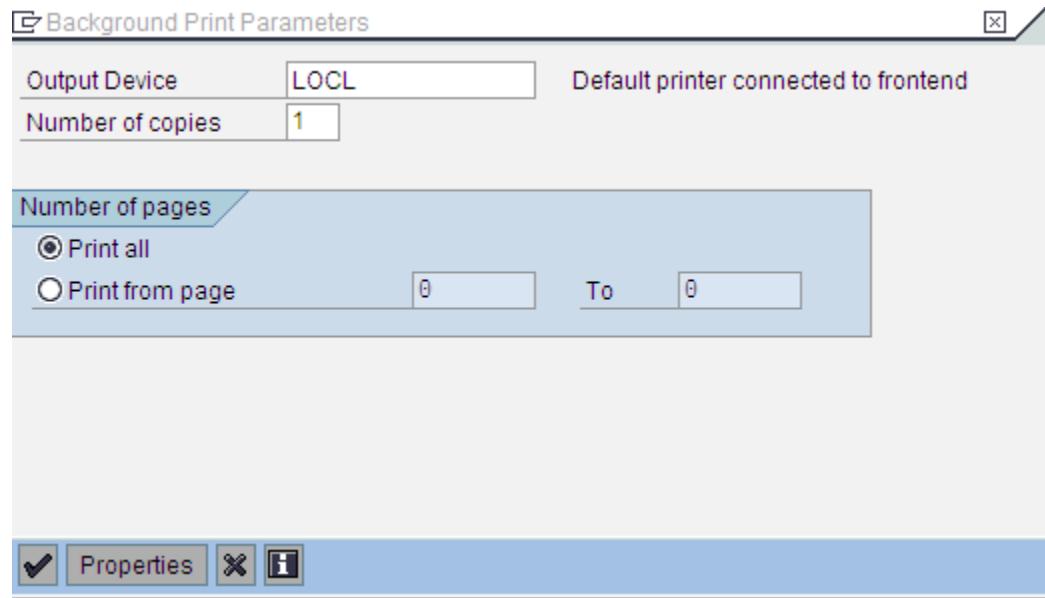
setup at once. Enter name of run as TEST12 and change the termination time to future date and time.

Statistical Setup from Old Documents: Orders

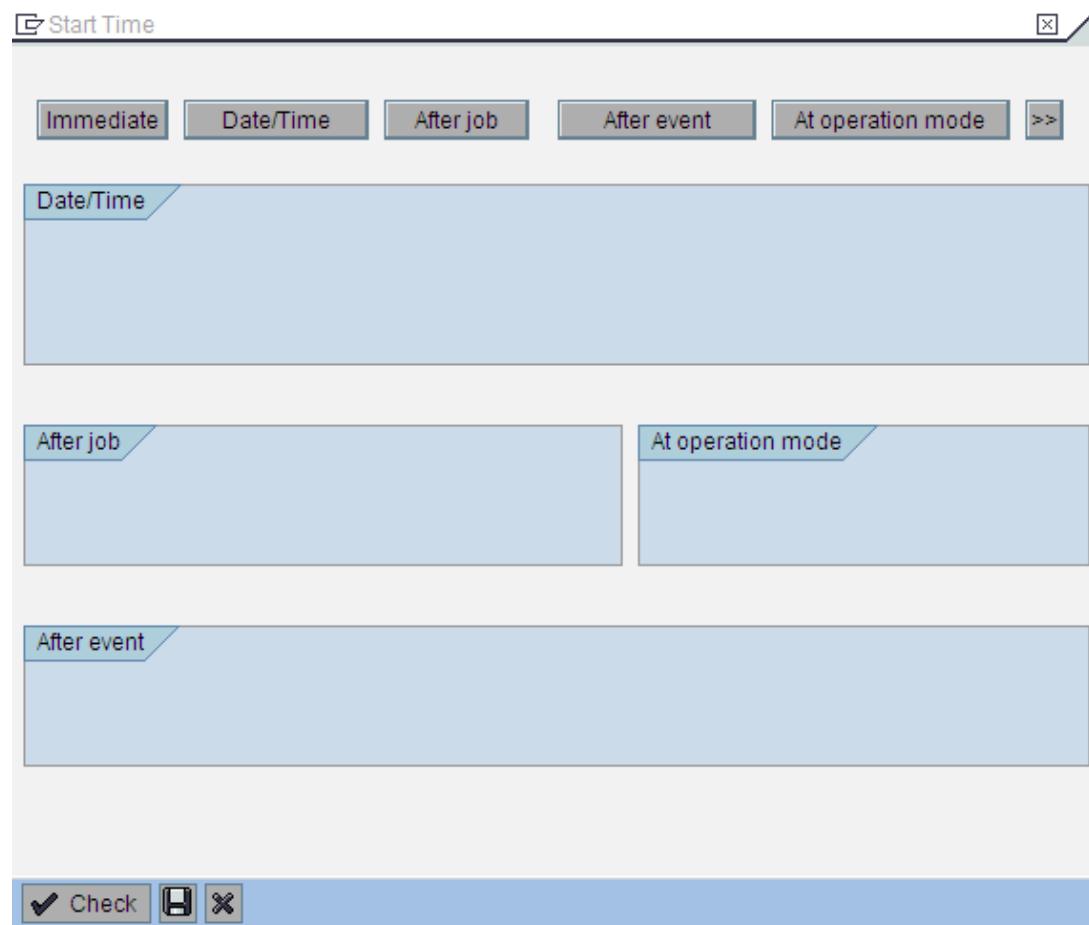
11. Goto program In the menu bar and click on execute in background



12. Choose a local printer device by clicking F4 for Output device as seen below and say Continue



13. Choose Immediate option in the below step and Click on Save.



14. Goto SM37 and select the following options and click execute.

Job Overview

Release Spool Job log Step Application servers

Job overview from: 12.09.2011 at: : :
to: 12.09.2011 at: : :

Selected job names: *
Selected user names: DHAMEHTA

Scheduled Released Ready Active Finished Canceled
 Event controlled Event ID:
 ABAP program Program name :

Job	Ln	Job CreatedB	Status	Start date	Start time	Duration(sec.)	Delay (sec.)
RMCVNEUA		DHAMEHTA	Active	12.09.2011	14:29:33	9	0
*Summary						9	0

15. Once the job is finished as seen in the above screenshot.

Release Spool Job log Step Application servers

Job overview from: 12.09.2011 at: : :
to: 12.09.2011 at: : :

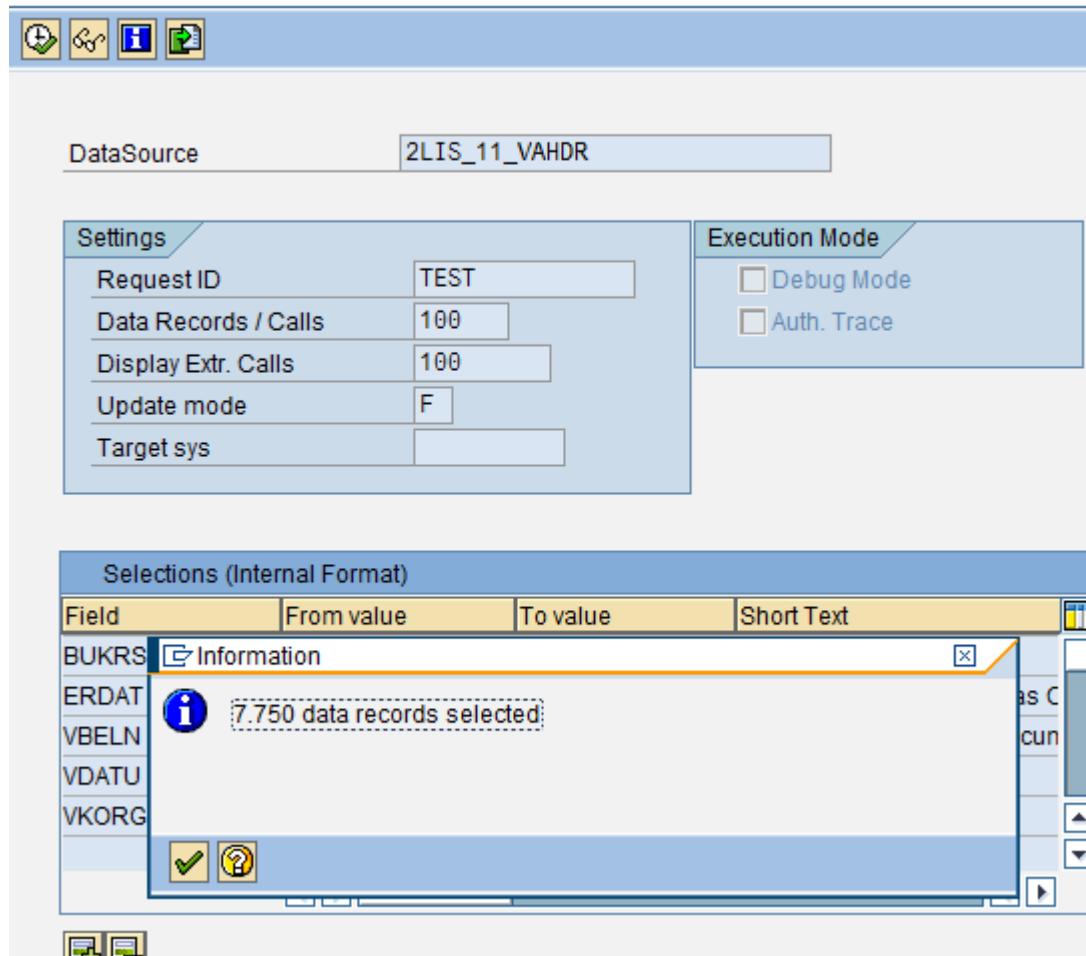
Selected job names: *
Selected user names: DHAMEHTA

Scheduled Released Ready Active Finished Canceled
 Event controlled Event ID:
 ABAP program Program name :

Job	Ln	Job CreatedB	Status	Start date	Start time	Duration(sec.)	Delay (sec.)
RMCVNEUA		DHAMEHTA	Finished	12.09.2011	14:29:33	164	0
*Summary						164	0

16. Check data in ECC to find out how many entries in the setup table using RSA3 tcode. Please select update mode as full.

Extractor Checker S-API



The screenshot shows the Extractor Checker S-API interface. At the top, there are four icons: a green checkmark, a yellow warning, a blue information, and a red error. Below them, the **DataSource** is set to **2LIS_11_VAHDR**.

Settings panel:

Request ID	TEST
Data Records / Calls	100
Display Extr. Calls	100
Update mode	F
Target sys	

Execution Mode panel:

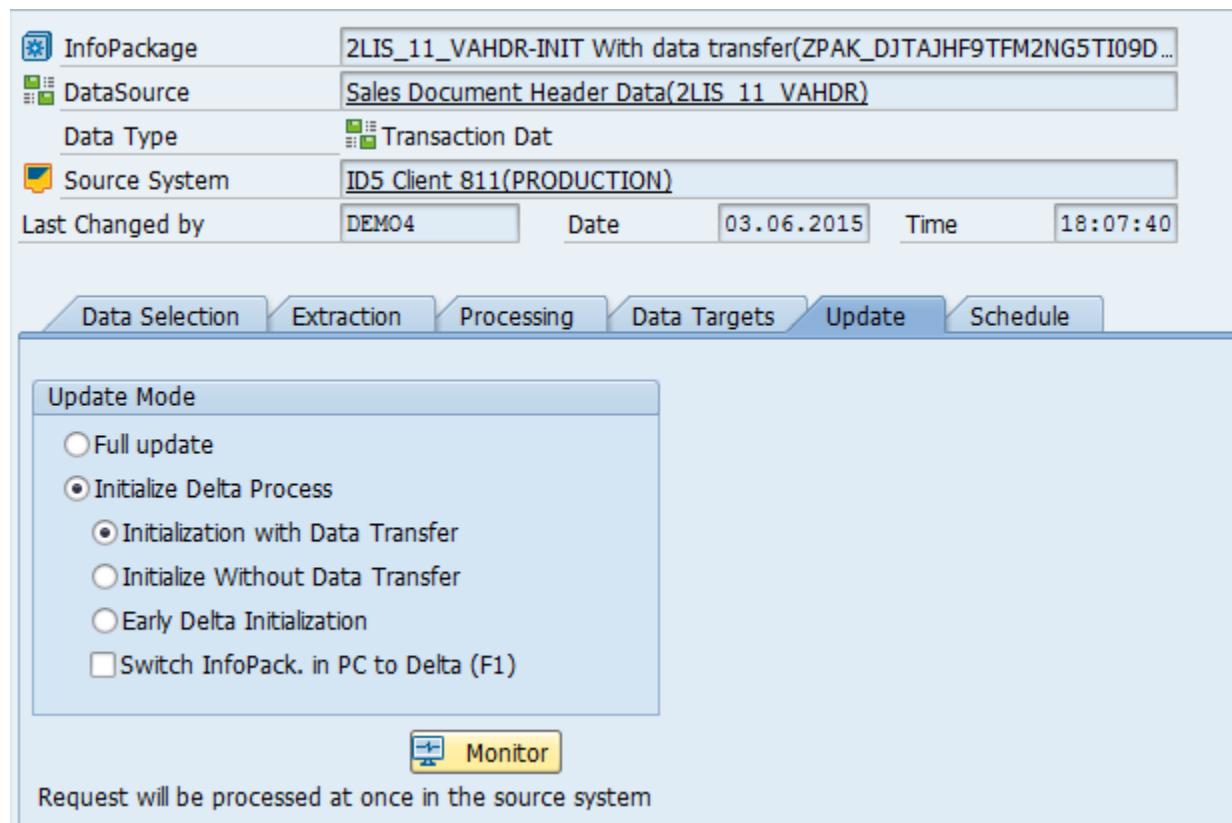
<input type="checkbox"/> Debug Mode
<input type="checkbox"/> Auth. Trace

Selections (Internal Format) panel:

Field	From value	To value	Short Text
BUKRS	Information		
ERDAT			
VBELN			
VDATU			
VKORG			

A message box displays: **i** 7.750 data records selected.

17. In this step we will extract data from ECC (setup table) to BI. Create a infopackage to load data from datasource to PSA . Keep update mode to 'Initialize with data transfer' and Data targets as 'Only PSA'.
So all data from setup table will be fetched and also datasource will be initialized in RSA7.



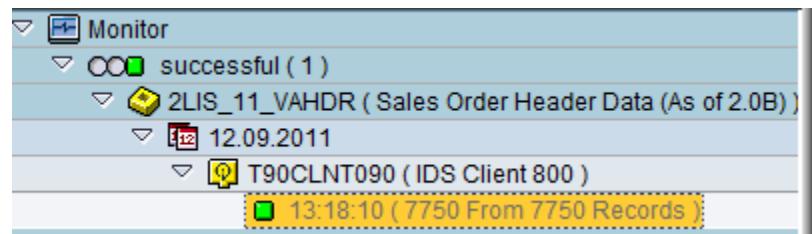
The screenshot shows the SAP BW Infopackager interface. At the top, there is a table with the following data:

InfoPackage	2LIS_11_VAHDR-INIT With data transfer(ZPAK_DJTAJHF9TFM2NG5TI09D ...)				
DataSource	Sales Document Header Data(2LIS_11_VAHD)				
Data Type	Transaction Dat				
Source System	ID5 Client 811(PRODUCTION)				
Last Changed by	DEMO4	Date	03.06.2015	Time	18:07:40

Below this is a navigation bar with tabs: Data Selection, Extraction, Processing, Data Targets, Update, and Schedule. The 'Update' tab is selected. A sub-dialog titled 'Update Mode' is open, showing the following options:

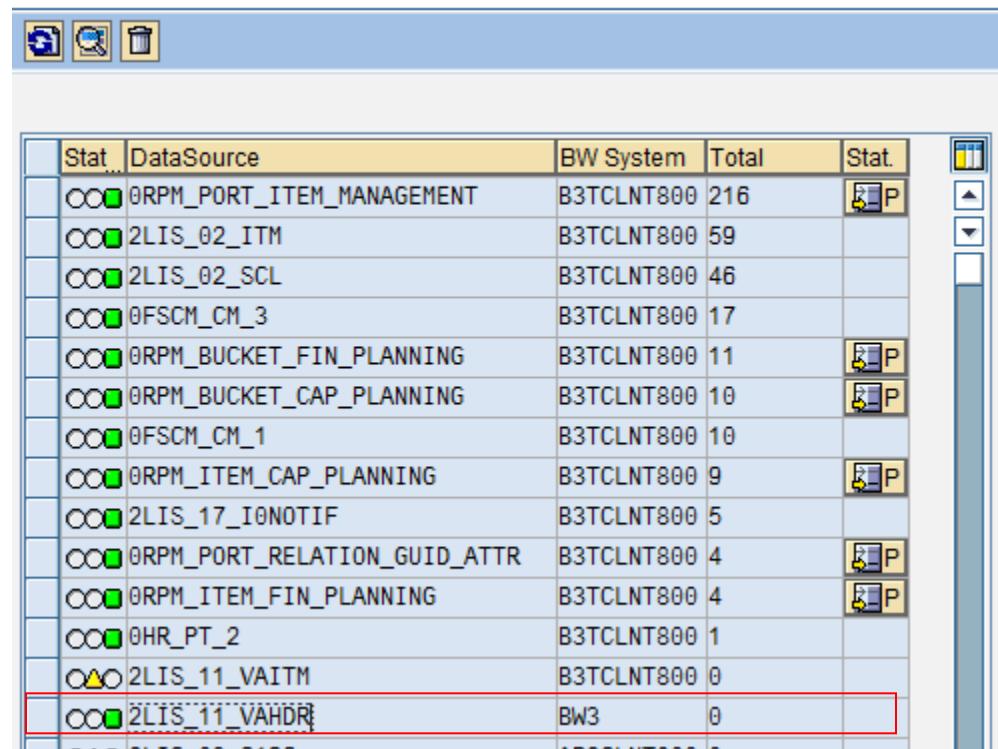
- Full update (radio button)
- Initialize Delta Process** (radio button, selected)
- Initialization with Data Transfer (radio button)
- Initialize Without Data Transfer (radio button)
- Early Delta Initialization (radio button)
- Switch InfoPack. in PC to Delta (F1)

At the bottom of the sub-dialog is a 'Monitor' button. Below the sub-dialog, a message states: "Request will be processed at once in the source system".



Screenshot Below shows that datasource 2LIS_12_VAHDR has been initialized in RSA7.

BW Delta Queue Maintenance



The screenshot shows the SAP BW Delta Queue Maintenance screen. It displays a table of data sources and their status. The table has columns: Stat., DataSource, BW System, Total, and Stat. The last row, 'OO green 2LIS_11_VAHDR', is highlighted with a red border.

Stat...	DataSource	BW System	Total	Stat.
OO green	0RPM_PORT_ITEM_MANAGEMENT	B3TCLNT800	216	P
OO green	2LIS_02_ITM	B3TCLNT800	59	
OO green	2LIS_02_SCL	B3TCLNT800	46	
OO green	0FSCM_CM_3	B3TCLNT800	17	
OO green	0RPM_BUCKET_FIN_PLANNING	B3TCLNT800	11	P
OO green	0RPM_BUCKET_CAP_PLANNING	B3TCLNT800	10	P
OO green	0FSCM_CM_1	B3TCLNT800	10	
OO green	0RPM_ITEM_CAP_PLANNING	B3TCLNT800	9	P
OO green	2LIS_17_I0NOTIF	B3TCLNT800	5	
OO green	0RPM_PORT_RELATION_GUID_ATTR	B3TCLNT800	4	P
OO green	0RPM_ITEM_FIN_PLANNING	B3TCLNT800	4	P
OO green	0HR_PT_2	B3TCLNT800	1	
OO yellow	2LIS_11_VAITEM	B3TCLNT800	0	
OO green	2LIS_11_VAHDR	BW3	0	

18. Now create delta DTP to load data from PSA to data target DSO and trigger it.

Data Transfer Proc.	RSDS_2LIS_11_VAHDR PRODUCTION -> ODSO		
ID	DTP_0002TL8ODLZ60FUZJVR9JST30		
DTP Type	Standard (Can Be Scheduled)		
Version	Active	Saved	Inactive, not executable
<input type="button" value="Extraction"/> <input type="button" value="Update"/> <input type="button" value="Execute"/>			
Source Object	<input type="button" value="..."/> DataSource 2LIS_11_VAHDR PRODUCTION Sales Document Header Data	<input type="button" value="Filter"/> <input type="button" value="Semantic Groups"/>	
Extraction Mode	Delta		
Delta Status	Active, No Request Yet		
Request Selection	<input type="checkbox"/> Delta Init Without Data <input type="checkbox"/> Get All New Data Request By Request <input type="checkbox"/> Only Get Delta Once		
Parallel Extraction	<input checked="" type="checkbox"/>		
Package Size	0	records	<input type="button" value="i"/>

Selectable Data Targets for Administration

Name	D...	Technical Name	Table Type
Sales Transactions	<input type="button" value="..."/>	ZSD_001	DataStore Object

Contents Requests Reconstruction

Requests from DataStore Object: Sales Transactions (ZSD_001)

Request ID	R...	D...	ID of Requ...	Re...	Lo...	Log...	Transferred...	Added Rec...	Type of Data Update
4255	<input type="button" value="..."/>	4258	<input type="button" value="..."/>	<input type="button" value="..."/>	<input type="button" value="..."/>	<input type="button" value="..."/>	7750	7750	Delta update

Check data in DSO.

19. Create some sales docs in ECC to capture delta records. In Below screenshot one doc is created in ECC (in this case transaction VA01 – create sales document) and it is captured in extraction queue (LBWQ).

p.s Ask trainer to create one sales document when you are recreating same scenario.

qRFC Monitor (Outbound Queue)

						Number of LUW Entries						
<table border="1"> <thead> <tr> <th colspan="2">Queue Information</th> </tr> <tr> <td>Number of Entries Displayed:</td> <td>1</td> </tr> <tr> <td>Number of Queues Displayed:</td> <td>1</td> </tr> </thead> </table>							Queue Information		Number of Entries Displayed:	1	Number of Queues Displayed:	1
Queue Information												
Number of Entries Displayed:	1											
Number of Queues Displayed:	1											
	C1	Queue Name	Destination	Entries								
	800	MCEX11	NONE	1								

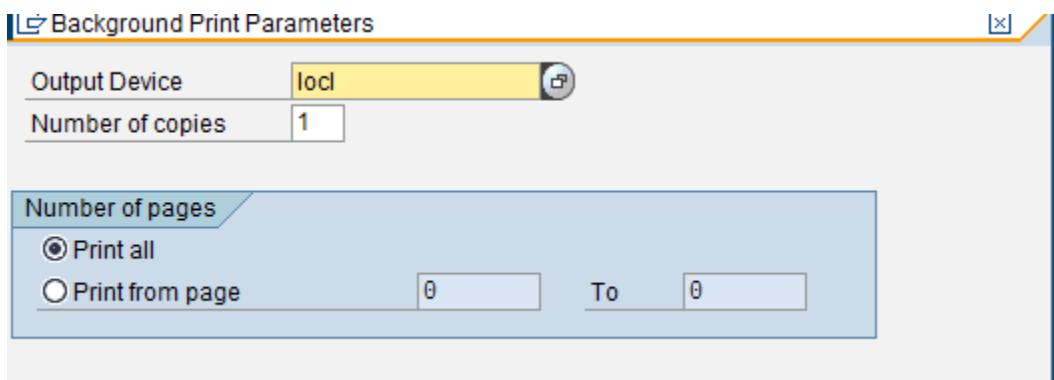
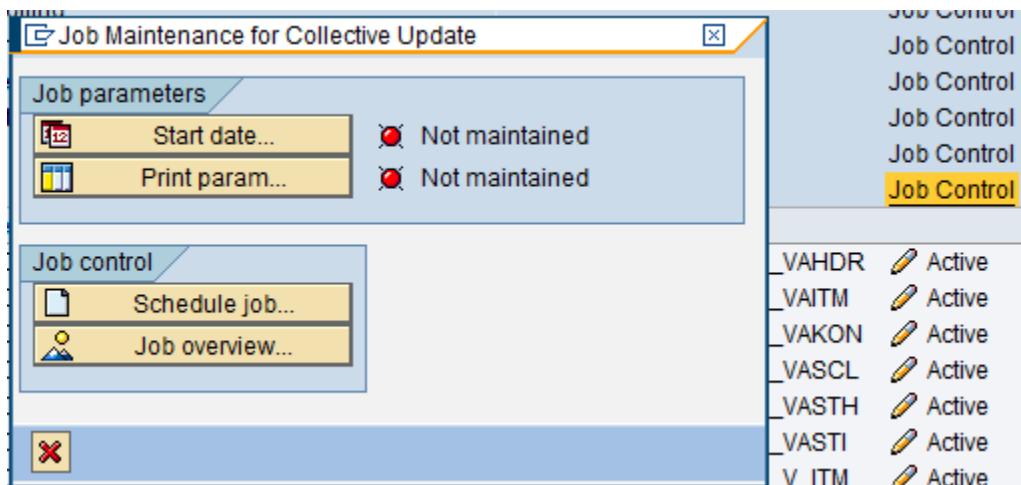
20. Go to LBWE to start V3 job to transfer data from LBWQ to RSA7(delta queue). Click on job control, after that you will see below screenshot.

11 : SD Sales BW

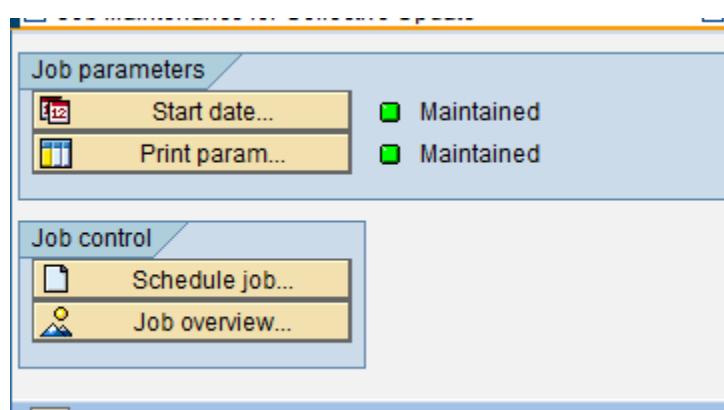
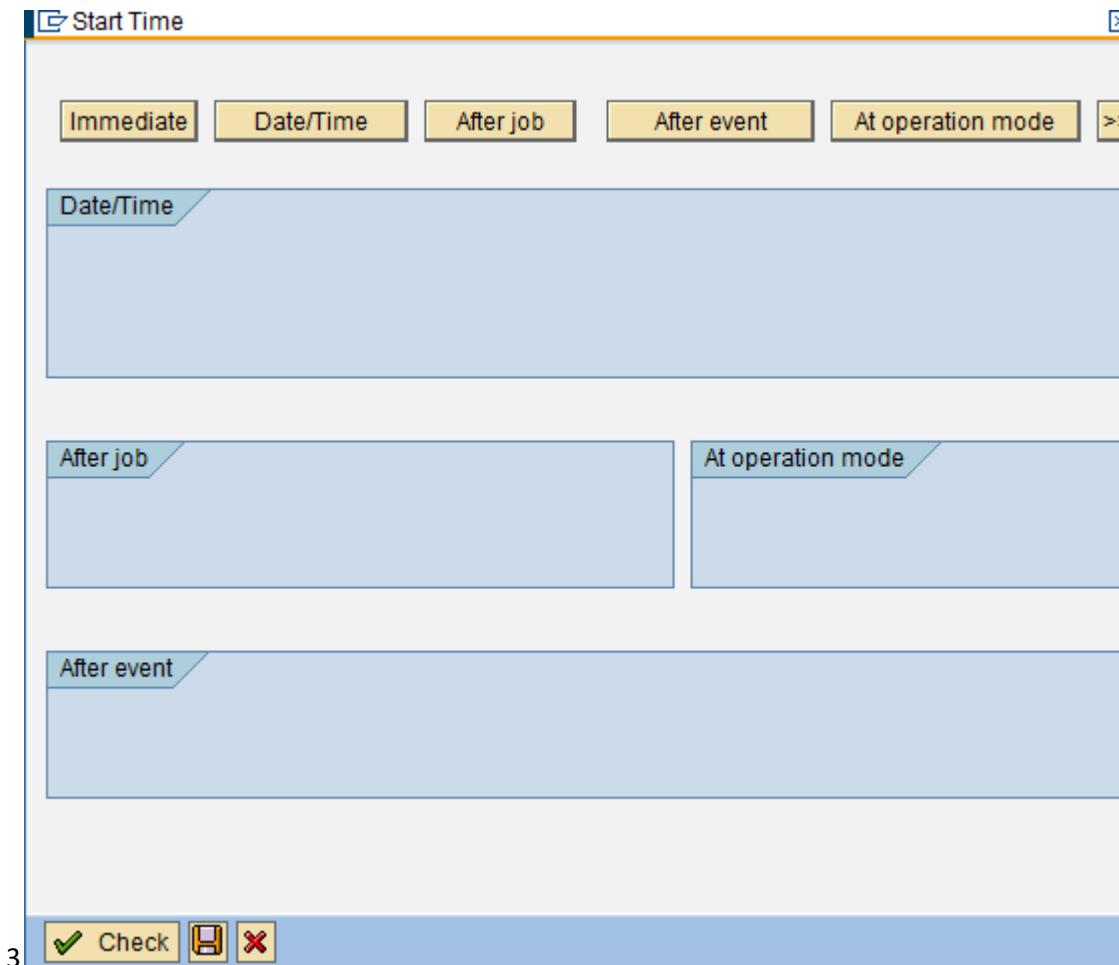
Extract structures

Job Control	Queued Delta	
MC11VA0HDR: Extraction SD Sales BW: Document Header	2LIS_11_VAHDR	Active
MC11VA0ITM: Extraction SD Sales BW: Document Item	2LIS_11_VAITM	Active
MC11VA0KON: Extraction SD Sales BW: Document Condition	2LIS_11_VAKON	Active
MC11VA0SCL: Extraction SD Sales BW: Document Structure	2LIS_11_VASCL	Active
MC11VA0STH: Extraction MD Order Header Status	2LIS_11_VASTH	Active
MC11VA0STI: Extraction MD Order Item Status	2LIS_11_VASTI	Active
MC11V_0ITM: Extraction SD Sales BW: Document Item	2LIS_11_V_ITM	Active
MC11V_0SCL: Extraction SD Sales BW: Allocation Structure	2LIS_11_V_SCL	Active
MC11V_OSSL: Extraction MD Sales: Order Delivery	2LIS_11_V_SSL	Active

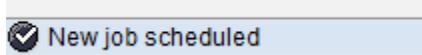
Now click on print parameter and select locl is the local printer.



Then click on start date and give here date and time also frequency of V3 jobs (hourly etc), check and save.



Finally ,click on schedule job so you will see bottom of screen that new job scheduled.



21. Now go to SM37 to check job status.

Job overview from: 12.09.2011 at: : :							
to: 12.09.2011 at: : :							
Selected job names: *							
Selected user names: DHAMEHTA							
<input type="checkbox"/> Scheduled <input checked="" type="checkbox"/> Released <input checked="" type="checkbox"/> Ready <input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Finished <input checked="" type="checkbox"/> Canceled <input type="checkbox"/> Event controlled Event ID: <input type="checkbox"/> ABAP program Program name :							
Job	Ln	Job CreatedB	Status	Start date	Start time	Duration(sec.)	Delay (sec.)
LIS-BW-VB_APPLICATION_11_800		DHAMEHTA	Finished	12.09.2011	17:59:32	545	0

22. Once the above job is finished this entry is deleted from LBWQ and transfer to RSA7(delta queue)

qRFC Monitor (Outbound Queue)

Number of LUW Entries

Queue Information	
Number of Entries Displayed:	0
Number of Queues Displayed:	0

Nothing selected

RSA7 (delta queue)

Stat...	DataSource	BW System	Total
OO	0RPM_PORT_ITEM_MANAGEMENT	B3TCLNT800	216
OO	2LIS_02_ITM	B3TCLNT800	59
OO	2LIS_02_SCL	B3TCLNT800	46
OO	0FSCM_CM_3	B3TCLNT800	17
OO	0RPM_BUCKET_FIN_PLANNING	B3TCLNT800	11
OO	0RPM_BUCKET_CAP_PLANNING	B3TCLNT800	10
OO	0FSCM_CM_1	B3TCLNT800	10
OO	0RPM_ITEM_CAP_PLANNING	B3TCLNT800	9
OO	2LIS_17_I0NOTIF	B3TCLNT800	5
OO	0RPM_PORT_RELATION_GUID_ATTR	B3TCLNT800	4
OO	0RPM_ITEM_FIN_PLANNING	B3TCLNT800	4
OO	2LIS_11_VAHDRI	BW3	1

23. Create and trigger delta infopackage in BI to load data from delta queue to PSA. Trigger delta DTP to load data from PSA to DSO.
24. After activating the request, check in DSO if the new sales document is loaded or not.

InfoPackage	2LIS_11_VAHDR_DELTA_R/3(0PAK_DEMBBFXXZ1MLTBYX27WRX7B4I)		
DataSource	Sales Document Header Data(2LIS_11_VAHDR)		
Data Type	Transaction Dat		
Source System	ID5 Client 811(PRODUCTION)		
Last Changed by	TRAINEE04	Date	10.06.2016
	Time	20:17:24	

Data Selection Extraction Processing Data Targets Update Schedule

Update Mode

Full update
 Delta Update
 Initialize Delta Process

Initialization with Data Transfer
 Initialize Without Data Transfer
 Early Delta Initialization
 Switch InfoPack. in PC to Delta (F1)

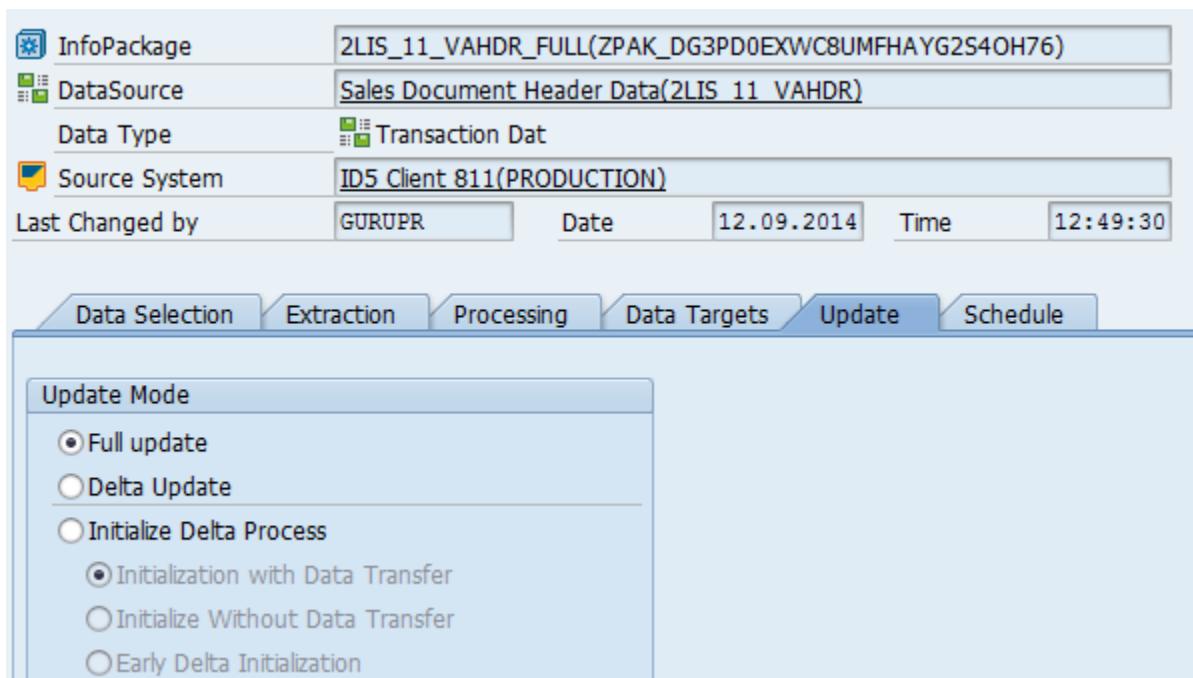
Request will be processed at once in the source system

Data transfer Modes

Use: Data Transfer mode defines amount and kind of data loaded to BW from source system.

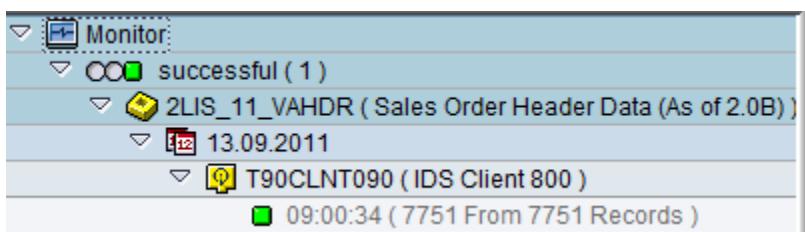
Full data load:- Infopackage with update mode as Full . It will extract all records present in the setup table.

Now we will create new infoapackage with update mode as Full.



The screenshot shows the SAP BW InfoPackage configuration interface. At the top, there are several fields: InfoPackage (2LIS_11_VAHDR_FULL(ZPAK_DG3PD0EXWC8UMFHAYG2S4OH76)), DataSource (Sales Document Header Data(2LIS_11_VAHD)), Data Type (Transaction Dat), Source System (IDS Client 811(PRODUCTION)), and Last Changed by (GURUPR) with a timestamp of 12.09.2014 at 12:49:30. Below these are tabs for Data Selection, Extraction, Processing, Data Targets, Update, and Schedule. A sub-panel titled 'Update Mode' is open, showing the following options:

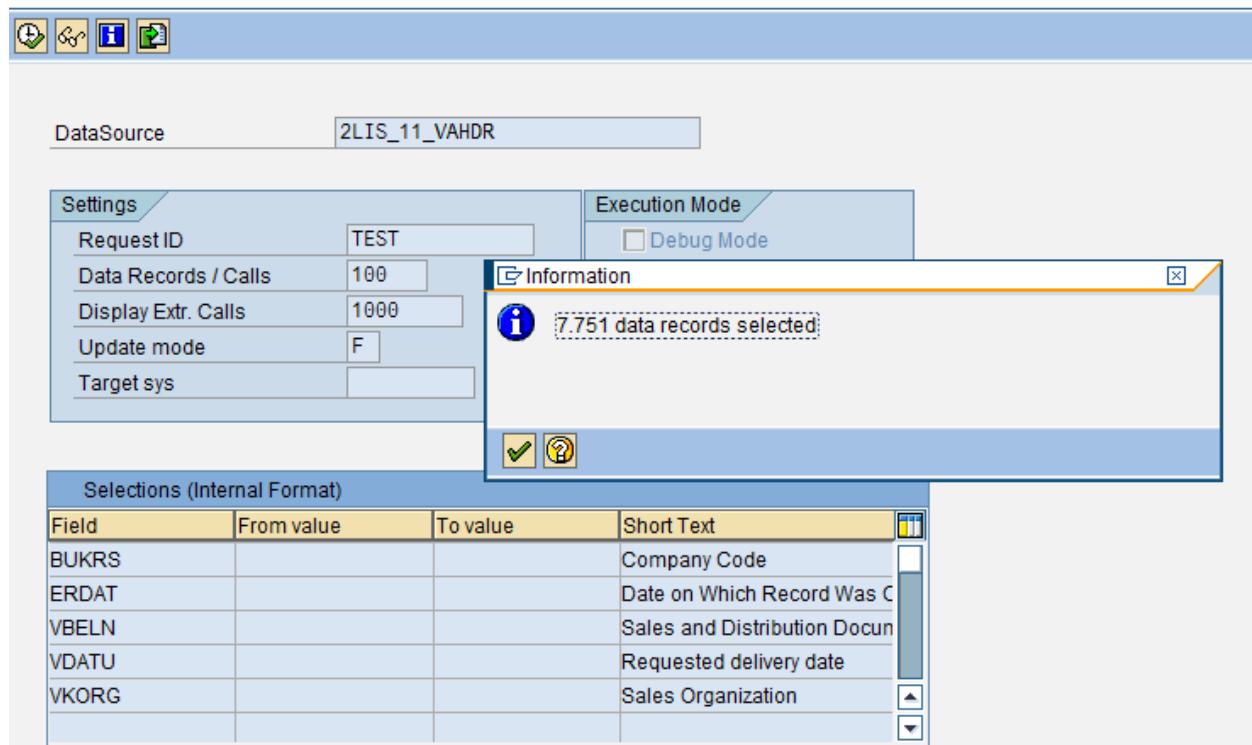
- Full update
- Delta Update
- Initialize Delta Process
- Initialization with Data Transfer
- Initialize Without Data Transfer
- Early Delta Initialization



The screenshot shows the SAP BW Monitor interface. It displays a log entry for a successful data transfer: 'OO green successful (1)' for '2LIS_11_VAHD (Sales Order Header Data (As of 2.0B))' on '13.09.2011' by 'T90CLNT090 (IDS Client 800)'. The log message indicates '09:00:34 (7751 From 7751 Records)'.

Records present in the setup table.

Extractor Checker S-API



The screenshot shows the SAP Extractor Checker S-API interface. At the top, there are four icons: a magnifying glass, a gear, a blue square with a white 'I', and a green square with a white 'P'. Below these is a toolbar with a 'DataSource' dropdown set to '2LIS_11_VAHDR'. The main area has two tabs: 'Settings' and 'Execution Mode'. In the 'Settings' tab, the 'Request ID' is set to 'TEST', 'Data Records / Calls' is '100', 'Display Extr. Calls' is '1000', 'Update mode' is 'F', and 'Target sys' is empty. In the 'Execution Mode' tab, there is a checkbox for 'Debug Mode' which is unchecked. A message box titled 'Information' is displayed, stating '7.751 data records selected.' at the bottom. At the bottom of the interface, there is a table titled 'Selections (Internal Format)' with columns 'Field', 'From value', 'To value', and 'Short Text'. The table contains five rows:

Field	From value	To value	Short Text
BUKRS			Company Code
ERDAT			Date on Which Record Was C
VBELN			Sales and Distribution Docun
VDATU			Requested delivery date
VKORG			Sales Organization

Now create Delta DTP and trigger it to load data from PSA to DSO, after activating newly loaded request in DSO, you will see new loaded data in DSO.

[Initialize without data transfer:-](#)

It only initializes the data source in BW. This means no data will be loaded in BW but only initialization of delta queue (RSA7) will happen. This option is required when you do not want to load any data from setup tables but only initialize the delta queue for the datasource.

InfoPackage	2LIS_11_VAHDR_INIT_R/3(0PAK_DEMBBFXXZ1LU4PN5QOH5URWUQ)			
DataSource	Sales Document Header Data(2LIS_11_VAHDR)			
Data Type	Transaction Dat			
Source System	ID5 Client 811(PRODUCTION)			
Last Changed by	TRAINEE04	Date	10.06.2016	Time
			20:17:24	

Data Selection
Extraction
Processing
Data Targets
Update
Schedule

Update Mode

- Full update
- Delta Update
- Initialize Delta Process
 - Initialization with Data Transfer
 - Initialize Without Data Transfer
 - Early Delta Initialization
 - Switch InfoPack. in PC to Delta (F1)

Initialisation with data transfer –

It initializes the data source and transfers all the data from setup table to PSA. This option is generally used when project goes live where it is initialize data source such that further regular delta updates can be done.

 InfoPackage	2LIS_11_VAHDR-INIT With data transfer(ZPAK_DJTAJHF9TFM2NG5TI09D...)		
 DataSource	Sales Document Header Data(2LIS_11_VAHDR)		
Data Type	 Transaction Dat		
 Source System	IDS Client 811(PRODUCTION)		
Last Changed by	TRAIN07	Date	28.06.2016
	Time	17:38:53	

Data Selection
Extraction
Processing
Data Targets
Update
Schedule

Update Mode

- Full update
- Delta Update
- Initialize Delta Process
 - Initialization with Data Transfer
 - Initialize Without Data Transfer
 - Early Delta Initialization
 - Switch InfoPack. in PC to Delta (F1)

Request will be processed at once in the source system

[Delta update –](#)

As the name indicates in this update delta changes or delta postings are transferred to BW from source system. Infopackage with delta update is generally executed everyday to load the delta postings to BW.

InfoPackage	2LIS_11_VAHDR_DELTA_R/3(0PAK_DEMBBFXXZ1MLTBYX27WRX7B4I)			
DataSource	Sales Document Header Data(2LIS_11_VAHDR)			
Data Type	Transaction Dat			
Source System	IDS Client 811(PRODUCTION)			
Last Changed by	TRAINEE04	Date	10.06.2016	Time
			20:17:24	

Data Selection Extraction Processing Data Targets Update Schedule

Update Mode

Full update
 Delta Update
 Initialize Delta Process

Initialization with Data Transfer
 Initialize Without Data Transfer
 Early Delta Initialization
 Switch InfoPack. in PC to Delta (F1)

Request will be processed at once in the source system

Conclusion:-

After this exercise we will know how to load logistic data from ECC to BI, how to fill up the setup table and load that data from setup table to BI through initialization process and how to load the delta data. This document also explains you to different types of data transfer modes in BI.

4.4. How to Configure SAP BW Service API

Use

The BW Service API (SAPI) is a technology package in the SAP source system that enables tight integration of data transfer from SAP source systems into the BW system.

The SAPI allows you to

- make available SAP application extractors as a basis for data transfer into BW
- carry out generic data extraction
- use intelligent delta processes
- access data in the source system directly from BW (Virtual Provider support)

With transaction SBIW, the SAPI provides an implementation guide in the SAP source system that includes the activities necessary for data extraction and data transfer from an SAP source system into BW.

Irrespective of the type of SAP source system, Customizing for extractors comprises activities that belong to the scope of SAPI:

- General settings for data transfer from source systems into BW.
- the option of installing BI Content delivered by SAP

- the option of maintaining generic DataSources
- the option of postprocessing the application component hierarchy and DataSources on a source system level

In addition to the activities that are part of the scope of SAPI, Customizing for extractors for OLTP and further SAP source systems may contain source-system specific settings for application-specific DataSources.

Features

General Settings

General settings include the following activities:

- Maintaining Control Parameters for Data Transfer
 - Restricting Authorizations for the Extraction
 - Checking the Delta Queue
-
- **Installing BI Content Delivered by SAP**
 - DataSources delivered with the BI Content by SAP and those delivered by partners appear in a delivery version (D version). If you want to use a partner or BI Content DataSource to copy data from a source system into BW, you need to copy this DataSource from the D to the active (A) version.
 - In the source system, the DataSources are assigned to specific application components. If you want to display the DataSources in BW in the DataSource tree of the Data Warehousing Workbench according to this application component hierarchy, you need to transfer them from the D version into the A version in the source system.
 - Transferring data from an OLTP system or other SAP source systems

- You need to make some settings in advance for some BI Content Data Sources before you can transfer data into a BW. These settings are listed in transaction SBIW in the Settings for Application-Specific Data Sources section. You can only find this section in those SAP source systems for which it is relevant.

V1-V2-V3 Update and Delta Queue

We will get to know about V1, V2 and V3 update and delta queues. These updates are only used in logistical applications.

V1 update comes into picture when user does some posting and saves it, at the same time that change goes to application tables (VBAK...) and extraction queue (SMQ1) in Queued delta.

When the user does some posting (Create, Change , delete sales orders in this case) in ECC , at the same time that record gets saved into application table (VBAK, VBAP etc) and extraction queue (LBWQ) by V1 method.

Queued Delta

Queued delta only involves V1 and V3 update.

Data Flow for Logistics Extraction with Queued Delta

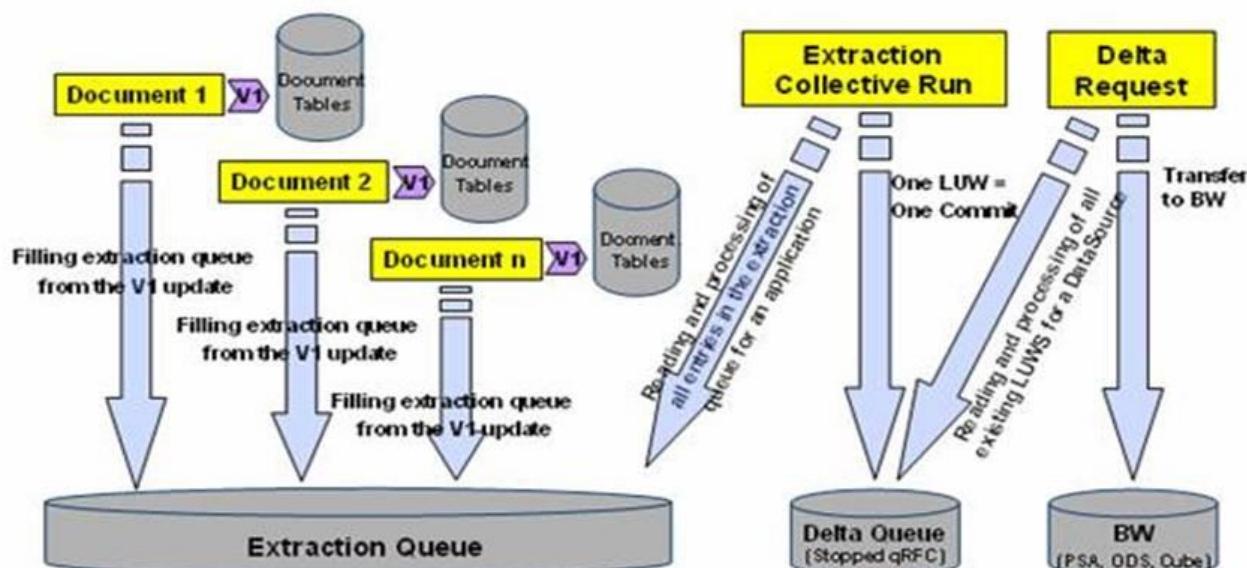


Fig.4: Queued Delta update mechanism

V1 - Synchronous update

V2 - Asynchronous update

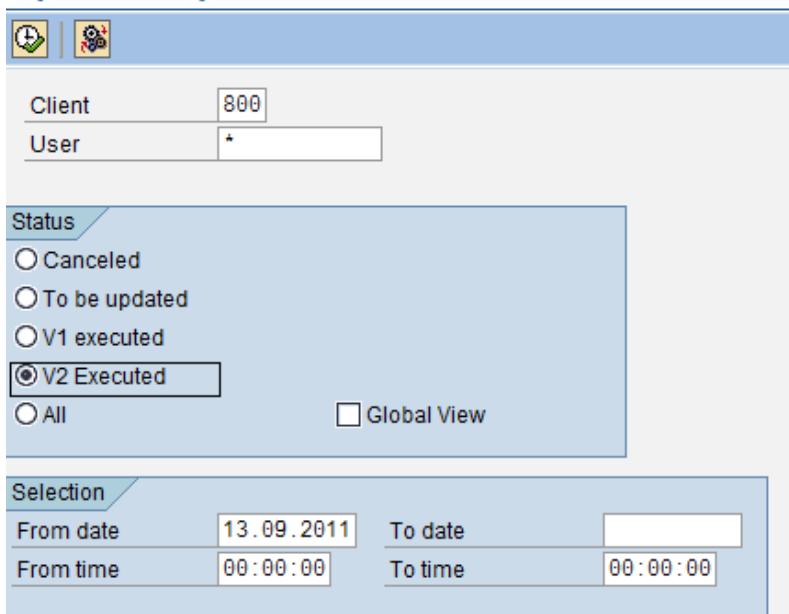
V3 - Batch asynchronous update

Use:

This is same as V1 update, the only difference is V2 updates statistical tables related to transactional tables whereas V1 updates standard transactional tables and V1 occurs as soon as posting occur whereas V2 is not time critical. You can see V2 update in SM13 t-code which is update table. Extraction in Unserialized V3 delta is dependent on V2 update .When you run V3 job, it will take data from update tables (SM13) to delta queue(RSA7).

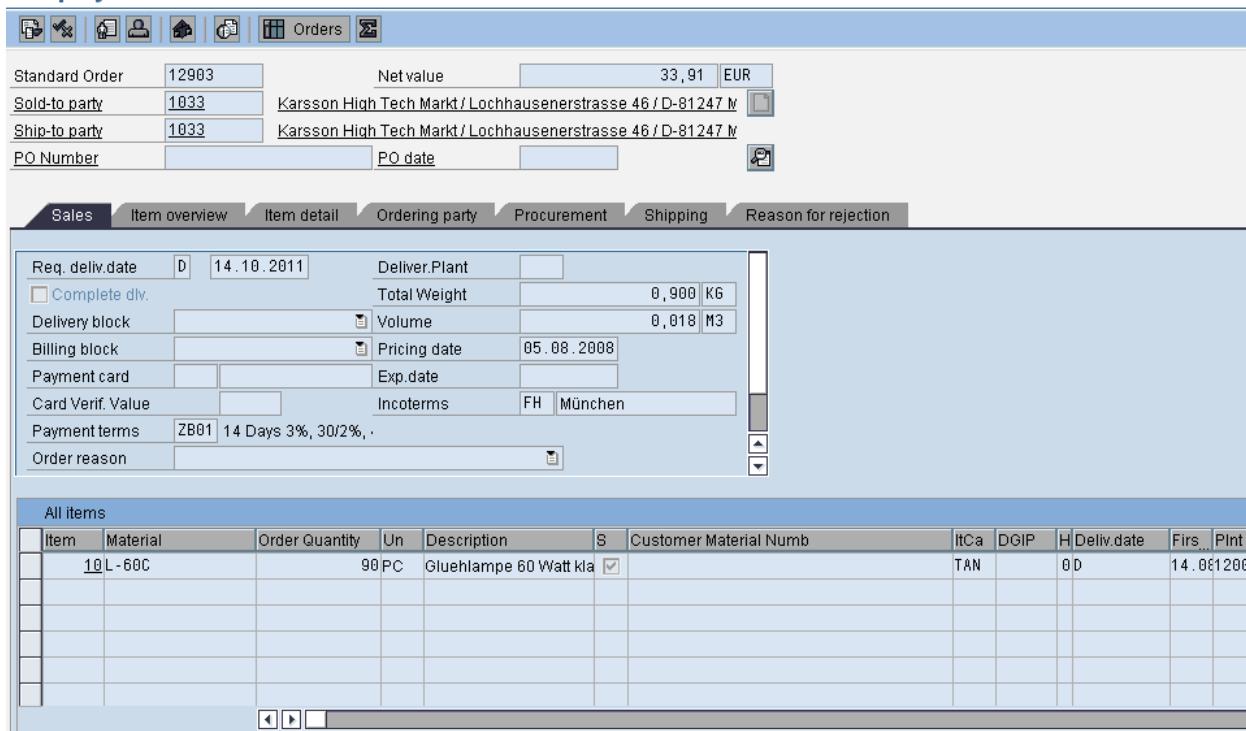
SM13 screenshot:

Update Requests: Initial Screen



The screenshot shows the SAP SM13 'Update Requests: Initial Screen' dialog box. It has three main sections: 'Client' (set to 800), 'User' (set to *), and 'Status'. Under 'Status', the radio button for 'V2 Executed' is selected. There is also a checkbox for 'Global View' which is not checked. At the bottom, there is a 'Selection' section with date and time fields: 'From date' is set to 13.09.2011, 'To date' is empty, 'From time' is set to 00:00:00, and 'To time' is set to 00:00:00.

Sales doc 12903 is created in ECC.

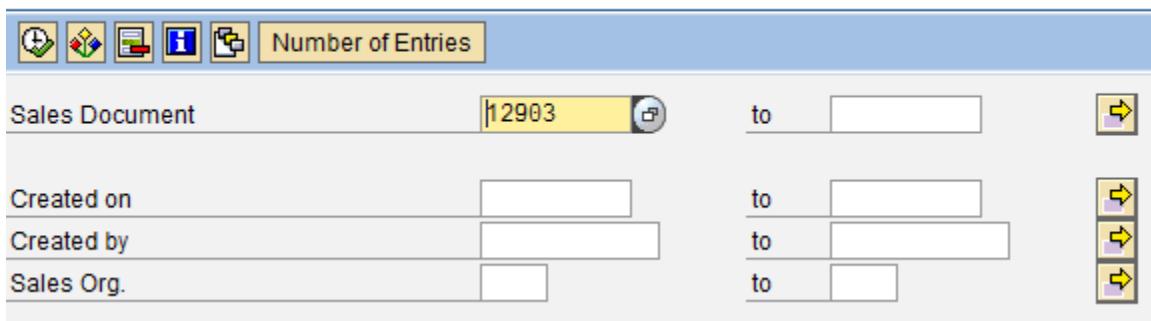
Display Standard Order 12903: Overview


The screenshot shows the SAP Display Standard Order 12903: Overview screen. At the top, there are several icons and a toolbar with the word "Orders". Below the toolbar, the order number is 12903, Net value is 33,91 EUR, and the delivery address is Karsson High Tech Markt / Lochhausenstrasse 46 / D-81247 M. The "PO Number" field is empty, and the "PO date" field has a placeholder. A "Print" icon is next to the PO date field.

The main area has tabs: Sales (selected), Item overview, Item detail, Ordering party, Procurement, Shipping, and Reason for rejection. Under the Sales tab, there are fields for Req. deliv.date (D 14.10.2011), Deliver.Plant (empty), Total Weight (0,900 KG), Delivery block (empty), Volume (0,018 M3), Billing block (empty), Pricing date (05.08.2008), Payment card (empty), Exp.date (empty), Card Verif. Value (empty), Incoterms (FH München), Payment terms (ZB01 14 Days 3%, 30/2%,), and Order reason (empty).

At the bottom, there is a table titled "All items" showing one item: Item 10L-60C, Order Quantity 90 PC, Description Gluehlampe 60 Watt kia, and Customer Material Numb TAN. The table includes columns for Item, Material, Order Quantity, Un, Description, S, Customer Material Numb, ItCa, DGIP, H, Deliv.date, Firs, and Pint.

Below screenshot of VBAK table for this sales doc.

Data Browser: Table VBAK: Selection Screen


The screenshot shows the SAP Data Browser: Table VBAK: Selection Screen. At the top, there are several icons and a "Number of Entries" input field. Below, there are search fields for Sales Document (12903), Created on (date range), Created by (multiple dropdowns), and Sales Org. (multiple dropdowns). To the right of each search field are "to" buttons and "next" arrows.

Data Browser: Table VBAK Select Entries 1



Table: VBAK
Displayed Fields: 18 of 124 Fixed Columns: | List Width 0250

Client	Sales Document	Created on	Time	Created by	Valid from	Valid to	Document Date	Document cat.
800	0000012903	13.09.2011	11:22:55	DHAMEHTA	00.00.0000	00.00.0000	13.09.2011	C

Below screenshot of SMQ1(Extraction queue)

qRFC Monitor (Outbound Queue)



Number of LUW Entries

Queue Information
Number of Entries Displayed: 612
Number of Queues Displayed: 60

C1.	Queue Name	Destination	Entries
800	BBP_EXTREQ_TRANSFER_80	NONE	2
800	BBP_EXTREQ_TRANSFER_80	SRM_00_300	42
800	BBP_EXTREQ_TRANSFER_80	SRM_00_800	3
800	BW8000FSCM_CM_1	B3TCLNT800	10
800	BW8000FSCM_CM_3	B3TCLNT800	17
800	BW8000HR_PT_2	B3TCLNT800	1
800	BW8000RPM_BUCKET_CAP__1	B3TCLNT800	10
800	BW8000RPM_BUCKET_FIN__1	B3TCLNT800	11
800	BW8000RPM_ITEM_CAP_PL__1	B3TCLNT800	9
800	BW8000RPM_ITEM_FIN_PL__1	B3TCLNT800	4
800	BW8000RPM_PORT_ITEM_M__1	B3TCLNT800	216
800	BW8000RPM_PORT_RELAT_A1	B3TCLNT800	4
800	BW8002LIS_02_ITM	B3TCLNT800	59
800	BW8002LIS_02_SCL	B3TCLNT800	46
800	BW8002LIS_11_VAHDR	BW3	1
800	BW8002LIS_17_IONOTIF	B3TCLNT800	5
800	R3AD_	DTZ_800	40
800	R3AD_12882	DTZ_800	4
800	R3AD_12883	DTZ_800	4
800	R3AD_12884	DTZ_800	4

V3 Collective job:

Use:

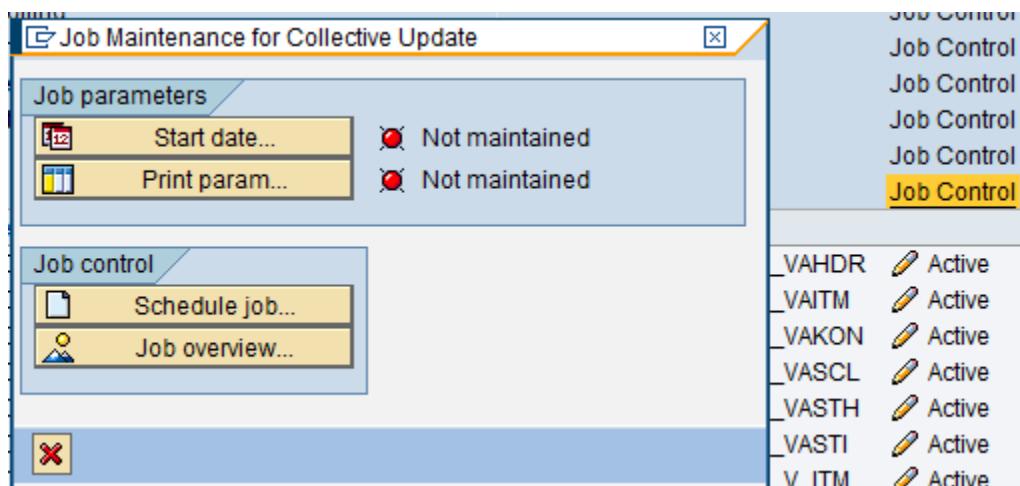
It is the background job which transfers data from extraction queue (SMQ1) to delta queue (RSA7) in queued delta and from update tables (SM13) to delta queue (RSA7) in unserialized delta. We can schedule this job by time basis.

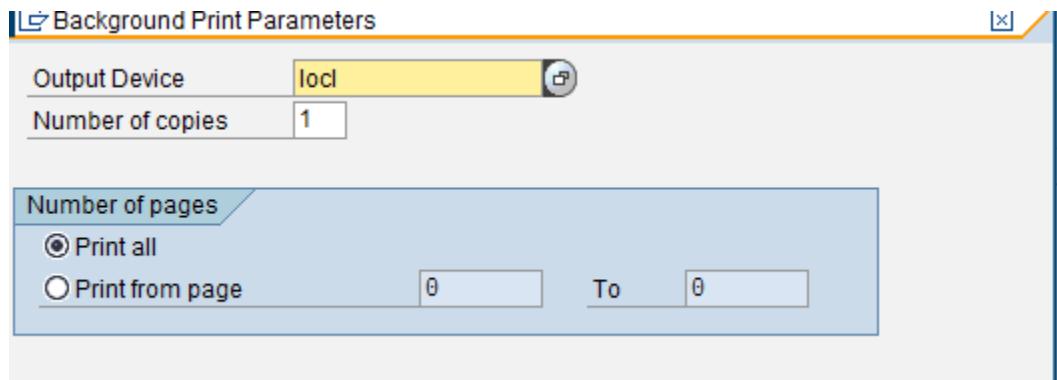
Procedure to Schedule V3 Job:

Go to LBWE to start V3 job to transfer data from LBWQ to RSA7(delta queue). Click on job control, after that you will see below screenshot.

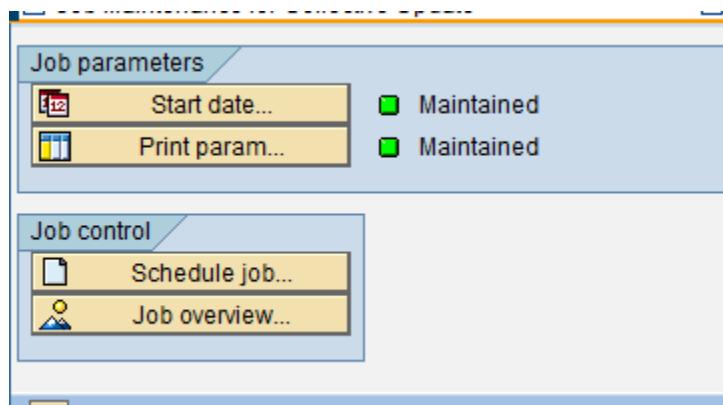
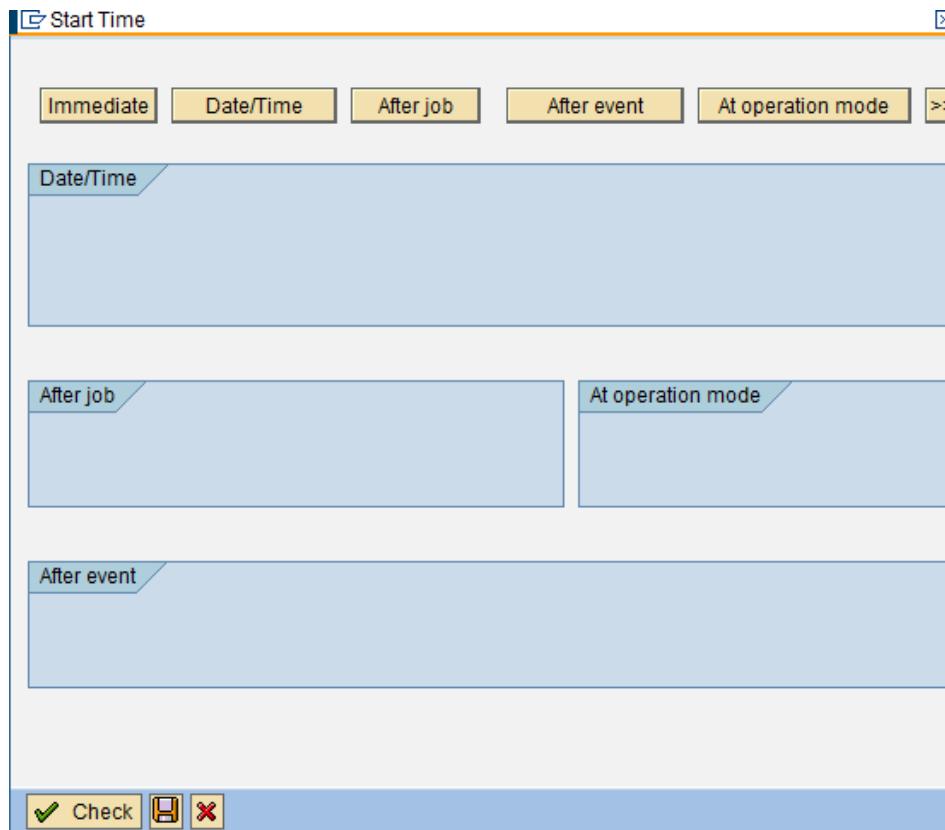
11 : SD Sales BW		Job Control	Queued Delta
Extract structures			
D	MC11VA0HDR: Extraction SD Sales BW: Document Header	Maintain...	Active
D	MC11VA0ITM: Extraction SD Sales BW: Document Item	Maintain...	Active
D	MC11VA0KON: Extraction SD Sales BW: Document Condition	Maintain...	Active
D	MC11VA0SCL: Extraction SD Sales BW: Document Specification	Maintain...	Active
D	MC11VA0STH: Extraction MD Order Header Status	Maintain...	Active
D	MC11VA0STI: Extraction MD Order Item Status	Maintain...	Active
D	MC11V_0ITM: Extraction SD Sales BW: Document Item	Maintain...	Active
D	MC11V_0SCL: Extraction SD Sales BW: Allocation Specification	Maintain...	Active
D	MC11V_0SSL: Extraction MD Sales: Order Delivery	Maintain...	Active

Now click on print parameter and select locl is the local printer.

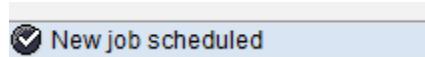




Then click on start date and give here date and time also frequency of V3 jobs (hourly etc), check and save.



Finally, click on schedule job so you will see bottom of screen that new job scheduled.

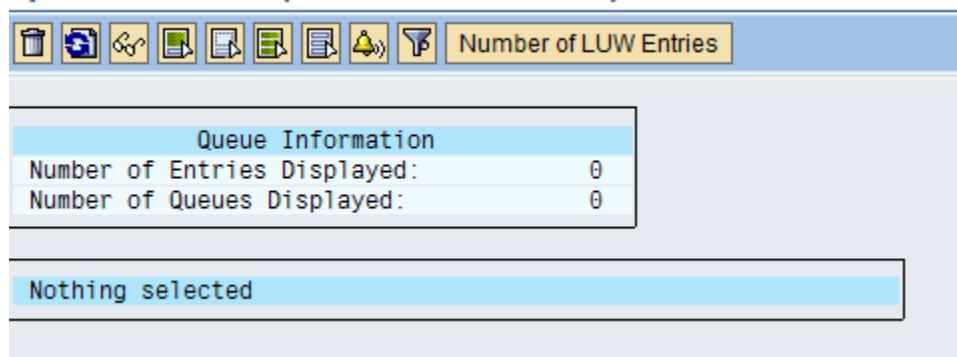


Now go to SM37 to check job status.

Job overview from: 12.09.2011 at: : :							
to: 12.09.2011 at: : :							
Selected job names: *							
Selected user names: DHAMEHTA							
<input type="checkbox"/> Scheduled <input checked="" type="checkbox"/> Released <input checked="" type="checkbox"/> Ready <input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Finished <input checked="" type="checkbox"/> Canceled							
<input type="checkbox"/> Event controlled Event ID:							
<input type="checkbox"/> ABAP program Program name :							
Job	En	Job CreatedB	Status	Start date	Start time	Duration(sec.)	Delay (sec.)
LIS-BW-VB_APPLICATION_11_800		DHAMEHTA	Finished	12.09.2011	17:59:32	545	0

Once the above job is finished this entry is deleted from SMQ and is transferred to RSA7 (delta queue)

qRFC Monitor (Outbound Queue)



The screenshot shows the SAP GUI interface for the qRFC Monitor. At the top, there is a toolbar with various icons for managing the queue. Below the toolbar, a section titled "Queue Information" displays two rows of data: "Number of Entries Displayed: 0" and "Number of Queues Displayed: 0". At the bottom of the screen, a message box states "Nothing selected".

Delta queue:

Use:

This is the central table which stores the delta LUW's of all delta enabled active datasources. You can see delta queue by using RSA7 tcode, for that we need to initialize that datasource for delta transfer.

Stat...	DataSource	BW System	Total
000	0RPM_PORT_ITEM_MANAGEMENT	B3TCLNT800	216
000	2LIS_02_ITM	B3TCLNT800	59
000	2LIS_02_SCL	B3TCLNT800	46
000	0FSCM_CM_3	B3TCLNT800	17
000	0RPM_BUCKET_FIN_PLANNING	B3TCLNT800	11
000	0RPM_BUCKET_CAP_PLANNING	B3TCLNT800	10
000	0FSCM_CM_1	B3TCLNT800	10
000	0RPM_ITEM_CAP_PLANNING	B3TCLNT800	9
000	2LIS_17_I0NOTIF	B3TCLNT800	5
000	0RPM_PORT_RELATION_GUID_ATTR	B3TCLNT800	4
000	0RPM_ITEM_FIN_PLANNING	B3TCLNT800	4
000	2LIS_11_VAHDR	BW3	1

Conclusion:

At the end of this doc, we will get to know about V1,V2 and V3 update and delta queues. These updates are only used in logistical applications.

4.5 Enhance Data source

Use:

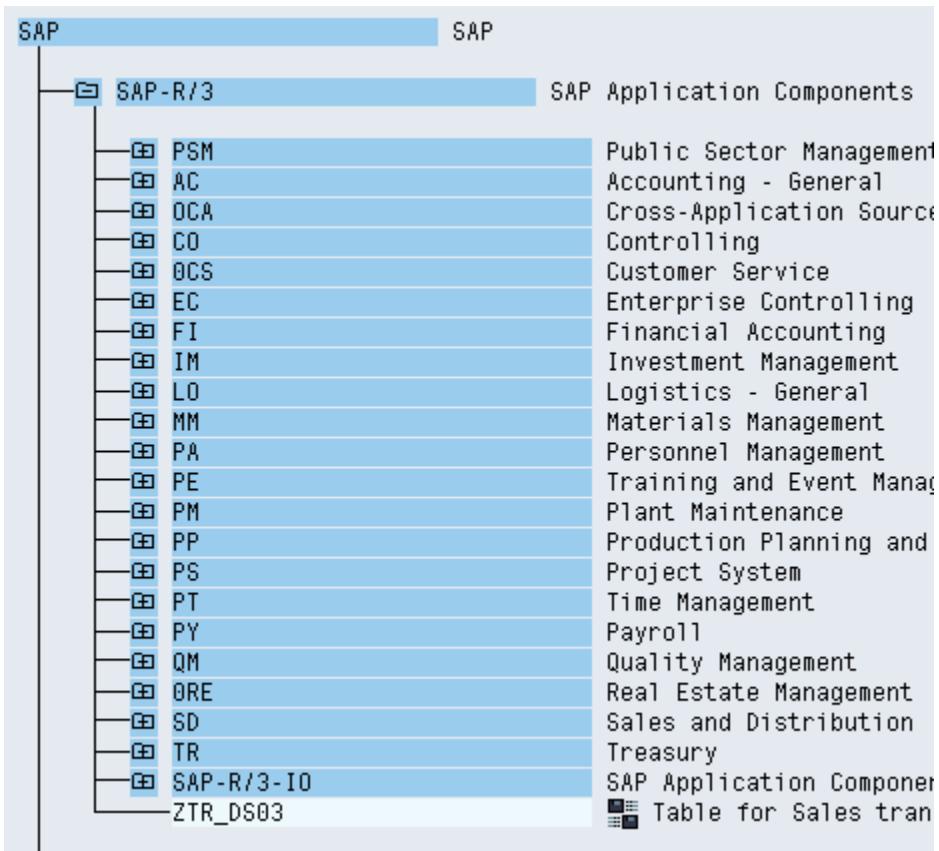
The standard fields provided by the standard (content) data source might not be sufficient for modeling all the business scenarios in BW. There is a provision to enhance the standard datasources with custom fields on the ECC (R/3) side.

Prerequisite –

ZTR_DS03 generic data source is available for enhancement.

Procedure:

1. Log onto the ECC system.
2. Go to Tcode RSA6 and open the SAP Application Components sub tree. There you will find the Datasource that needs to be enhanced ZTR_DSXX. We are going to enhance this Sales data source with the 'Sold to party' field from the table VBAK - Sales Document: Header Data.

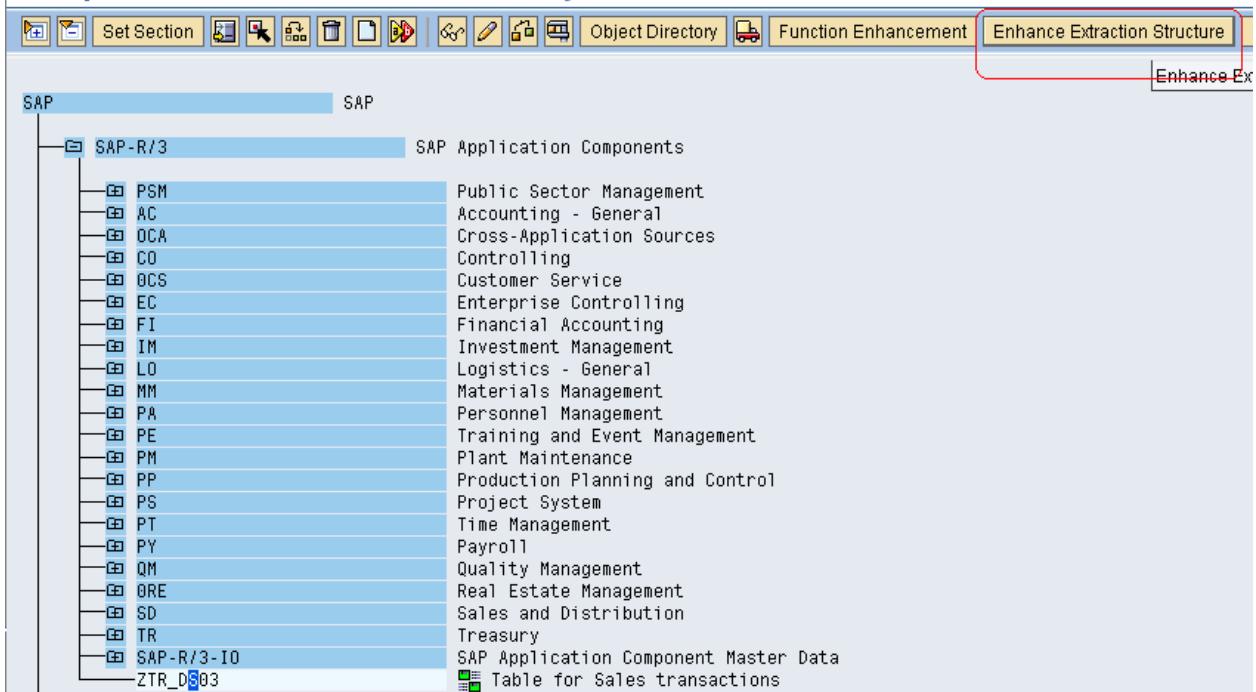


Double click on the data source and you will see the fields currently in the data source.

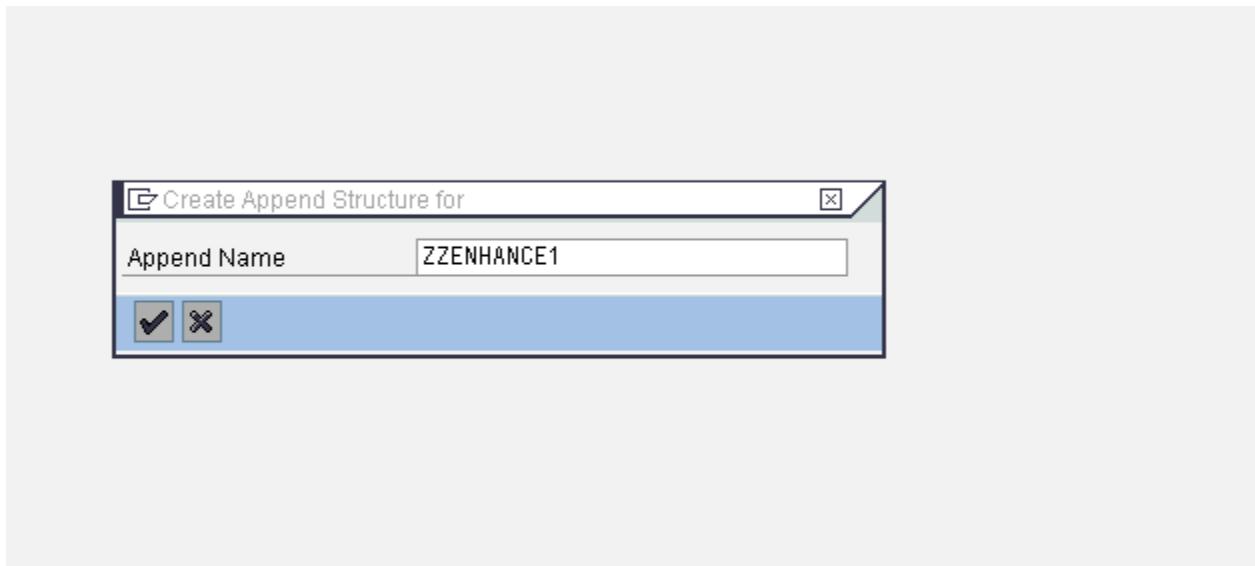
DataSource: Customer version Display

3. Click on the data source and click on Enhance Extraction Structure.

Postprocess DataSources and Hierarchy



4. Give a name to the append structure as 'ZZXXXX' in the subsequent screen. This append structure will contain the field that will be added to the datasource.

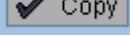


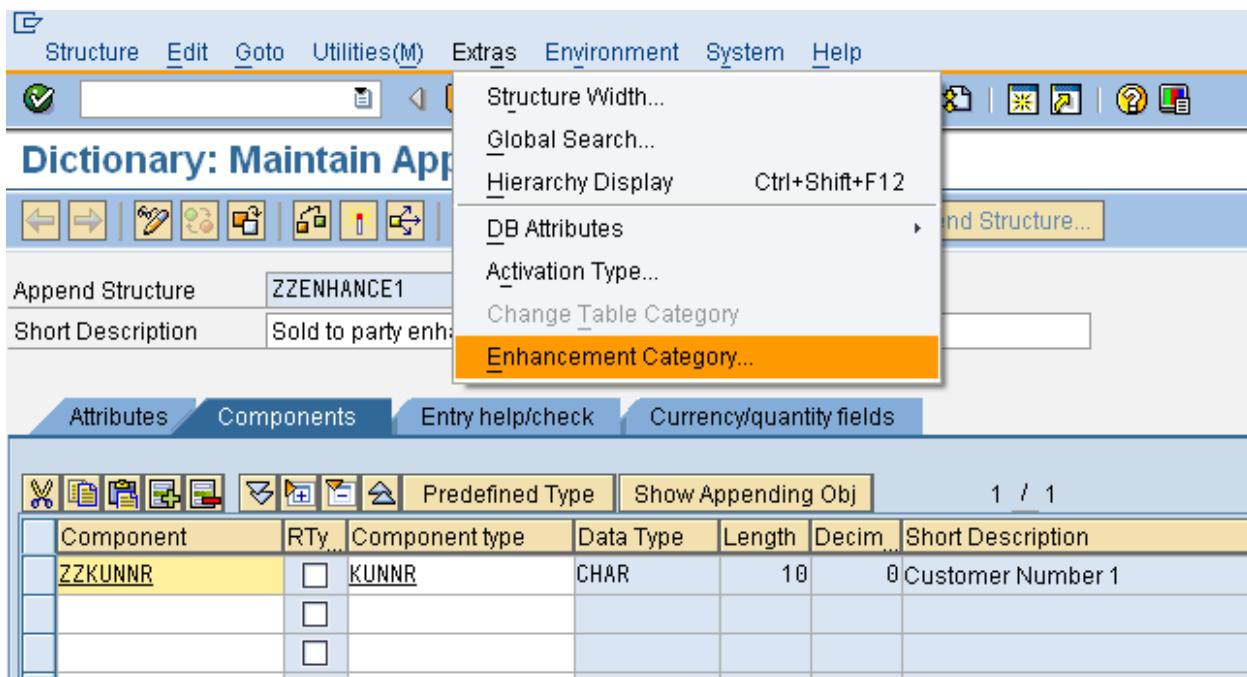
5. Enter the description and the component type that we want to enhance the datasource with; in our case it is KUNNR. Enter the name of the component as 'ZZKUNNR'

Append Structure	ZZENHANCE1	Active
Short Description	Sold to Party Enhancement.	

Attributes Components Entry help/check Currency/quantity fields

Predefined Type							Show Appending Obj	1 / 1
Component	RTy...	Component type	Data Type	Length	Decim...	Short Description		
ZZKUNNR	<input type="checkbox"/>	KUNNR	CHAR	10	0	Customer Number 1		
	<input type="checkbox"/>							
	<input type="checkbox"/>							
	<input type="checkbox"/>							
	<input type="checkbox"/>							
	<input type="checkbox"/>							

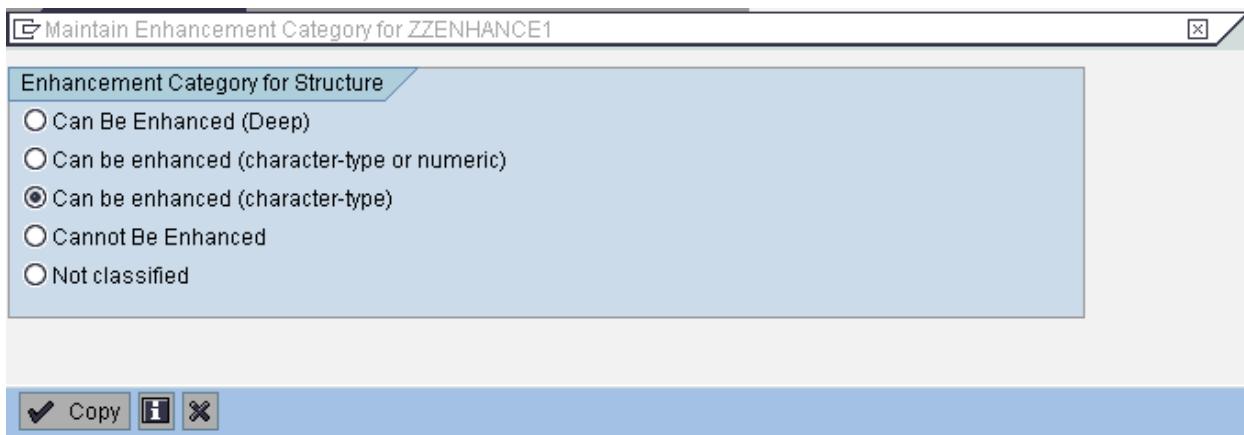
6. Goto Extras->Enhancement Category and click on 'Can Be enhanced' radio button and press copy . Now activate the append structure. This step will allow further enhancement in this append structure.



The screenshot shows the SAP Dictionary: Maintain Application Structure (RSA6) interface. The main window displays a table of components, with one row selected:

Component	RTy	Component type	Data Type	Length	Decim.	Short Description
ZZKUNNR		KUNNR	CHAR	10	0	Customer Number 1

A context menu is open at the top right, with the "Enhancement Category..." option highlighted. The menu also includes other options like "Structure Width...", "Global Search...", "Hierarchy Display", "DB Attributes", "Activation Type...", "Change Table Category", and "Find Structure...".



The dialog box is titled "Maintain Enhancement Category for ZZENHANCE1". It contains a list of enhancement categories:

- Can Be Enhanced (Deep)
- Can be enhanced (character-type or numeric)
- Can be enhanced (character-type)
- Cannot Be Enhanced
- Not classified

At the bottom of the dialog are buttons for "Copy" (with a checkmark), "OK", and "Cancel".

7. Go back to rsa6 and click change the datasource.

Postprocess DataSources and Hierarc

SAP SAP Application

PSM	Public Sector	
AC	Accounting	
OCA	Cross-Application	
CO	Controlling	
OCS	Customer	
EC	Enterprise	
FI	Financial	
IM	Investment	
LO	Logistics	
MM	Materials	
PA	Personnel	
PE	Training	
PM	Plant Maintenance	
PP	Productivity	
PS	Project Scheduling	
PT	Time Management	
PY	Payroll	
QM	Quality Management	
ORE	Real Estate	
SD	Sales and Distribution	
TR	Treasury	
SAP-R/3-IO	SAP Application	
ZTR_DS03	Table	

8. Uncheck the hide field column for the field ZZKUNNR and save. Note that the 'Field only known in Customer Exit' is automatically checked.

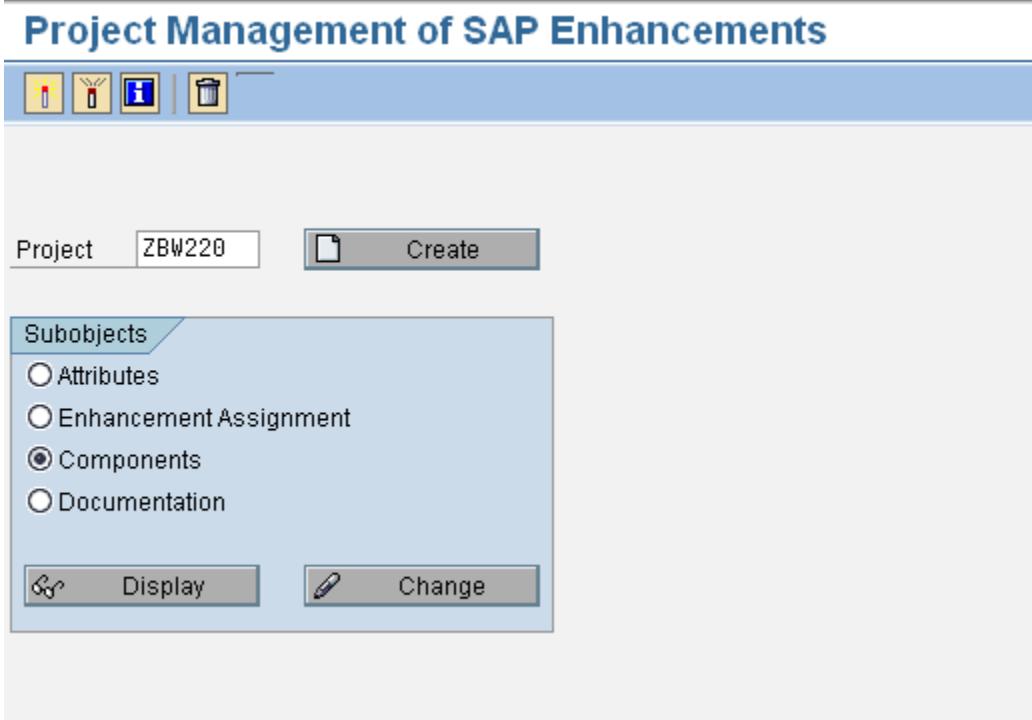
DataSource: Customer version Edit

Header Data						
DataSource	ZTR_DS03	Package	\$TMP			
Description	Table for Sales transactions					
Extraction						
ExtractStruct.	Z0XID30164					
Direct Access	1					
Delta Update	<input type="checkbox"/>	DataSource for Reconciliation	<input type="checkbox"/>			
Field Name	Short text	Selection	Hide field	Inversion	Field only	
ERDAT	Date on Which Record Was Created	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
NETWR	Net Value of the Sales Order in Document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
SPART	Division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
VBELN	Sales Document	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
VBTYP	SD document category	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
VKORG	Sales Organization	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
VTWEG	Distribution Channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
WAERK	SD Document Currency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 
ZZKUNNR	Customer Number 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 

Post activation , one needs to write the exit code in the source system to populate the source fields.

This is done through Tcode CMOD wherein you can then refer to the associated project and use enhancement RSAP0001.

9. Go to transaction cmod choose project ZBW220 (in your case it might be different, search for ZXXX object). Select radio button components and click on change.



10. This project has already implemented the enhancement RSAP0001 which has 4 Exits.

Change ZBW220

				Enhancement assignments	 Enhancement
Project				ZBW220	
Enhancement	Impl	■	Exp	RSAP0001 Customer function calls in the serv	
Function exit	✓ ✓	■ ■ ■ ■		EXIT_SAPLRSAP_001 EXIT_SAPLRSAP_002 EXIT_SAPLRSAP_003 EXIT_SAPLRSAP_004	

EXIT_SAPLRSAP_001 – Transaction data

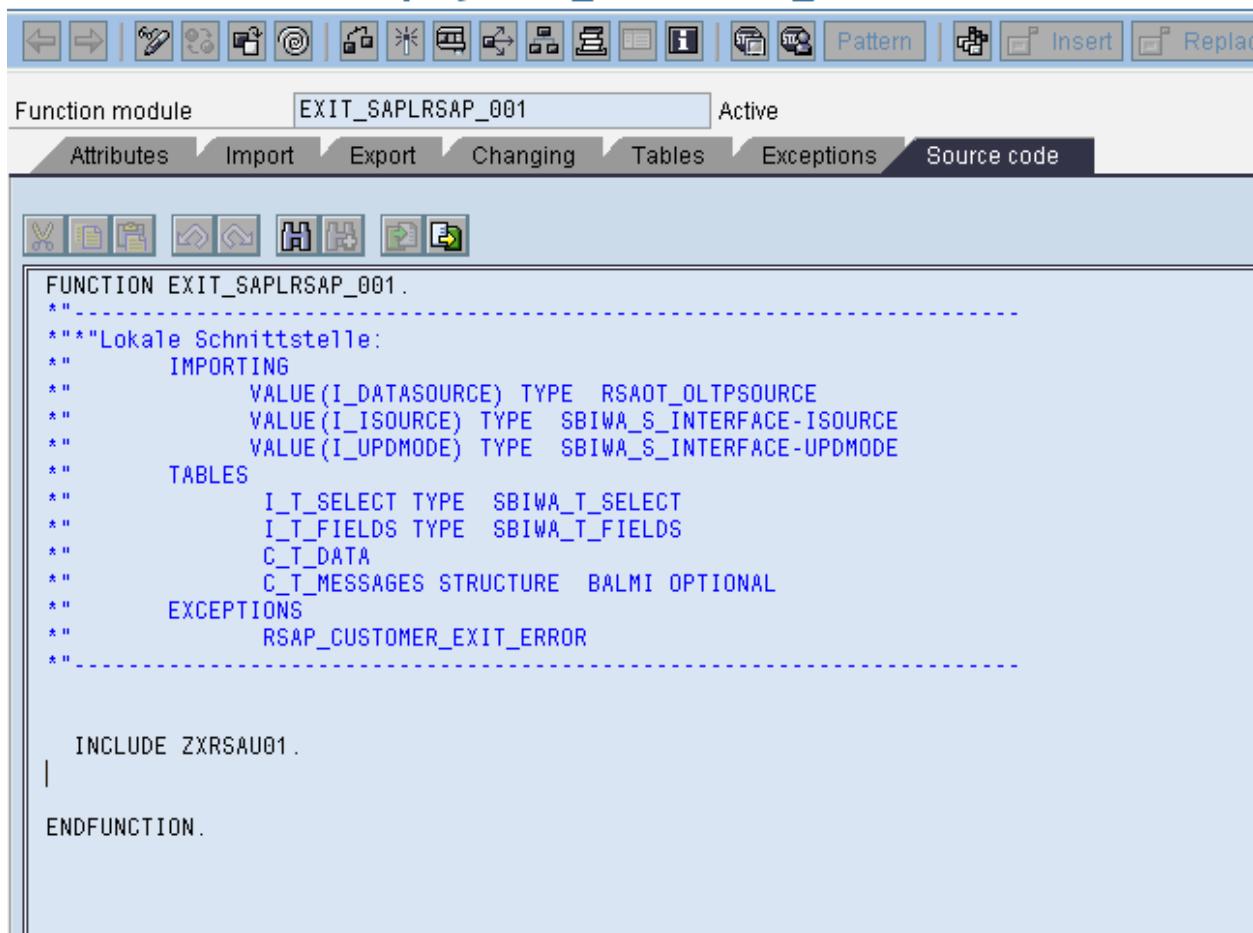
EXIT_SAPLRSAP_002 – Master Data Attributes

EXIT_SAPLRSAP_003 – Master Data Text

EXIT_SAPLRSAP_004 – Master Data Hierarchy

11. We will use the transaction data enhancement EXIT_SAPLRSAP_001. Double click on EXIT_SAPLRSAP_001.

Function Builder: Display EXIT_SAPLRSAP_001



```

FUNCTION EXIT_SAPLRSAP_001.
*"-"
**"**"Lokale Schnittstelle:
*"
      IMPORTING
*"
          VALUE(I_DATASOURCE) TYPE RSAOT_OLTPSOURCE
*"
          VALUE(I_ISOURCE) TYPE SBIWA_S_INTERFACE-ISOURCE
*"
          VALUE(I_UPDMODE) TYPE SBIWA_S_INTERFACE-UPDMODE
*"
      TABLES
*"
          I_T_SELECT TYPE SBIWA_T_SELECT
*"
          I_T_FIELDS TYPE SBIWA_T_FIELDS
*"
          C_T_DATA
*"
          C_T_MESSAGES STRUCTURE BALMI OPTIONAL
*"
      EXCEPTIONS
*"
          RSAP_CUSTOMER_EXIT_ERROR
*"

INCLUDE ZXRSAU01.

ENDFUNCTION.

```

Include as shown below will contain all the relevant code controls which define the field population. This is a generic include and the code piece needs to be controlled through datasource name as shown below in the sample code (screenshot). The existing fields along with their values are stored in the internal table C_T_DATA which is to be further modified to also include and populate values for the newly enhanced and added fields. Use the following code and activate the Include.

Sample Code for Sold to Party enhancement

Data Declaration.

```
35
36   types  : begin of lty_vbak,
37     VBELN type VBAK-VBELN,
38     KUNNR type VBAK-KUNNR,
39   end of lty_vbak.
40
41   data : l_vbak type lty_vbak,
42         lt_vbak type table of lty_vbak,
43         l_ZTR_DS03 type ZOXID30164,
44         lt_ZTR_DS03 type table of ZOXID30164.
45
```

Data Modification.

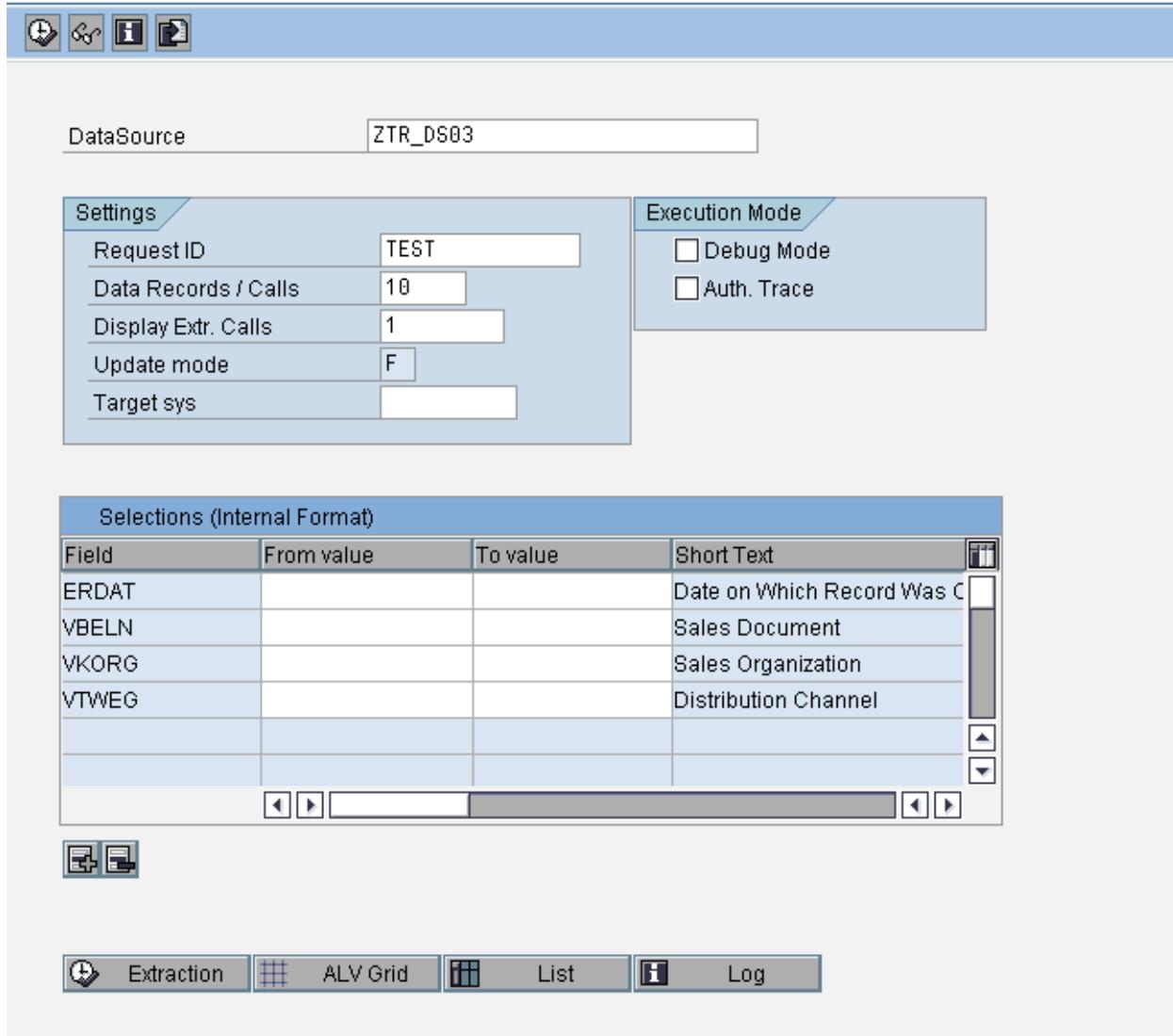
```

147   o      when 'ZTR_DS03'.
148
149   *copy C_T_DATA into temporary internal table.
150
151   lt_ZTR_DS03 = C_T_DATA[].
152
153   *get the Sold to party information from VBAK in an internal table.
154   select vbeln kunnr from vbak into table lt_vbak
155   for all entries in lt_ZTR_DS03
156   where VBELN = lt_ZTR_DS03-VBELN.
157
158   *Sort the VBAK internal table for quicker read access.
159   sort lt_vbak by vbeln.
160
161   *Modify the temporary internal table.
162   loop at lt_ZTR_DS03 into l_ZTR_DS03.
163
164   *Get Sold to party information in a work area.
165   read table lt_vbak with key vbeln = l_ZTR_DS03-vbeln into l_vbak binary search.
166
167   if sy-subrc = 0.
168   *Update the temporary internal table with sold to party information
169   l_ZTR_DS03-ZZKUNNR = l_vbak-kunnr.
170   modify lt_ZTR_DS03 from l_ZTR_DS03.
171
172   endif.
173
174   clear : l_ZTR_DS03, l_vbak.
175
176   endloop.
177
178   *Copy the temporary internal table back to C_T_DATA.
179   C_T_DATA[] = lt_ZTR_DS03.
...

```

12. In order to test the enhancement, go to transaction RSA3. Input the Datasource name and click on  Extraction.

Extractor Checker S-API



The screenshot shows the SAP Extractor Checker S-API interface. At the top, there are four icons: a magnifying glass, a double arrow, a magnifying glass with a minus sign, and a double arrow with a minus sign. Below this is a toolbar with icons for extraction, ALV grid, list, and log.

DataSource: ZTR_DS03

Settings:

Request ID	TEST
Data Records / Calls	10
Display Extr. Calls	1
Update mode	F
Target sys	

Execution Mode:

- Debug Mode
- Auth. Trace

Selections (Internal Format):

Field	From value	To value	Short Text
ERDAT			Date on Which Record Was C
VBELN			Sales Document
VKORG			Sales Organization
VTWEG			Distribution Channel

Log:

Extraction ALV Grid List Log

13. The Sold to party (Customer Number 1) field is correctly populated from VBAK table.

Result of Extraction of DataSource ZTR_DS03

Data Package (Number of Recs) 1 (10)								
Sales Doc	Created on	DocCa	Netvalue	Curr.	SOrg.	DChl	Dw	Customer
5601	16.10.1998	C	63.000,00	DEM	1000	12	00	1174
5602	16.10.1998	C	536.600,00	DEM	1000	10	00	1321
5603	19.10.1998	C	262.048,00	DEM	1000	12	00	1001
5604	19.10.1998	C	110.096,00	DEM	1000	12	00	1175
5606	03.11.1998	C	168.957,95	DEM	1000	10	00	2130
5607	04.11.1998	C	62.220,00	DEM	1000	10	00	1172
5608	04.11.1998	C	6.160,00	DEM	1000	10	00	1172
5609	04.11.1998	C	177.144,00	DEM	1000	12	00	1033
5610	04.11.1998	C	94.594,50	DEM	1000	12	00	2140
5611	04.11.1998	C	39.580,24	USD	1000	12	00	1901

Now go to BW system -> RSA1 -> Datasource -> ZTR_DS03 datasource -> Right click-> Replicate metadata.

Active Version		Executable	Edited Version
General Info.		Extraction	Fields
Field Attributes			
Pos.	Field	Descript.	
2	VBELN	Sales Docum	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CHAR 10
3	ERDAT	Created on	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> DATS 8
4	VBTYP	Document ca	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CHAR 1
5	NETWR	Net value	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CURR 15
6	WAERK	Doc. Currency	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CUKY 5
7	VKORG	Sales Org.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CHAR 4
8	VTWEG	Distr. Channe	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CHAR 2
9	SPART	Division	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CHAR 2
10	ZZKUNNR	Customer	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> CHAR 10

This will bring newly added field to BW datasource. Now to populate data in ZSD_O01 and ZSC_C01 for the 'Customer Number' follow the dataload steps mentioned in earlier exercises.

Conclusion: We have enhanced the data source ZTR_DS03 with sold to party information found in VBAK table.

5.4 Creation of Different types of DSOs

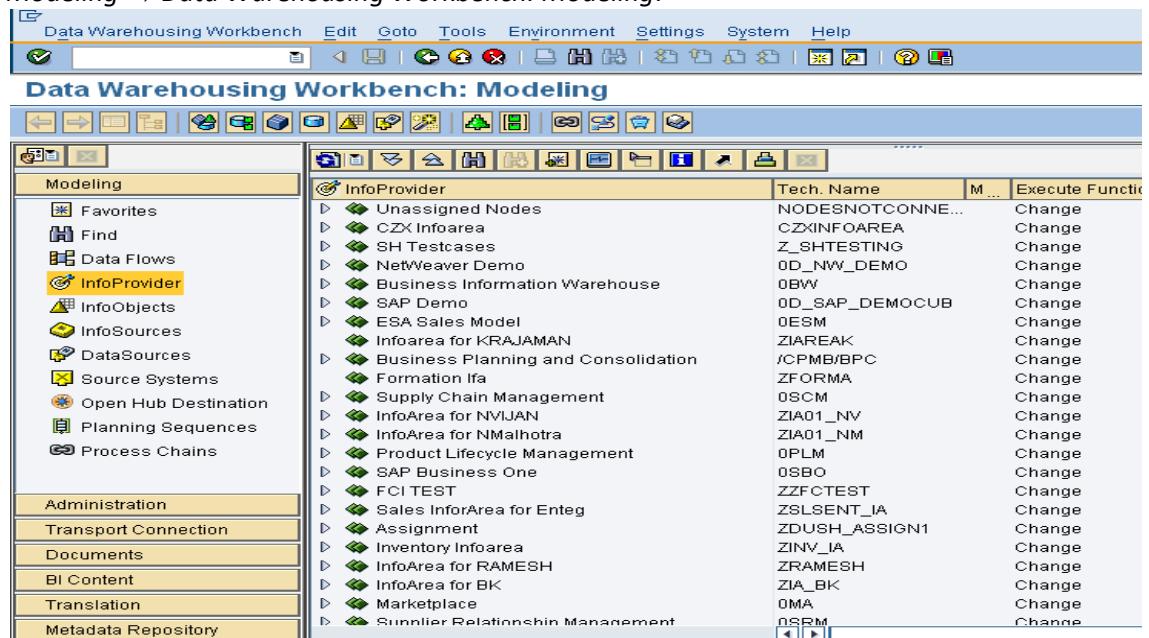
Use:

A DataStore object stores consolidated and cleaned-up data (for example, transaction data or master data) at document level (basic level). This data can be evaluated using a BEx query. A DataStore object contains key fields (for example, document number, document item) and data fields that can also contain character fields (for example, order status, customer) in addition to key figures.

Unlike multi-dimensional data storage using InfoCubes, the data in DataStore objects is stored in transparent, flat database tables. Fact and dimension tables are not created.

Procedure:

13. Log onto the BI system.
14. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.

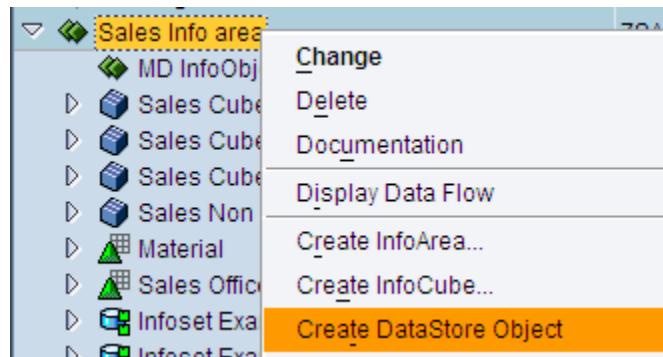


Various functional areas are displayed at the left in the Data Warehousing Workbench. In the functional area *Modeling* you can display different views on the objects used in the

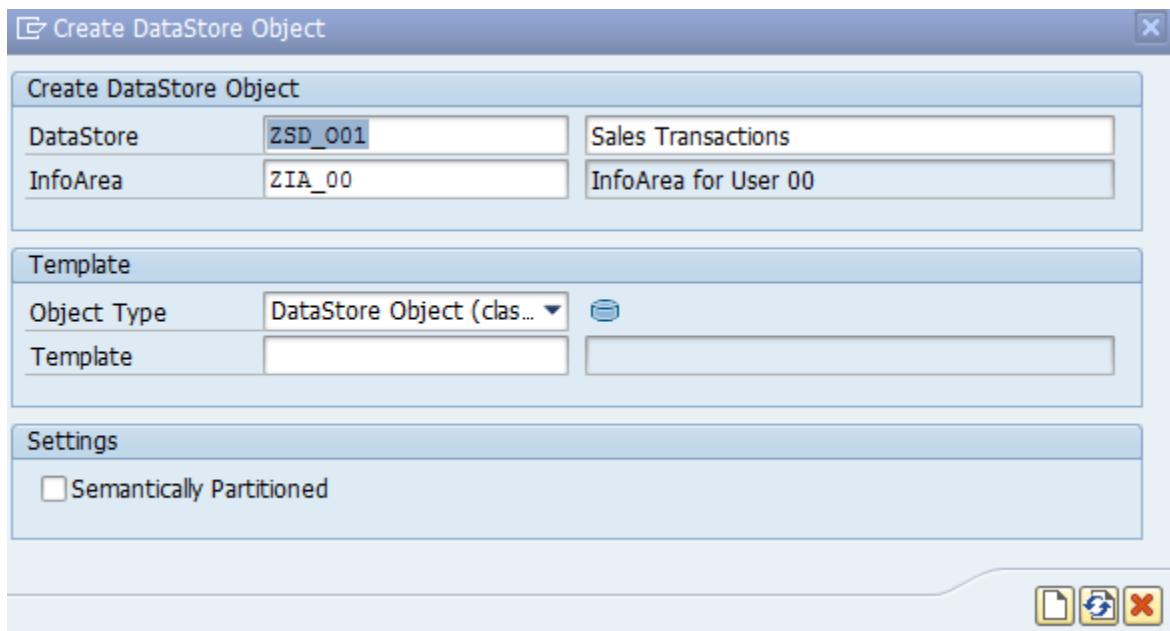
Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree.

15. Under modeling, choose  **InfoProvider**. The Infoprovider tree is displayed.

16. Right Click on the Sales Infoarea and Click on Create Data Store Object.



17. On the next screen, enter a technical name **ZSD_Onn**. Give Description as *Standard DSO for Sales*. Click on the Create  Button



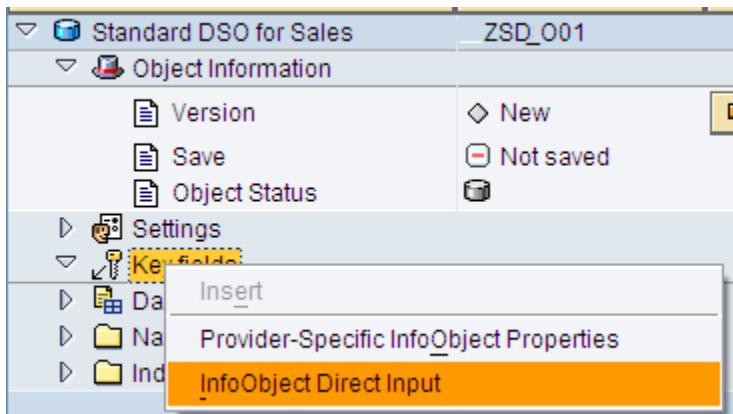
18. Below Screen will appear.

DataStore Object		Techn. name / value	Fu...	O...	Appe...	Data...	L...	Key FI...	C...
▽	⌚ Sales Transactions	ZSD_001							
▽	⌚ Object Information								
	⌚ Version	◊ In Process							
	⌚ Save	⊕ Saved							
	⌚ Revised Version	= Active Version							
	⌚ Object Status	⌚ Active, executable							
▷	⌚ Settings								
▷	⌚ Key fields								
▷	⌚ Data Fields								
▷	⌚ Navigation Attributes								
▷	⌚ Indexes								

19. If you open the Settings drop down you will see type of the Datastore object as Standard.

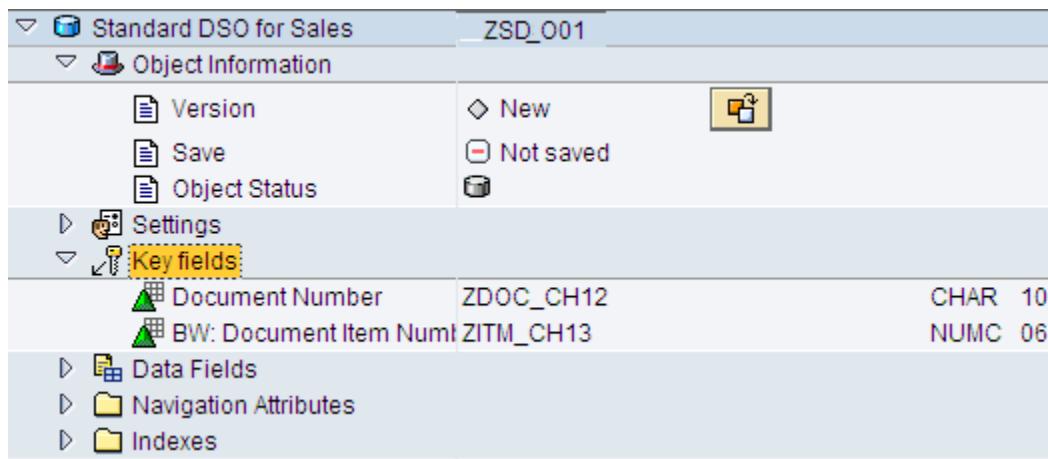
DataStore Object		Techn. name / value	Fu...	O...	Appe...	Data...	L...	Key FI...	C...
▽	⌚ Sales Transactions	ZSD_001							
▽	⌚ Object Information								
	⌚ Version	◊ In Process							
	⌚ Save	⊕ Saved							
	⌚ Revised Version	= Active Version							
	⌚ Object Status	⌚ Active, executable							
▽	⌚ Settings								
	⌚ Type of DataStore Object	Standard							
	⌚ SID Generation	During Activation							
	⌚ In-Memory								
	⌚ Unique Data Records								
	⌚ Activate Data Automatically								
▷	⌚ Options for 3.x Data Flows								

20. Right Click on the Key Fields dropdown and Select *Infoobject direct Input* from the dropdown menu.

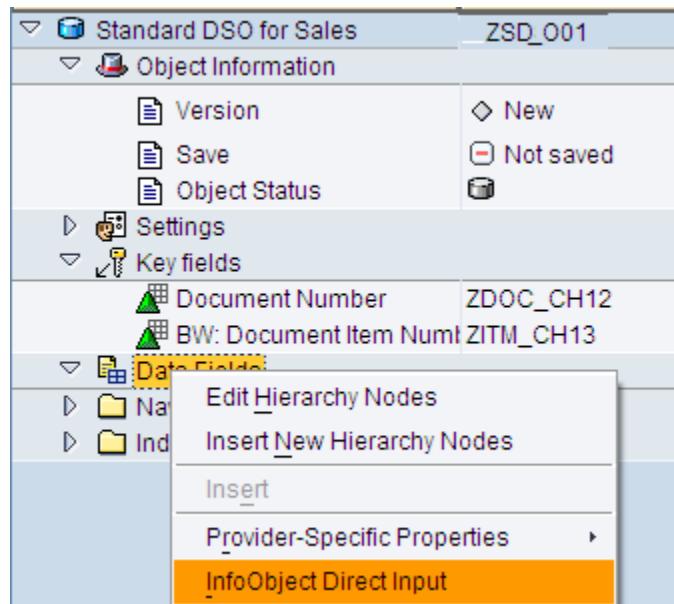


21. In the next Screen Add Infoobjects ZDOC_CHnn and ZITM_CHnn and Click Continue .

22. You will see the following Screen



23. Similarly right click on the data fields' dropdown and Choose Infoobject direct input from the context menu and add following fields in the box that appears. Choose Continue



ZDAT_CH04	 les Document Date
ZMAT_CH05	Material
ZCUS_CH08	Customer / Sold to Party
ZVER_CH11	Version
ZSPR_CH03	Sales Person
ZORG_CH06	Sales Organisation
ZOFF_CH07	Sales Office
ZQUAN_K01	Sales Quantity
ZAMT_K01	Sales Amount
ZPLANT	Plant

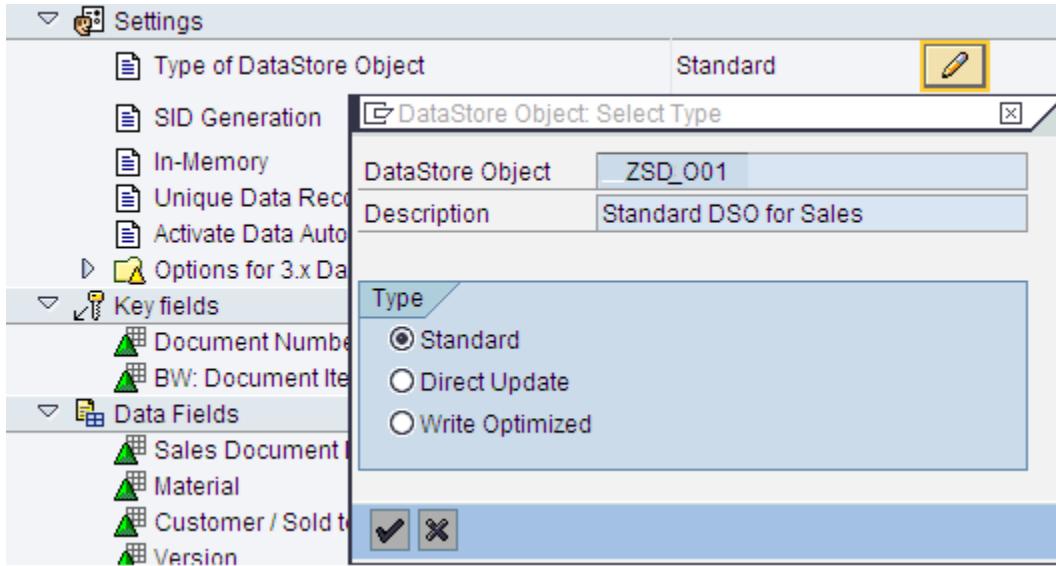
24. You will be able to see the below screen.

Standard DSO for Sales	ZSD_001
Object Information	
Version	<input type="checkbox"/> In Process
Save	<input type="checkbox"/> Not saved
Object Status	<input checked="" type="checkbox"/> Inactive, not exec...
Settings	
Key fields	
Document Number	ZDOC_CH12
BW: Document Item Number	ZITM_CH13
Data Fields	
Sales Document Date	ZDAT_CH04
Material	ZMAT_CH05
Customer / Sold to Party	ZCUS_CH08
Version	ZVER_CH11
Sales Person	ZSPR_CH03
Sales Organisation	ZORG_CH06
Sales Office	ZOFF_CH07
Sales Quantity	ZQUAN_K01
Sales Amount	ZAMT_K01
Unit of measure	0UNIT
Currency key	0CURRENCY
Plant	ZPLANT

25. Click on Save  and then Activate .

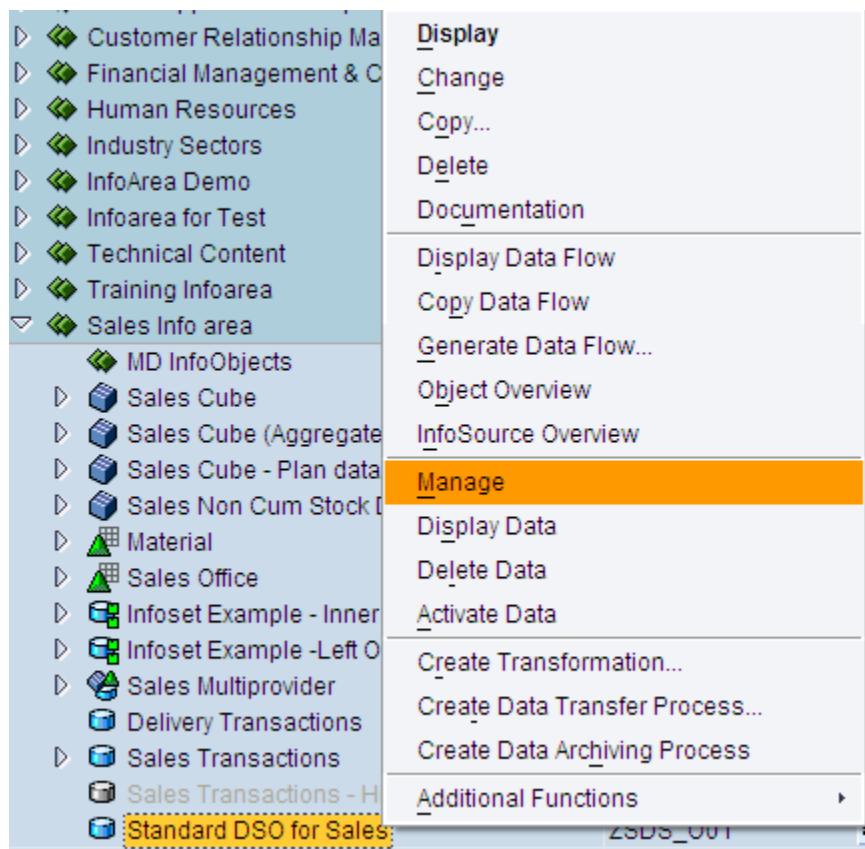
Repeat above steps and Create a Write optimized DSO and Direct Update DSO and give it names as ZWD_Onn (Write Optimized DSO for Sales) and ZDU_Onn (Direct Update DSO for Sales) respectively. The

only difference will be you will have to Change the Type of Data store Object in Settings dropdown by Clicking on the Icon  as Shown below

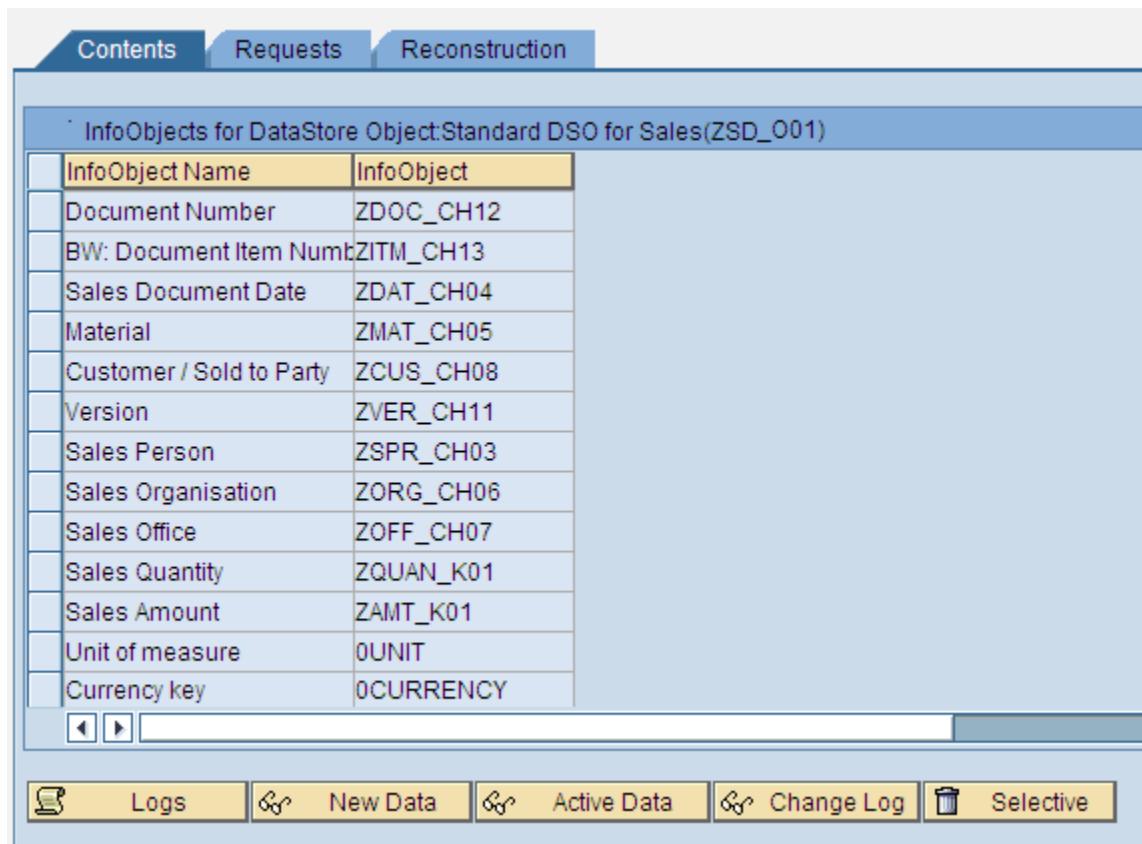


Note

For all the 3 types of DSOs once created right click on the respective DSO and Choose option **Manage** from the Context menu.



Check the Number of buttons at the bottom of **Contents** tab. Below Screenshot shows New data, Active Data and Change log buttons as it is for a standard DSO. Note the difference in Write optimized and Direct update DSO.



The screenshot shows a SAP BW interface for managing InfoObjects. The title bar has tabs for 'Contents', 'Requests', and 'Reconstruction'. The main area displays a table titled 'InfoObjects for DataStore Object:Standard DSO for Sales(ZSD_001)'. The table lists various InfoObject names and their corresponding InfoObject codes:

InfoObject Name	InfoObject
Document Number	ZDOC_CH12
BW: Document Item Numbr	ZITM_CH13
Sales Document Date	ZDAT_CH04
Material	ZMAT_CH05
Customer / Sold to Party	ZCUS_CH08
Version	ZVER_CH11
Sales Person	ZSPR_CH03
Sales Organisation	ZORG_CH06
Sales Office	ZOFF_CH07
Sales Quantity	ZQUAN_K01
Sales Amount	ZAMT_K01
Unit of measure	0UNIT
Currency key	0CURRENCY

Below the table are navigation buttons: back, forward, and search. At the bottom are several action buttons: Logs, New Data, Active Data, Change Log, and Selective.

Write Optimised DSO.

Selectable Data Targets for Administration

Name	D...	Technical Name	Table Type
Sales Transactions - History (Write Optimise)		ZWD_002	DataStore Object

Contents Requests Reconstruction

InfoObjects for DataStore Object: Sales Transactions - History (Write Optimise)(ZWD_002)

InfoObject Name	InfoObject
Request GUID	0REQUEST
Data Package	0DATAPAKID
Data Record Number	0RECORD
BW: Document Number	0DOC_NUM
BW: Document Item Number	0DOC_ITEM
BW Delta Process: Update	0RECORDMODE
Sales Document Date	ZDAT_CH04
Material	ZMAT_CH05
Customer / Sold to Party	ZCUS_CH08
Version	ZVER_CH11

Logs Active Data Selective

Direct Update DSO –

Selectable Data Targets for Administration

Name	D...	Technical Name	Table Type
Sales Transactions - Direct Update DSO		ZDU_001	Transactional DataStore Object

Contents Requests Reconstruction

InfoObjects for DataStore Object: Sales Transactions - Direct Update DSO(ZDU_001)

InfoObject Name	InfoObject
BW: Document Number	0DOC_NUM
BW: Document Item Numbr	0DOC_ITEM
BW Delta Process: Update	0RECORDMODE
Sales Document Date	ZDAT_CH04
Material	ZMAT_CH05
Customer / Sold to Party	ZCUS_CH08
Version	ZVER_CH11
Unit of measure	0UNIT
Currency key	0CURRENCY
Sales Person	ZSPR_CH03

Logs Active Data Selective

Conclusion:

- We have created a Standard, Write Optimized and Direct update Data store Objects. Also checked various types of tables created underneath the DSO.

Creating Different types of Infocubes

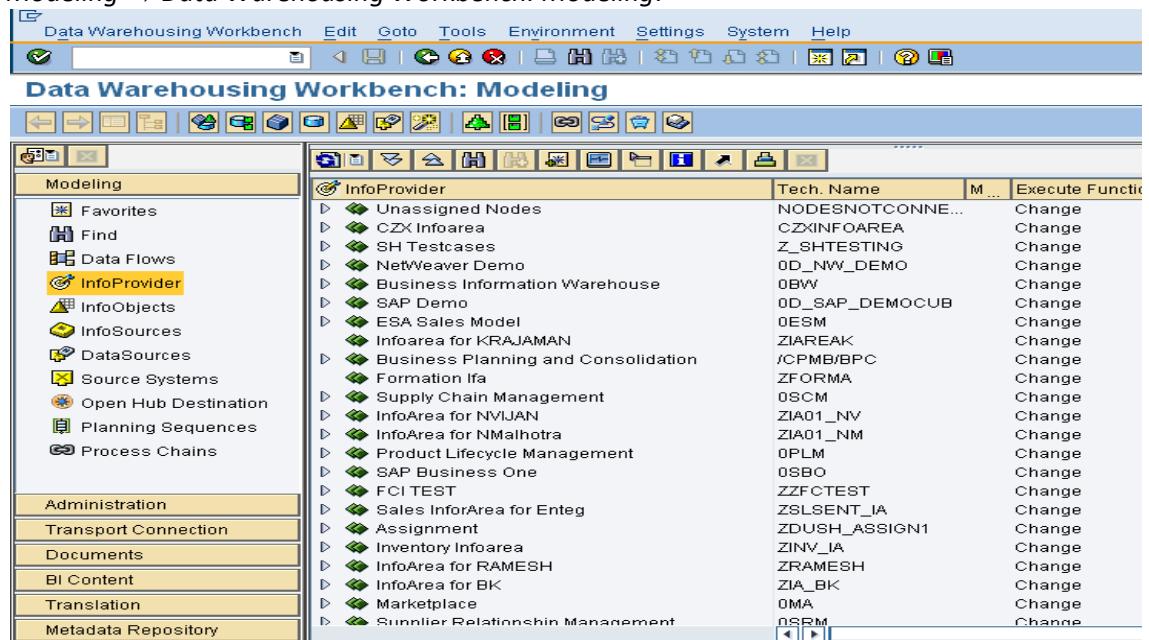
Use:

Infocubes are used as data targets or info providers in BW reporting. They store data in star schema format. Dimensions store characteristics information whereas fact tables store Key figure values.

Standard Cube

Procedure:

26. Log onto the BI system.
27. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.

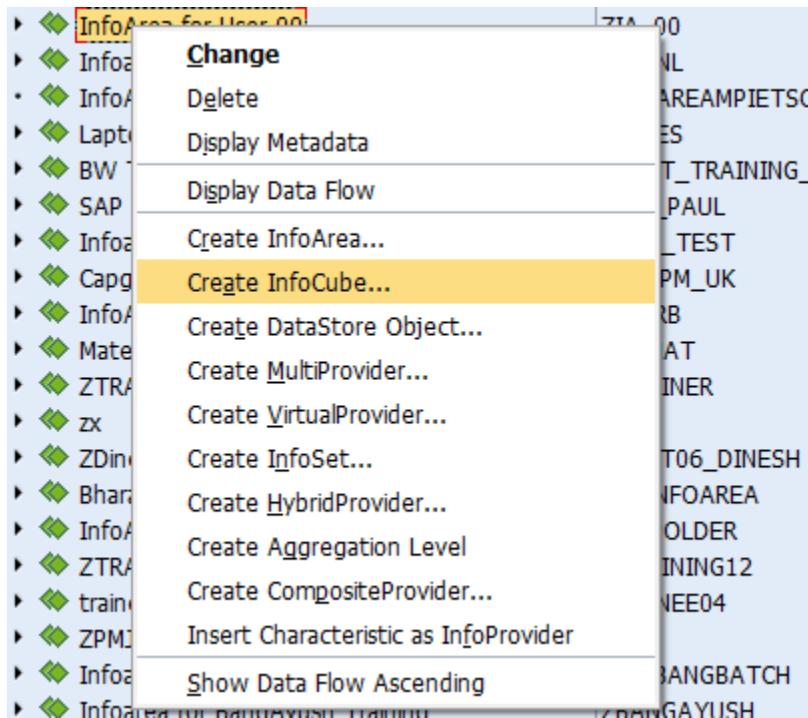


Various functional areas are displayed at the left in the Data Warehousing Workbench. In the functional area *Modeling* you can display different views on the objects used in the

Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree.

28. Under modeling, choose  **InfoProvider**. The Infoprovider tree is displayed.

29. Right Click on your InfoArea and Click on Create Infocube.



30. On the next screen, enter a technical name **ZSC_CConn** Give Description as *Sales Cube*. Make sure radio button for Standard Infocube is selected as shown below. Click on the

Create  Button

Create InfoCube

InfoCube	ZSC_C01	
InfoArea	ZIA_00	InfoArea for User 00

Template

Object Type	InfoCube	
Template		

InfoProvider Type

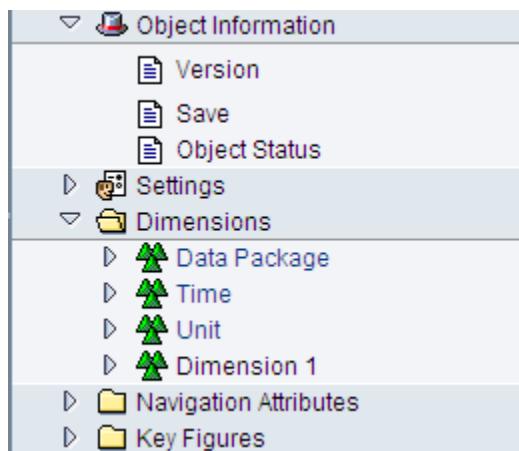
<input checked="" type="checkbox"/> Standard InfoCube	With Physical Data Store
BWA Status	InfoCube stores its data in the database
<input type="checkbox"/> Semantically Partitioned	
<input type="checkbox"/> VirtualProvider	Without Physical Data Store

Settings

Name of Delta Cache Class	CL_RSD_DC_SUPPORT_INFOCUBE
<input type="checkbox"/> Do Not Transform Selection Conditions	
<input checked="" type="checkbox"/> Supports Navigation Attributes	
<input type="checkbox"/> Derive Selection Conditions from Attribute	

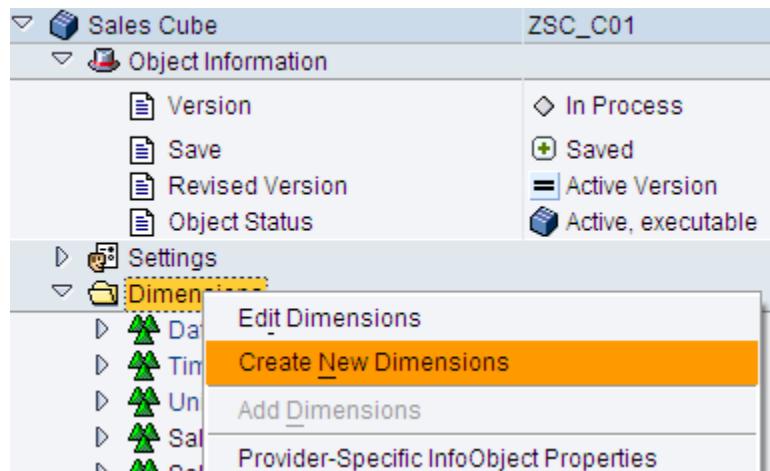
31. Below Screen will appear.



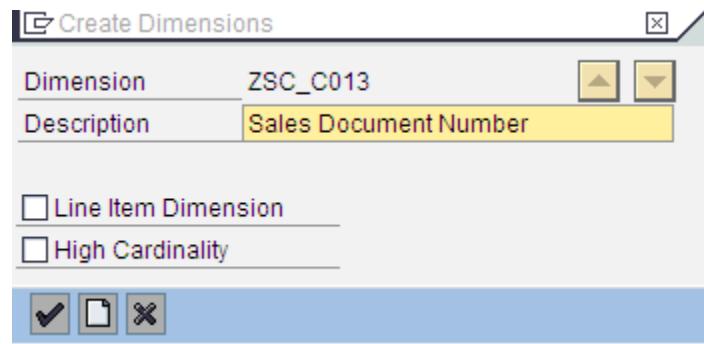
32. Right click on Dimension1 and goto properties from the Context Menu and change the description of the Dimension1 to Sales organization



33. Right Click on the Dimensions and Select Create New Dimension from the Context menu



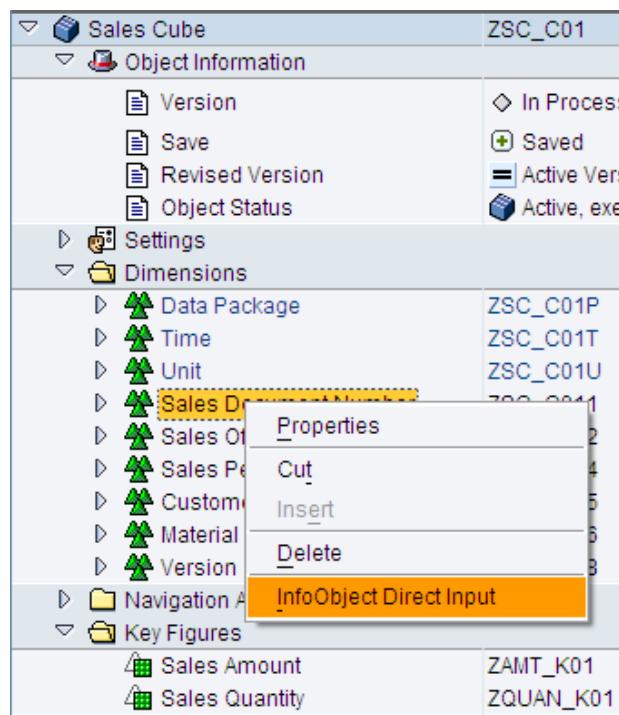
34. Give a description for the dimension and say Continue



35. Similarly create dimensions Sales office, Sales Person, Customer, Material and Version.

▷	cube icon	Sales Cube	ZSC_C01
▷	document icon	Object Information	
	list icon	Version	◊ In Process
	list icon	Save	⊕ Saved
	list icon	Revised Version	= Active Version
	list icon	Object Status	● Active, execut
▷	hand icon	Settings	
▷	folder icon	Dimensions	
▷	green triangle icon	Data Package	ZSC_C01P
▷	green triangle icon	Time	ZSC_C01T
▷	green triangle icon	Unit	ZSC_C01U
▷	green triangle icon	Sales Document Number	ZSC_C011
▷	green triangle icon	Sales Office	ZSC_C012
▷	green triangle icon	Sales Person	ZSC_C014
▷	green triangle icon	Customer	ZSC_C015
▷	green triangle icon	Material	ZSC_C016
▷	green triangle icon	Version	ZSC_C018

36. Right Click on Sales Document number dimension and choose Infoobject Direct Input from the context menu



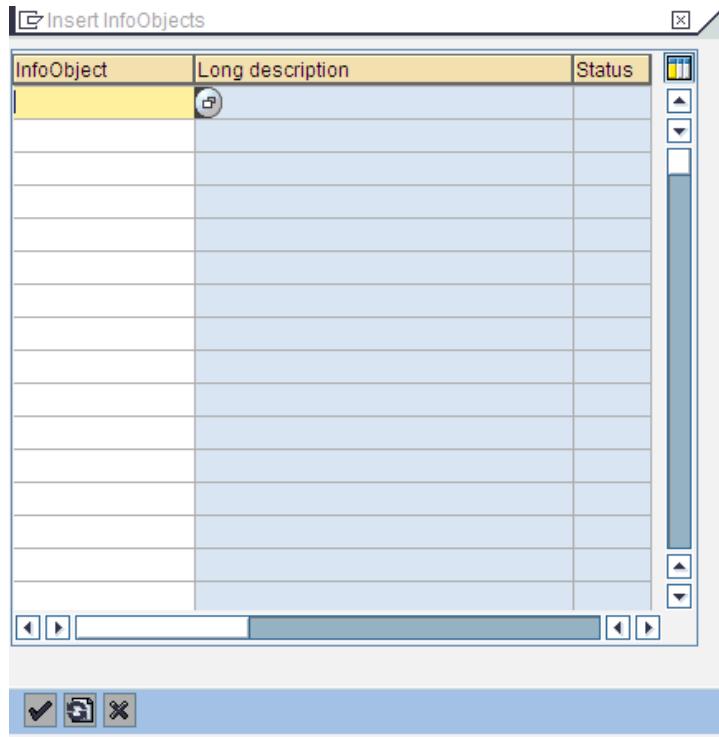
The screenshot shows the SAP BW InfoObject Direct Input dialog box, which is overlaid on a list of dimensions. The dialog has the following options:

- Properties
- Cut
- Insert
- Delete
- InfoObject Direct Input

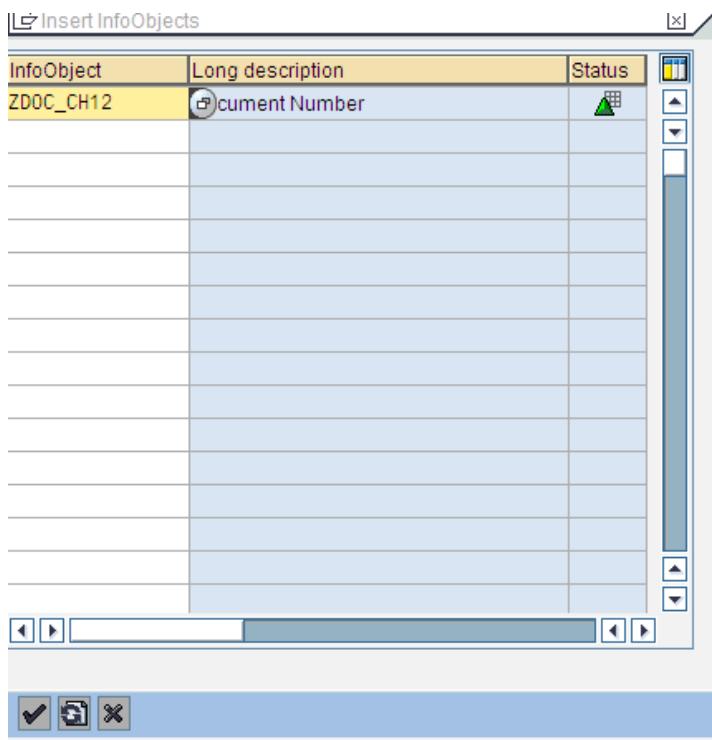
The "InfoObject Direct Input" option is highlighted with an orange background.

Dimension	Object Name
Data Package	ZSC_C01P
Time	ZSC_C01T
Unit	ZSC_C01U
Sales Dimension	(highlighted)
Sales Order	
Sales Period	
Customer	
Material	
Version	

37. You will see the following Screen



38. Add infoObject ZDOC_CHnn and Choose Continue



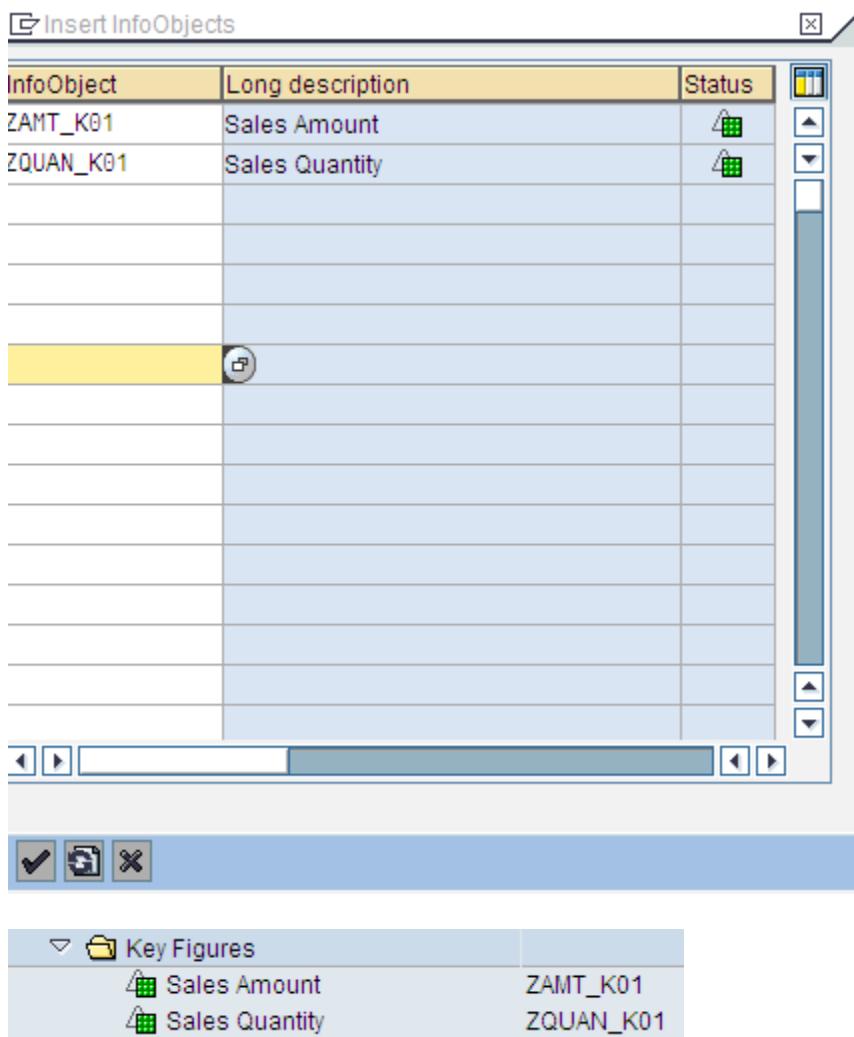
39. You will be able to see the below screen.

Sales Cube	ZSC_C01
Object Information	
Version	◊ In Process
Save	⊕ Saved
Revised Version	= Active Version
Object Status	⌚ Active, executable
Settings	
Dimensions	
Data Package	ZSC_C01P
Time	ZSC_C01T
Unit	ZSC_C01U
Sales Document Number	ZSC_C011
Document Number	ZDOC_CH12

40. Similarly add below Infoobjects to the other dimensions as per the screenshot below.

▼  Sales Office	ZSC_C012
 Sales Office	ZOFF_CH07
 Sales Organisation	ZORG_CH06
▼  Sales Person	ZSC_C014
 Sales Person	ZSPR_CH03
▼  Customer	ZSC_C015
 Customer / Sold to Party	ZCUS_CH08
▼  Material	ZSC_C016
 Material	ZMAT_CH05
 Plant	ZPLANT
▼  Version	ZSC_C018
 Version	ZVER_CH11

41. Right Click on the Key Figures Folder and Choose Infoobject Direct Input from the Context menu as above and add following 2 Key Figures and say continue.



InfoObject	Long description	Status
ZAMT_K01	Sales Amount	4
ZQUAN_K01	Sales Quantity	4

✓
↻
✖

▼
📁 Key Figures

- ▲ Sales Amount ZAMT_K01
- ▲ Sales Quantity ZQUAN_K01

42. Add following time characteristics to the Time Dimension.

Time	ZSC_C01T
⌚ Calendar day	0CALDAY
⌚ Calendar year/month	0CALMONTH
⌚ Calendar year	0CALYEAR

43. Open the dropdown for navigation attribute and click the checkbox next to the Infoobject ZCUS_CH08_ZCN_CH15.

Navigation Attributes		
▲ ZCUS_CH08_ZCN_CH15	ZCUS_CH08_ZCN...	<input checked="" type="checkbox"/>
▲ Person Responsible	ZOFF_CH07_ZSP...	<input type="checkbox"/>
▲ Company Code	ZPLANT_ZCOMPC...	<input type="checkbox"/>

44. Now you will be able to see below structure of the cube

▽ Sales Cube	ZSC_C01
▽ Object Information	
Version	◊ In Process
Save	⊕ Saved
Revised Version	= Active Version
Object Status	█████ Active, executable
▷ Settings	
▽ Dimensions	
▷ Data Package	ZSC_C01P
▽ Time	ZSC_C01T
Calendar day	0CALDAY
Calendar year/month	0CALMONTH
Calendar year	0CALYEAR
▽ Unit	ZSC_C01U
Currency key	0CURRENCY
Unit of measure	0UNIT
▽ Sales Document Number	ZSC_C011
Document Number	ZDOC_CH12
▽ Sales Office	ZSC_C012
Sales Office	ZOFF_CH07
Sales Organisation	ZORG_CH06
▽ Sales Person	ZSC_C014
Sales Person	ZSPR_CH03
▽ Customer	ZSC_C015
Customer / Sold to Party	ZCUS_CH08
▽ Material	ZSC_C016
Material	ZMAT_CH05
Plant	ZPLANT
▽ Version	ZSC_C018
Version	ZVER_CH11
▽ Navigation Attributes	
ZCUS_CH08_ZCN_CH15	ZCUS_CH08_ZCN... <input checked="" type="checkbox"/>
Person Responsible	ZOFF_CH07_ZSP... <input type="checkbox"/>
Company Code	ZPLANT_ZCOMPC... <input type="checkbox"/>

45. Click on Save and Activate .

Similarly create 2 more Standard Cubes ZSC_C02 (Sales Cube (Aggregated) for RRI) and ZSC_C03 (Sales Non Cum Stock Data) with following fields.

ZSC_C02

↳  Sales Cube (Aggregated) for RRI	ZSC_C02
↳  Object Information	
 Version	◊ In Process
 Save	⊕ Saved
 Revised Version	= Active Version
 Object Status	◆ Active, executa
↳  Settings	
↳  Dimensions	
↳  Data Package	ZSC_C02P
↳  Time	ZSC_C02T
 Calendar year	0CALYEAR
 Calendar year/month	0CALMONTH
↳  Unit	ZSC_C02U
↳  Sales Office	ZSC_C022
 Sales Organisation	ZORG_CH06
↳  Customer	ZSC_C025
 Customer / Sold to Party	ZCUS_CH08
↳  Material	ZSC_C026
 Material	ZMAT_CH05
 Plant	ZPLANT
↳  Version	ZSC_C028
 Version	ZVER_CH11
↳  Navigation Attributes	
↳  Key Figures	
 Sales Amount	ZAMT_K01
 Sales Quantity	ZQUAN_K01

ZSC_C03

↳  Sales Non Cum Stock Data	ZSC_C03
↳  Object Information	
 Version	◊ In Process
 Save	⊕ Saved
 Revised Version	= Active Version
 Object Status	⌚ Active, execut
↳  Settings	
↳  Dimensions	
↳  Data Package	ZSC_C03P
↳  Time	ZSC_C03T
 Calendar year/month	0CALMONTH
↳  Unit	ZSC_C03U
 Base Unit of Measure	0BASE_UOM
↳  Plant	ZSC_C031
 Plant	ZPLT_CH16
↳  Navigation Attributes	
↳  Key Figures	
 Total Stock	ZTST_K03
 Received Stock	ZRST_K02
 Issued Stock	ZIST_K03

Realtime Infocube

Referring to the Steps above Create a real time cube with following Dimensions and Key figures and give the name of the cube as ZPLAN_C02 (Sales Cube - Plan data).

The difference will be only in the step 5 above. You will have to click on the Check box for realtime Cube in step 5 as shown below.

Create InfoCube

InfoCube	ZPLAN_C02	Sales Cube - Plan Data
InfoArea	ZIA_00	InfoArea for User 00

Template

Object Type	InfoCube	
Template		

InfoProvider Type

<input checked="" type="checkbox"/> Standard InfoCube	With Physical Data Store
<input checked="" type="checkbox"/> Real Time	
BWA Status	InfoCube stores its data in the database
<input type="checkbox"/> Semantically Partitioned	
<input type="checkbox"/> VirtualProvider	Without Physical Data Store

Settings

Name of Delta Cache Class	CL_RSD_DC_SUPPORT_INFOCUBE
<input type="checkbox"/> Do Not Transform Selection Conditions	
<input checked="" type="checkbox"/> Supports Navigation Attributes	
<input type="checkbox"/> Derive Selection Conditions from Attribute	

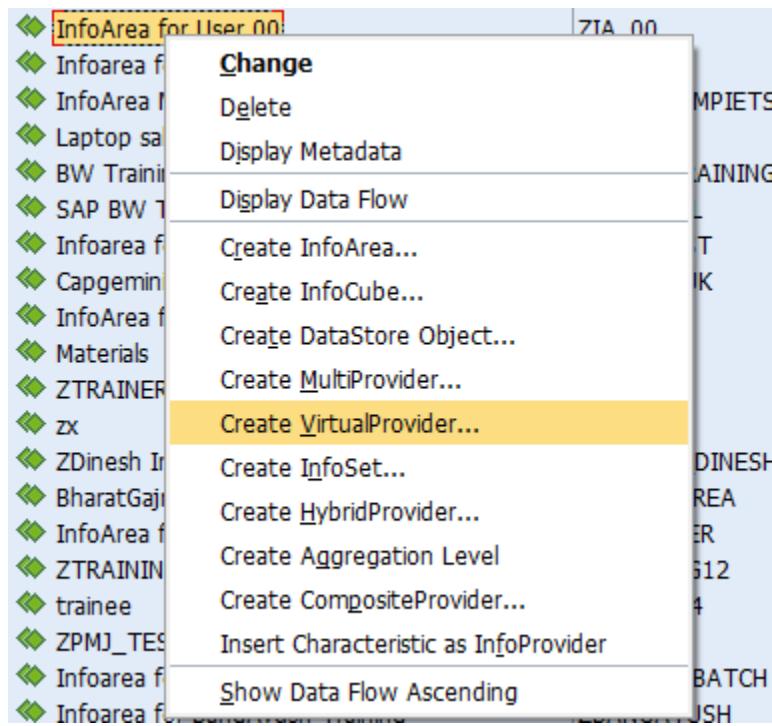
  

InfoCube	Techn. name / value	Fu...	O...	Appe...	Data...	L	Key Fi...	C...	N...	Ag...	Ex...	Reference...	Unit	Alias Name	Cu...
▽ Sales Cube - Plan data	ZPLAN_C02														
▽ Object Information															
Version	◊ In Process														
Save	<input checked="" type="checkbox"/> Saved														
Revised Version	<input type="checkbox"/> Active Version														
Object Status	Active, executable														
▷ Settings															
▽ Dimensions															
Data Package	ZPLAN_C02P														
Change run ID	0CHNGID	NUMC	14												
Record type	ORECORDTP	NUMC	01												
Request ID	OREQUID	CHAR	30												
Time	ZPLAN_C02T														
Calendar year	0CALMONTH	NUMC	06												
Calendar year	0CALYEAR	NUMC	04												
Unit	ZPLAN_C02U														
Currency key	0CURRENCY	CUKY	05												
Unit of measu	0UNIT	UNIT	03												
Sales Office	ZPLAN_C021														
Sales Office	ZOFF_CH07	CHAR	04												
Sales Organis	ZORG_CH06	CHAR	04												
Version	ZPLAN_C022														
Version	ZVER_CH11	CHAR	03												
▷ Navigation Attributes															
▽ Key Figures															
Sales Amount	ZAMT_K01	CURR	09	Amount	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SUM	SUM				0CURREN...	ZAMT_K01		
Sales Quantity	ZQUAN_K01	QUAN	09	Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SUM	SUM				0UNIT	ZQUAN_K01		

Note: InfoObjects in Unit dimension get populated automatically based on the key figures that you choose.

Virtual Infocube

1. Refer the steps for Standard Cube till Step 4. In Step 4 Choose Create Virtual Provider instead of Infocube.



2. Give the name and description of the cube as ZSV_C01 and Sales Cube - Virtual Provider. Choose the first radio button for Virtual Provider based on Data transfer Process. Add the Cube ZPLAN_C02 in Field template as shown below. Click on Create  button.

Create InfoCube

InfoCube	ZSV_C01	Sales Cube - Virtual Provider
InfoArea	ZIA_00	InfoArea for User 00

Template

Object Type	InfoCube	
Template	ZPLAN_C02	

InfoProvider Type

<input type="checkbox"/> Standard InfoCube	With Physical Data Store
<input checked="" type="checkbox"/> VirtualProvider	Without Physical Data Store
<input checked="" type="radio"/> Based on Data Transfer Process for Direct Access	
<input type="radio"/> Based on BAPI	
With Source System	<input type="text"/>
<input type="checkbox"/> Execute Conversion Exit(s)	
<input type="radio"/> Based on Function Module	

Settings

Name of Delta Cache Class	<input type="text"/>
<input type="checkbox"/> Do Not Transform Selection Conditions	
<input type="checkbox"/> Supports Navigation Attributes	
<input type="checkbox"/> Derive Selection Conditions from Attribute	

3. You will see that all the Dimensions and Key figures from Infocube ZPLAN_C02 are transferred to this cube. Just Click on Save and activate .

▽  Sales Cube - Virtual Provider	ZSV_C01
▽  Object Information	
 Version	◊ New
 Save	□ Not saved
 Object Status	○ Inactive, not ex
▷  Settings	
▽  Dimensions	
▷  Data Package	ZSV_C01P
▷  Time	ZSV_C01T
 Calendar year/month	0CALMONTH
 Calendar year	0CALYEAR
▽  Unit	ZSV_C01U
 Currency key	0CURRENCY
 Unit of measure	0UNIT
▽  Sales Office	ZSV_C011
 Sales Office	ZOFF_CH07
 Sales Organisation	ZORG_CH06
▽  Version	ZSV_C012
 Version	ZVER_CH11
▷  Navigation Attributes	
▽  Key Figures	
 Sales Amount	ZAMT_K01
 Sales Quantity	ZQUAN_K01

Conclusion:

We have created different types of Cubes: Standard, Real time and Virtual.

List of Tables for an InfoCube

Use:

As infocube follows extended star schema architecture it contains multiple database tables. Let's see which those tables are

Procedure –

For any Infocube, there are 2 fact tables – E and F. The D tables are Dimension Tables.

Standard tables of infocube are:

/B10/F -- Fact Table (Before Compression)

/B10/E -- Fact Table (After Compression)

/B10/P -- Dimension Table - Data Package

/B10/T -- Dimension Table - Time

/B10/U -- Dimension Table - Unit

/B10/1, 2, 3.....A,B,C,D : -- Dimension Tables

For Example:

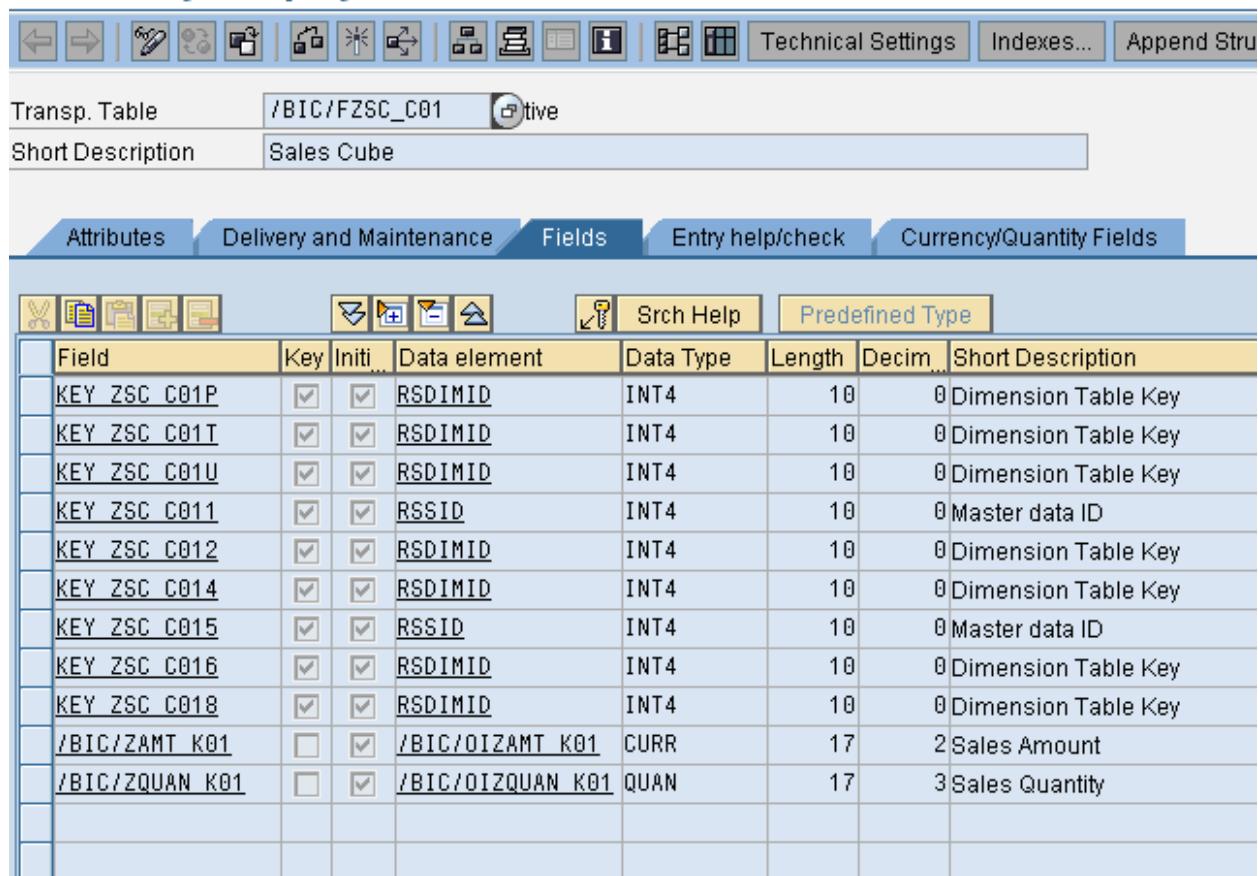
Below is the list of all the tables generated for cube ZSC_C01.

Tables	Description
/BIC/DZSC_C011	Sales Document Number
/BIC/DZSC_C012	Sales Office
/BIC/DZSC_C014	Sales Person
/BIC/DZSC_C015	Customer
/BIC/DZSC_C016	Material
/BIC/DZSC_C018	Version
/BIC/DZSC_C01P	Data Package
/BIC/DZSC_C01T	Time
/BIC/DZSC_C01U	Unit
/BIC/EZSC_C01	Sales Cube
/BIC/FZSC_C01	Sales Cube
/BIC/VZSC_C01F	Factview Infocube - ZSC_C01

View of F - Table of the Cube

When the requests in the cube are not compressed it exists in the F fact table. When you load data in a cube, the data is stored in the F fact table by default. If the cube is compressed, the data in the F fact table is transferred to the E fact table.

Dictionary: Display Table



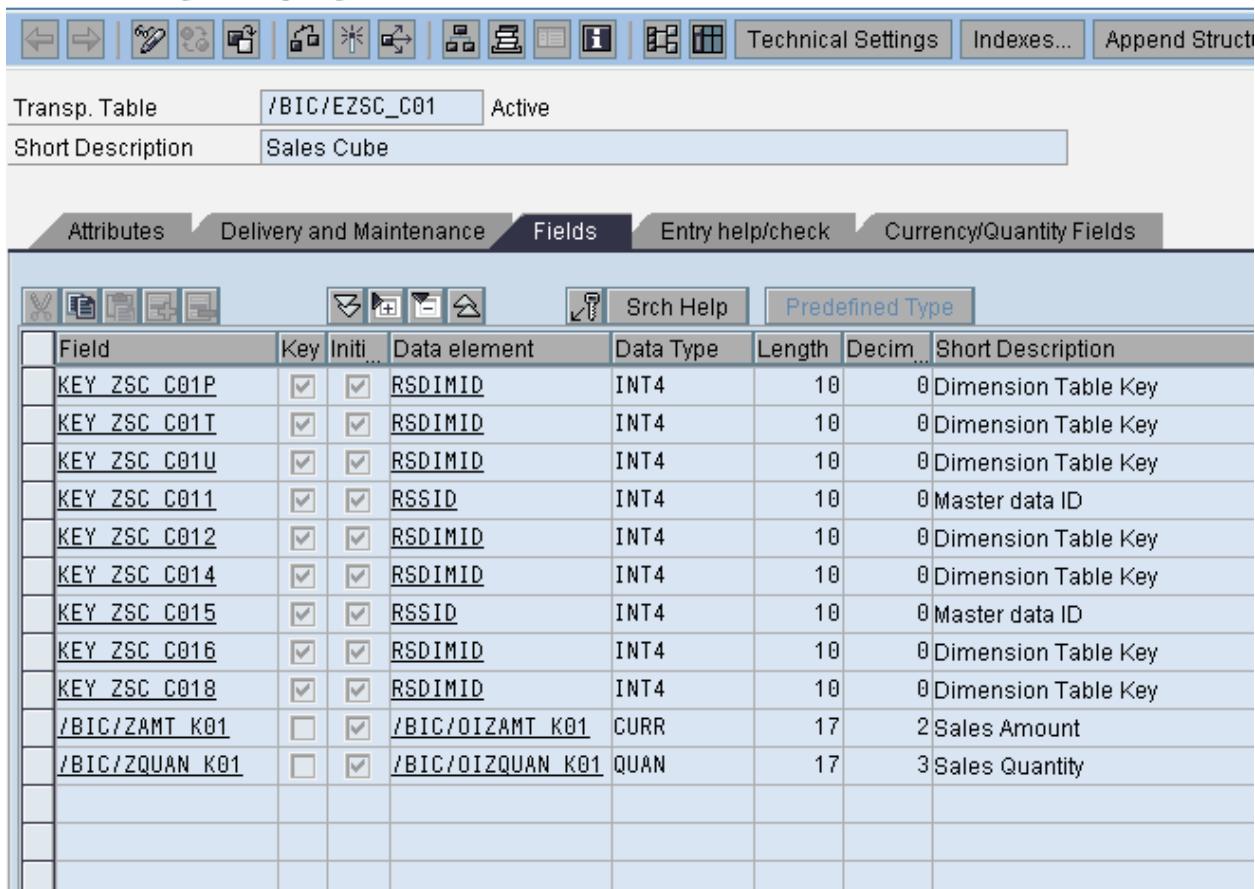
The screenshot shows the SAP Dictionary: Display Table interface. At the top, there is a toolbar with various icons for navigation and settings. Below the toolbar, the 'Transp. Table' is set to '/BIC/FZSC_C01' and the 'Short Description' is 'Sales Cube'. The main area contains tabs for 'Attributes', 'Delivery and Maintenance', 'Fields' (which is selected), 'Entry help/check', and 'Currency/Quantity Fields'. Below these tabs is a toolbar with icons for creating, deleting, and modifying fields. The main content is a table with the following columns: Field, Key, Initial, Data element, Data Type, Length, Decim., and Short Description. The table lists the following fields:

Field	Key	Initial	Data element	Data Type	Length	Decim.	Short Description
KEY_ZSC_C01P	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C01T	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C01U	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C011	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10	0	Master data ID
KEY_ZSC_C012	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C014	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C015	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10	0	Master data ID
KEY_ZSC_C016	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C018	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDDIMID	INT4	10	0	Dimension Table Key
/BIC/ZAMT_K01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/BIC/OIZAMT_K01	CURR	17	2	Sales Amount
/BIC/ZQUAN_K01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/BIC/OIZQUAN_K01	QUAN	17	3	Sales Quantity

View of E- Table of the Cube

When the requests are compressed it lies in the E fact table. When the requests are compressed all the request ids are lost (set to NULL) and you would not be able to select/delete the data by request id. The data in the E fact table is compressed and occupies lesser space than F fact table.

Dictionary: Display Table



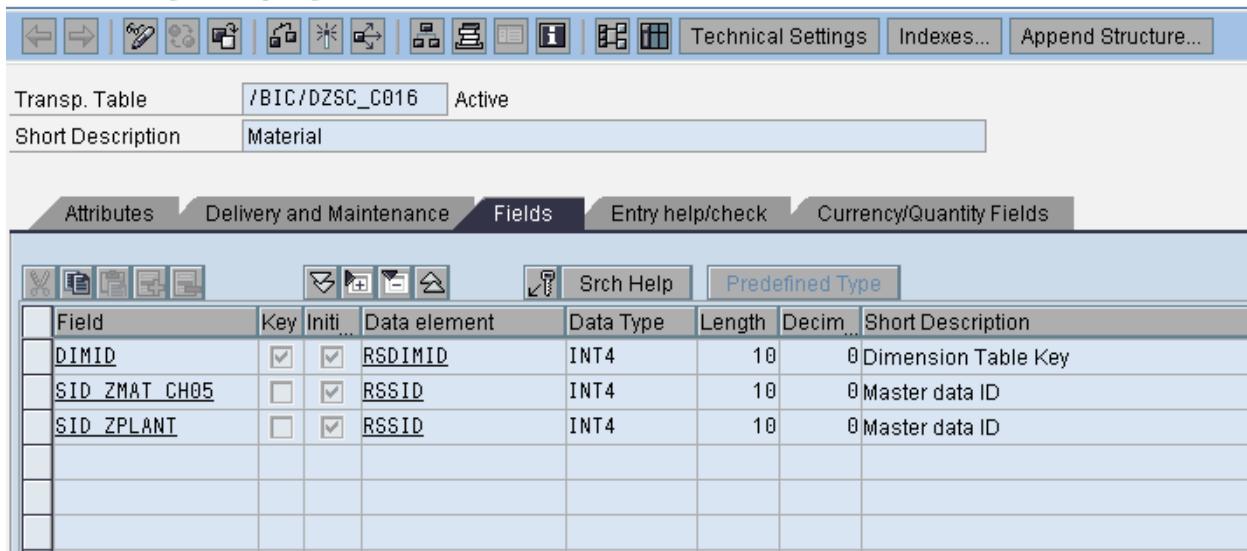
The screenshot shows the SAP Dictionary: Display Table interface. At the top, there is a toolbar with various icons. Below the toolbar, the Transp. Table is set to /BIC/EZSC_C01 and is marked as Active. The Short Description is Sales Cube. The main area contains tabs: Attributes, Delivery and Maintenance, Fields (which is selected), Entry help/check, and Currency/Quantity Fields. Below these tabs is a detailed table of fields:

Field	Key	Initi...	Data element	Data Type	Length	Decim...	Short Description
KEY_ZSC_C01P	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C01T	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C01U	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C011	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10	0	Master data ID
KEY_ZSC_C012	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C014	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C015	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10	0	Master data ID
KEY_ZSC_C016	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10	0	Dimension Table Key
KEY_ZSC_C018	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10	0	Dimension Table Key
/BIC/ZAMT_K01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/BIC/OIZAMT_K01	CURR	17	2	Sales Amount
/BIC/ZQUAN_K01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	/BIC/OIZQUAN_K01	QUAN	17	3	Sales Quantity

View of one of the D – Table

For any dimension table, DIMID is the key of the table.

Dictionary: Display Table



Transp. Table: /BIC/DZSC_C016 Active
Short Description: Material

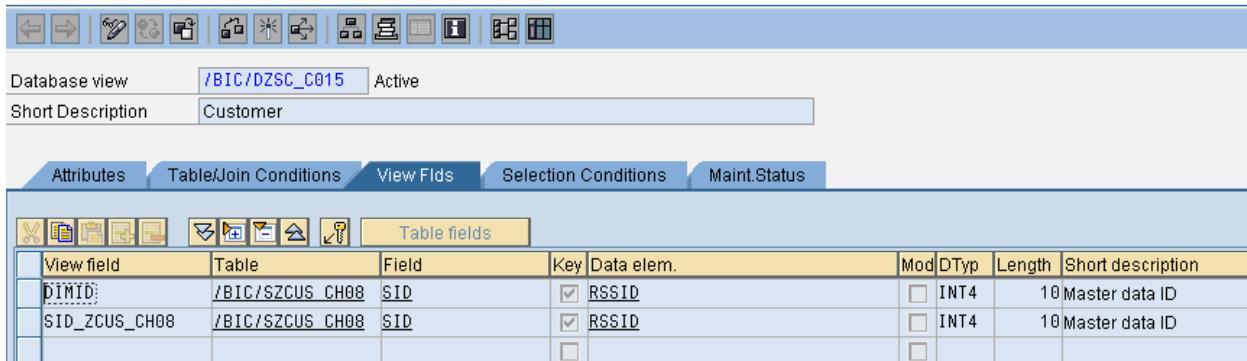
Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

Field	Key	Initi...	Data element	Data Type	Length	Decim...	Short Description
DIMID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSDIMID	INT4	10		0 Dimension Table Key
SID_ZMAT_CH05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10		0 Master data ID
SID_ZPLANT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RSSID	INT4	10		0 Master data ID

View of a Line-Item Dimension Table

For any Line-Item Dimension table, SID of that particular characteristic is the key for the table.

Dictionary: Display View



Database view: /BIC/DZSC_C015 Active
Short Description: Customer

Attributes Table/Join Conditions View Flds Selection Conditions Maint.Status

View field	Table	Field	Key	Data elem.	Mod	DTyp	Length	Short description
DIMID	/BIC/SZCUS_CH08	SID	<input checked="" type="checkbox"/>	RSSID	<input type="checkbox"/>	INT4	10	Master data ID
SID_ZCUS_CH08	/BIC/SZCUS_CH08	SID	<input checked="" type="checkbox"/>	RSSID	<input type="checkbox"/>	INT4	10	Master data ID

Conclusion:

Infocube follows the extended star schema architecture. It contains multiple Dimension tables, F& E fact tables.

Extended Star Schema

Match the following.

Note - Matching can be many to many relation.

Definition	Object
1. Table consisting of Dimension IDs and measurements, metrics, KPIs	A. SID Table
2. The table working as an interface between master data table and Dimension tables	B. DIM Tables
3. The values or measurement fields	C. Attribute table
4. The table having the link between DIM IDs and SIDs	D. Fact Table
5. Master Data tables	E. Text Table
6. The tables that can be language and time dependent	F. Facts / Key Figures
	G. Hierarchy

Answers:

1-D

2-A

3-F

4-B

5-C, E, G

6 – C, E

Creating MultiProviders

Use:

- ▶ A MultiProvider is a type of InfoProvider that combines data from a number of InfoProviders and makes it available for analysis purposes.
- ▶ The MultiProvider itself does not contain any data. Its data comes entirely from the InfoProviders on which it is based. These InfoProviders are connected to one another by a union operation.

Example: InfoProvider A contains sales actuals. InfoProvider B contains sales plan data. One can combine the two InfoProviders into one MultiProvider to compare actual vs. plan sales.

Prerequisites:

We have created 2 InfoCubes:

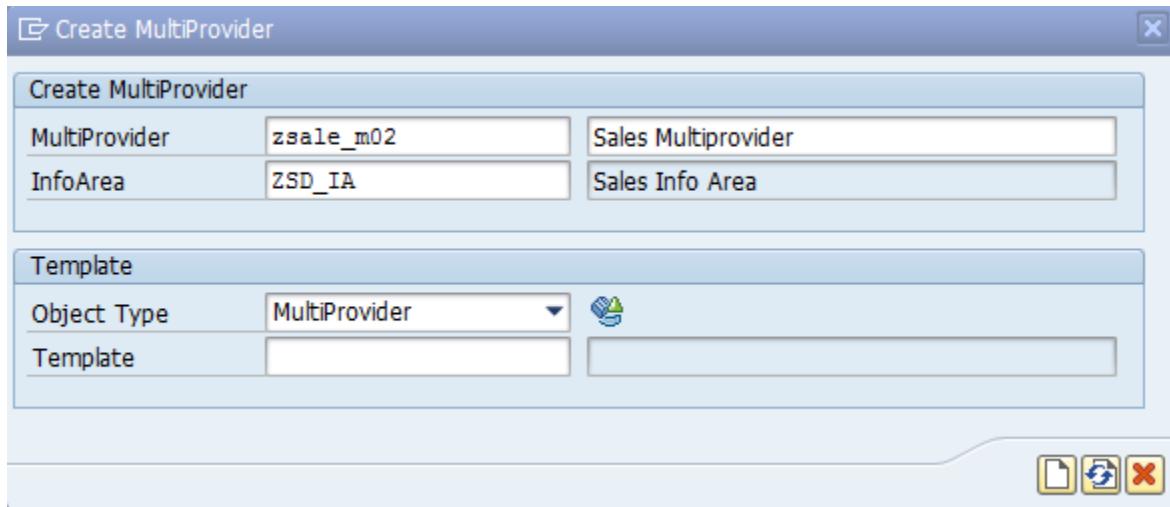
1. Sales Cube: ZSC_Cnn
2. Sales Cube - Plan data: ZPLAN_Cn

Procedure:

13. You are in the *Modeling* functional area of the Data Warehousing Workbench.(Tcode: RSA1)

14. In the context menu of your InfoArea, select Create MultiProvider

Enter Details on next screen and click on Create



15. Select the InfoCubes over which you want to build your MultiProvider. In our scenario, it is ZSC_Cnn and ZPLAN_Cnn

MultiProvider: Relevant InfoProviders

MultiProvider	ZSALE_M02
Description	Sales MultiProvider

DataStores InfoCubes Log.Part.Prov. HybridProvider InfoObjects

Inv.	InfoCube	Long Description
<input checked="" type="checkbox"/>	ZPLAN_CD2	Sales Cube - Plan data
<input type="checkbox"/>	ZSALEACT	Sales - Actuals
<input type="checkbox"/>	ZSALEPLAN	Sales - Plan
<input type="checkbox"/>	ZSALE_BK	Sales Overview BK
<input type="checkbox"/>	ZSALE_KM	Sales Overview
<input type="checkbox"/>	ZSALE_LL	Sales Overview
<input type="checkbox"/>	ZSALE_MH	Sale Overview
<input type="checkbox"/>	ZSALE_NM	Sales Overview
<input type="checkbox"/>	ZSALE_NV	Sales Overview
<input checked="" type="checkbox"/>	ZSC_C01	Sales Cube

Select the InfoProviders involved in the MultiProvider

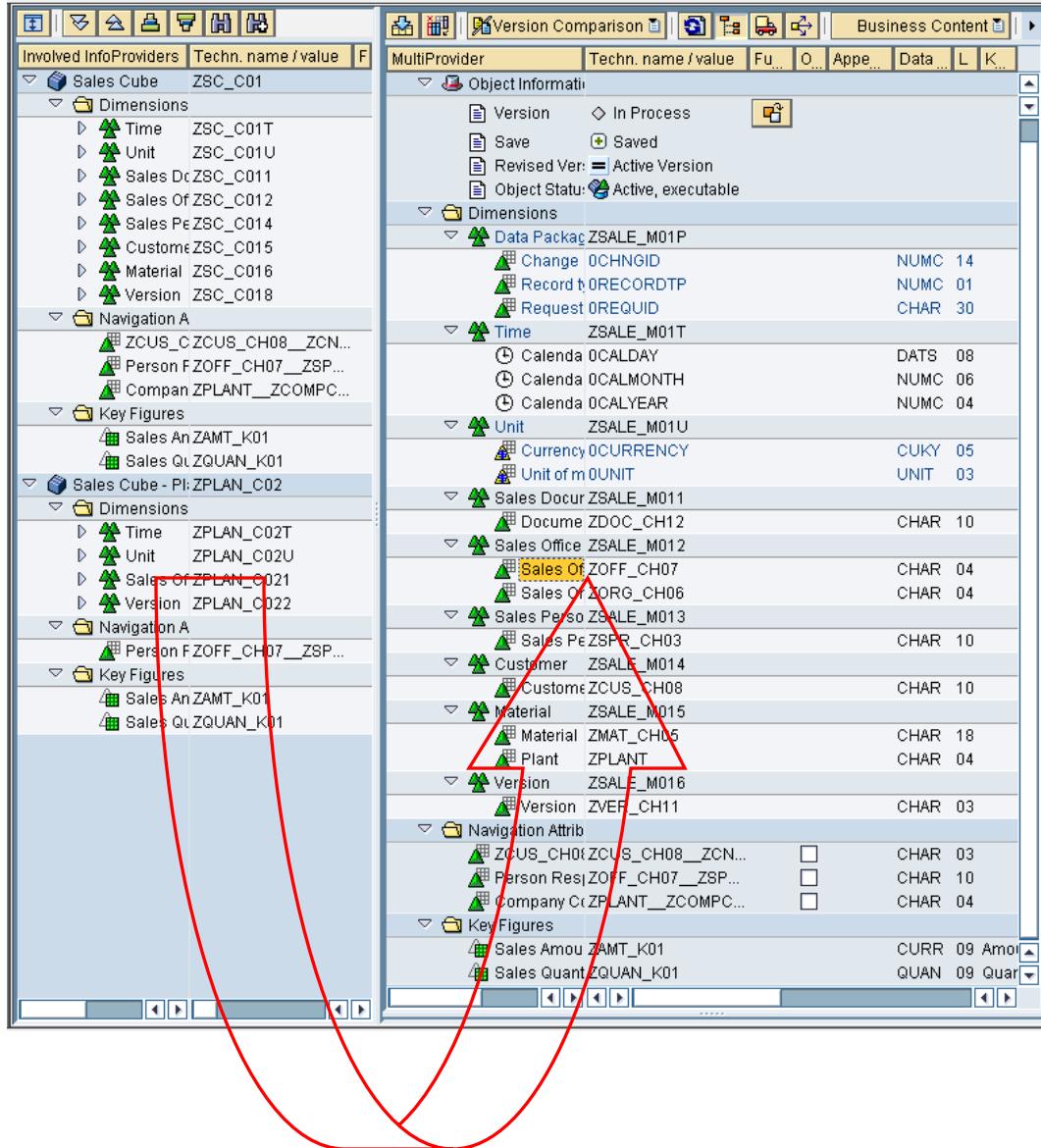
Display Options

- Display All InfoProviders (Place Selected First)
- Only Display Selected InfoProviders
- Only Selected and InfoArea... Unassigned Nodes

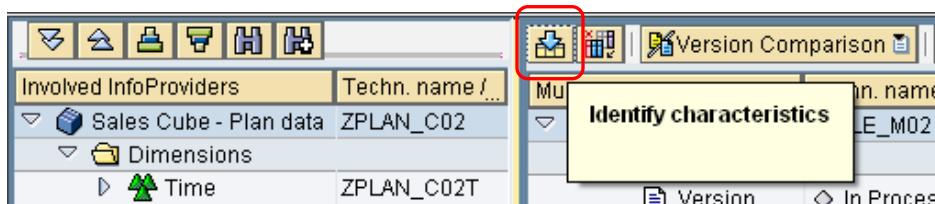
   

Choose  Continue.

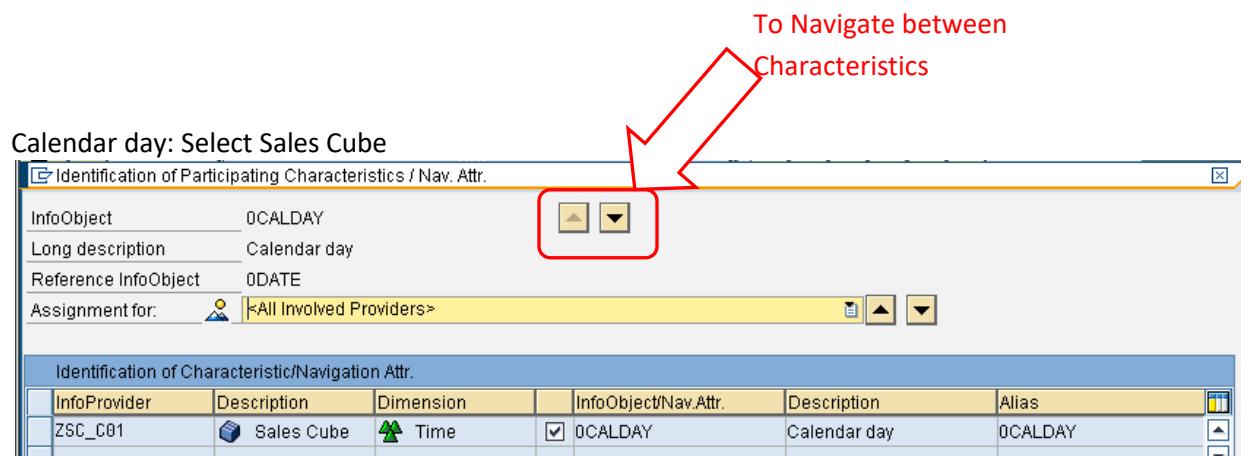
16. Drag and drop dimensions and KeyFigures from the InfoProviders to the MultiProvider:



17. Next Select Identify Characteristics:



To Navigate between Characteristics



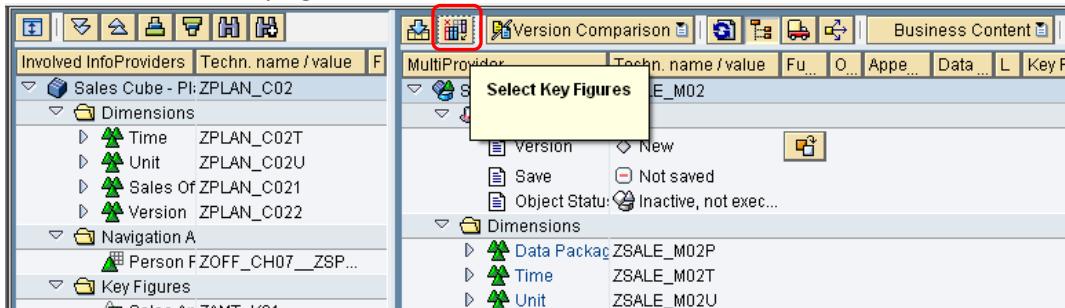
Identification of Characteristic/Navigation Attr.					
InfoProvider	Description	Dimension	InfoObject/Nav.Attr.	Description	Alias
ZSC_C01	Sales Cube	Time	OCALDAY	Calendar day	OCALDAY

For the other Characteristics, select according to following table

Characteristic	Sales Cube: ZSC_Cnn	Sales Cube - Plan data: ZPLAN_Cnn
Calendar day	yes	
Calendar year/month	Yes	yes
Calendar year	Yes	Yes
Sales Office	Yes	Yes
Sales Organisation	Yes	Yes
Sales Person	yes	
Customer / Sold to Party	Yes	
Material	Yes	
Plant	Yes	
Version	Yes	Yes

Choose continue

18. Next click on select key figures:



We want both providers to feed KeyFigures. Hence, select both

KeyFigure	Sales Cube: ZSC_Cnn	Sales Cube - Plan data: ZPLAN_Cnn
Sales Amount	Yes	Yes
Sales Quantity	Yes	Yes

19. Activate the MultiProvider.

Result:

We have created a MultiProvider based on InfoCubes Actual Sales and Planned Sales. This MultiProvider will help us to compare Actual Sales to Planned Sales.

p.s. - For understanding how multiprovider works, execute ZSALE_M01_QUERY01 query.

Real-Time Data Acquisition

Real-time data acquisition (RDA) supports tactical decision-making. It also supports operational reporting by allowing you to send data to the delta queue or PSA table in real time. You then use an RDA job to transfer data into InfoProviders in the Operational DataStore layer at defined intervals. The data is stored persistently in BW.

Purpose

Real-time data acquisition is used if data needs to be transferred to BW at more regular intervals (every hour or every minute) than scheduled data transfers and up-to-date data is needed to be available regularly for analysis and reporting (at least several times a day).

To ensure that the transaction data and master data is synchronized, we can use real-time data acquisition to transfer data into Info Objects as well as Info Providers. The real-time transfer of attributes and texts is supported.

If you load data into a Data Store object, you have to model the data flow using a transformation between the Data Source and Data Store object. .

A data flow with 3.x objects does not support real-time data acquisition.

Special Info Packages and data transfer processes are used for transferring data with real-time data acquisition. There are also special background processes (RDA jobs) that control and monitor data transfer with real-time data acquisition. These jobs are referred to as "daemons" for Web Service and BW Service, and "data package jobs" for ODP. Data is available for analysis and reporting as soon as it has been posted to the master data tables or Data Store object (of a Hybrid Provider) and activated. Refresh the query display to display the current data. The query shows the time that the query was last updated by a daemon run, even if no new data was posted.

The RDA job that controls and monitors data transfer for Web Service and BW Service API is referred to as "daemon". In this case, the data is transferred to the persistent staging area (PSA) in BW. This requires an Info Package. The data is transferred using a data transfer process from the PSA to the Info Provider. The data transfer procedure from the source to the PSA can differ as follows:

Using a Web service

The data in the source can be written to the PSA directly using the Web Service. The data transfer is therefore controlled externally without being requested in BW. An InfoPackage is only required here in order to define certain parameters for real-time data acquisition.

Using a service API

Data from an SAP source system can be loaded into the PSA using an Info Package created specifically for this purpose. This is triggered when the delta queue in the source system requests data. We have to perform the initialization of the delta process for the Data Source beforehand.

The following two scenarios are possible:

- The source system application writes the data to the delta queue of the BW Service API.
- In this case, the daemon retrieves the data without calling the extractor.

- The application does not write data to the delta queue automatically. The extractor writes the data to the delta queue when requested by BW instead.
- For extractors that transfer data synchronously from BW to the service API on request (generic extractors, for example), the daemon calls the extractor, which then writes the data to the delta queue. The data is transferred directly to BW from the delta queue.

Converting an Existing Data Flow to Real-Time Data Acquisition.

If we want to integrate the transfer of data with real-time data acquisition into an existing data flow, we have two options:

- Using two different DataSources

One DataSource executes the standard data transfer, and the other DataSource transfers the data with real-time data acquisition. The data is then combined into a Composite Provider.

- Using a single Data Source

In this case, We have to replace the standard data transfer completely with a real-time data acquisition scenario.

Creating InfoSets

Use:

- ▶ InfoSets allows reporting on several InfoProviders by combining data from infoproviders by join condition.
- ▶ An InfoSet can have following join conditions
 - Inner Join
 - Left Outer Join
 - Temporal Join

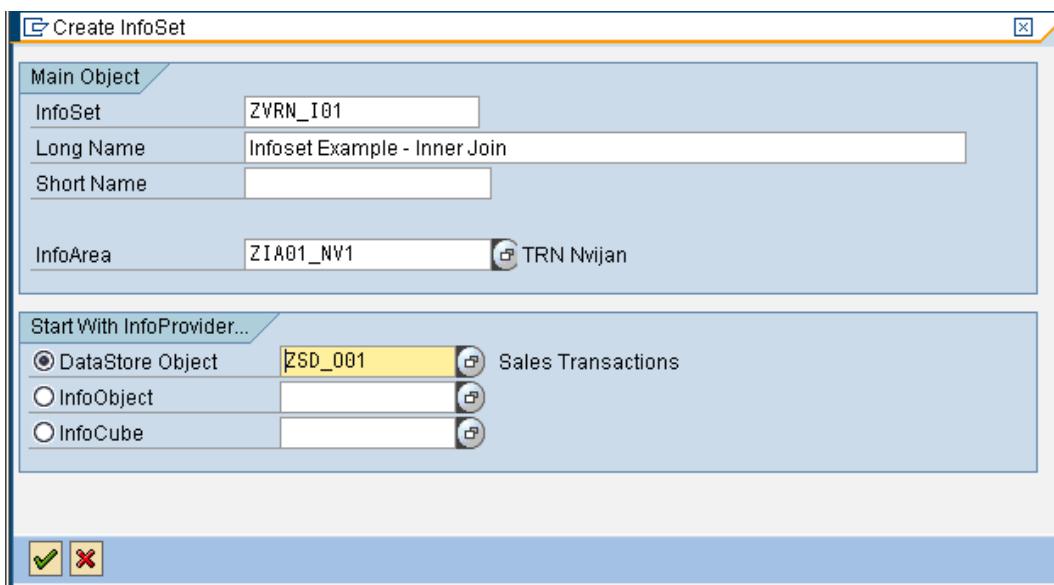
Prerequisites:

We have created DSO Sales Transactions: ZSD_001 and master data InfoObject ZMAT_N1

Procedure:

Inner Join

20. You are in the *Modeling* functional area of the Data Warehousing Workbench.(Tcode: RSA1)
21. In the context menu of you InfoArea, Select Create InfoSet
22. Enter Details in next screen:



Select start with DSO and enter the DSO you created for Sales Transaction.

23. Now Select InfoObjects

Technical Name	Description	Key Date
ZDOC_CH12	Document Number	
ZITM_CH13	BW: Document Item	
ZDAT_CH04	Sales Document Date	
ZMAT_CH05	Material	
ZCUS_CH08	Customer / Sold to P	
ZVER_CH11	Version	
DUNIT	Unit of measure	
DCURRENCY	Currency	
ZSPR_CH03	Sales Person	

Select the Material InfoObject you created.

Technical Name	Description	Key Date
ZDOC_CH12	Document Number	
ZITM_CH13	BW: Document Item	
ZDAT_CH04	Sales Document Date	
ZMAT_CH05	Material	
ZCUS_CH08	Customer / Sold to P	
ZVER_CH11	Version	
DUNIT	Unit of measure	
DCURRENCY	Currency	
ZSPR_CH03	Sales Person	

Technical Name	Description	Key Date
ZPLANT	Plant	
ZMAT_CH05	Material	

Now add the links by selecting the fields (common fields on which you want to create join) and dragging.

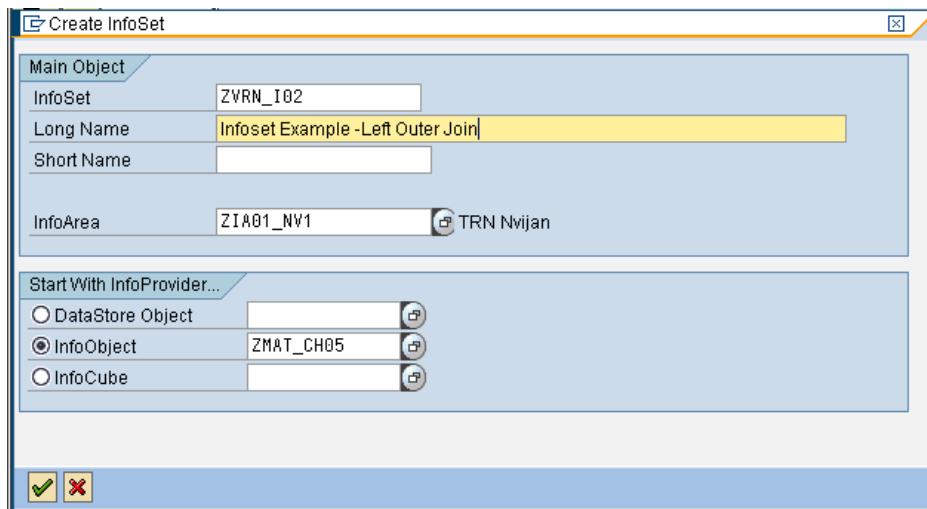
24. Activate the InfoSet

25. To see how inner join works execute ZVR_I01_QUERY01 query and see the output.

26. Inner join will bring records that have common material numbers in ZSD_O01 DSO and ZMAT_N1 infoobject.

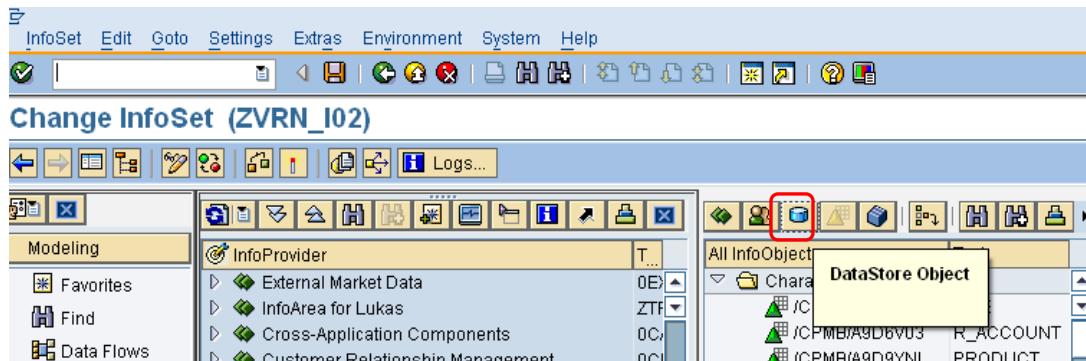
Left Outer Join:

1. You are in the *Modeling* functional area of the Data Warehousing Workbench.(Tcode: RSA1)
2. In the context menu of your InfoArea, Select Create InfoSet
3. Enter Details in next screen:



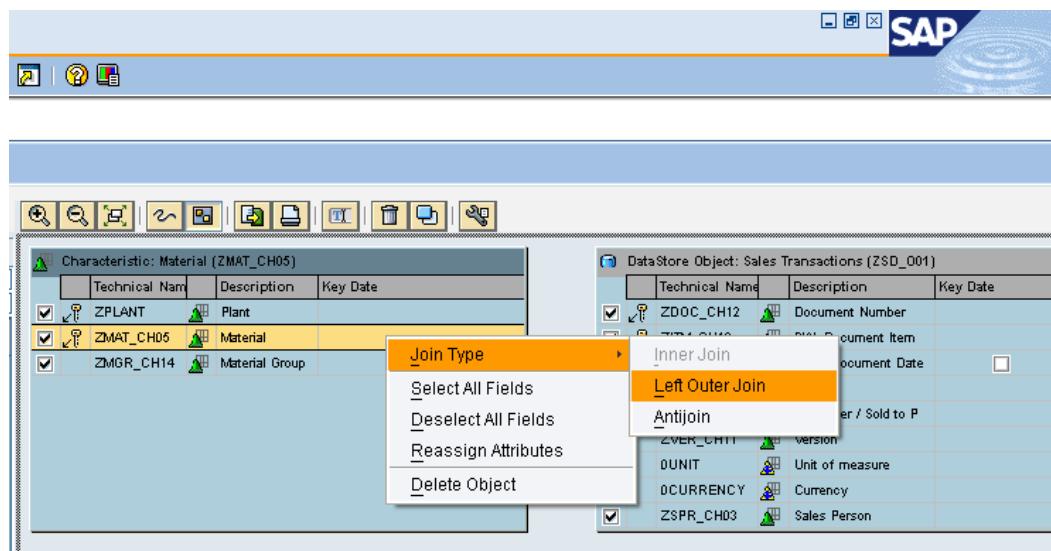
Start with InfoObject Material

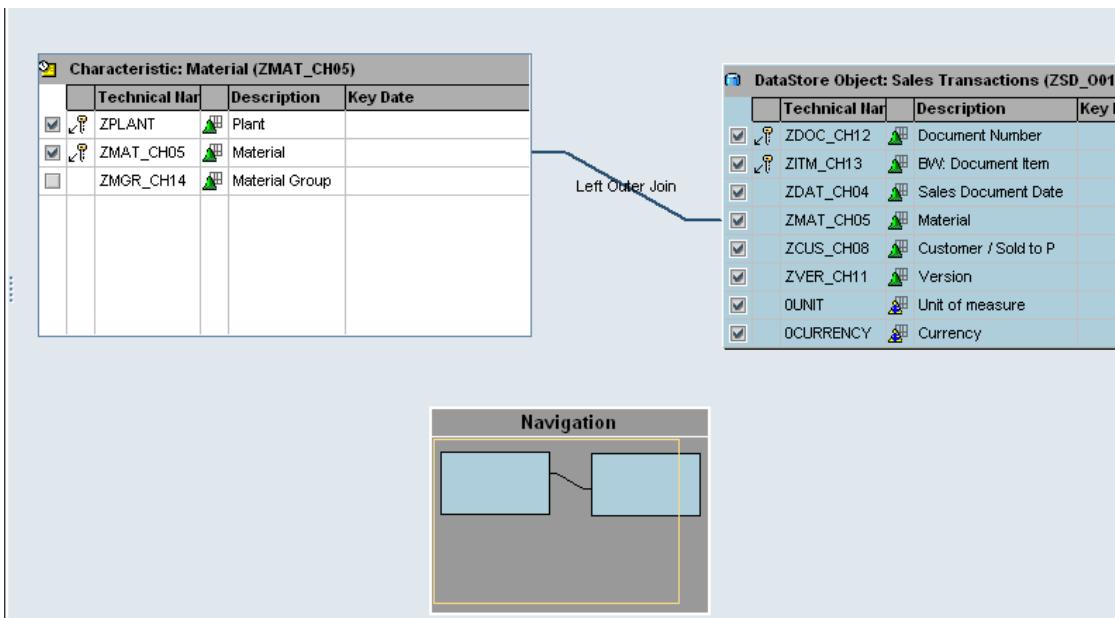
4. Now Select DSO



Select the Sales Transaction DSO

5. Now right Click on Material and select join type -> Left outer Join



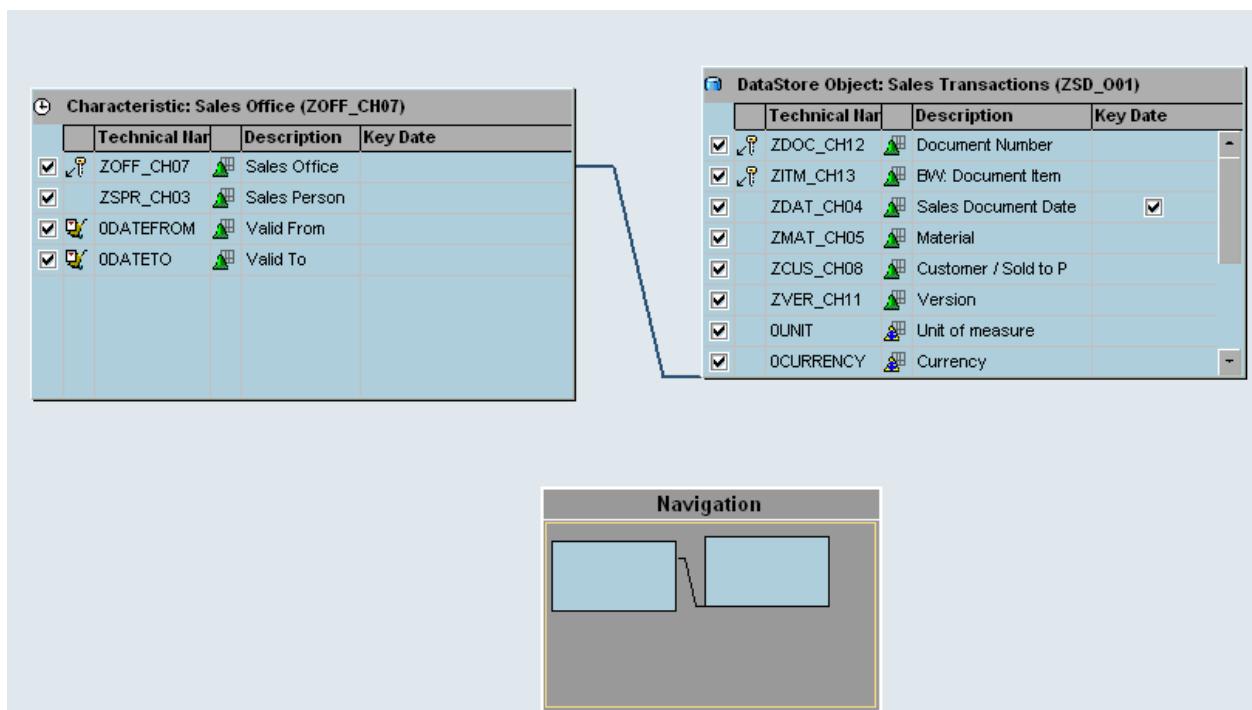


6. Activate the InfoSet
7. Left outer join will bring all the material numbers from ZMAT_CH05 infoobject and their corresponding other fields from ZSD_O01 DSO. In case particular material number is not present in the DSO but present in infoobject, that material will still be fetched but fields fetched from DSO

against it would be blank. If material number is present in DSO but not in infoobject, it will not bring records for such material number.

Temporal Join:

1. Create an InfoSet in your InfoArea with name ZVR_I03.
2. Start with InfoObject Sales Office and add DSO Sales Transactions
3. Since the InfoObject is time dependent, we have “Date to” and “Date From”
4. For fields of an infoprovider you can set key date indicator. If it is set, field acts as temporal operand. In temporal join they influence the result set.
5. In below case only those records will be populated at the output of the infoset in which key date (of DSO) falls in the range of Valid from and Valid to (of infoobject). Key date falling outside and their corresponding records will be ignored in the output.



Result:

We have created InfoSets with different joins:

1. Inner join will bring records that have common material numbers in ZSD_O01 DSO and ZMAT_N1 infoobject.
2. Left outer join will bring all the material numbers from ZMAT_N1 infoobject and their corresponding other fields from ZSD_O01 DSO. In case particular material number is not present in the DSO but present in infoobject, that material will still be fetched but fields fetched from DSO against it would be blank. If material number is present in DSO but not in infoobject, it will not bring records for such material number.
3. Temporal join will bring records where key date (of DSO) falls in the range of Valid from and Valid to (of infoobject). Key date falling outside and corresponding records will be ignored in the output.

5.7 Install BI Content

Use:

Business Content is a pre-configured set of role and task-relevant information models based on consistent metadata in the SAP Business Information Warehouse. Business Content provides selected roles within a company with the information they need to carry out their tasks.

Business content includes integral roles, workbooks, queries, InfoSources, InfoCubes, ODS objects, key figures, characteristics, update rules, and extractors for SAP R/3, mySAP.com Business Applications, and for other selection applications.

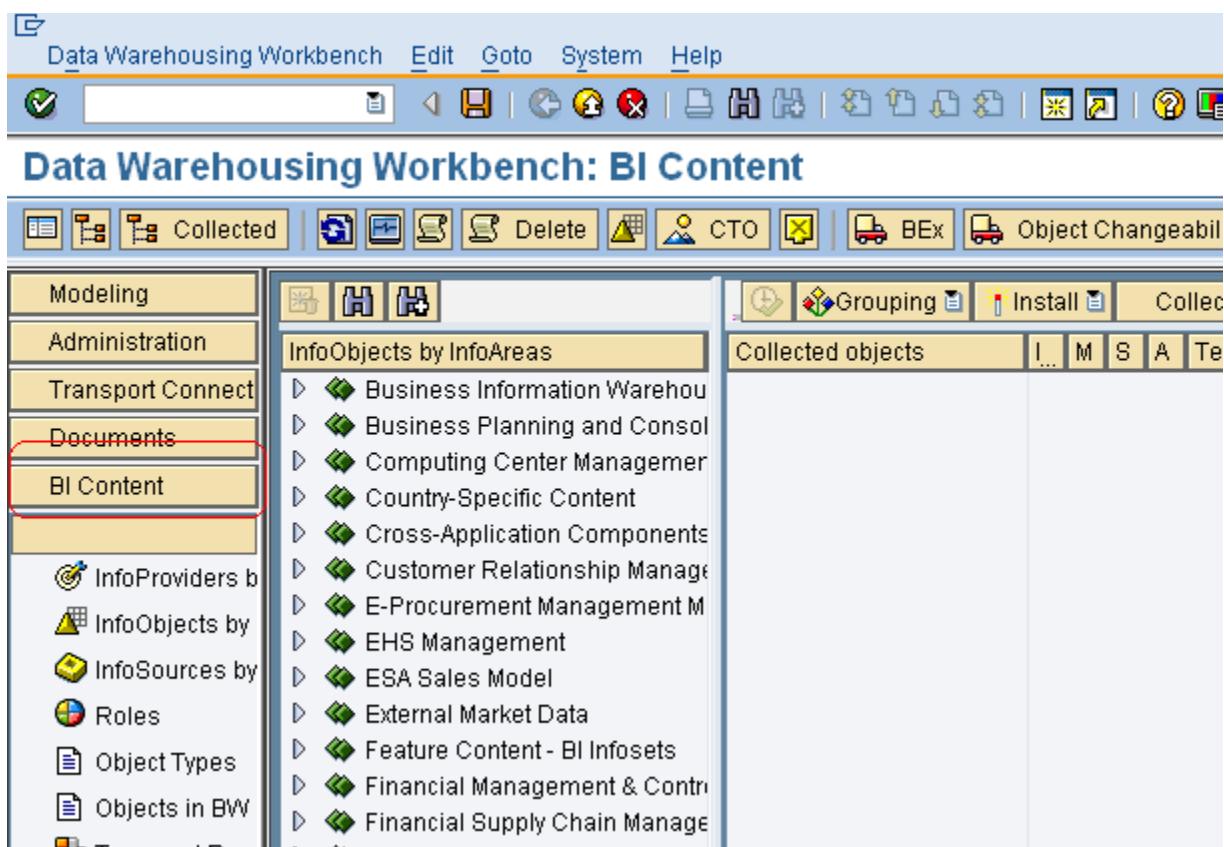
Business Content can:

- be used in particular industries without being modified
- be modified, meaning you can work with it to any degree of detail

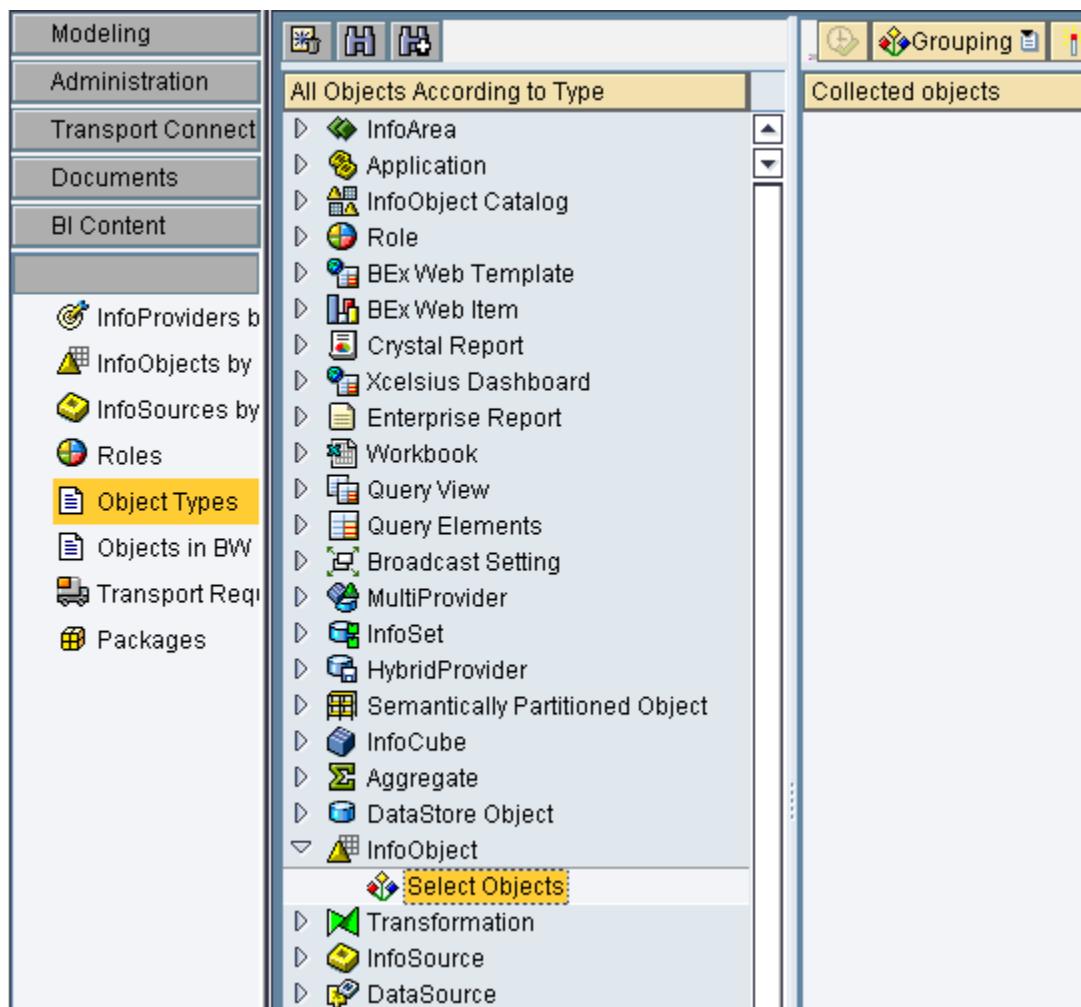
- serve as a template or an example for customer-defined Business Content

Procedure:

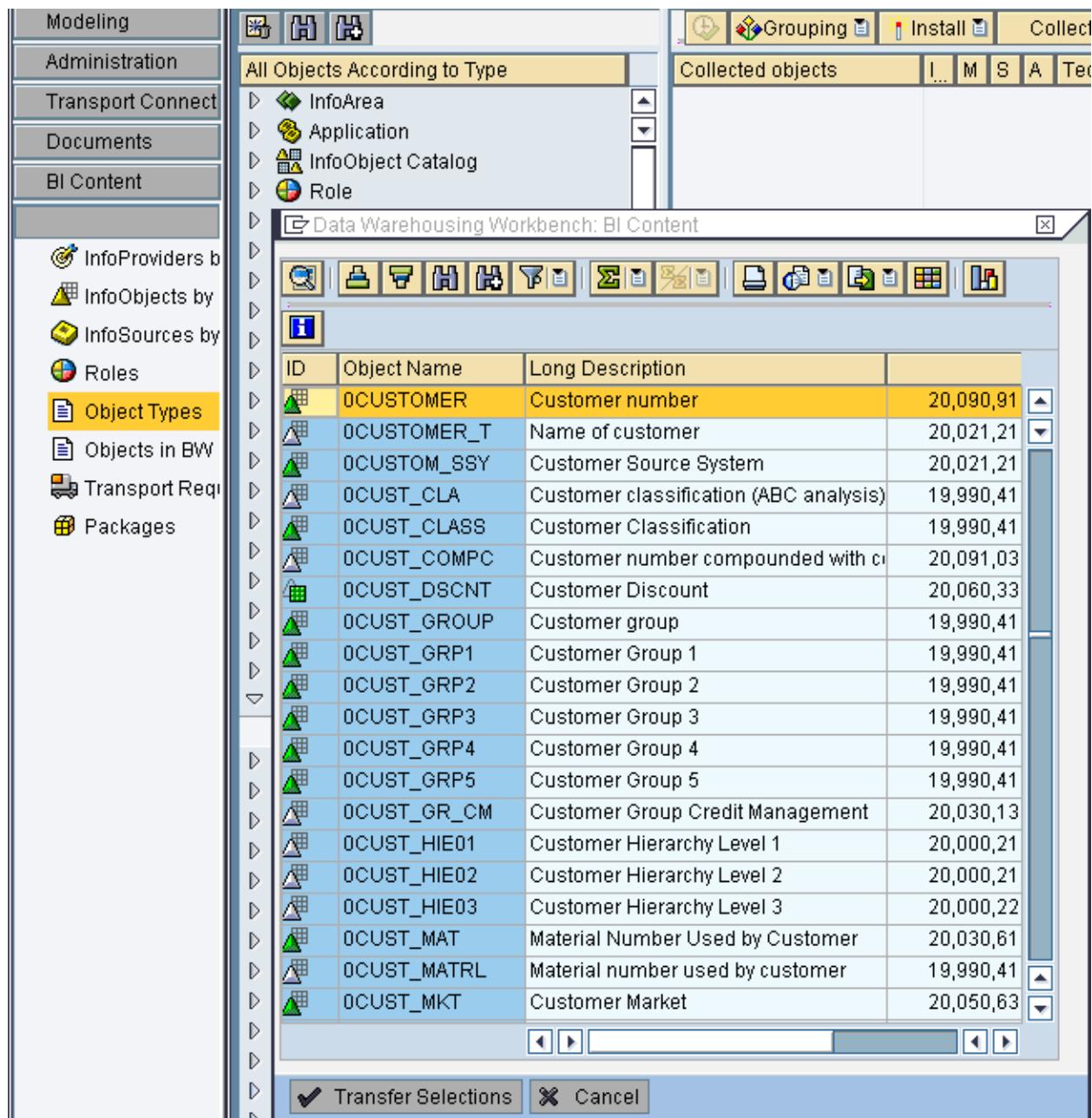
1. Log onto the BI system.
2. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Data Warehousing Workbench:BI Content*.



3. Various search criteria's based on object types are displayed under the BI content button. We will be installing the BI Content for the info object OCUSTOMER.
4. Under BI Content, choose Object types . and in the middle pane open Infoobjects tree and double click select objects.



5. Search for the info object OCUSTOMER using  in the subsequent pop up and on the first hit close the search window on the first hit using .

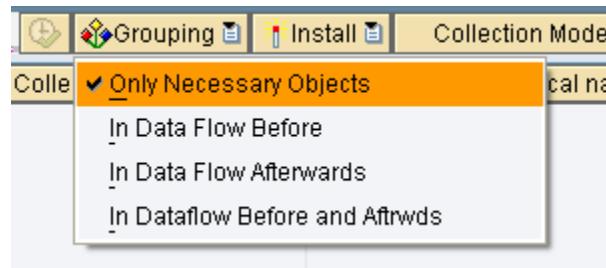


ID	Object Name	Long Description	
OCUSTOMER	Customer number	20,090,91	
OCUSTOMER_T	Name of customer	20,021,21	
OCUSTOM_SSY	Customer Source System	20,021,21	
OCUST_CLA	Customer classification (ABC analysis)	19,990,41	
OCUST_CLASS	Customer Classification	19,990,41	
OCUST_COMPC	Customer number compounded with c	20,091,03	
OCUST_DSCNT	Customer Discount	20,060,33	
OCUST_GROUP	Customer group	19,990,41	
OCUST_GRP1	Customer Group 1	19,990,41	
OCUST_GRP2	Customer Group 2	19,990,41	
OCUST_GRP3	Customer Group 3	19,990,41	
OCUST_GRP4	Customer Group 4	19,990,41	
OCUST_GRP5	Customer Group 5	19,990,41	
OCUST_GR_CM	Customer Group Credit Management	20,030,13	
OCUST_HIE01	Customer Hierarchy Level 1	20,000,21	
OCUST_HIE02	Customer Hierarchy Level 2	20,000,21	
OCUST_HIE03	Customer Hierarchy Level 3	20,000,22	
OCUST_MAT	Material Number Used by Customer	20,030,61	
OCUST_MATRL	Material number used by customer	19,990,41	
OCUST_MKT	Customer Market	20,050,63	

6. Select OCUSTOMER infoobject press transfer selections.

Transfer Selections

7. In the right hand pane make sure the three buttons have following settings.



-> By default only necessary objects is selected which means only the objects that are absolutely necessary for the transport of the desired object. For instance, with customer info-object, the application component to which it belongs and attributes (if any) would be collected.

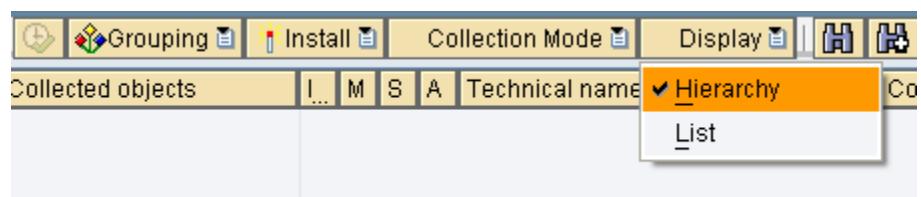
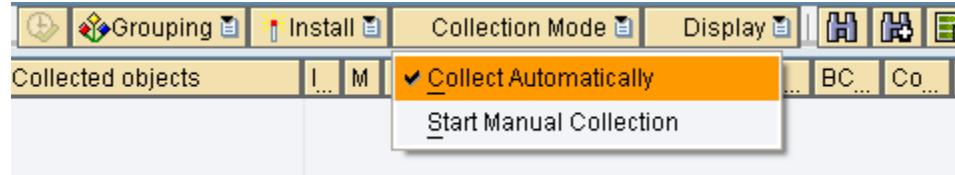
-> 'In data flow before' would collect only the objects that occur in the dataflow before the object i.e. Ocustomer would bring in datasource, transfer rules, transformations, DTP and update rules.

-> 'In data flow afterwards' collects all objects that are in the dataflow after OCustomer which would comprise of any ODS, Infocube, reports etc.

-> 'In dataflow before and afterwards' collects all objects in the dataflow of the selected object.

a. *Collect Automatically* (default setting): The data is collected as soon as the objects are selected.

b. *Start Manual Collection*: The data is not collected until you choose  Collect Dependent Objects.



Hierarchy View will display objects in an object based hierarchy .

Collected objects	I...	M	S	A	Technical name	Elevated o...	BC...	C...
Customer number					0CUSTOMER			
Application								
InfoArea								
InfoObject								
Customer ac...					0ACCNT_GRP	Is an attrib...	1.2I..	
from Acc...					0ACCNT_GRP...	Sends dat...	3.0I..	
Info								
C					0ACCNT_GRP	Receives d...	1.2I..	
L					0LANGU	Is required ...	7.3I..	
M					0TXTMD	Is required ...	7.3I..	

List view will display objects by their types like DSO in separate area, Cube in separate so on and so forth...

Collected objects	I	M	S	A	Technical name	Elevated o...	BC...	Co...	L
▷ Application	<input type="checkbox"/>								
▷ InfoArea	<input type="checkbox"/>								
▷ InfoObject	<input type="checkbox"/>								
▷ Communication S1	<input type="checkbox"/>								
▷ DataSource 3.x	<input type="checkbox"/>								
▷ InfoPackage	<input type="checkbox"/>								
▷ Transfer rules	<input type="checkbox"/>								
▷ 3.x InfoSource	<input type="checkbox"/>								
▷ Transfer structu	<input type="checkbox"/>								
▷ Source System	<input type="checkbox"/>								
▷ DataStore Object	<input type="checkbox"/>								
▷ Routine	<input type="checkbox"/>								
▷ InfoSource	<input type="checkbox"/>								
▷ Transformation	<input type="checkbox"/>								
▷ Update rules	<input type="checkbox"/>								

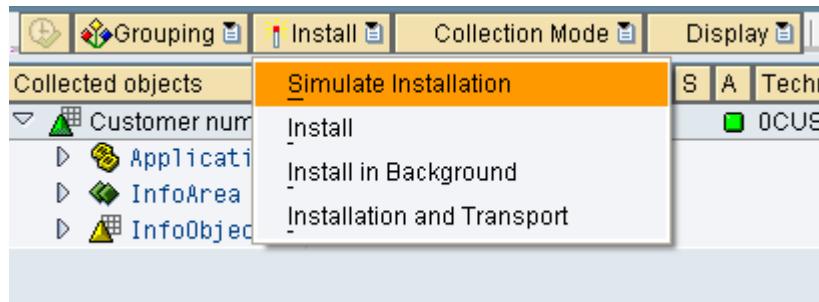
8. Now check the check box under 'Install' and 'Match(X) or copy' (this check box is generated after the install check box is checked).

Collected objects	Install	Match (X) or copy
▷ Customer number	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▷ Application	<input type="checkbox"/>	
▷ InfoArea	<input type="checkbox"/>	
▷ InfoObject	<input type="checkbox"/>	

Install check box indicates whether the object is to be installed.

Match(X) or copy check box indicates whether the Delivered Version(BI Content Version) of the object needs to be checked with the Active Version of the object (If the object is already installed and being used in the system). Click on install and Match or copy.

9. Click on Simulate Installation.



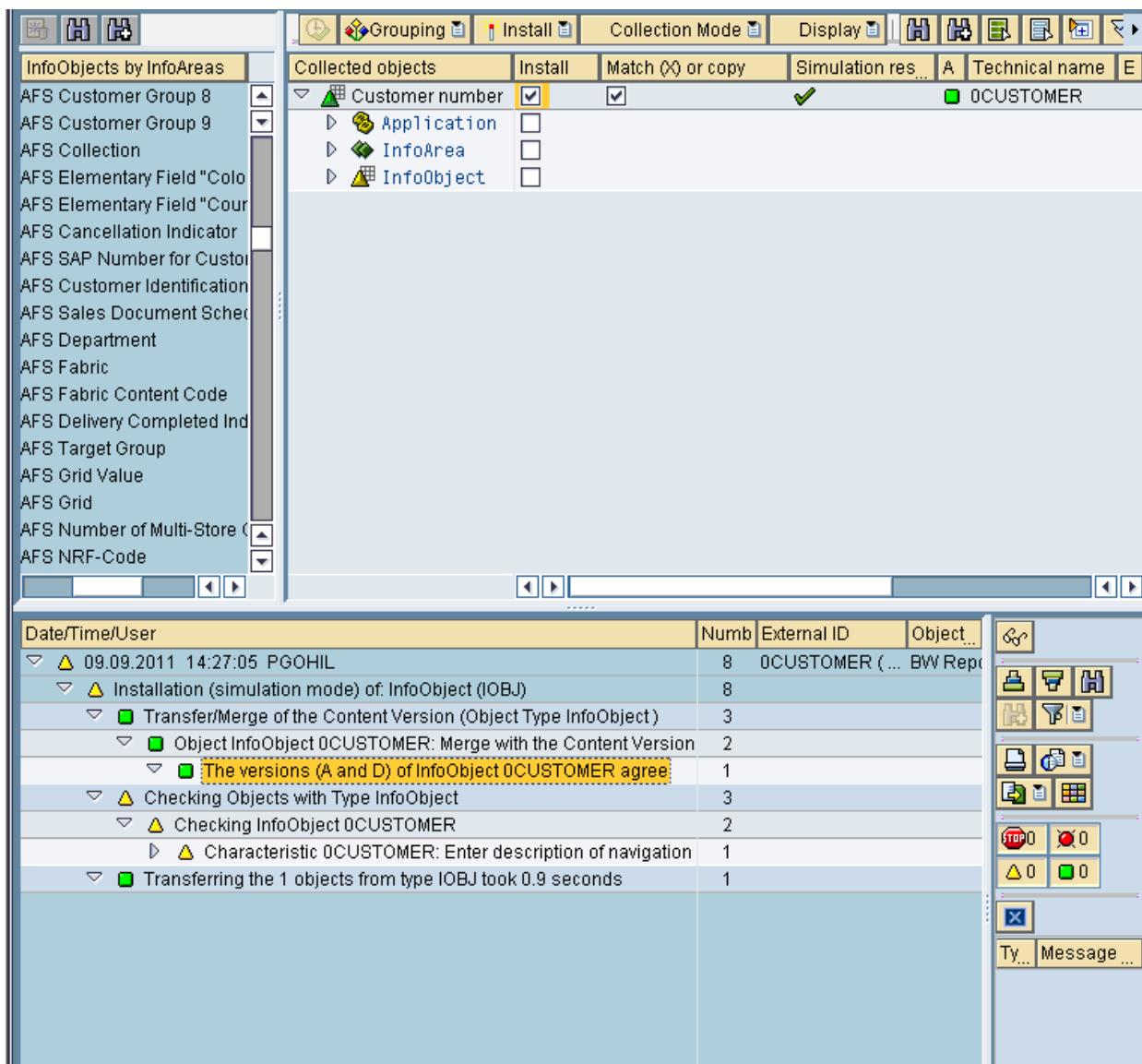
'Simulate installation' runs a basic check that could occur in while the installation runs.

'Install' triggers the installation immediately.

'Install in background' helps scheduling the installation as a background job.

'Installation and transport' installs the objects immediately and writes them to a transport request.

10. The pane on the left hand side will display the result of simulation if the Active version and the Delivered Version are the same.

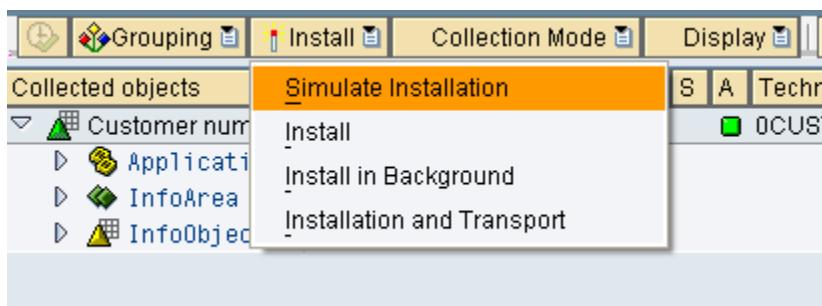


The screenshot shows the SAP BW BEx Query studio interface. On the left, a tree view lists various InfoObjects by InfoAreas. In the center, the 'Collected objects' view displays a selected object: 'Customer number' (InfoObject type). The 'Install' checkbox is checked, and the 'Match (X) or copy' checkbox is also checked. A green checkmark indicates successful installation. The 'Technical name' field shows '0CUSTOMER'. Below this, a detailed log table provides step-by-step information about the installation process:

Date/Time/User	Numb	External ID	Object...
09.09.2011 14:27:05 PGOHIL	8	0CUSTOMER (... BW Repor	
Installation (simulation mode) of: InfoObject (IOBJ)	8		
Transfer/Merge of the Content Version (Object Type InfoObject)	3		
Object InfoObject 0CUSTOMER: Merge with the Content Version	2		
The versions (A and D) of InfoObject 0CUSTOMER agree	1		
Checking Objects with Type InfoObject	3		
Checking InfoObject 0CUSTOMER	2		
Characteristic 0CUSTOMER: Enter description of navigation	1		
Transferring the 1 objects from type IOBJ took 0.9 seconds	1		

The right side of the screen features a toolbar with various icons for file operations, and a status bar at the bottom right shows 'Ty... Message ...'.

If the active version and the delivered version converge you can click on install to install the object.



Conclusion: BI content for 0Customer is installed.

Process Chain

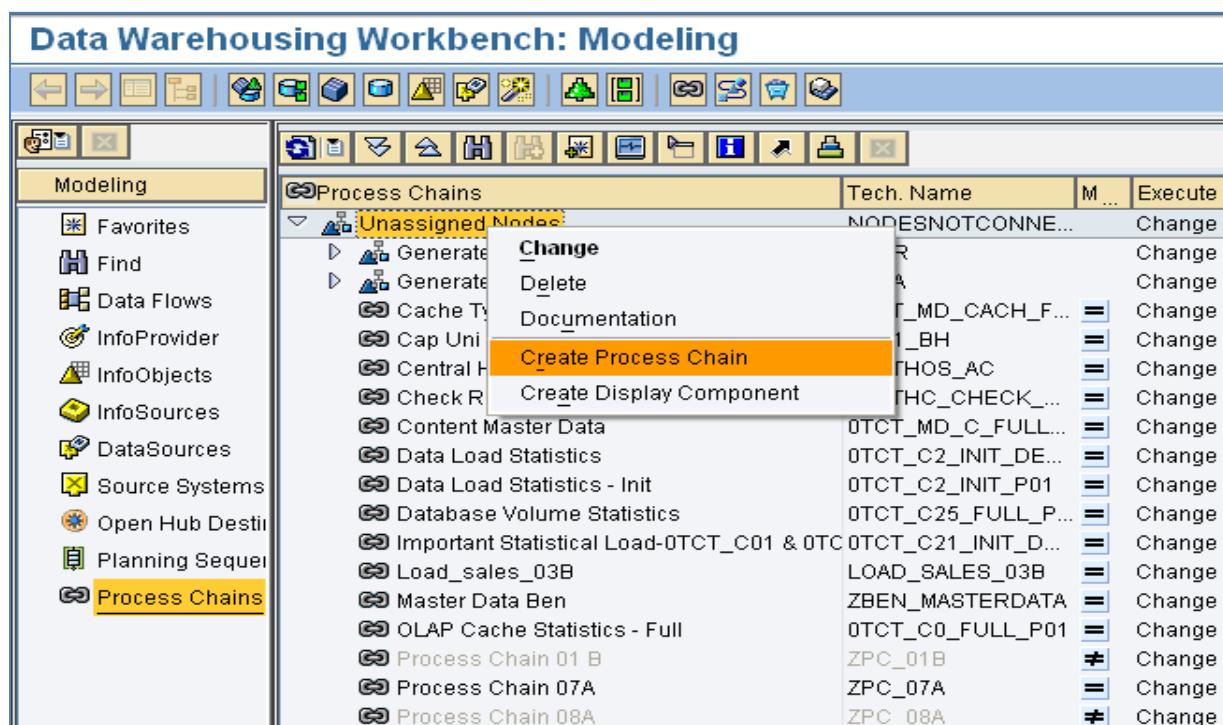
Use:

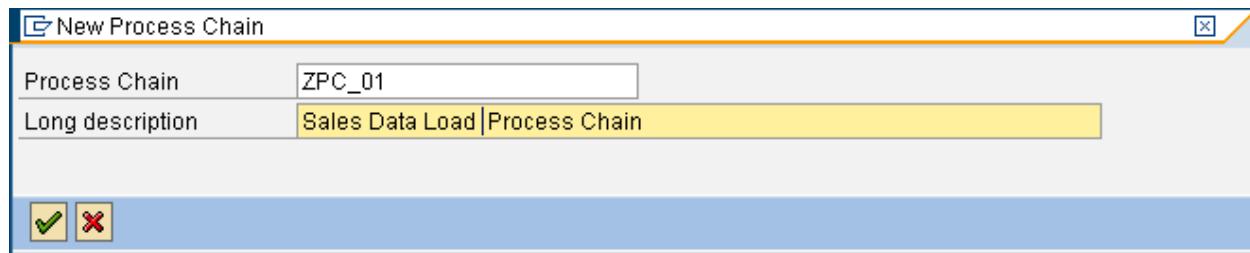
This document helps you in learning how to create a Process Chain to automate the process of data load from source destination to target destination.

We will use existing data flow of generic datasource (ZTR_DS03) that loads data to ZSC_C01 cube.

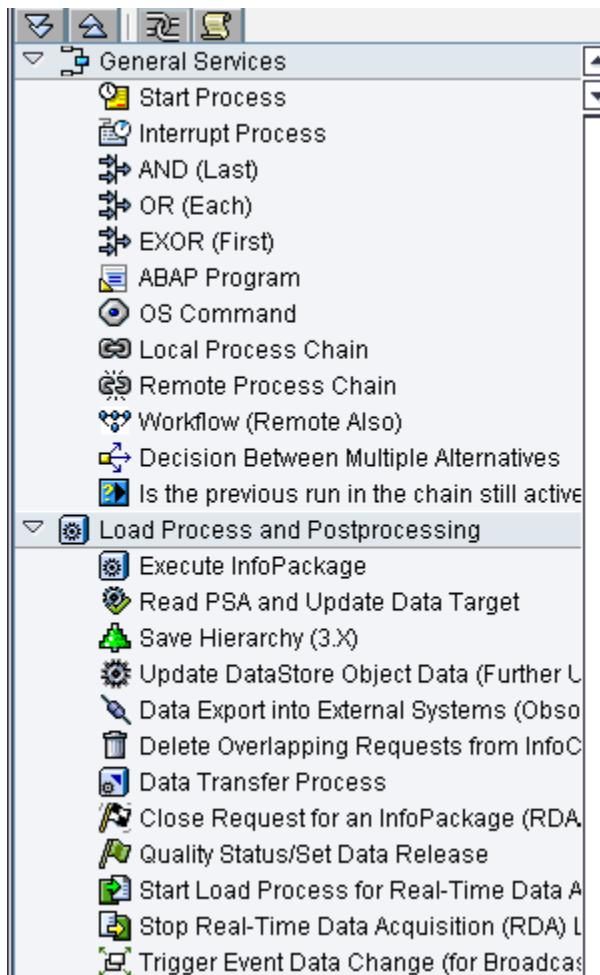
Steps:

Step 1: Go to transaction code – RSA1 – Modeling – Process Chain Option / Or go to Transaction RSPC to create a Process Chain.





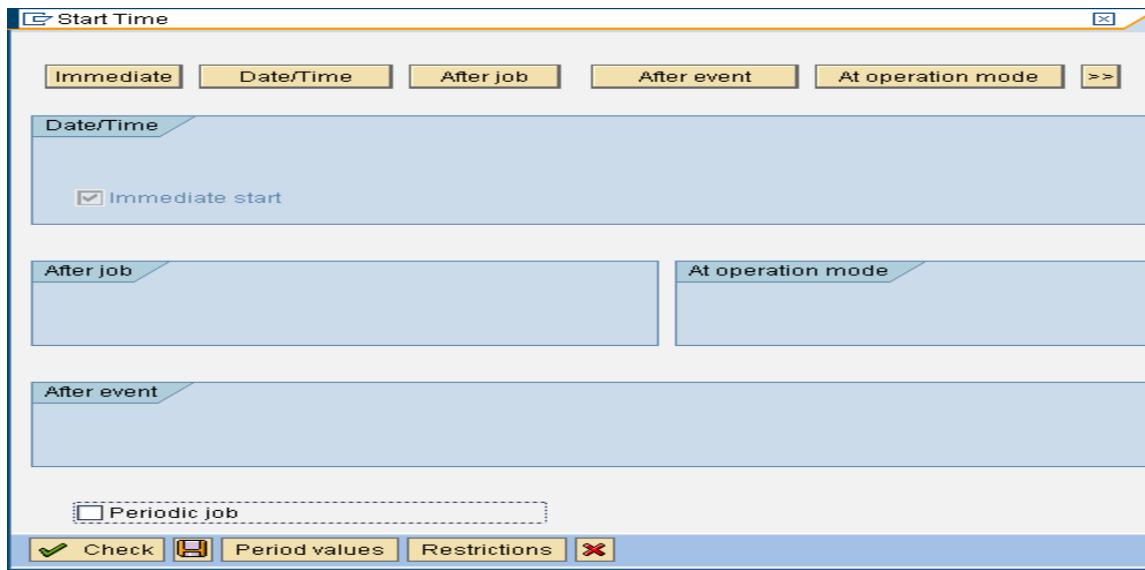
Step 2: Start the process Chain using the Process Type START. You will find the type in ‘General Services’ section on left side. This indicates the start point and time of the whole process.



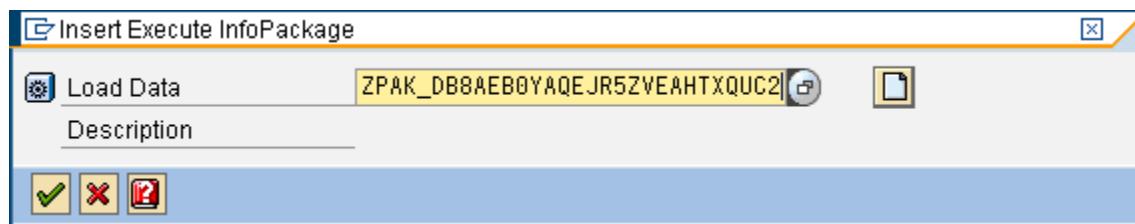
Maintain Start Process

Variant	ZSTART_01			Start Sales			
Last Changed by	SGANDHI	Changed on	09.09.2011	At	12:11:42		
Scheduling Options <input checked="" type="radio"/> Direct Scheduling <input type="radio"/> Start Using Meta Chain or API Change Selections							

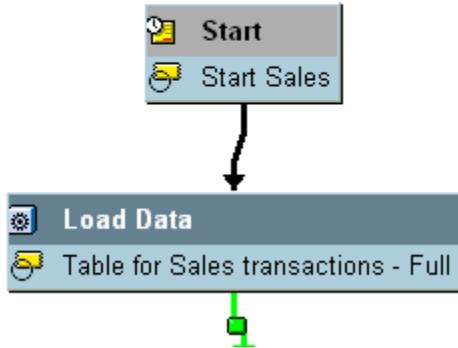
Click on the **Change Selections** Button to schedule the PC. Select **Immediate** Run and Save it.



Step 3: select the process type (from ‘Load processes and postprocessing’ section) **Execute Info Package.** Use info package ZPAK_DB8AEB0YAQEJR5ZVEAHTXQUC2 of DSO – ZSD_O01.

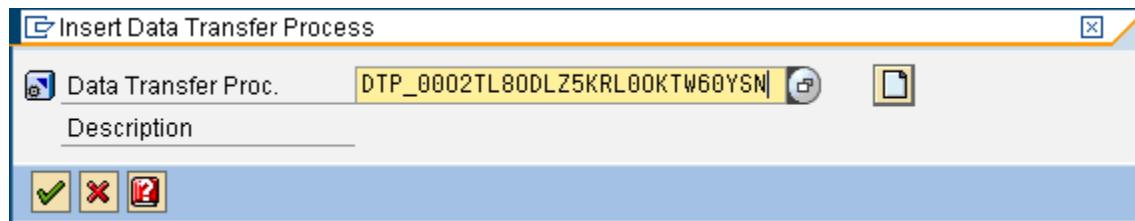


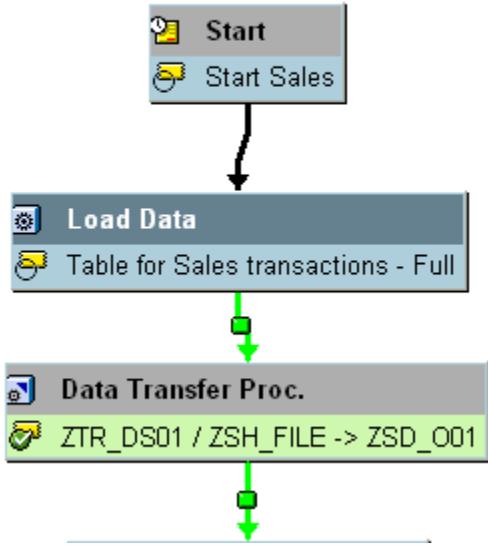
Link this Load Data Process with the Start Process.



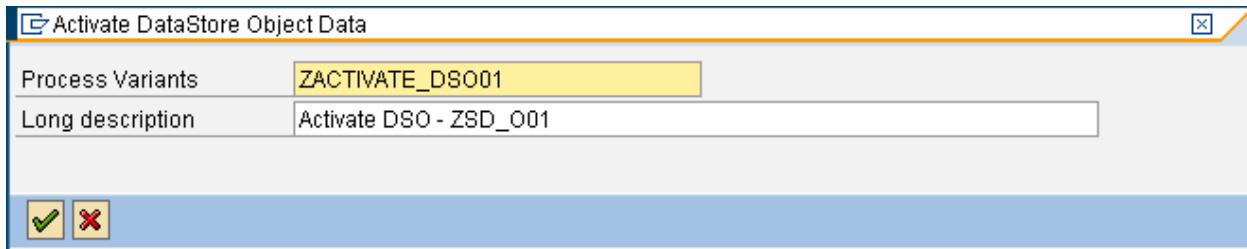
Step 4: Then create a **Data Transfer Process** (from ‘Load processes and postprocessing’ section) – i.e a **DTP**. This is used to load data from PSA to DSO.

For this flow, **DTP_0002TL80DLZ5KRL0OKTW60YSN** is selected. Link this process to InfoPackage.





Step 5: Then create a process to Activate Data in DSO. Use the process type ('data target administration' process type) – **Activate DataStore Object Data**. Create a process variant for this process.



Select the DSO that needs to be activated – ZSD_001. Then link this process to its previous process.

Process Maintenance: Activate DataStore Object Data



Variant	ZACTIVATE_DS001	Activate DSO - ZSD_001	
Last Changed By	DHAMEHTA	Changed on	12.09.2011 At 14:15:14

To Select, Press F4 On The Object Type, Then F4 on the Name

Selections			
Obj...	Object Type	Object Name	Object Name
	DataStore Object	ZSD_001	Sales Transactions

Step 6: Then the data needs to be loaded to Infocube. For this, initially we delete the index for that particular Infocube. Hence, create a process type (from data target administration section) **Delete Index**. Create a process Variant for Deleting Index of the cube ZSC_C01.

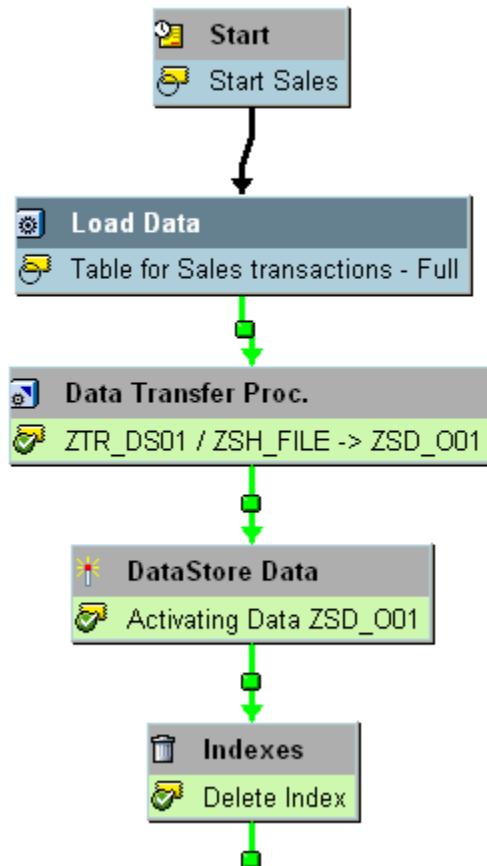
Process Maintenance: Delete Index



Variant	ZDEL_01	Delete Index	
Last Changed By	SGANDHI	Changed on	09.09.2011 At 12:23:32

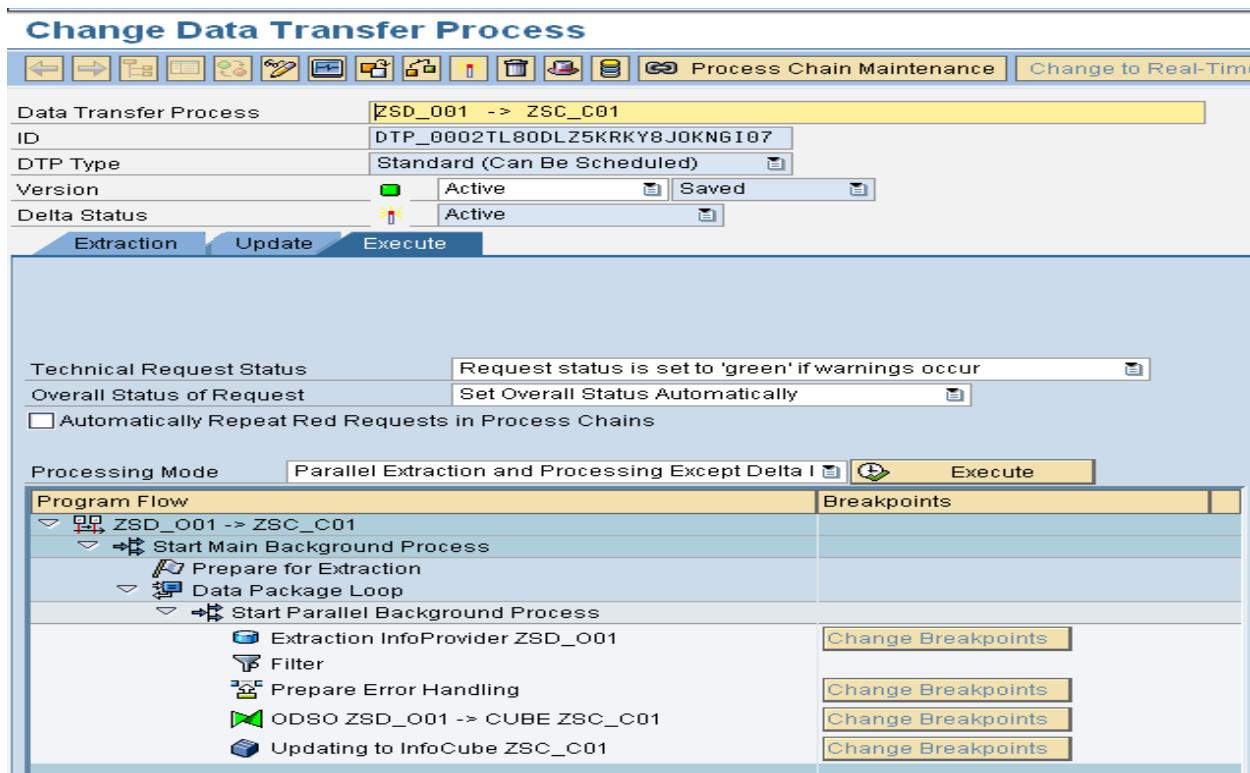
To Select, Press F4 On The Object Type, Then F4 on the Name

Selections			
Obj...	Object Type	Object Name	Object Name
	InfoCube	ZSC_C01	Sales Cube



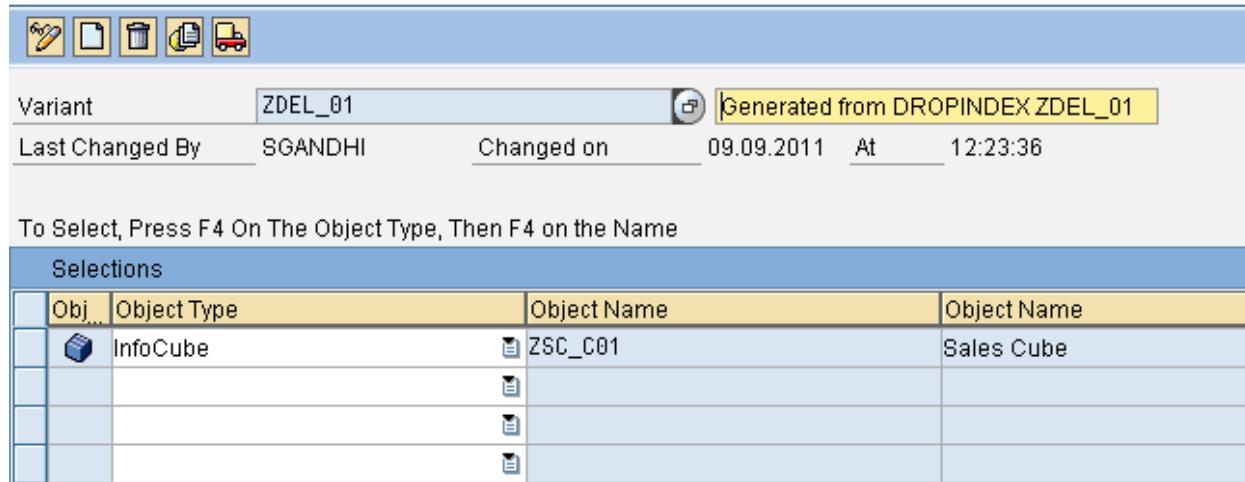
Step 7: Then load data to cube. So create process type **Data Transfer Process**. Here give the name of DTP that loads data from DSO to InfoCube - DTP_00O2TL8ODLZ5KRKY8JOKNGI07.

Change Data Transfer Process



Step 8: Then index that was deleted previously, needs to be recreated. Hence create a process type (from data target administration section) **Generate Index**. Create a process variant for creating index of cube ZSC_C01.

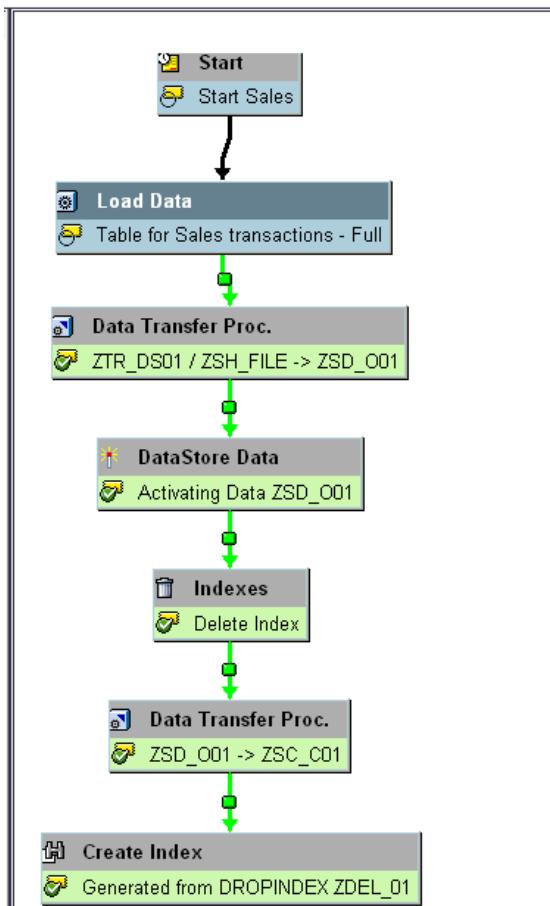
Process Maintenance: Generate Index



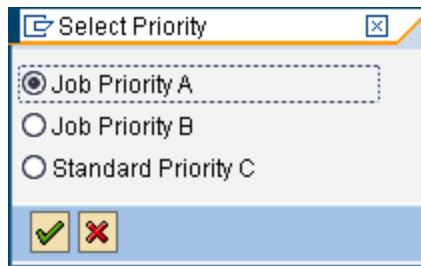
The screenshot shows the SAP Process Maintenance interface for generating an index. At the top, there are several icons: a pencil, a document, a trash can, a magnifying glass, and a truck. Below the icons, the variant is set to ZDEL_01, and a note indicates it was generated from DROPINDEX ZDEL_01. The last change was made by SGANDHI on 09.09.2011 at 12:23:36. A message below the header says "To Select, Press F4 On The Object Type, Then F4 on the Name". The main area is titled "Selections" and contains a table with four columns: Obj., Object Type, Object Name, and Object Name. The first row shows an InfoCube named ZSC_C01, which is identified as the Sales Cube. There are four empty rows below it.

Obj...	Object Type	Object Name	Object Name
	InfoCube	ZSC_C01	Sales Cube

Link each process in the sequence they need to be executed.

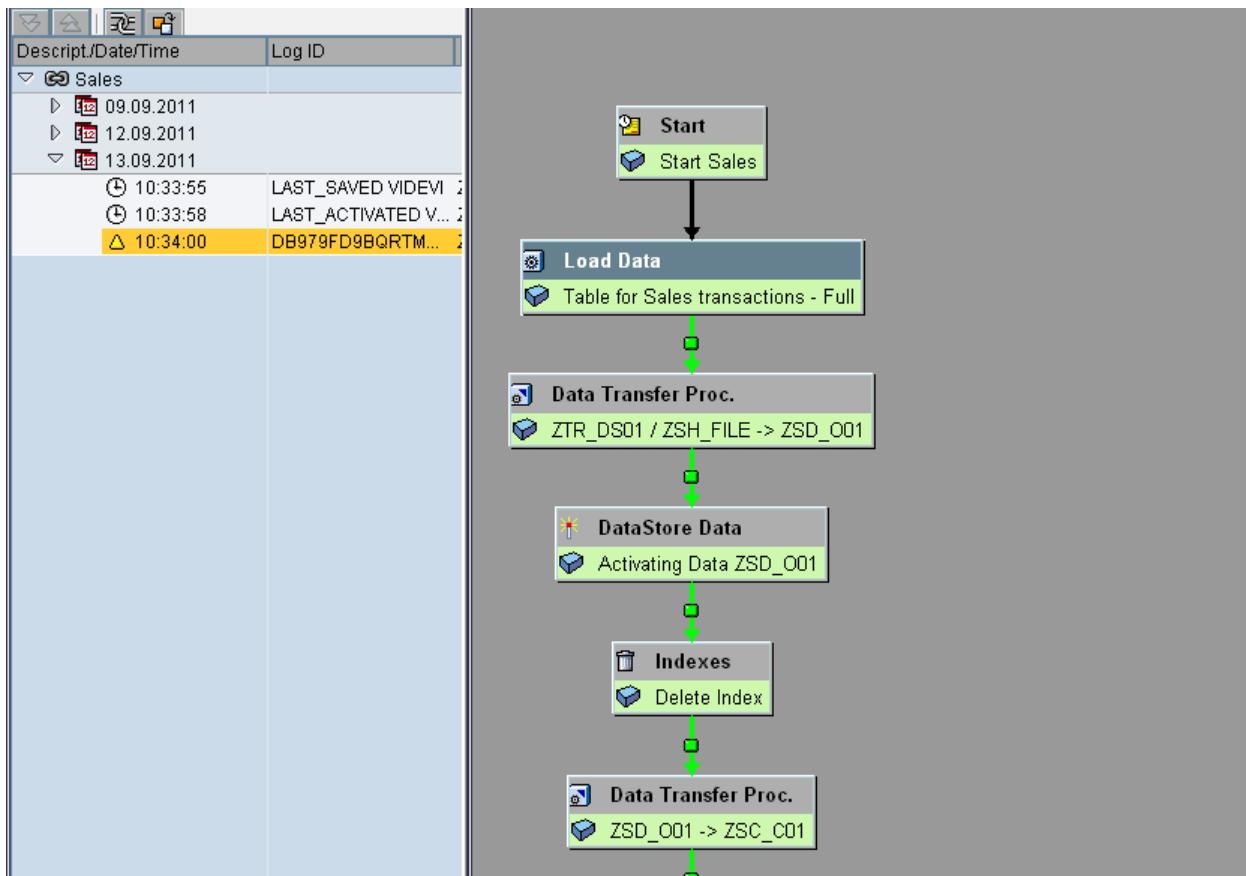


Step 9: Save and activate the process chain. Then execute it by using  button. It will ask for the priority for the job to execute, as below. Select the priority of the load and run the process chain.



Step 10: You can check the run status for the logs of the chain for that particular date or any

selected time from the given options by using  button on top area.



Conclusion:

Process chains are used to automate the various data warehousing processes in the background.

Aggregates, Partitions

Use:

Aggregates and Partitions are used to improve the query performance. Partitioning breaks the total data in the cube into smaller units making it easier to analyze and delete data whereas an aggregate creates redundant data which allows quicker access while reporting.

Pre-requisites:

Infocube ZCU_CXX should be available as a copy of Sales infocube.

Infocube should contain either of the fields: OCalmonth or OFiscper as partitioning can be done only on these.

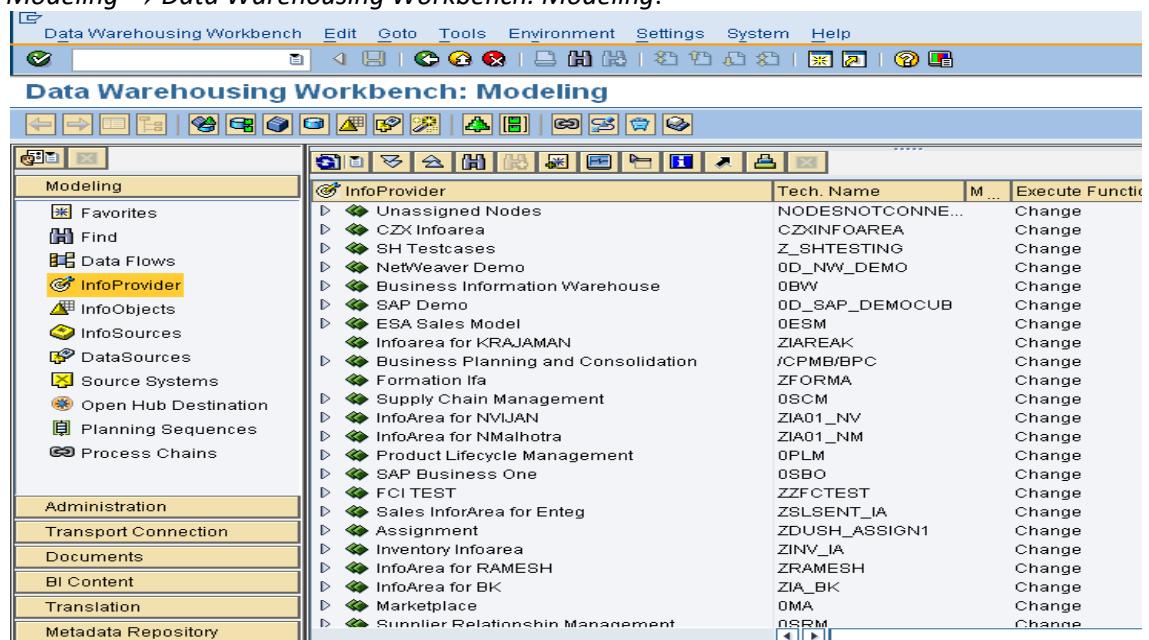
The transformation and DTP from Sales cube to ZCU_CXX should be available.

Infocube ZCU_CXX should not contain any data when the exercise starts.

Procedure for Partitions:

46. Log onto the BI system.

47. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.



48. Under Modeling, choose Infoprovider.

49. Select Infocube ZCU_CXX to be partitioned. For ex. ZSALE_PAR .

50. Check the tables created for this infocube in Transaction SE11.

Goto Transaction SE11. Enter Database Table as *infocubename* and press F4 to get list.

For ex.

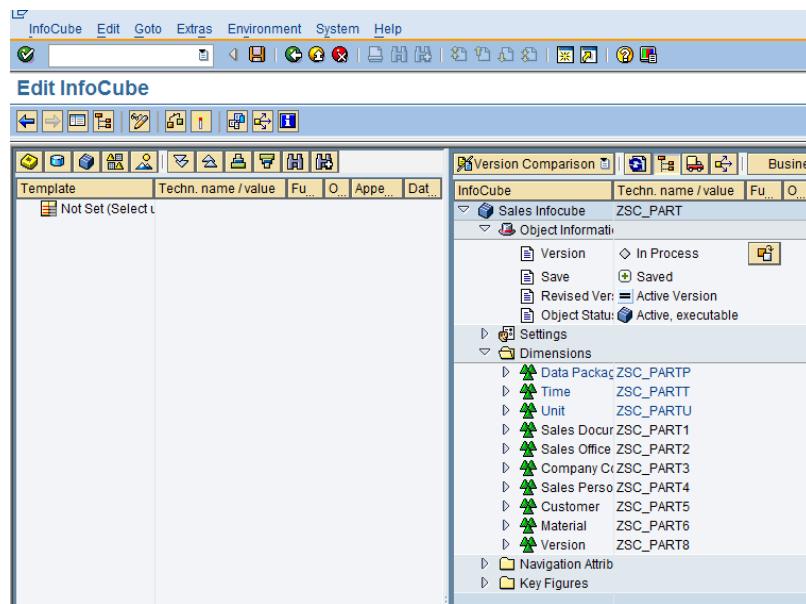
ABAP Dictionary: Initial Screen	
<input checked="" type="radio"/> Database table	*ZSC_PART*
<input type="radio"/> View	
<input type="radio"/> Data typ	
<input type="radio"/> Type Grp	
<input type="radio"/> Domain	
<input type="radio"/> Search h	
<input type="radio"/> Lock obj	
<input type="radio"/> D	
	Repository Info System: Tables Find (13 Hits)
Table Name	Short text
/BIC/DZSC_PART1	Sales Document Number
/BIC/DZSC_PART2	Sales Office
/BIC/DZSC_PART3	Company Code
/BIC/DZSC_PART4	Sales Person
/BIC/DZSC_PART5	Customer
/BIC/DZSC_PART6	Material
/BIC/DZSC_PART7	Version
/BIC/DZSC_PART8	Data Package
/BIC/DZSC_PARTP	Time
/BIC/DZSC_PARTT	Unit
/BIC/EZSC_PART	Sales Infocube
/BIC/FZSC_PART	Sales Infocube
/BIC/VZSC_PARTF	FACTVIEW - INFOCUBE ZSC_PART

51. For partitioning, we will consider Calmonth from Jan 2011 to Aug 2011.

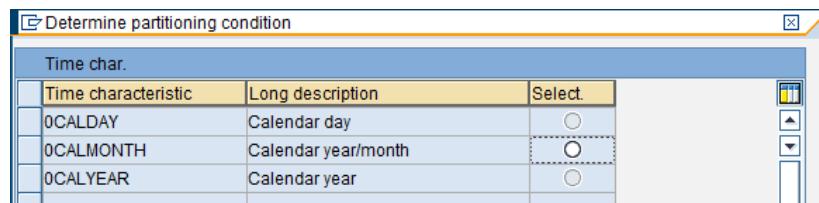
Goto Transaction RSA1. From Modeling, goto Infoprovider. Select the infocube ZCU_CXX to be partitioned.

52. Right click on infocube name ZCU_CXX and select “Change”. The infocube Edit screen should appear.

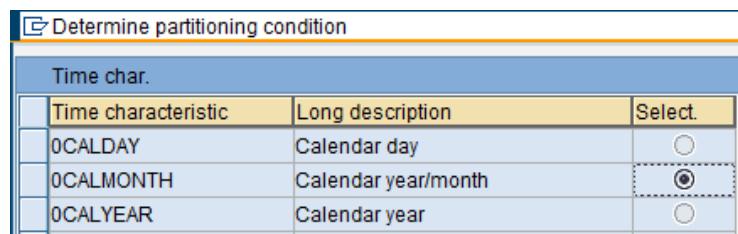
For ex.



53. Goto Menu Option Extras -> DB Performance -> DB Partitioning.

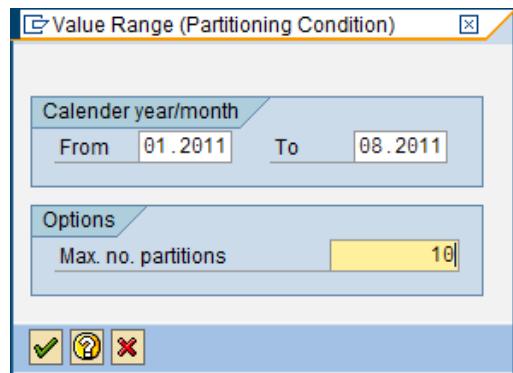


54. Select Calmonth and Click on Next 



55. Enter From Calmonth = 01.2011 , To Calmonth = 08.2011 and Max. no of Partitions = 10.

Click on Next 



56. Save Infocube ZCU_CXX by clicking



57. Activate infocube ZCU_CXX by clicking

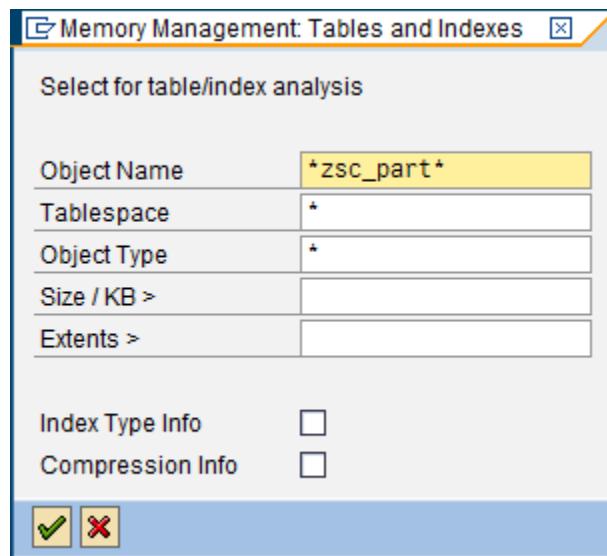
58. The transformation and DTP to ZCU_CXX would have got inactive. To activate it, go to that transformation / DTP from RSA1 and then activate it.

59. Load data to infocube ZCU_CXX by executing DTP.

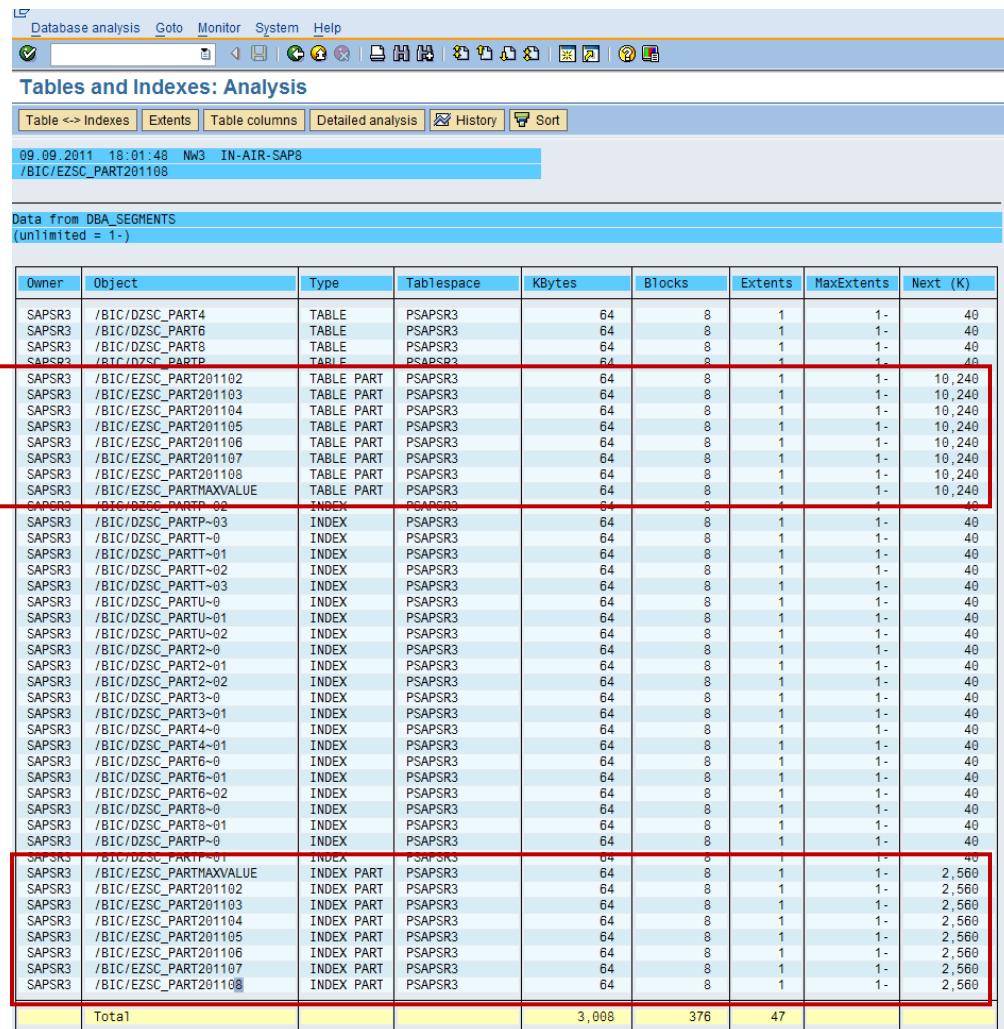
60. Compress the request in infocube ZCU_CX.

61. Goto Transaction DB02old. Click on Button “Detailed Analysis”. Enter Object Name as *ZCU_CXX* and click ok Enter.

For ex.



62. It will show the partitions created as below.



Owner	Object	Type	Tablespace	KBytes	Blocks	Extents	MaxExtents	Next (K)
SAPSR3	/BIC/DZSC_PART4	TABLE	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART6	TABLE	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART8	TABLE	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTP	TABLE	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/EZSC_PART201102	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/EZSC_PART201103	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/EZSC_PART201104	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/EZSC_PART201105	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/EZSC_PART201106	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/EZSC_PART201107	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/EZSC_PART201108	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/EZSC_PARTMAXVALUE	TABLE PART	PSAPSR3	64	8	1	1-	10,240
SAPSR3	/BIC/DZSC_PARTP_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTP_02	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTP_03	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTT_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTT_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTT_02	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTT_03	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTU_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTU_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTU_02	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART2_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART2_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART2_02	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART3_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART3_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART4_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART4_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART6_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART6_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART6_02	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART8_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PART8_01	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/DZSC_PARTP_0	INDEX	PSAPSR3	64	8	1	1-	40
SAPSR3	/BIC/EZSC_PARTMAXVALUE	INDEX PART	PSAPSR3	64	8	1	1-	2,560
SAPSR3	/BIC/EZSC_PART201102	INDEX PART	PSAPSR3	64	8	1	1-	2,560
SAPSR3	/BIC/EZSC_PART201103	INDEX PART	PSAPSR3	64	8	1	1-	2,560
SAPSR3	/BIC/EZSC_PART201104	INDEX PART	PSAPSR3	64	8	1	1-	2,560
SAPSR3	/BIC/EZSC_PART201105	INDEX PART	PSAPSR3	64	8	1	1-	2,560
SAPSR3	/BIC/EZSC_PART201106	INDEX PART	PSAPSR3	64	8	1	1-	2,560
SAPSR3	/BIC/EZSC_PART201107	INDEX PART	PSAPSR3	64	8	1	1-	2,560
SAPSR3	/BIC/EZSC_PART201108	INDEX PART	PSAPSR3	64	8	1	1-	2,560
Total				3,008	376	47		

Conclusion:

Cube partition is created using OCalmonth.

Procedure for Aggregates:

1. Create a query ZCU_CXX_QXX on infocube ZCU_CXX in query designer with below definition:

Filter = Calmonth restricted by variable Calendar Month
Customer restricted to “CUST2”.

Rows = Sales office, Customer

Column = Sales Amount , Sales Quantity.

 Preview

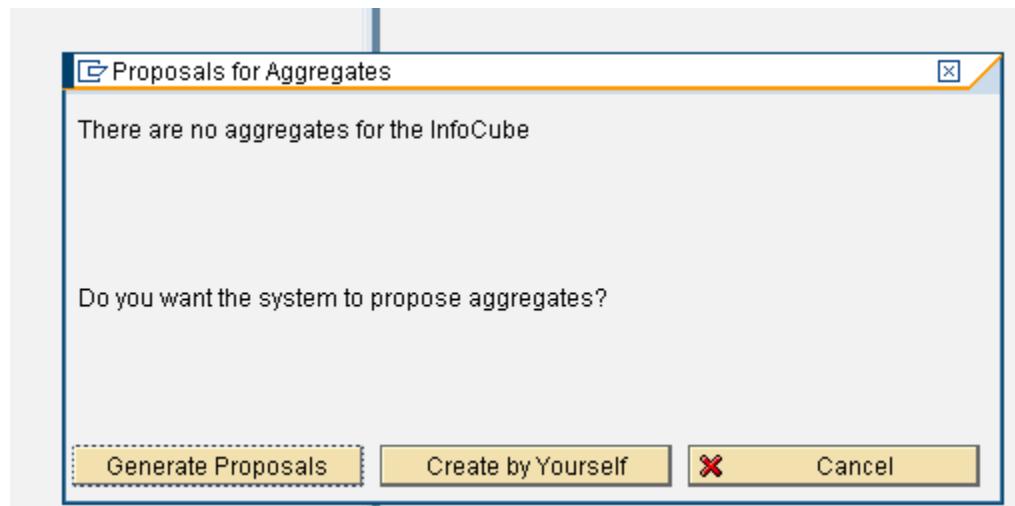
		Sales Amou	Sales Quan
a-Sales Offi	a-Customer		
	b-Customer		
b-Sales Offi	a-Customer		
	b-Customer		

2. Now we need to create aggregate for query created in step 20.

Goto RSA1 -> Modeling -> Infoprovider -> Select infocube ZCU_CXX.

Right Click on ZCU_CXX and select Maintain Aggregates.

3. The system propose aggregates if you click on ‘Create Proposal’ or Click on Create by Yourself’ if you want to manually want to create the aggregate. It should take you to Maintain Aggregates screen.



4. Enter Aggregate description. For ex.



5. Now Select characteristic one by one and drag from left section and drop on the Aggregate. For ex. "Sales Query Aggr".

Calendar Month

Sales Office

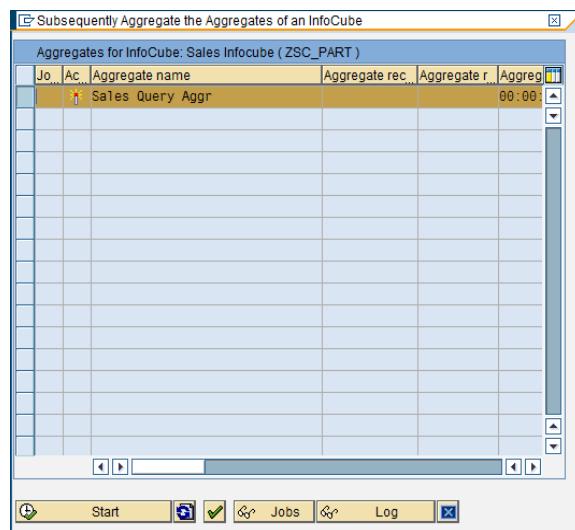
Customer / Sold to Party -> Right Click -> Fixed Value -> select CUST2.

6. Save Aggregate by clicking .

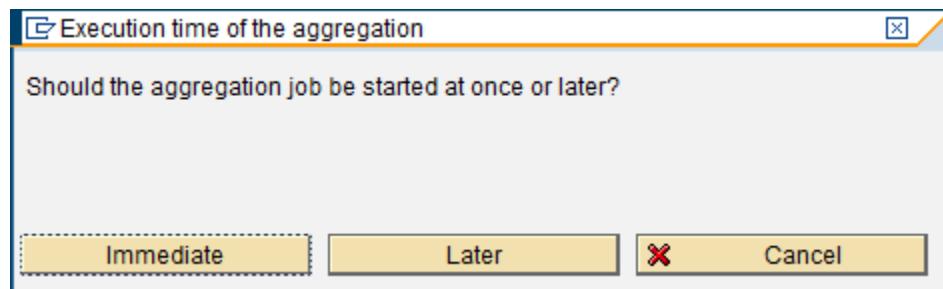
7. Select the aggregate by keeping cursor on it say "Sales Query Aggr" and then click on

Activate and Fill .

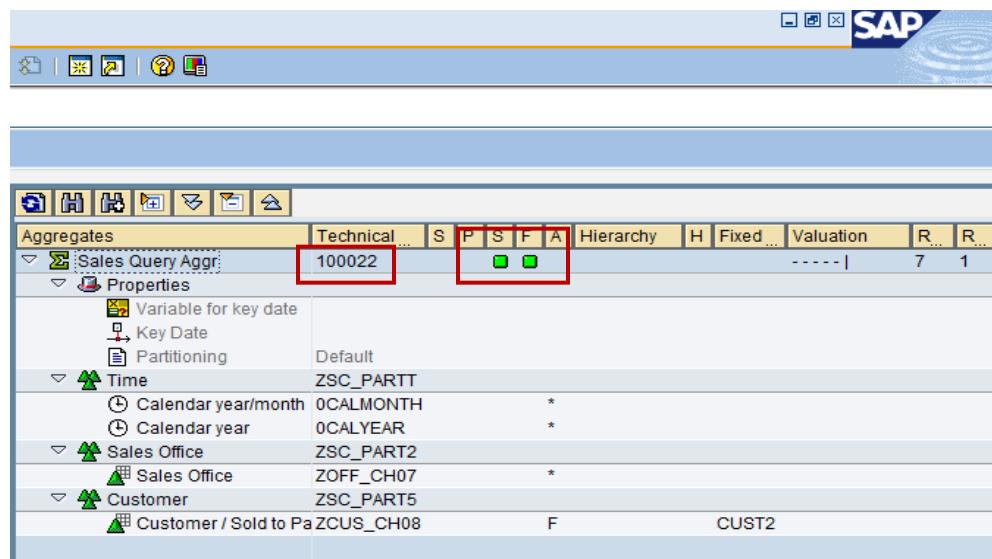
8. Below Screen will appear. Select the Aggregate and Click on Start.



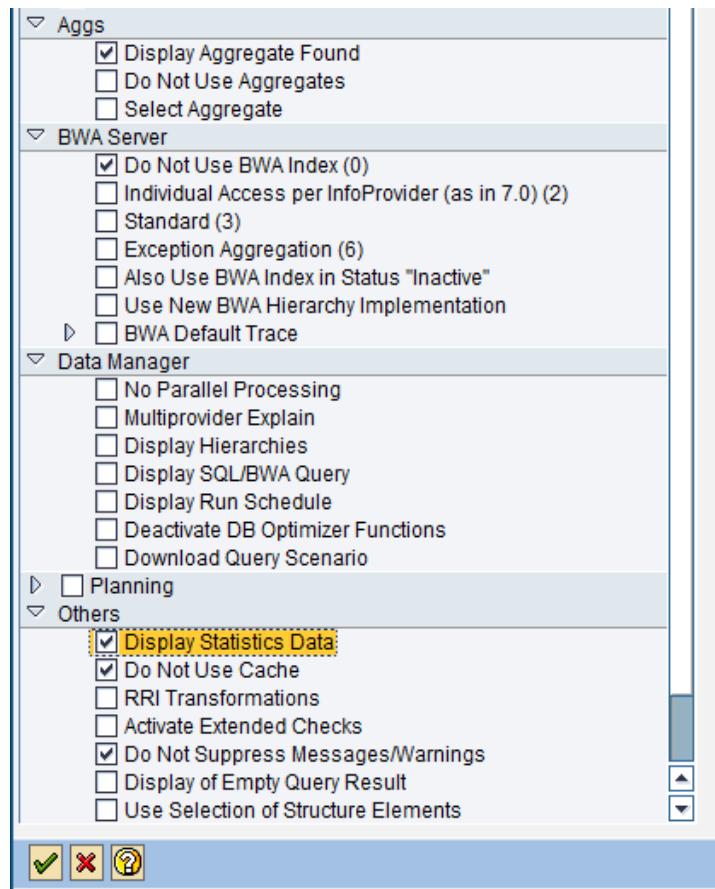
Then Select Immediate.



9. Click on Refresh till the entry disappears.
10. The aggregate should show as active and filled. Thus aggregate 10022 is created here.

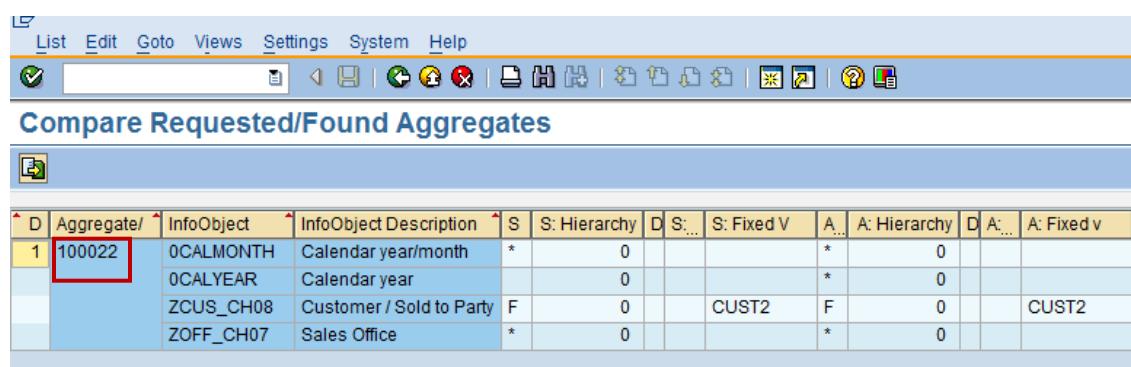


11. To check whether the query uses the created aggregate: Goto Transaction RSRT. Enter query ZCU_CXX_QXX and click Execute + Debug.
12. Select Display aggregate found and Display statistics data, do not use Cache. Click on OK (Tick mark)



13. Enter Selections for Calendar Month as 02.2011 to 11.2011. Click Execute.

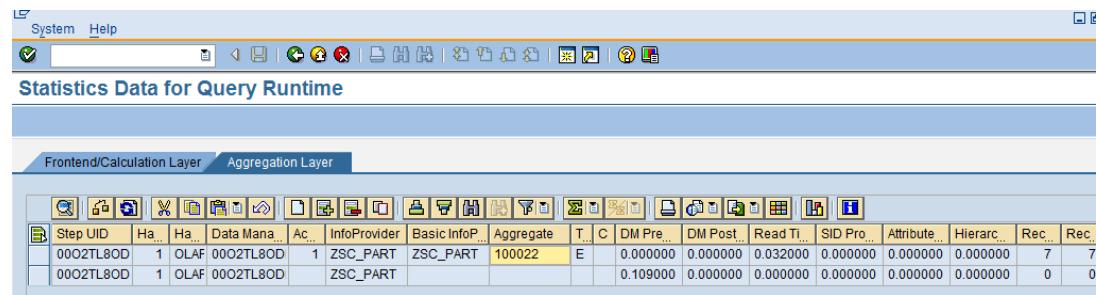
The table will show aggregate no. if found as below.



D	Aggregate/	InfoObject	InfoObject Description	S	S: Hierarchy	D	S...	S: Fixed V	A...	A: Hierarchy	D	A...	A: Fixed v
1	100022	0CALMONTH	Calendar year/month	*	0				*	0			
		0CALYEAR	Calendar year		0				*	0			
		ZCUS_CH08	Customer / Sold to Party	F	0		CUST2		F	0			CUST2
		ZOFF_CH07	Sales Office	*	0				*	0			

Click F3, it will show report result.

It shows data is read from aggregate 10022.



The screenshot shows the SAP BW Statistics Data for Query Runtime interface. At the top, there's a toolbar with various icons. Below it is a menu bar with 'System' and 'Help'. The main title is 'Statistics Data for Query Runtime'. Underneath, there are two tabs: 'Frontend/Calculation Layer' and 'Aggregation Layer', with 'Aggregation Layer' being selected. A large table follows, with columns including Step UID, Hash, Data Manager, Ac., InfoProvider, Basic InfoP., Aggregate, T, C, DM Pre., DM Post., Read T..., SID Pro..., Attribute..., Hierarc..., Rec., and Rec. The table contains two rows of data.

Step UID	Ha...	Ha...	Data Mana...	Ac...	InfoProvider	Basic InfoP...	Aggregate	T...	C	DM Pre...	DM Post...	Read T...	SID Pro...	Attribute...	Hierarc...	Rec...	Rec...
0002TL80D	1	OLAF	0002TL80D	1	ZSC_PART	ZSC_PART	100022	E		0.000000	0.000000	0.032000	0.000000	0.000000	0.000000	7	7
0002TL80D	1	OLAF	0002TL80D		ZSC_PART					0.109000	0.000000	0.000000	0.000000	0.000000	0.000000	0	0

Conclusion:

Aggregate is created for a Bex query.

Index (Create, Delete, Repair), Roll-up, Compression.

Index

Use:

Indices are data structure sorted values containing pointer to records in table. Indices are used to improve data reading performance / query performance but decreases data loading/writing performance .We delete/drop them during the data loading to Cube and create

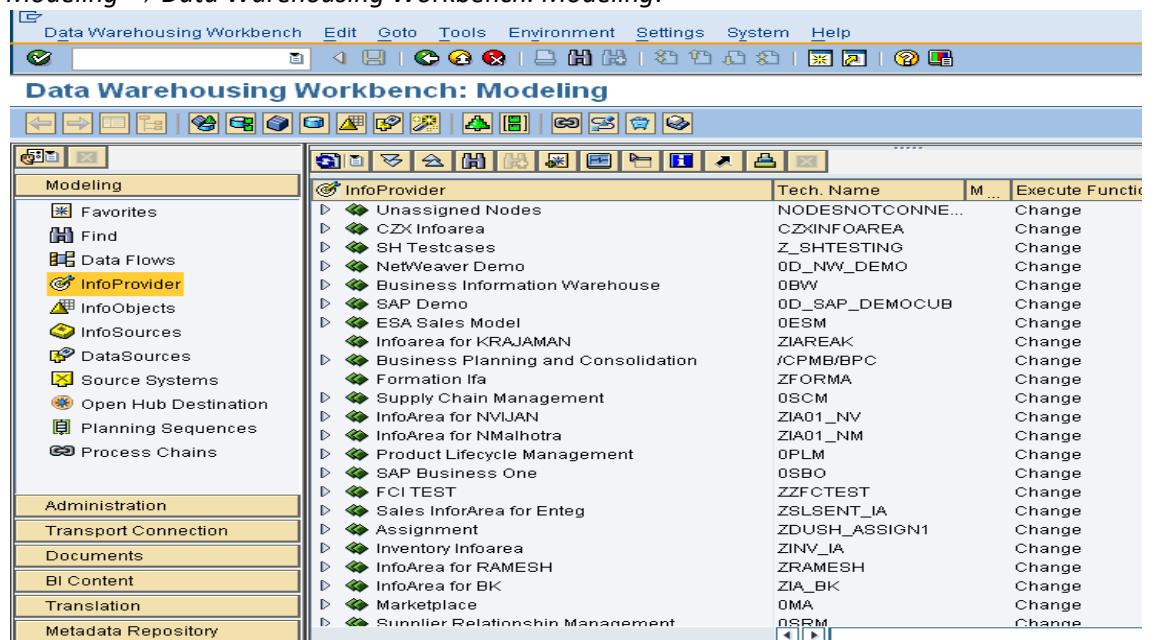
again after loading is finished. In BW normally we include this in process chain. In process chain before loading the data to cube use the delete index process and load the cube and create index.

Pre-requisites:

InfoCube ZSC_XX should be available.

Procedure for Indexing:

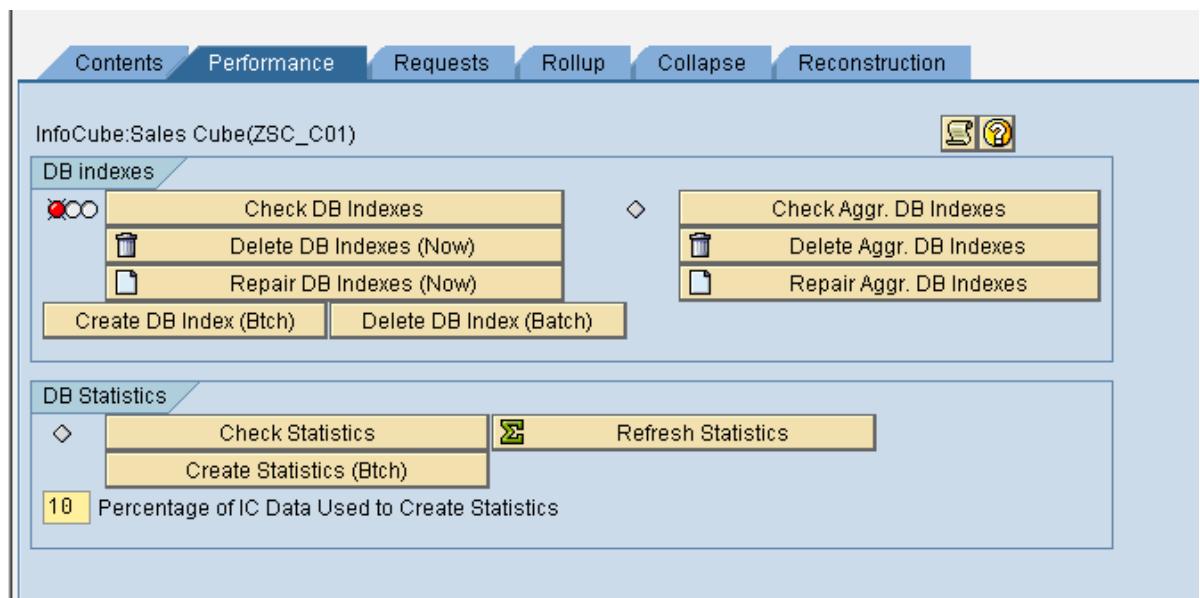
63. Log onto the BI system.
64. Go to Tcode RSA1. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling*.



65. Under Modeling, choose Info provider.

Right click Info cube ZSC_XX on which we will create and delete indices for example ZSC_C01.

Follow the path - Right click on info cube-> Manage > Performance > Check DB Indices.



Checking Indices

Using the Check Indices button, you can check whether indices already exist.

Yellow status display: There are indices of the wrong type

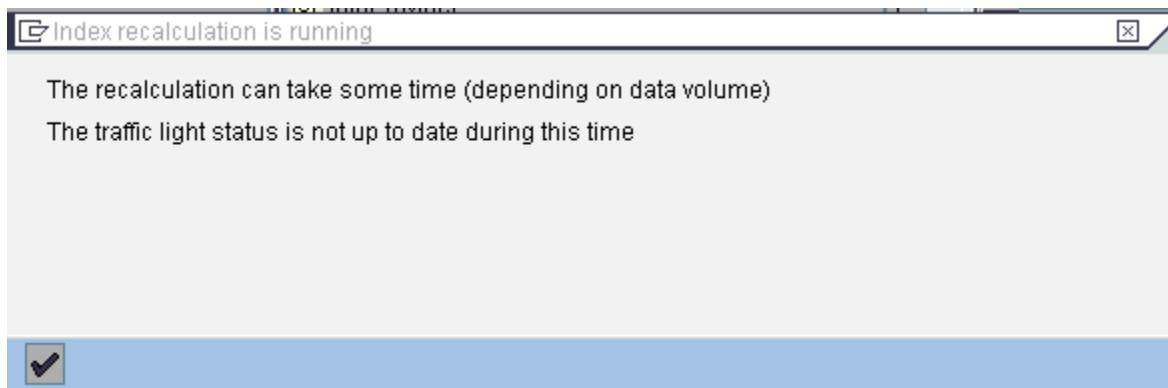
Red status display: No indices exist, or one or more indices are faulty

Green status display: Indices exist.

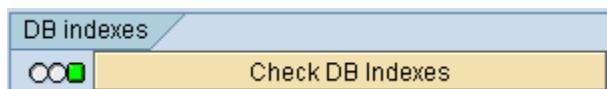
In this case as the indices are not created we will create indices by clicking on

Following pop will open up and press enter.

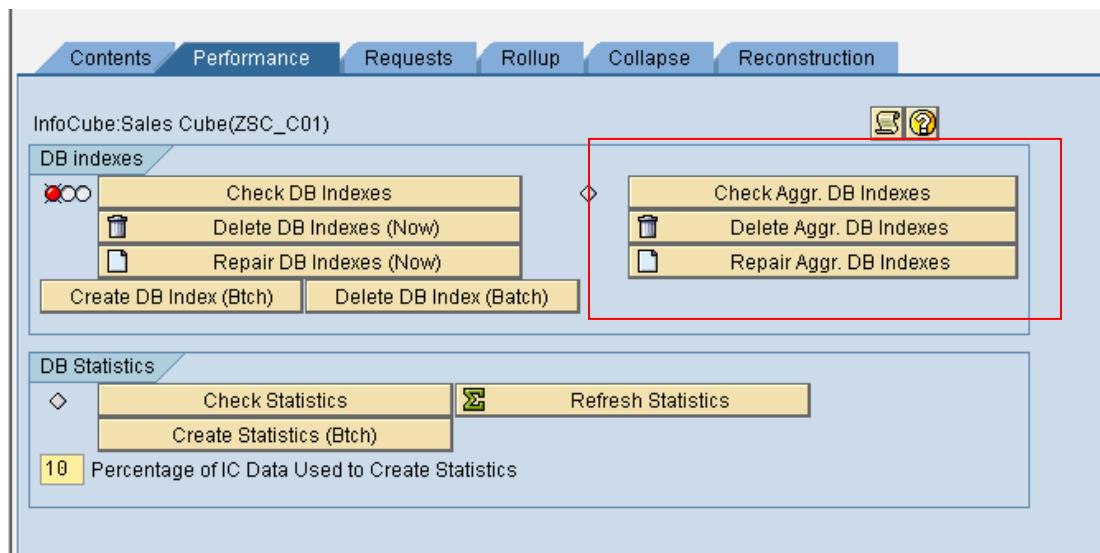




Now click on **Check DB Indexes** it will show a green flag which means that Indices are created and consistent.



Similarly we can create/drop/repair indices for aggregates as well



Deleting Indices

Using this function you can delete indeces.

Repairing Indices

Using this function you can create missing indices or regenerate deleted indices. Faulty indices are corrected.

Roll up

Use:

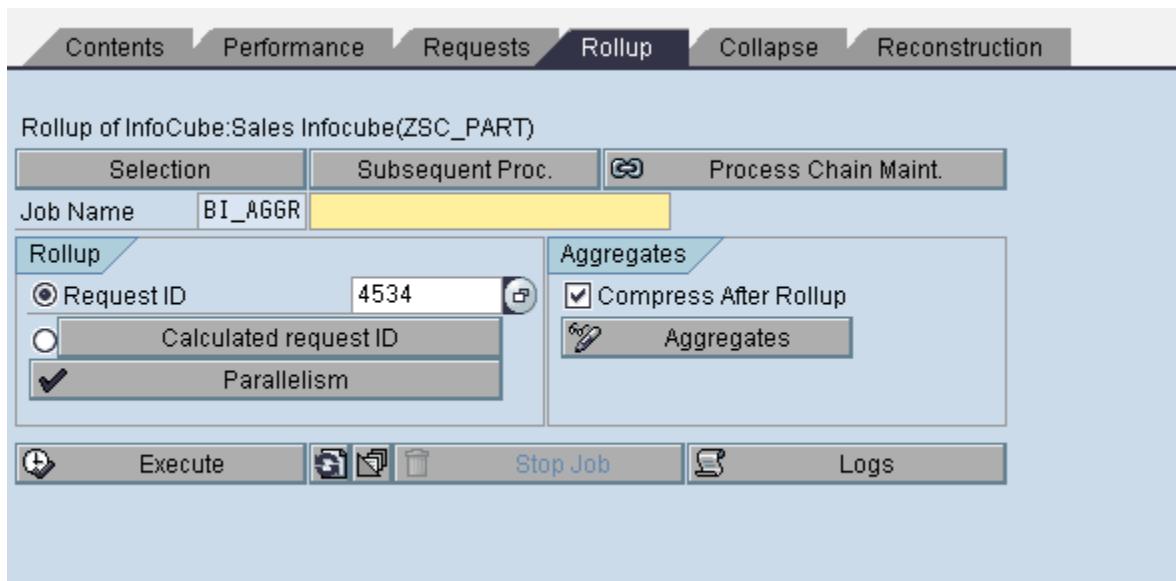
Roll up is required to fill the Aggregates which are used to improve the query performance.

Pre-requisites:

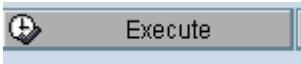
Infocube ZSC_XX should be available and loaded with data and aggregates must be created on the cube.

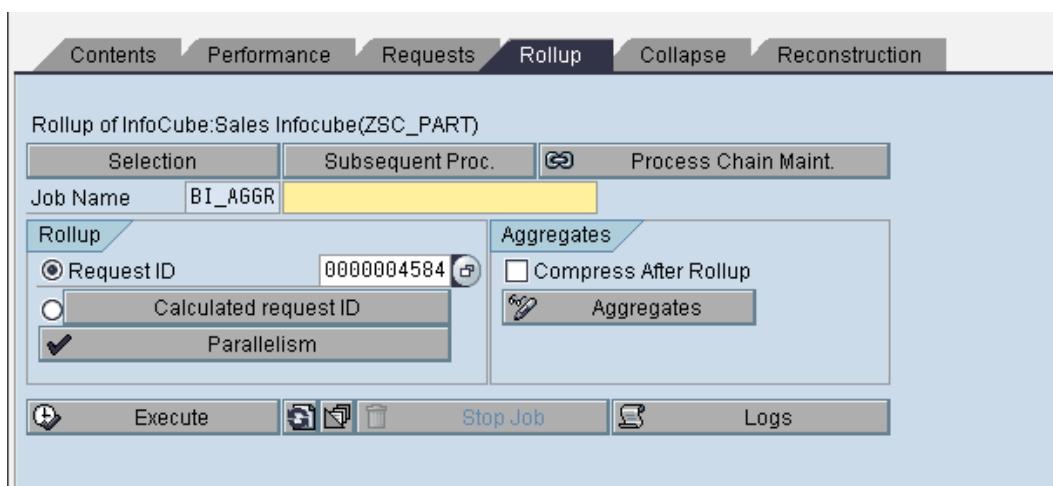
Procedure for Indexing:

1. Log onto the BI system.
2. Goto RSA1 -> Modeling -> Infoprovider -> Select infocube ZSC_XXX (e.g. ZSC_PART)
Right Click on ZSC_XXX → manage → Roll up tab .

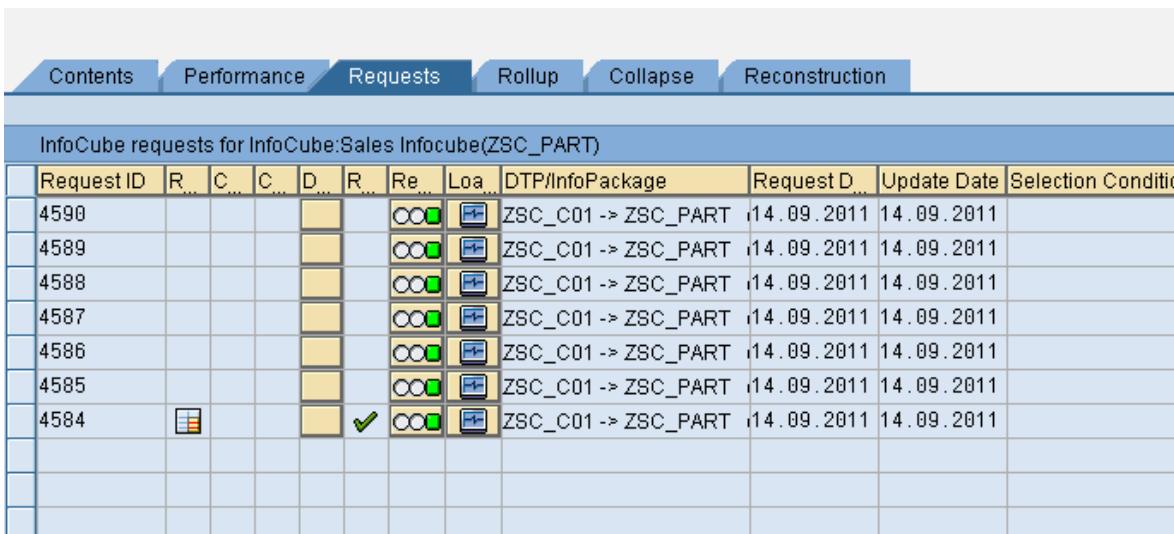


3. Select the request id that needs to be rolled up using F4 help in the Request id field

(same ids that you see in Requests tab) and press .



4. When you see the request tab you will see that the selected request in step 3 is rolled up.



Request ID	R	C	C	D	R	Re	Lo	DTP/InfoPackage	Request Date	Update Date	Selection Condition
4590						COO	CO	ZSC_C01 -> ZSC_PART	14.09.2011	14.09.2011	
4589						COO	CO	ZSC_C01 -> ZSC_PART	14.09.2011	14.09.2011	
4588						COO	CO	ZSC_C01 -> ZSC_PART	14.09.2011	14.09.2011	
4587						COO	CO	ZSC_C01 -> ZSC_PART	14.09.2011	14.09.2011	
4586						COO	CO	ZSC_C01 -> ZSC_PART	14.09.2011	14.09.2011	
4585						COO	CO	ZSC_C01 -> ZSC_PART	14.09.2011	14.09.2011	
4584						COO	CO	ZSC_C01 -> ZSC_PART	14.09.2011	14.09.2011	

The Compress After Rollup check will compress the aggregates after roll up.

Conclusion : Roll up is performed to fill in the aggregates

Compression

Use:

When you load data into the InfoCube, entire requests can be inserted at the same time. Each of these requests has its own request ID, which is included in the fact table in the packet dimension. This makes it possible to pay particular attention to individual requests. One advantage of the request ID concept is that you can subsequently delete complete requests from the InfoCube.

However, the request ID concept can also cause the same data record (all characteristics agree, with the exception of the request ID) to appear more than once in the fact table. This unnecessarily increases the volume of data, and reduces performance in Reporting, as the system has to aggregate using the request ID every time you execute a query.

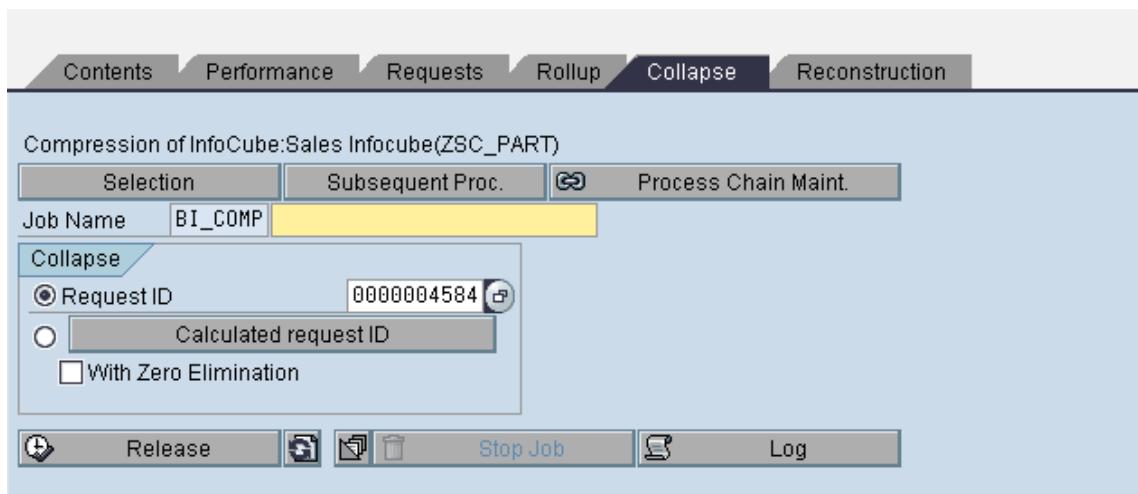
Using compressing, you can eliminate these disadvantages, and bring data from different requests together into one single request (request ID 0).

Pre-requisites:

Infocube ZSC_XX should be available and loaded with data.

Procedure for Indexing:

1. Log onto the BI system.
2. Goto RSA1 -> Modeling -> Infoprovider -> Select infocube ZSC_XXX (e.g. ZSC_PART)
Right Click on ZSC_XXX → manage → Collapse tab .



3. Select the request id that needs to be rolled up using F4 help in the Request id field and press **Release**.
4. The request will be compressed and the data from F table will be moved to the E table. The aggregates if any on the infocube will also be compressed for this request.

5. Zero Elimination.

You want to avoid the InfoCube containing entries whose key figures are zero values you can run a zero-elimination at the same time as the compression. In this case, the entries, where all the key figures are equal to 0, are deleted from the fact table.

Conclusion:

Compression is performed on the cube and aggregates.

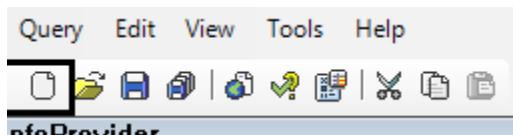
Simple Query and query view

Use:

Using query designer we can show data in report that is required by Business.

Steps to create new query:

- 1) Open query designer from business explorer menu. Login with your credentials.
- 2) Click on create new query tab from tool bar.



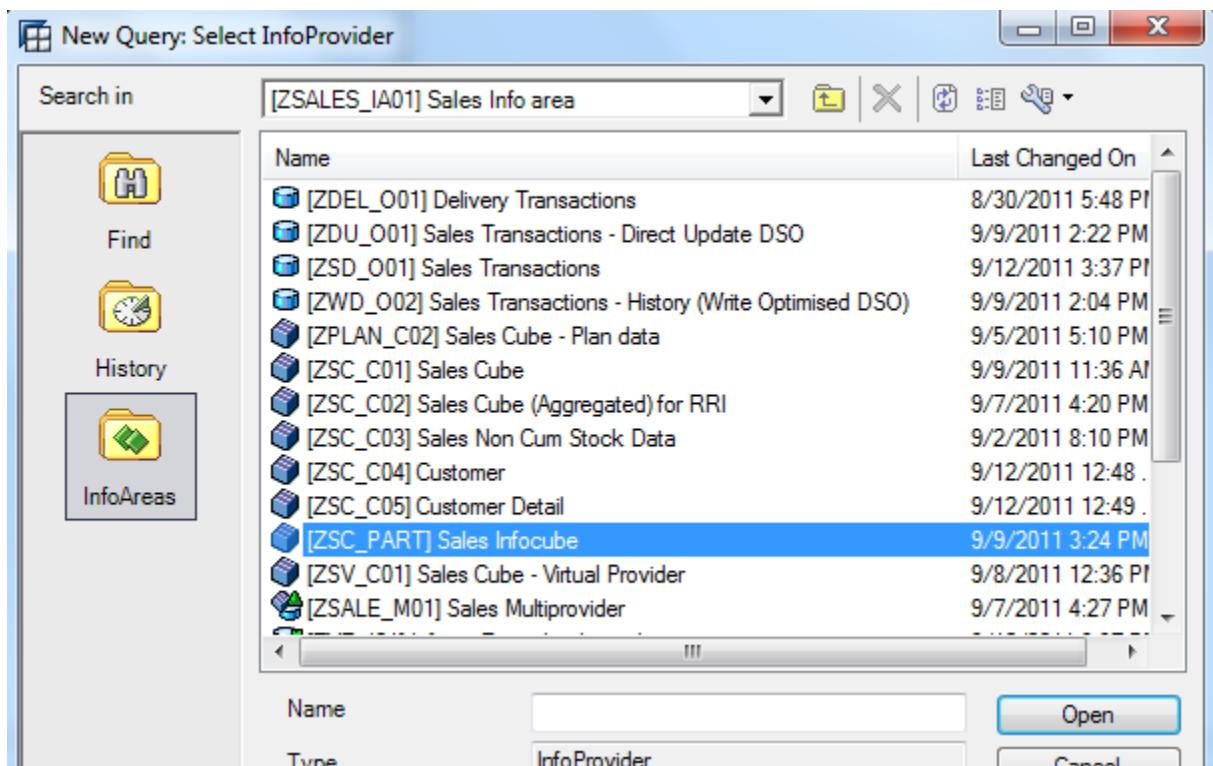
- 3) Click on infoarea tab and find out your infoarea and data target (ZSC_PART), after that click on data target to create new query.

New Query: Select InfoProvider

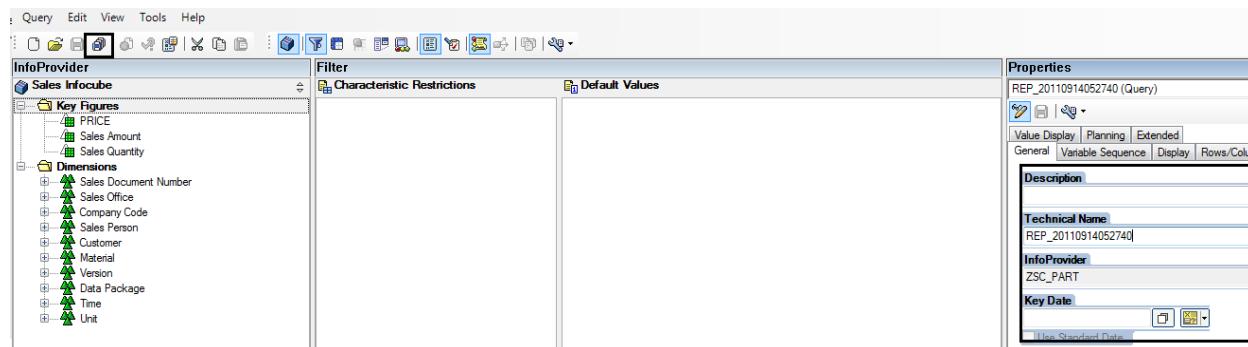
Search in **InfoAreas**

Name	Last Changed On
[ZIA01_NV] InfoArea for NVIJAN	7/26/2011 3:11 PM
[ZIA01_NV1] TRN Nvijan	9/13/2011 5:11 PM
[ZIA_BK] InfoArea for BK	8/9/2011 6:52 PM
[ZINFO_TEST] Infoarea for Test	8/24/2011 11:56 AM
[ZINV_IA] Inventory Infoarea	8/8/2011 11:47 AM
[ZMARBRUIN] InfoArea for Marbruin	9/5/2011 11:09 AM
[ZRAMESH] InfoArea for RAMESH	8/11/2011 3:17 PM
[ZSALES_IA01] Sales Info area	9/2/2011 6:06 PM
[ZSLSENT_IA] Sales InforArea for Enteg	8/12/2011 11:59 AM
[ZTRLUINFOAREA] InfoArea for Lukas	8/16/2011 10:10 AM
[ZZFCTEST] FCI TEST	8/3/2011 1:47 PM
[Z_SHTESTING] SH Testcases	8/10/2011 2:19 PM
[@10D_NW_EPM_TRANSIENT] Classical InfoSet/Transient prov...	

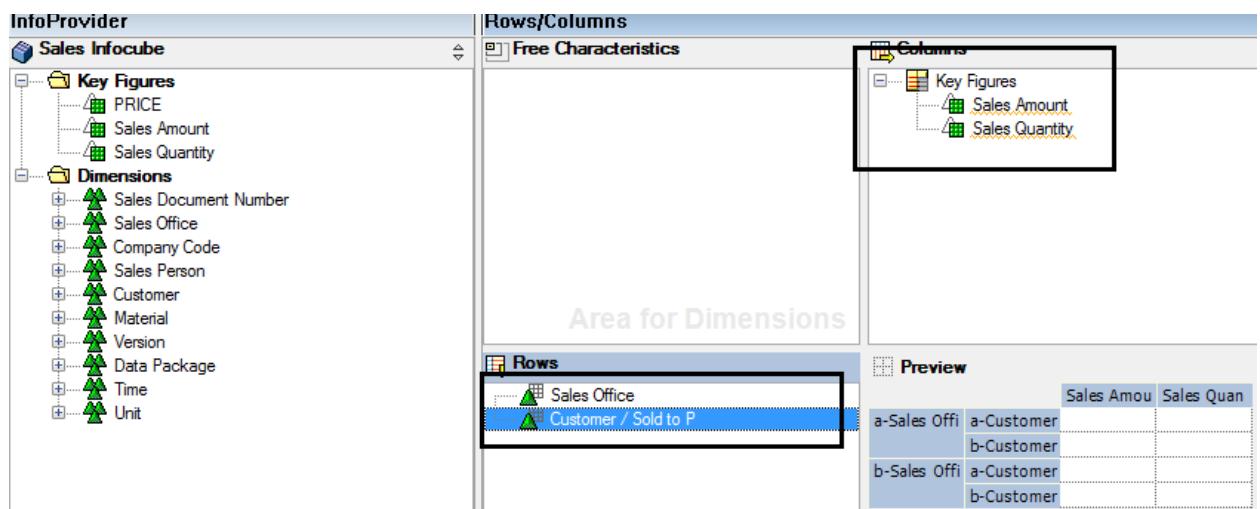
Name Open
Type InfoProvider Cancel



- 4) Give your query technical name(ZSC_PART_Q001) and description and save the query.



- 5) Now drag and drop some characteristic in row and key figures in column from the left column .



The screenshot shows the SAP BW Query Designer interface. On the left, the InfoProvider tree displays 'Sales Infocube' with 'Key Figures' (PRICE, Sales Amount, Sales Quantity) and 'Dimensions' (Sales Document Number, Sales Office, Company Code, Sales Person, Customer, Material, Version, Data Package, Time, Unit). In the center, the 'Rows/Columns' area shows 'Free Characteristics' and 'Columns' (Key Figures: Sales Amount, Sales Quantity). The 'Area for Dimensions' is empty. Below these, the 'Rows' area contains 'Sales Office' and 'Customer / Sold to P'. On the right, the 'Preview' table shows two rows: a-Sales Offi, a-Customer and b-Sales Offi, b-Customer. The preview table has columns for Sales Amou and Sales Quan.

- 6) If you want to see chars and Key figures in Key or Text or KEY-Text format in Query Designer (not output) use  button.

- 7) Save the query .



- 8) Click on Check Query. You will see success message in messages area.



- 9) Run the report from RSRT transaction.

Go to RSRT transaction -> Enter query technical name -> Select Query display as HTML -> Execute.

Query Output –

BEx Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

ZSC_PART_Q001 Last Data Update: 09.09.2011 13:22:26

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Rows Columns Free Characteristics

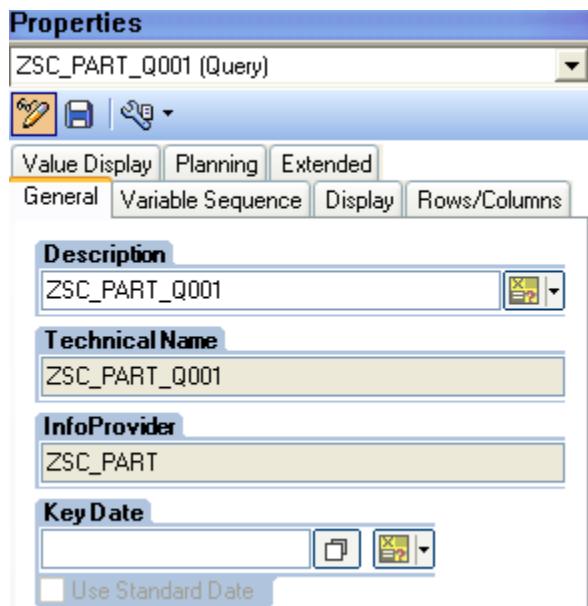
Sales Office	Customer / Sold to P	Document Number	No of Sales Orders	Sales Amount	Sales Quantity
	CUST2	1011	1	£ 100.00	100.000 EA
		Result	1	£ 100.00	100.000 EA
	Result		1	£ 100.00	100.000 EA
	CUST2	1017	1	£ 100.00	100.000 EA
		Result	1	£ 100.00	100.000 EA
	CUST2	1023	1	£ 100.00	100.000 EA

Query Properties-

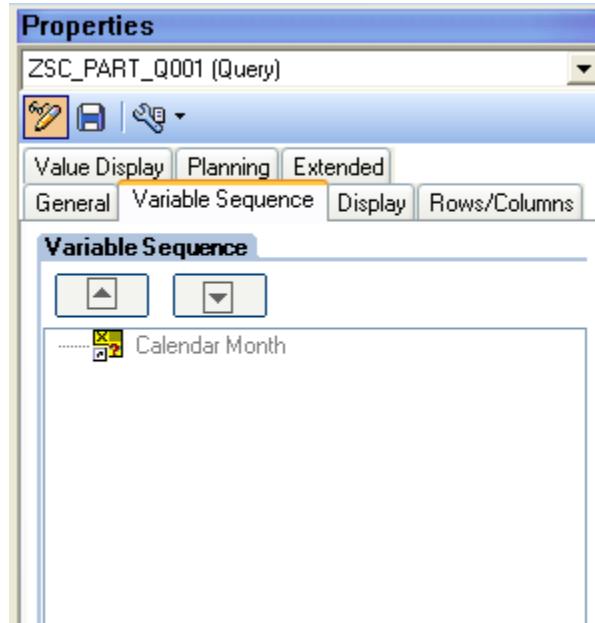
- 1) Click on  button to see Query properties on right hand side of the query.



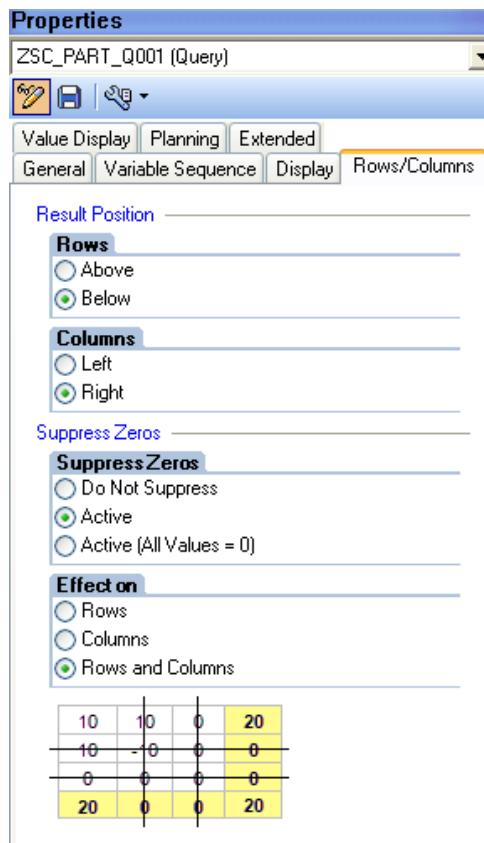
- 2) General tab shows Technical name, Description of the query and info provider on which query is built. Key date is used when you are showing time dependant master data. Master data that is valid at that particular date will be pulled at the output.



3) Variable Sequence tab is used to set the sequence in which User entry Variables will be shown at the query output. In this case there is only one variable. Had there been more than one we could have changed the sequence in which they will be shown in the output.



4) Rows and Columns tab - It is especially useful when you want to suppress Rows and columns that sum up to Zero. (like $+10 -10 = 0$)



5) Extended – It is ticked if data of Query need to be accessed by the external applications.

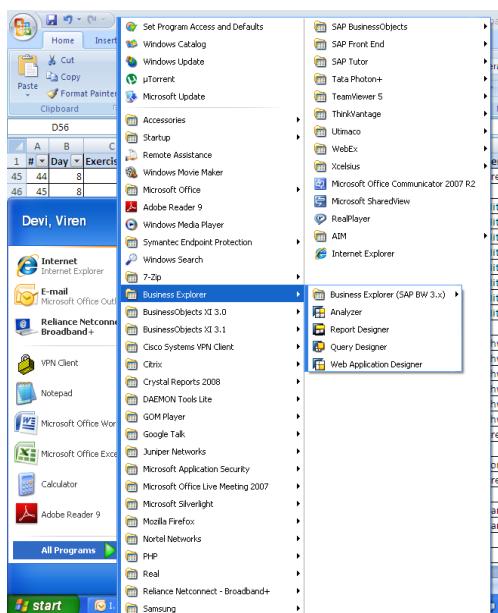
Query View

Use :

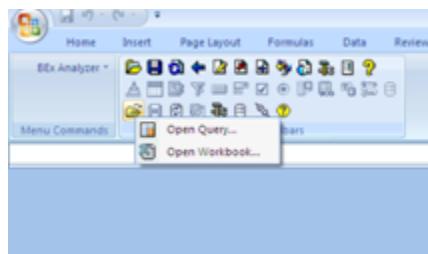
A query view is a kind of "snapshot" of changed settings of the original query. This might be adding or hiding key-figures or characteristics, defining filters or conditions and exceptions.

You can open these views directly without repeating navigational steps in the initial query and changing it.

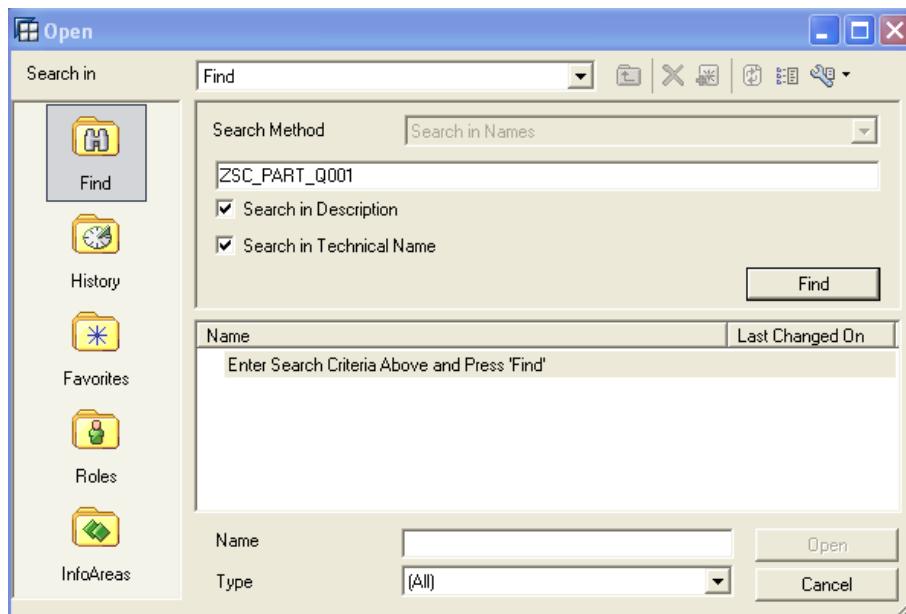
- 1) Open BEx Analyser from business explorer menu (Start -> All Programs->Business Explorer-> BEx Analyser).



2) Open a query in Analyzer (ZSC_PART_Q001).



3) Login with your credentials. Search for ZSC_PART_Q001 query.



Have a look at the query output.

	A	B	E	F	G	H	I	J	K	L	M	N
1				ZSC_PART_Q001								
2					Author SGANDHI			Status of Data	9/15/2011 6:14			
3								Chart	Filter	Information		
4												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												

How to save a Query View?

Query View is created from BEx Analyzer only.

Now change the layout as per your requirement. Here remove Document number and put Material characteristic.

ZSC_PART_Q001

Author SGANDHI Status of Data #####

Chart Filter Information

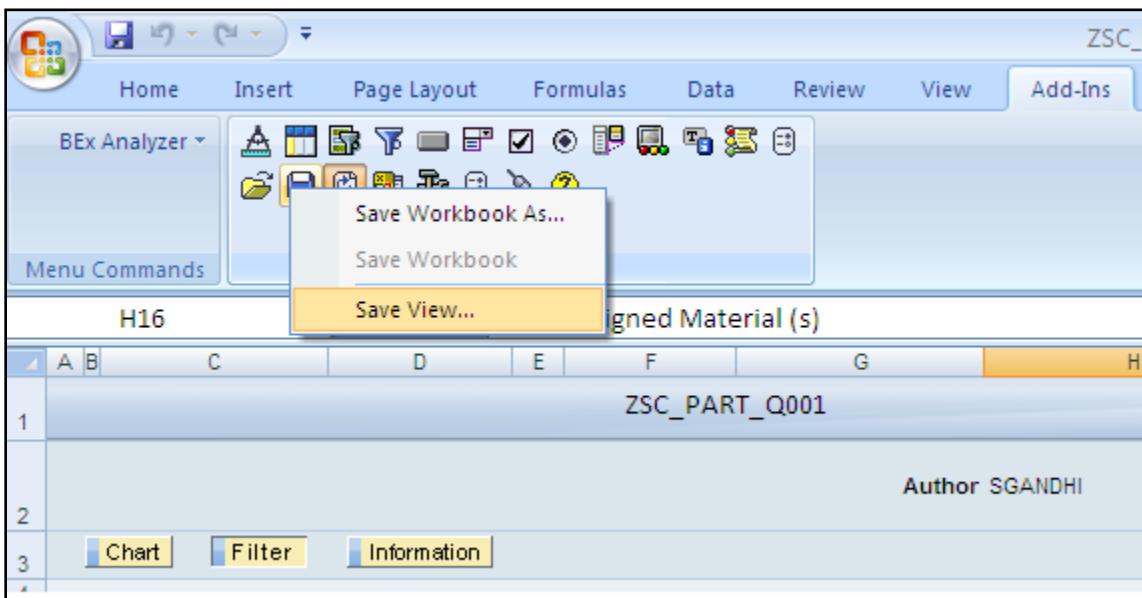
Filter

Company Code	
Customer / Sold to P	
Document Number	
Key Figures	Sales Amount,Sale
Material	
Sales Office	

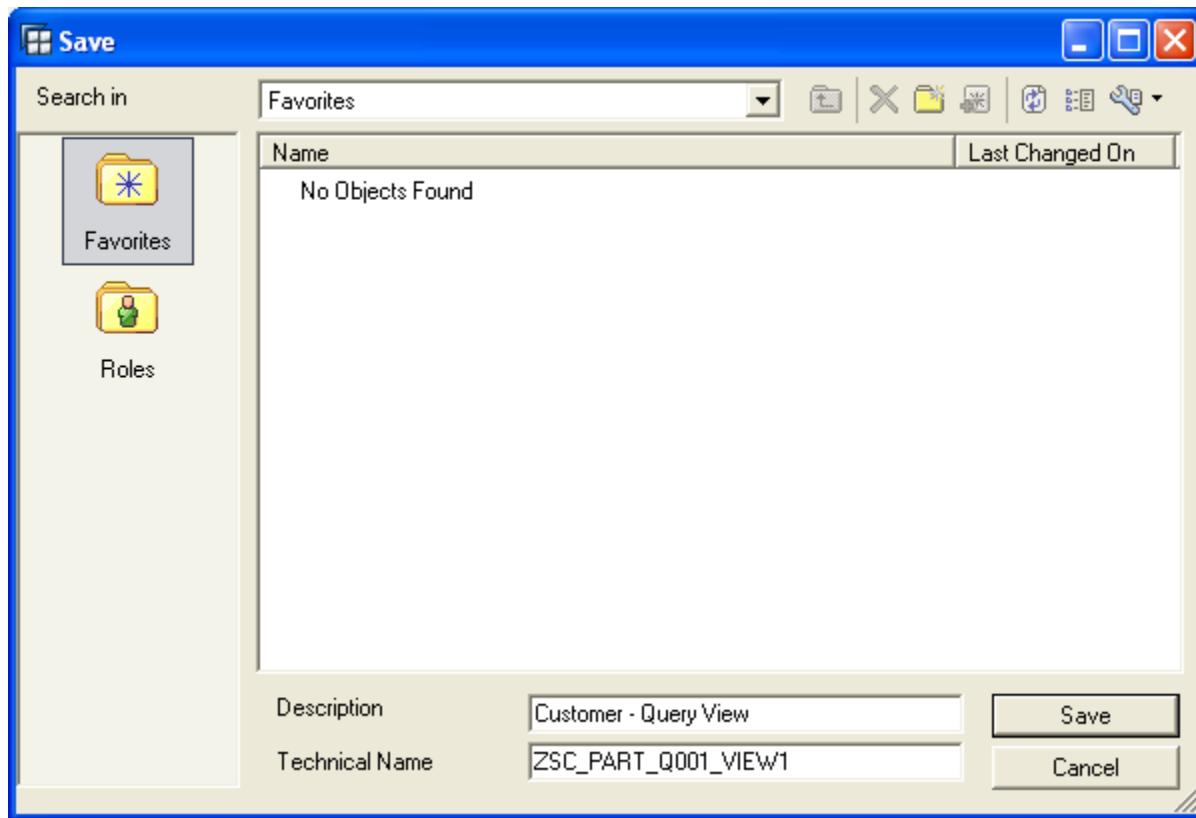
Table

Sales Office	Customer / Sold to P	Material	Sales Amount	Sales Quantity	PRICE
CUST2	▶ Not Assigned Material (s)		€ 100.00	100.000 EA	€ 1.00
Result			€ 100.00	100.000 EA	€ 1.00
CUST2	▶ Not Assigned Material (s)		€ 100.00	100.000 EA	€ 1.00
Result			€ 100.00	100.000 EA	€ 1.00
CUST2	▶ Not Assigned Material (s)		€ 100.00	100.000 EA	€ 1.00
Result			€ 100.00	100.000 EA	€ 1.00
CUST2	▶ Not Assigned Material (s)		€ 100.00	100.000 EA	€ 1.00
Result			€ 100.00	100.000 EA	€ 1.00
CUST2	▶ Not Assigned Material (s)		€ 200.00	200.000 EA	€ 2.00
Result			€ 200.00	200.000 EA	€ 2.00
SOF6	CUST2	▶ Not Assigned Material (s)	€ 100.00	100.000 EA	€ 1.00
Result			€ 100.00	100.000 EA	€ 1.00
SOF7	CUST2	▶ Not Assigned Material (s)	€ 100.00	100.000 EA	€ 1.00
Result			€ 100.00	100.000 EA	€ 1.00
Overall Result			€ 800.00	800.000 EA	€ 8.00

To save the changed format of the query result, click on the Save button of the BEx Toolbar. Select the option **Save View** from the given option.

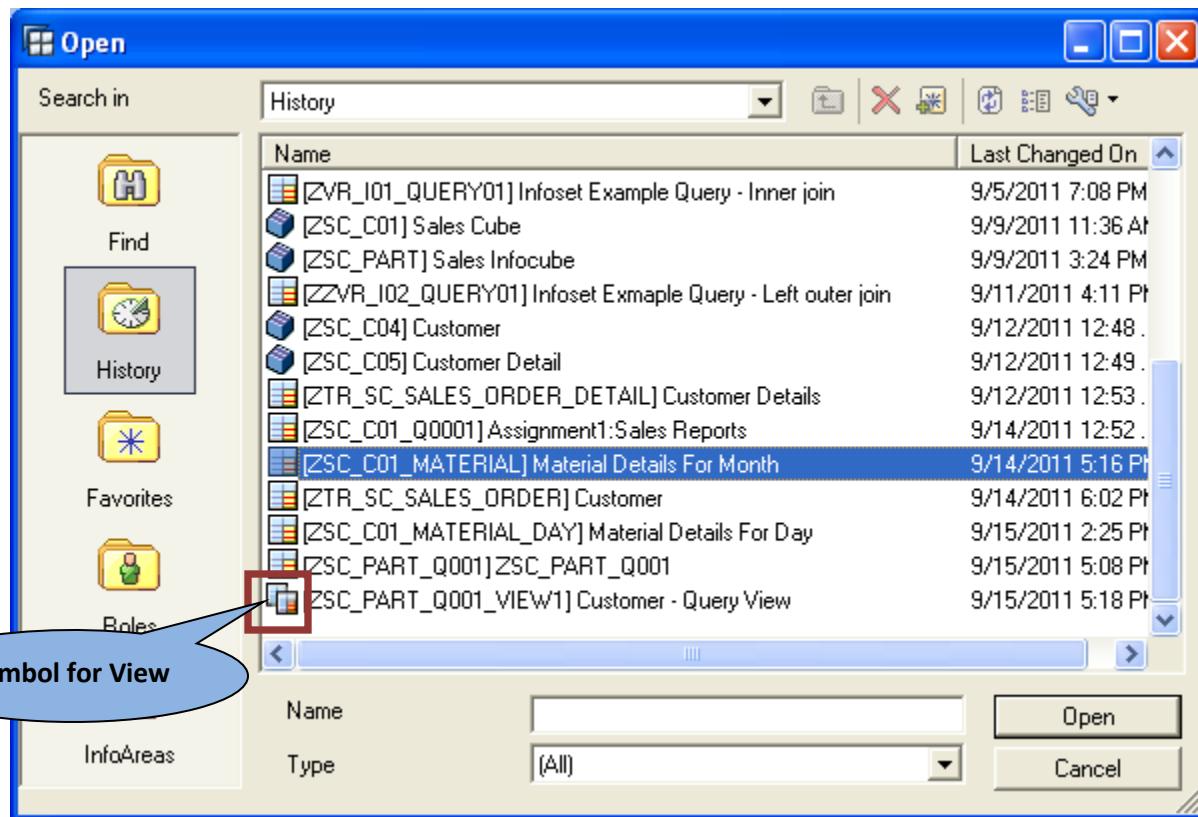


Give the appropriate View Name and save the query view.



How to identify a Query View or distinguish a Query from a Query View?

The icon symbol for the query and the query view is different. In the open dialog box, you will see those different symbols for both. See the screen shot below.



This way you do not need to change original query every time as per your requirement. You can change query output only once and refer it again and again.

Conclusion:

After completing this exercise we will understand how to create simple query and query view.

Filter, Restriction, default values and free characteristic

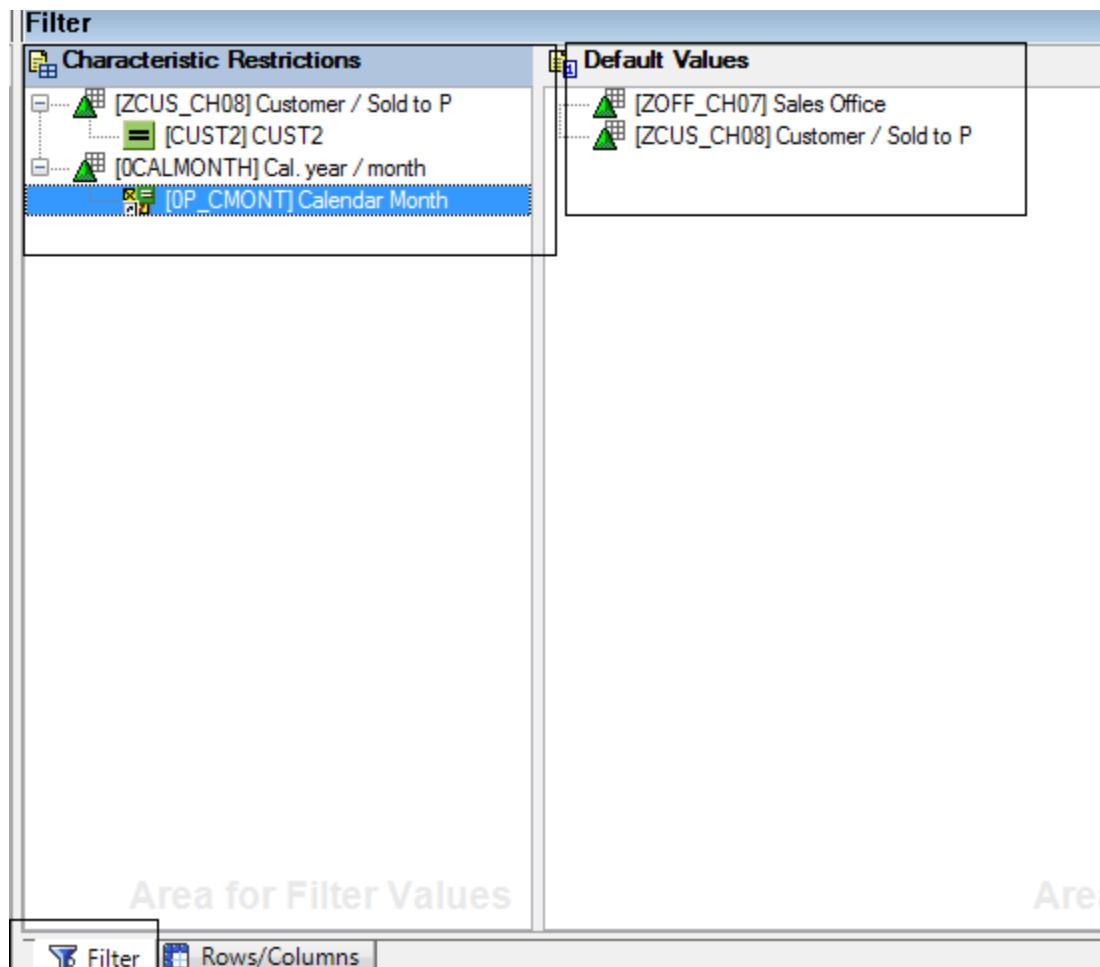
Prerequisite –

Query ZSC_PART_Q001 is developed.

Procedure:

Filter/ Characteristics Restrictions: Use of filter tab to restrict query with characteristic values globally, also you can restrict with variables. In below snap we can see that customer is restricted with CUST2. It means report only shows data for only CUST2 customer.

Default Values: Default values are those fields that will be shown in the report once you run the report. In below screenshot sales office and customer are default fields in the report. You can restrict characteristics in Default Values by constants or variables.



To see the difference between Global filter and default filter change filter values of Customer in 'Char restriction' area to CUST2 to CUST5 (right click on ZCUS_CH08-> Restrict-> single Values (in drop down)--> more CUST2 ,CUST3, CUST4 and CUST5 to right side-> OK.

And one in default, restrict it with CUST4.

Filter

Characteristic Restrictions		Default Values	
[ZCUS_CH08]	= [CUST2]	[ZMAT_CH05]	
	= [CUST3]	[ZCOMPCODE]	
	= [CUST4]	[ZOFF_CH07]	
	= [CUST5]	[ZDOC_CH12]	
[OCALMONTH]		[ZCUS_CH08]	
	= [CUST4]		

Now execute report in RSRT.

query

Initial List		Variable		Bookmark	
M	D	I	S	H	P
variable_screen=X				Bookmark (Data)	
				Bookmark	
				Process	
Variables for Ad Hoc Report					
Calendar Month (*)		01.2011	To	12.2011	
Execute		Check			

Output shows only for CUST4 customer,

Data Analysis Graphical display Info Information Broadcasting

ZSC_PART_Q001 Last Data Update: 15.09.2011 06:14:22

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Rows
Customer / Sold to P CUST4
Document Number
Sales Office
Columns
Key Figures
Free Characteristics
Company Code
Material

Sales Office	Customer / Sold to P	Document Number	No of sales order	Sales Amount	Sales Quantity	PRICE	Sales Quantity for 2011	Total Amount	
	CUST4	1013	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
	CUST4	1019	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
	CUST4	1025	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
	CUST4	1031	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
	CUST4	1037	1	€ 200.00	200.000 EA	€ 2.00	200.000 EA	€ 400.00000 EA	
		Result	1	€ 200.00	200.000 EA	€ 2.00	200.000 EA	€ 400.00000 EA	
		Result	1	€ 200.00	200.000 EA	€ 2.00	200.000 EA	€ 400.00000 EA	
	SOF6	1043	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA	
	SOF7	CUST4	1049	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
			Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Overall Result	7	€ 800.00	800.000 EA	€ 8.00	800.000 EA	€ 6,400.00000 EA	

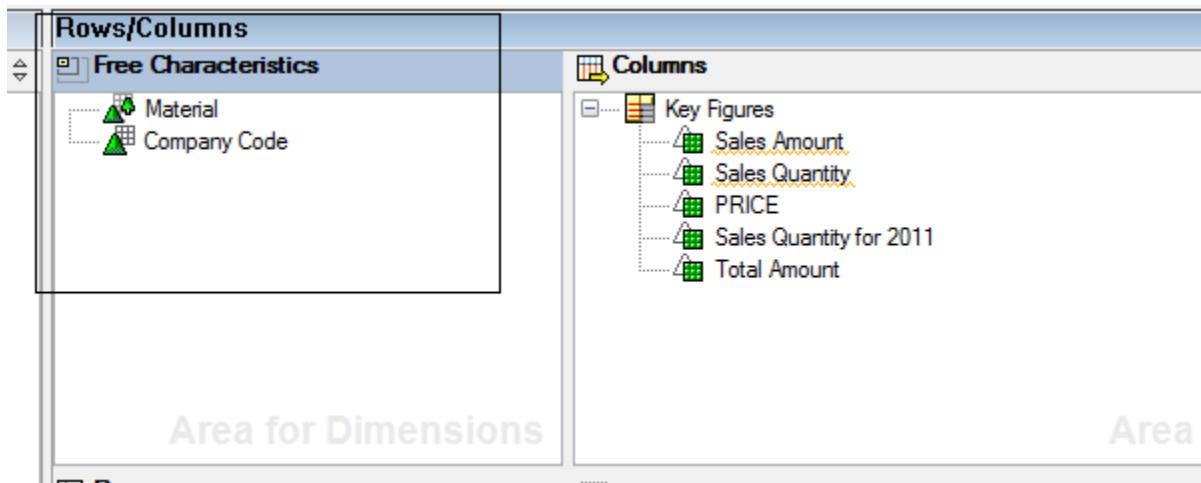
Now if you want to see data for CUST2 and CUST4, you can do it by clicking on  button next to Customer/sold to and select CUST 2 as well.

Sales Office	Customer / Sold to P	Document Number	No of sales order	Sales Amount	Sales Quantity	PRICE	Sales Quantity for 2011	Total Amount
	CUST4	1013	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
	CUST2	1011	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	2	€ 200.00	200.000 EA	€ 2.00	200.000 EA	€ 400.00000 EA
	CUST4	1019	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
	CUST2	1017	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	2	€ 200.00	200.000 EA	€ 2.00	200.000 EA	€ 400.00000 EA
	CUST4	1025	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
	CUST2	1023	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	2	€ 200.00	200.000 EA	€ 2.00	200.000 EA	€ 400.00000 EA
	CUST4	1031	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA
		Result	1	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.00000 EA

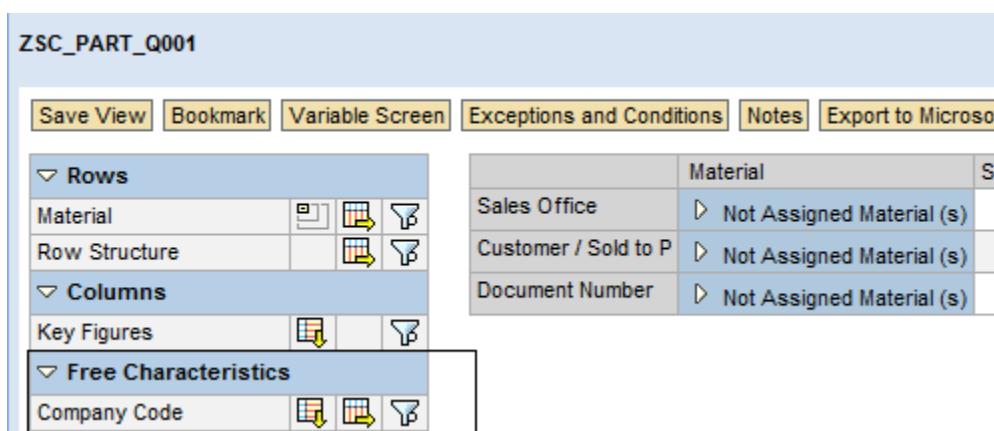
This means default value filter can be changed at runtime but global filter can not be.

Free Characteristic: It is used for navigational purpose; you can drag and drop free chars in the report from left side of the screen as per your requirement.

Below screenshot Company code is a free characteristic. It is not available in the query output once the report is run but can be dragged down in the report output in Rows or Columns.



The screenshot shows the SAP BW Query Designer interface. On the left, there's a large area labeled "Area for Dimensions". On the right, there's another area labeled "Area". At the top, there are two main sections: "Rows/Columns" and "Columns". The "Free Characteristics" section under "Rows/Columns" contains "Material" and "Company Code". The "Columns" section contains "Key Figures" which include "Sales Amount", "Sales Quantity", "PRICE", "Sales Quantity for 2011", and "Total Amount".



The screenshot shows the SAP BW Query Results view titled "ZSC_PART_Q001". The results table displays three rows: Sales Office, Customer / Sold to P, and Document Number, each with a status of "Not Assigned Material(s)". The left sidebar lists the dimensions used: "Rows" (Material, Row Structure), "Columns" (Key Figures), and "Free Characteristics" (Company Code). The top navigation bar includes options like Save View, Bookmark, Variable Screen, Exceptions and Conditions, Notes, and Export to Microsoft Excel.

Data Analysis Graphical display Info Information Broadcasting

ZSC_PART_Q001 Last Data Update: 14.09.2011 13:45:

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

	Material	Company Code	Sales Amount	Sales Quantity	PR
Sales Office	▷ Not Assigned Material (s)	# Not assigned	£ 600.00	600.000 EA	£ 6
	Result		£ 600.00	600.000 EA	£ 6
Customer / Sold to P	▷ Not Assigned Material (s)	# Not assigned	£ 600.00	600.000 EA	£ 6
	Result		£ 600.00	600.000 EA	£ 6
Document Number	▷ Not Assigned Material (s)	# Not assigned	£ 600.00	600.000 EA	£ 6
	Result		£ 600.00	600.000 EA	£ 6

Rows
Company Code
Material
Row Structure
Columns
Key Figures
Free Characteristics

Conclusion –In the exercise we understood significance of various sections in Query designer.

Characteristic and Key figure properties

Prerequisite

We will use query ZSC_PART_Q001 that was created in query creation exercise.

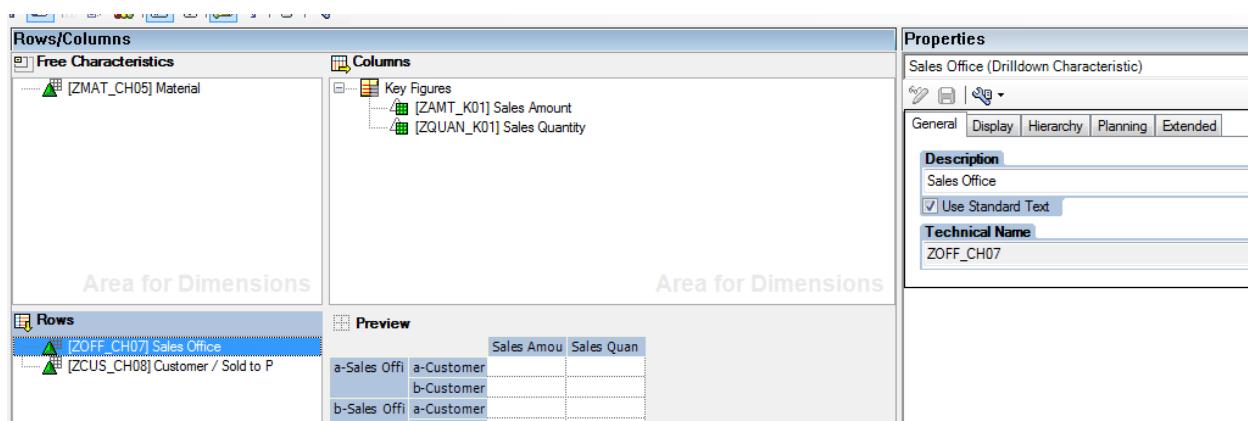
Use:

This will give you different properties of chars such as general, display etc and key figure properties such as aggregation, calculation.

Characteristic properties:

General Tab: In General Tab we can change description of characteristic. . .

Example- Sales office char

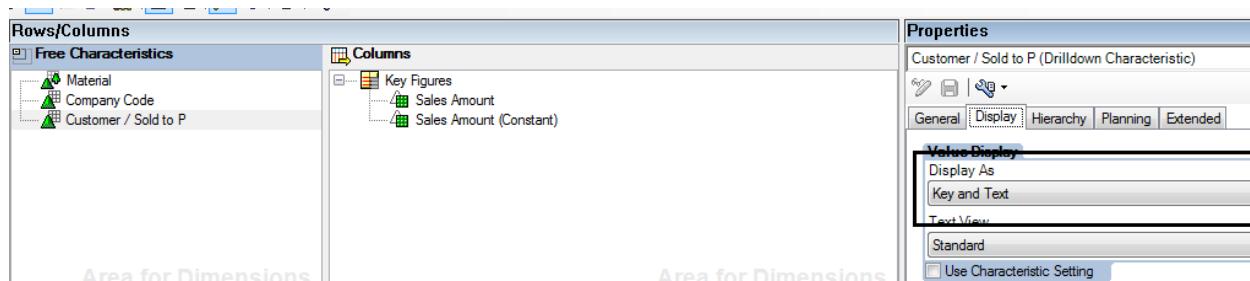


The screenshot shows the SAP BW Characteristic Properties dialog. The main area displays two columns: 'Free Characteristics' and 'Key Figures'. Under 'Free Characteristics', there is one entry: '[ZMAT_CH05] Material'. Under 'Key Figures', there are two entries: '[ZAMT_K01] Sales Amount' and '[ZQUAN_K01] Sales Quantity'. On the right side, the 'Properties' tab is selected for the 'Sales Office (Drilldown Characteristic)' entry. The 'General' tab is active, showing the 'Description' field set to 'Sales Office' and the 'Use Standard Text' checkbox checked. The 'Technical Name' field is set to 'ZOFF_CH07'. Below the properties, a preview table is shown with the following data:

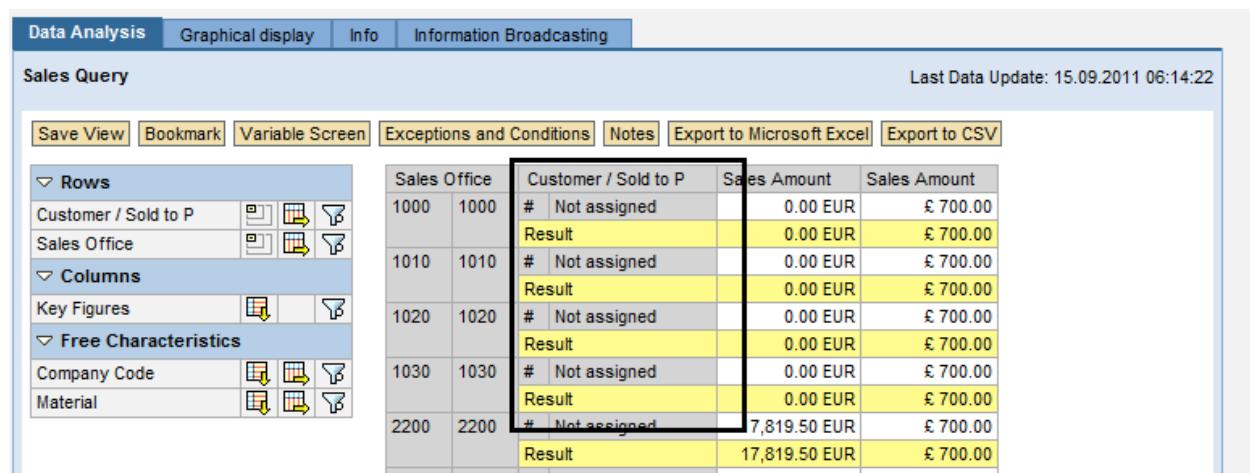
		Sales Amou	Sales Quan
a-Sales Offi	a-Customer		
	b-Customer		
b-Sales Offi	a-Customer		
	b-Customer		

Display Tab: In Display Tab we can set how to display particular char such text, key, text and key, also we can change settings of result row of the chars.

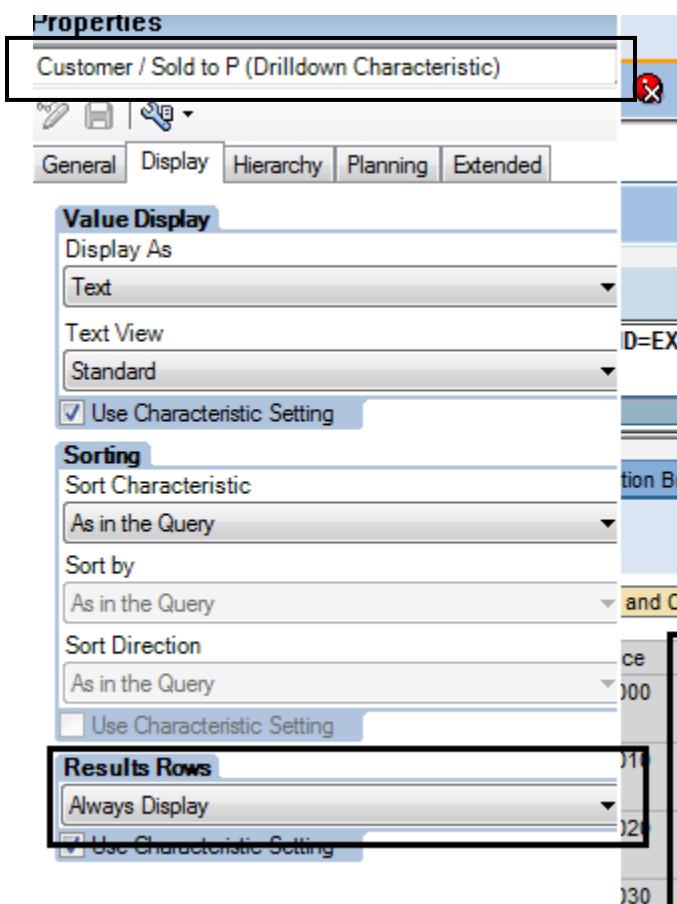
Below screen shot shows that we have changed display property to Key and text for customer.



Run the report from RSRT and you will see text and key for customer info object in the report output.



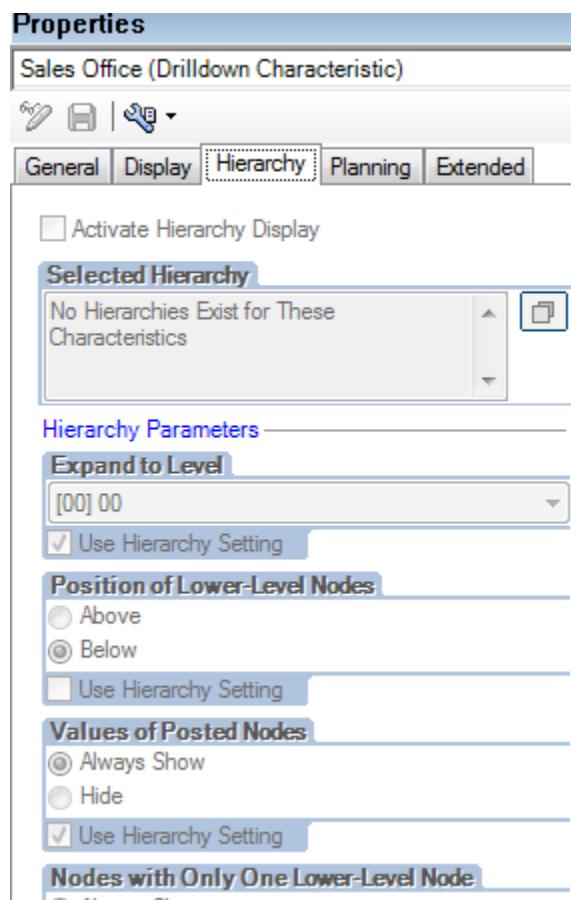
Sales Office	Customer / Sold to P	Sales Amount	Sales Amount
1000	# Not assigned	0.00 EUR	£ 700.00
	Result	0.00 EUR	£ 700.00
1010	# Not assigned	0.00 EUR	£ 700.00
	Result	0.00 EUR	£ 700.00
1020	# Not assigned	0.00 EUR	£ 700.00
	Result	0.00 EUR	£ 700.00
1030	# Not assigned	0.00 EUR	£ 700.00
	Result	0.00 EUR	£ 700.00
2200	# Not assigned	7,819.50 EUR	£ 700.00
	Result	17,819.50 EUR	£ 700.00



You can see below report output for char customer/sold result row is showing.

Sales Office	Customer / Sold to P	Document Number	Material	No of sales order	Sale
	CUST2	1011	▷ Not Assigned Material (s)	[1]	
		Result		[1]	
		Result		[1]	
	CUST2	1017	▷ Not Assigned Material (s)	[1]	
		Result		[1]	
		Result		[1]	
	CUST2	1023	▷ Not Assigned Material (s)	[1]	
		Result		[1]	
		Result		[1]	

Hierarchy Tab: We can use hierarchy tab to show particular char in a hierarchy format in the report.

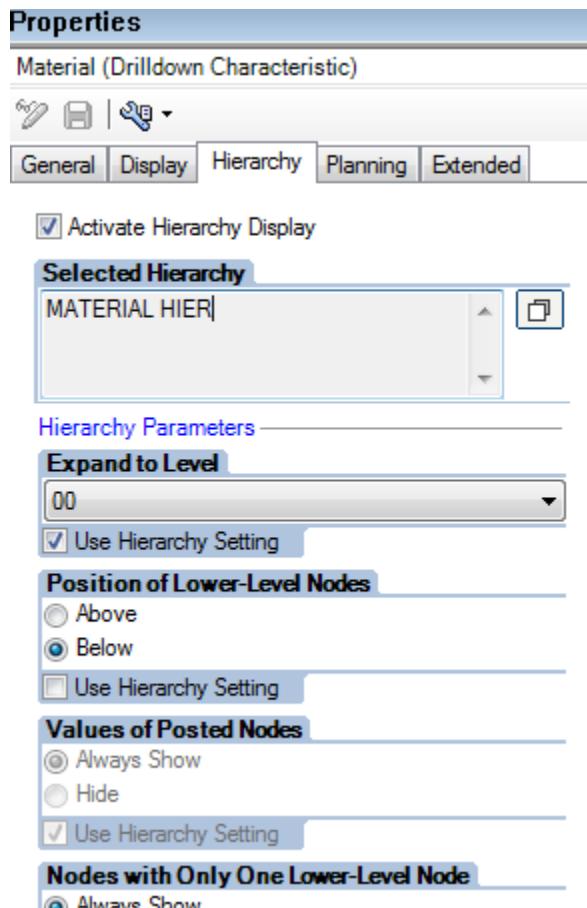


Expand levels: Here you can define how many levels of hierarchy will be shown in default view when you run the report.

Position to lower nodes: We can select position of nodes, it will be upper or lower when you run the report.

Values of posted values: It will only show nodes/leaves against which postings have happened.

We can display material as a hierarchy by assigning hierarchy in hierarchy tab.



Report output through RSRT for material hierarchy

BEx Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

ZSC_PART_Q001 Last Data Update: 09.0

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Rows Columns Key Figures Free Characteristics

Material

Drilldown in the Rows

	Sales Amount	Sales Quantity	PRICE	Sales Quantity for 2011	Total
Sales Office	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,
Customer / Sold to P	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,
Document Number	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,

ZSC_PART_Q001 Last Data Update: 09.09.2011 13:22:26

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Rows Columns Key Figures Free Characteristics

	Material	Sales Amount	Sales Quantity	PRICE	Sales Quantity for 2011	Total Amount
Sales Office	Not Assigned Material (s)	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,900.00000 EA
	#/M2	£ 400.00	400.000 EA	£ 4.00	400.000 EA	£ 1,600.00000 EA
	#/M8	£ 300.00	300.000 EA	£ 3.00	300.000 EA	£ 900.00000 EA
Customer / Sold to P	Not Assigned Material (s)	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,900.00000 EA
	#/M2	£ 400.00	400.000 EA	£ 4.00	400.000 EA	£ 1,600.00000 EA
	#/M8	£ 300.00	300.000 EA	£ 3.00	300.000 EA	£ 900.00000 EA
Document Number	Not Assigned Material (s)	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,900.00000 EA
	#/M2	£ 400.00	400.000 EA	£ 4.00	400.000 EA	£ 1,600.00000 EA
	#/M8	£ 300.00	300.000 EA	£ 3.00	300.000 EA	£ 900.00000 EA

Planning:

This function is useful in integrated planning purpose. We can ignore it for now.

Properties

Material (Drilldown Characteristic)

This setting can only be made if a display hierarchy is assigned to the characteristic

Planning on Hierarchy Nodes

- No Budgeting
- Bottom-Up Budgeting (Roll Up Value)
- Top-Down Budgeting (Posting to Higher-Level Nodes)
- Top-Down Budgeting (Posting to Root Node)

Extended:

Here you can select values for result and filter.

Properties

Material (Drilldown Characteristic)

Access Type for Result Values

- Posted Values
- Characteristic Relationships
- Master Data
- Use characteristic setting

Filter Value Selection at Query Execution

- Only Posted Values for Navigation
- Only Values in InfoProvider
- Values in Master Data Table
- Characteristic Relationships
- Use characteristic setting

Access Type for result values:

This setting is only applicable for result of the report.

Posted values: Output will show only those records of the characteristic against which postings are present in underlying info provider.

Master Data: Output will show all the records of the characteristic that are present in the master data table irrespective of postings for them in the info provider.

Filter value selection at query execution:

This is applicable when you do F4 to restrict some values in the filter area of the query (after the execution not while defining the query).

Only posted value for navigational purpose: Only those records of the characteristic against which postings in Fact table are present in underlying info provider will be shown in F4 help.

Only Values in Infoprovider: Only those records of the characteristic that are present in infprovider. (doesn't matter even if all key figure values against it are zero).

Values In master data table: All the values from characteristic master data table will be shown in the F4 help.

Key figure properties:

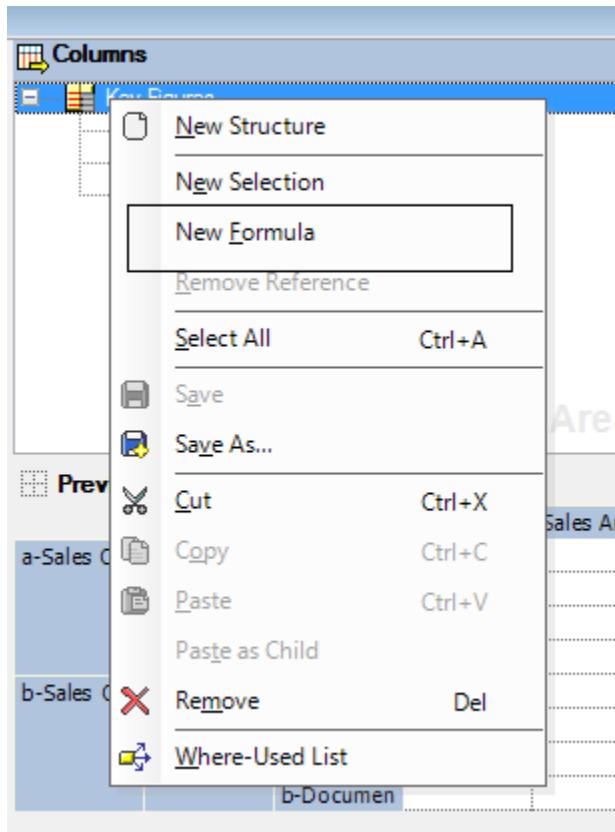
Aggregation:

It will give you how key figure is aggregated using exception aggregation.

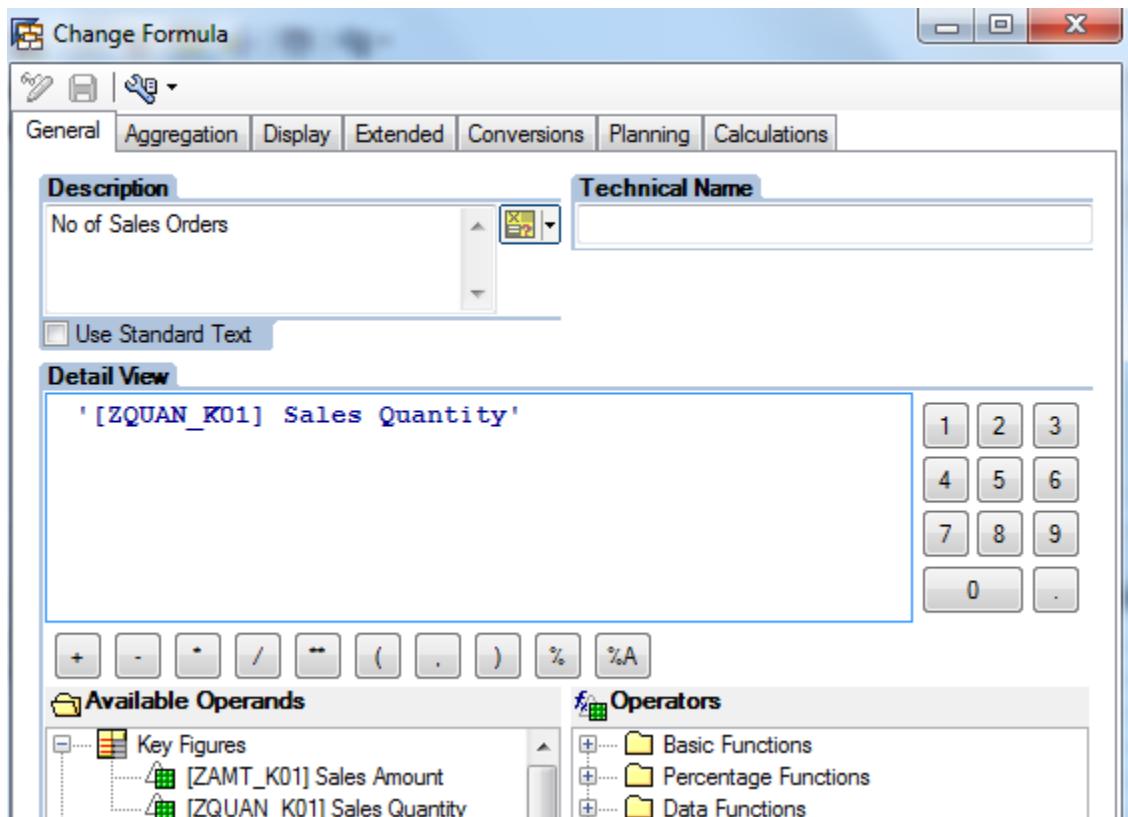
In below example we will find number of sales document using exception aggregation as a counter and reference char as Sales document number.

Steps:

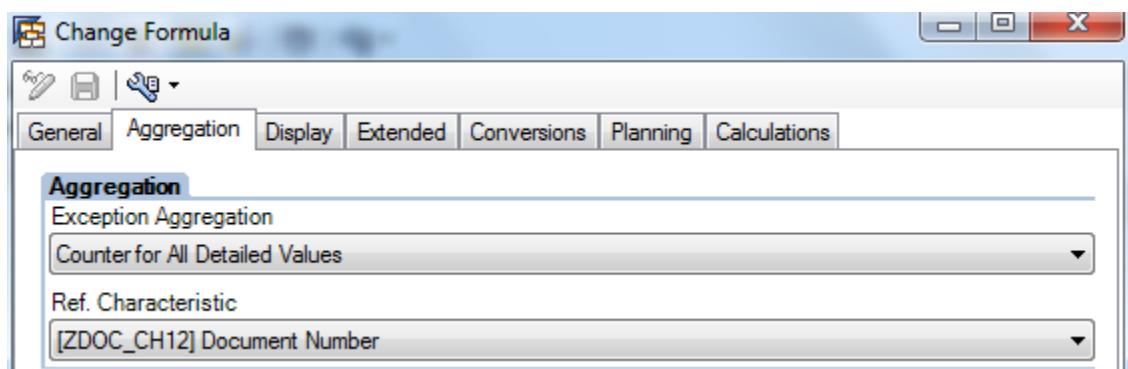
- 1) Create new formula to get count no of sales orders using exception aggregation.



- 2) Give name of the formula as 'No of sales orders' and use sales quantity as key figure.



- 3) Select exception aggregation as counter of all detailed values with reference chars a Doc number to get count.



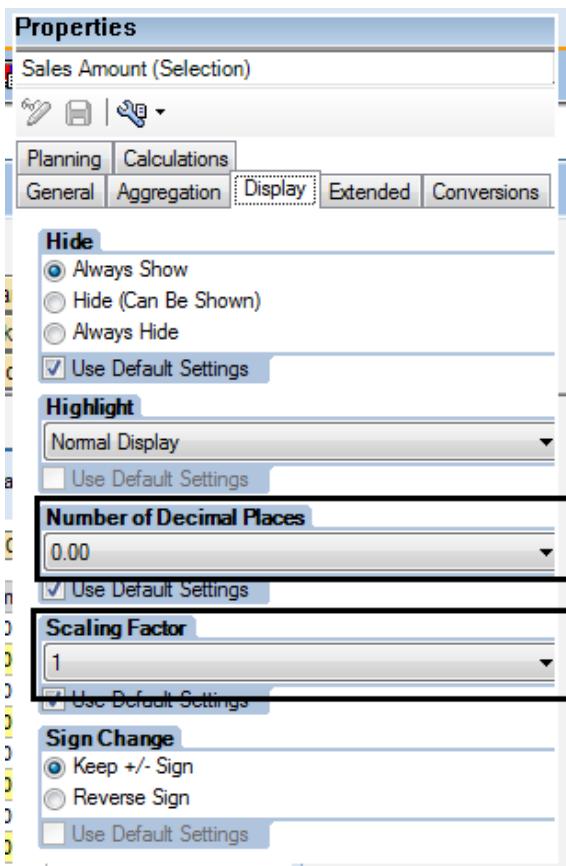
Report output in RSRT:

It shows that no of sales order are 7 using exception aggregations.

Sales Office	Customer / Sold to P	Document Number	No of sales order	Sales Amount	Sales Quantity	PRICE	Sales Quantity for 2011	Total Amount
	CUST2	1011	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.0000
		Result	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	[€ 100.0000]
	CUST2	1017	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.0000
		Result	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	[€ 100.0000]
	CUST2	1023	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.0000
		Result	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	[€ 100.0000]
	CUST2	1029	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.0000
		Result	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	[€ 100.0000]
	CUST2	1035	[1]	€ 200.00	200.000 EA	€ 2.00	200.000 EA	€ 400.0000
		Result	[1]	€ 200.00	200.000 EA	€ 2.00	200.000 EA	[€ 400.0000]
	CUST2	1041	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.0000
		Result	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	[€ 100.0000]
	CUST2	1047	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	€ 100.0000
		Result	[1]	€ 100.00	100.000 EA	€ 1.00	100.000 EA	[€ 100.0000]
		Overall Result	[7]	€ 800.00	800.000 EA	€ 8.00	800.000 EA	[€ 6,400.0000]

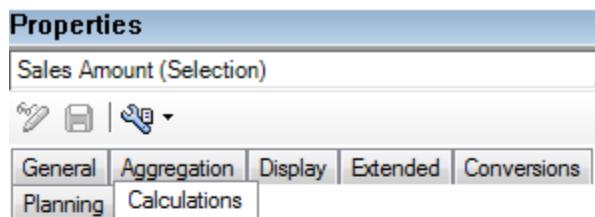
Display:

You set to display or hide particular key figure in the report. You can also set scaling factor (eg 10,00,000=1) and decimal places .



Calculation:

Here you can change the calculation of result and single values. All settings for calculation are applied to the displayed data only (calculation is done at runtime).



All settings for calculations are applied to the displayed data only

Local Calculations

Calculate Results As... (Standard Value)

(Standard Value) Summation Maximum Minimum Counter for All Detailed Values Counter for All Detailed Values Moving Average Moving Average That Is Not Standard Deviation Variance Hide First Value Last Value Summation of Rounded Valu

Calculate Single Values As... (Standard Value)

Cumulated Also Apply to Results

We have selected maximum for calculated results as.

The screenshot shows the SAP BW BEX Analyzer interface. The left pane displays dimensions: "Area for Dimensions" (Rows/Columns: Free Characteristics, Rows: Sales Office), "Area for Dimensions" (Columns: Key Figures, Sales Amount), and "Preview" (Sales Amou). The right pane shows the "Properties" dialog box for "Sales Amount (Selection)". The "General" tab is selected. In the "Local Calculations" section, "Calculate Results As..." is set to "Maximum" and "Calculate Single Values As..." is set to "(Standard Value)". Other options like "Cumulated" and "Also Apply to Results" are available but not selected. A note at the bottom states: "All settings for calculations are applied to the displayed data only".

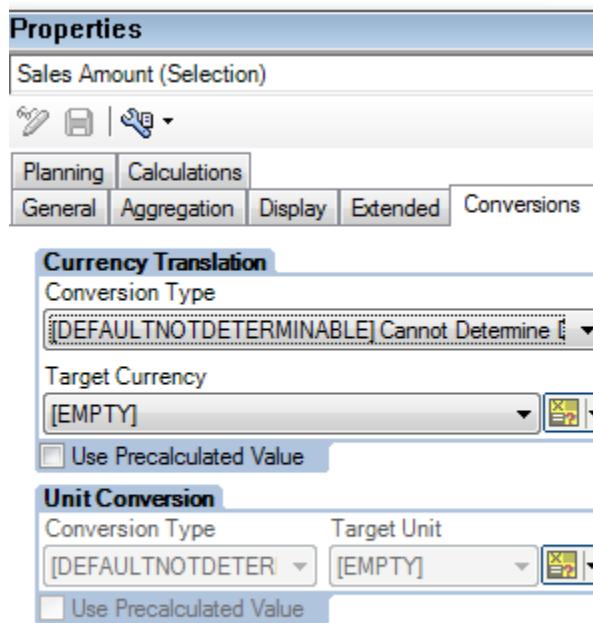
Report output (RSRT)

Sales Office		Sales Amount	Sales Amount
1000	1000	0.00 EUR	£ 700.00
1010	1010	0.00 EUR	£ 700.00
1020	1020	0.00 EUR	£ 700.00
1030	1030	0.00 EUR	£ 700.00
2200	2200	17,819.50 EUR	£ 700.00
2400	2400	0.00 EUR	£ 700.00
2500	2500	0.00 EUR	£ 700.00
3000	3000	\$ 0.00	£ 700.00
3010	3010	\$ 0.00	£ 700.00
3020	3020	\$ 0.00	£ 700.00
3030	3030	\$ 0.00	£ 700.00
3040	3040	\$ 0.00	£ 700.00
6000	6000	0.00 MXN	£ 700.00
S300	S300	\$ 0.00	£ 700.00
SOF1		£ 3,600.00	£ 700.00
SOF2		£ 600.00	£ 700.00
SOF3		£ 600.00	£ 700.00
SOF4		£ 600.00	£ 700.00
SOF5		£ 1,000.00	£ 700.00
SOF6	SOF6	£ 700.00	£ 700.00
SOF7	SOF7	£ 600.00	£ 700.00
#	Not assigned	302,160.00 EUR	£ 700.00
Overall Result		[302,160.00 EUR]	£ 700.00

Here in the output MAXIMUM value of Sales amount is shown in the result row which 302160.00 EUR.

Conversion:

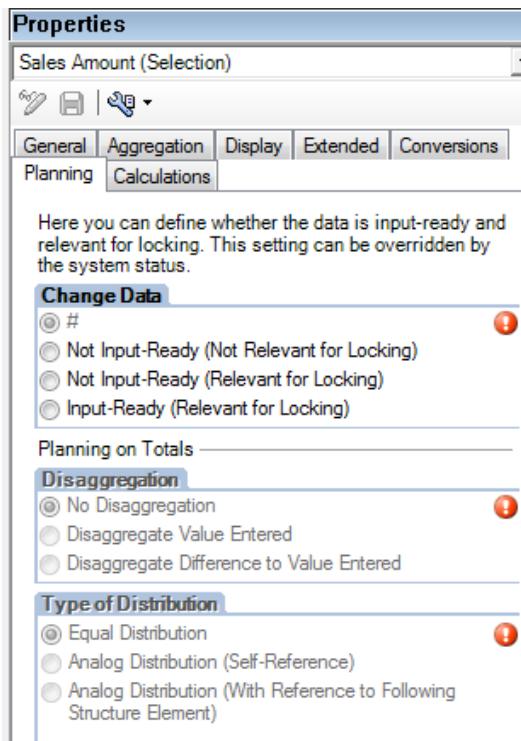
Here you can convert Currencies. You need to give conversion type and target currency . For eg if you want to convert GBP to INR, we can select GBP as target currency and Conversion type would be visible once it is created in RSCUR transaction. (RSCUR will be covered in separate exercise).



The screenshot shows the SAP BW Properties dialog for the selection 'Sales Amount'. The 'Properties' tab is selected. Under the 'Calculations' tab, the 'Currency Translation' section is expanded, showing the 'Conversion Type' dropdown set to '[DEFAULTNOTDETERMINABLE] Cannot Determine' and the 'Target Currency' dropdown set to '[EMPTY]'. A checkbox for 'Use Precalculated Value' is unchecked. Below this, the 'Unit Conversion' section is expanded, showing the 'Conversion Type' dropdown set to '[DEFAULTNOTDETERMINABLE]' and the 'Target Unit' dropdown set to '[EMPTY]'. Another 'Use Precalculated Value' checkbox is also unchecked.

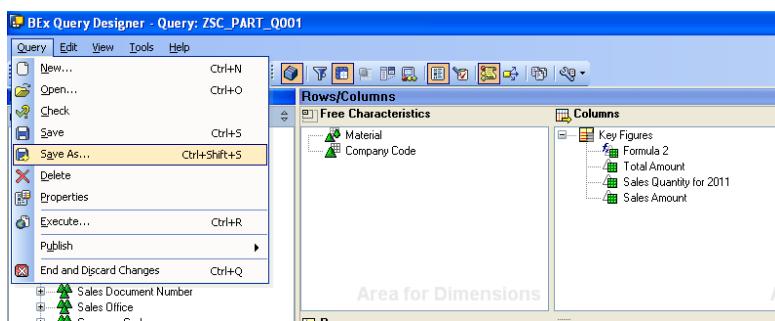
Planning:

This is use for integrated planning purpose.

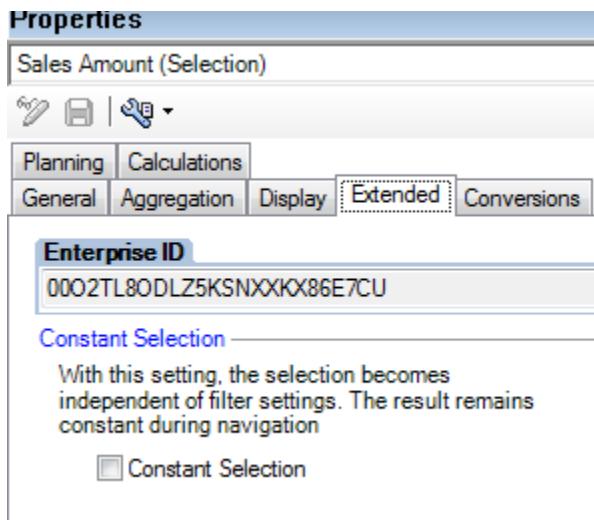


Extended:

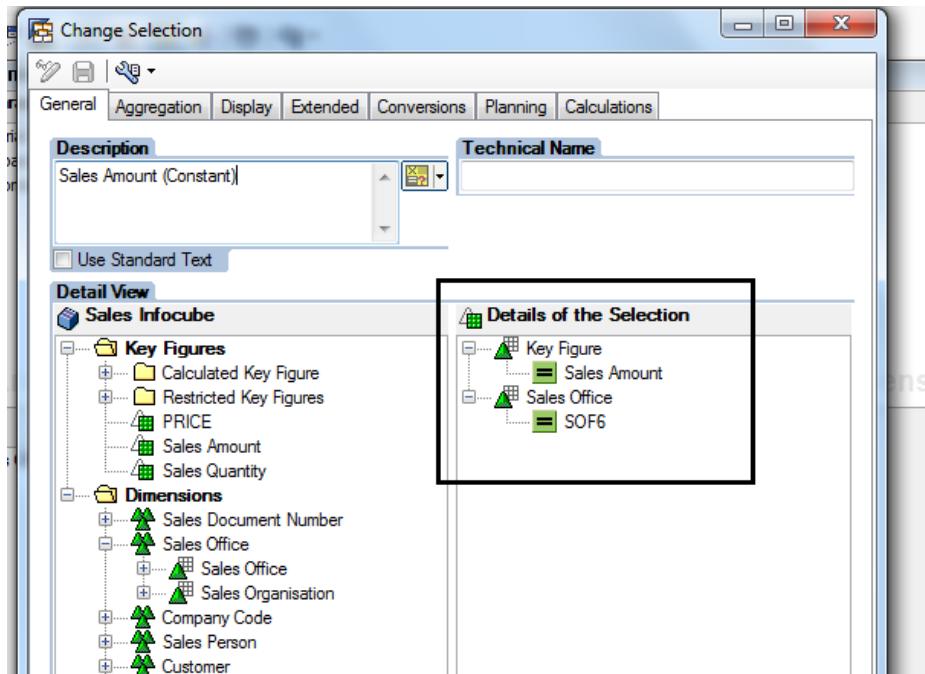
For understanding 'Constant selection' we will create copy of ZSC_PART_Q001 query.
Go to Query (on top left corner) -> Save as -> ZSC_PART_Q002.



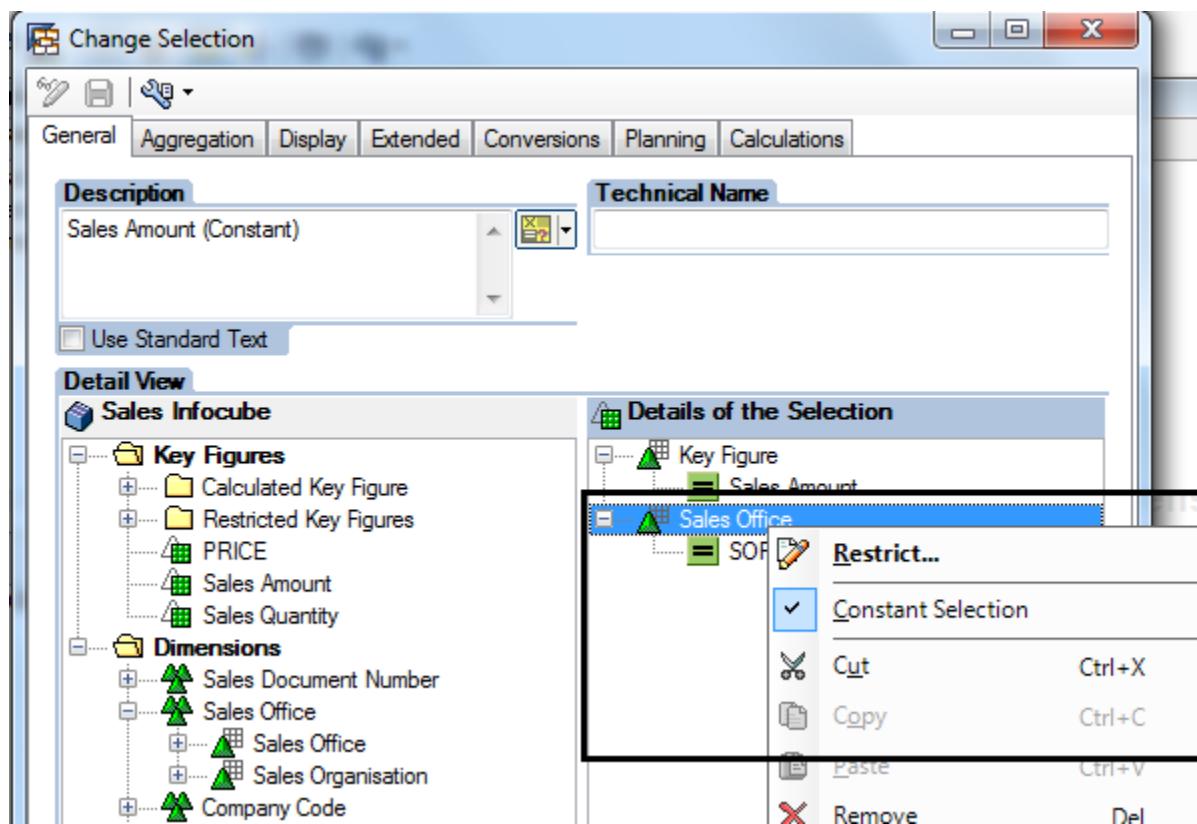
If you select constant selection then that key figure value remains same irrespective of further navigations and restrictions.



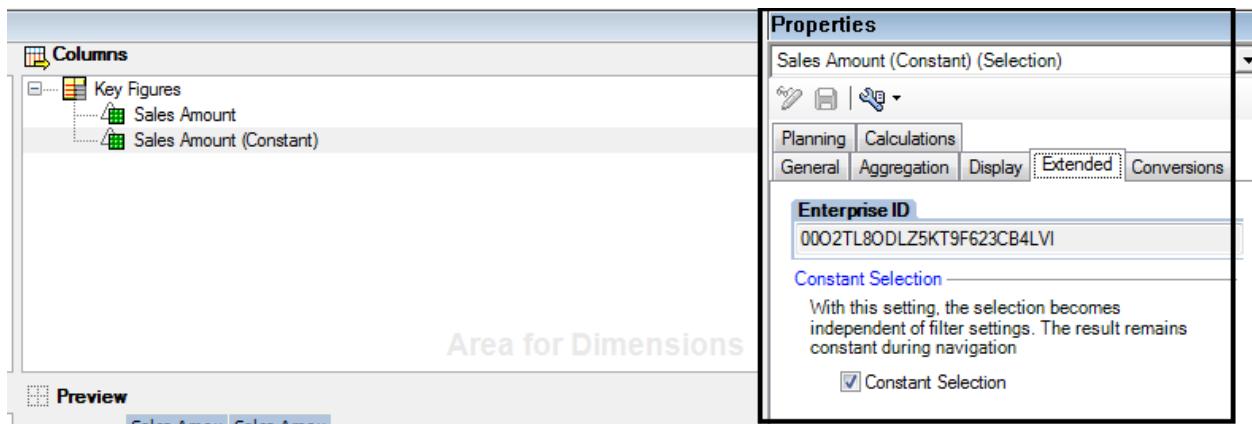
Example – In our query we will create new selection in column (Sales amount (Constant)). Selection for this, is sales amount key figure and sales office is restricted with SOF6.



Now we keep sales office SOF6 as a constant as shown below.



Now make this key figure as a constant selection by using its properties extended tab as shown below.



The screenshot shows the SAP BW BEX Analyzer interface. On the left, there's a 'Columns' tree view under 'Key Figures' containing 'Sales Amount' and 'Sales Amount (Constant)'. Below it is an 'Area for Dimensions' placeholder. At the bottom is a 'Preview' section with two tabs: 'Sales Amount' and 'Sales Amount (Constant)'. On the right is a 'Properties' panel for the 'Sales Amount (Constant) (Selection)' item. The 'Extended' tab is selected. In the 'Enterprise ID' section, the value '0002TL8ODLZ5KT9F623CB4LVI' is shown. Under 'Constant Selection', the note states: 'With this setting, the selection becomes independent of filter settings. The result remains constant during navigation' and the checkbox is checked.

Run the report through RSRT.

The report output indicates that sales amount value for all sales offices is 700.

Sales Office		Sales Amount	Sales Amount (Constant)
1000	1000	0.00 EUR	£ 700.00
1010	1010	0.00 EUR	£ 700.00
1020	1020	0.00 EUR	£ 700.00
1030	1030	0.00 EUR	£ 700.00
2200	2200	17,819.50 EUR	£ 700.00
2400	2400	0.00 EUR	£ 700.00
2500	2500	0.00 EUR	£ 700.00
3000	3000	\$ 0.00	£ 700.00
3010	3010	\$ 0.00	£ 700.00
3020	3020	\$ 0.00	£ 700.00
3030	3030	\$ 0.00	£ 700.00
3040	3040	\$ 0.00	£ 700.00
6000	6000	0.00 MXN	£ 700.00
S300	S300	\$ 0.00	£ 700.00
SOF1		£ 3,600.00	£ 700.00
SOF2		£ 600.00	£ 700.00
SOF3		£ 600.00	£ 700.00
SOF4		£ 600.00	£ 700.00
SOF5		£ 1,000.00	£ 700.00
SOF6	SOF6	£ 700.00	£ 700.00
SOF7	SOF7	£ 600.00	£ 700.00
#	Not assigned	302,160.00 EUR	£ 700.00
Overall Result		[302,160.00 EUR]	£ 700.00

Conclusion:

We understand different properties of Chars and Key figures.

Creating RKF, CKF, Structures and Hierarchies in Query

Restricted key figure:

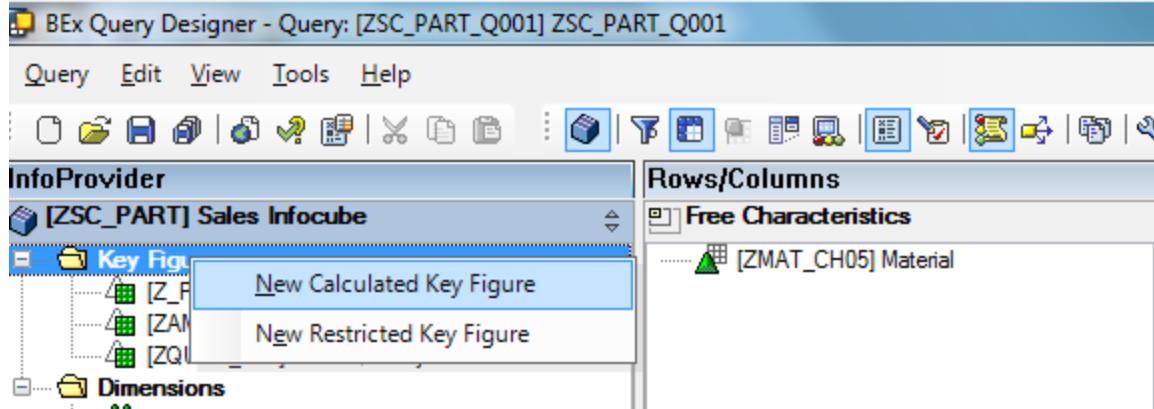
Use:

In restricted key figure we can restrict key figure with Characteristics value.

It is created on Infocube level which means it can be accessed by any other query developed on top of same cube.

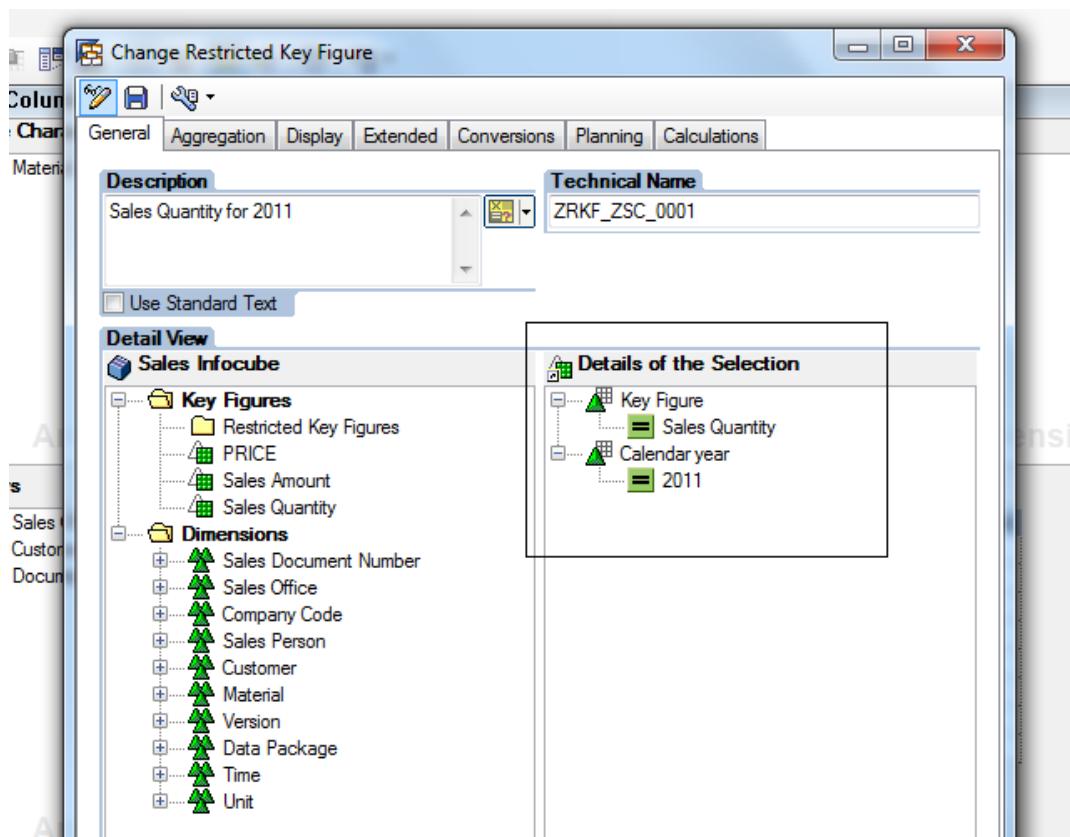
Steps:

- 1) Create a new query with name ZSC_PART_QXXX (in this case ZSC_PART_Q001) in query designer.
- 2) Right click on left side of screen on Key figures to create new restricted key figure.



- 3) Give technical name (ZRKF_ZSC_0001) and description for restricted key figure.

- 4) Now drag and drop calendar year char and sales quantity key figure to right panel and restrict calendar year with 2011. So you will see only Sales Quantity for 2011 year.
- 5) Drag restricted key figure from left (info provider) to Column area.
- 6) Drag Sales office, Customer/Sold to P and Document number in Rows from Info provider area.



- 7) Save the query and execute the report in RSRT.

ZSC_PART_Q001 Last Data Update: 09.09.2011 13:22:26

Save View | Bookmark | Variable Screen | Exceptions and Conditions | Notes | Export to Microsoft Excel | Export to CSV

Rows: Customer / Sold to P, Document Number, Sales Office, Key Figures
Columns: Sales Quantity for 2011, No of Sales Orders, Sales Amount, Sales Quantity

Sales Office	Customer / Sold to P	Document Number	Sales Quantity for 2011	No of Sales Orders	Sales Amount	Sales Quantity
CUST2	1011		100.000 EA	[1]	€ 100.00	100.000 EA
	Result		100.000 EA	[1]	€ 100.00	100.000 EA
			100.000 EA	[1]	€ 100.00	100.000 EA
CUST2	1017		100.000 EA	[1]	€ 100.00	100.000 EA
	Result		100.000 EA	[1]	€ 100.00	100.000 EA
			100.000 EA	[1]	€ 100.00	100.000 EA
CUST2	1023		100.000 EA	[1]	€ 100.00	100.000 EA

Calculated Key figure:

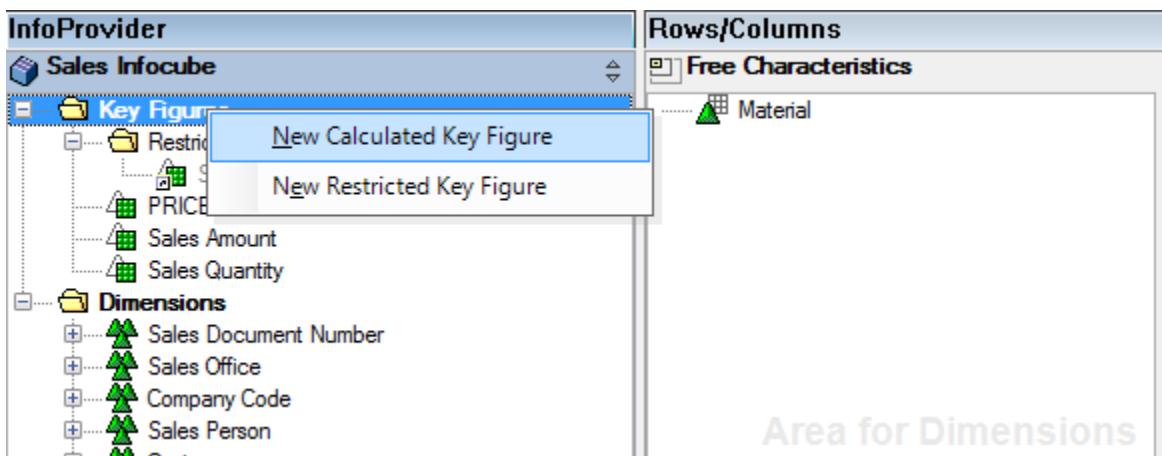
Use:

Using this we can add, subtract and do other mathematical, Trigonometrical, Boolean calculations with key figures.

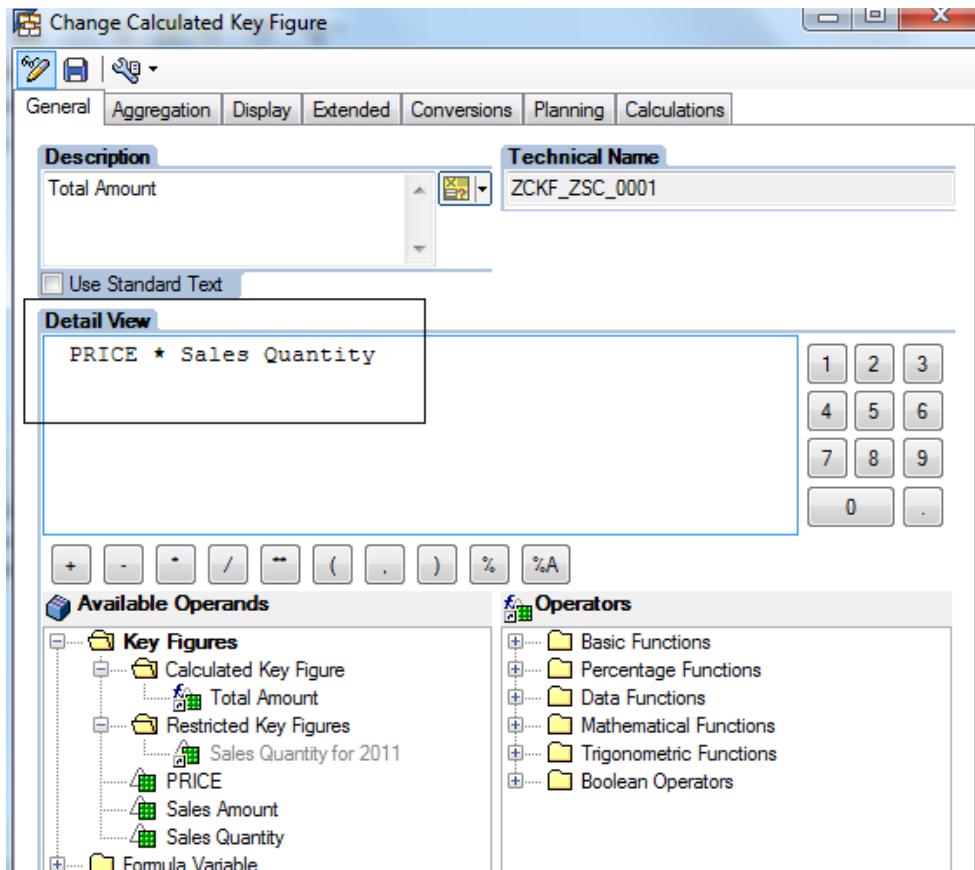
It is created on Infocube level which means it can be access by any other query developed on top of same cube.

Steps:

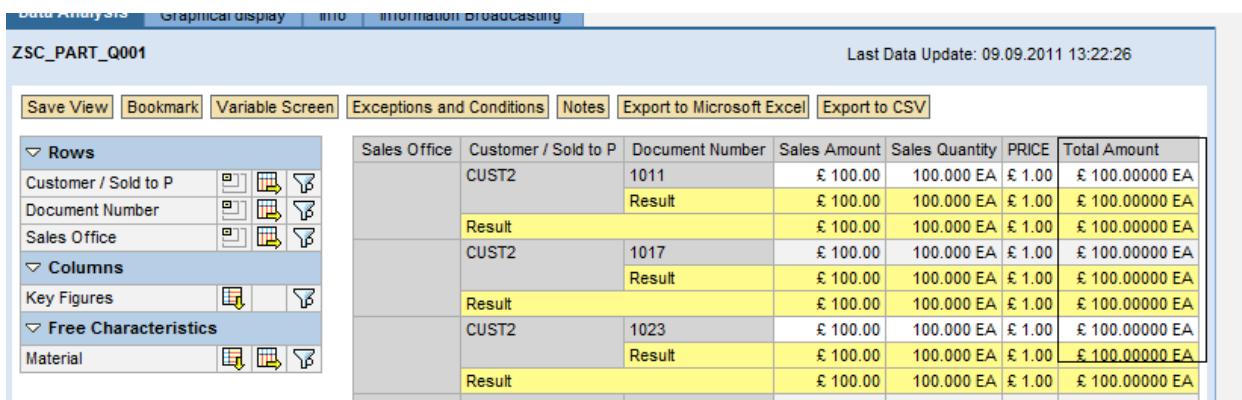
- 1) In same query right click on left side of screen on Key figures to create new calculated key figure.



- 2) Give technical name (ZCKF_ZSC_0001) and description for calculated key figure.
- 3) Now drag Price and Quantity from lower panel to detail view.
- 4) Perform multiplication of price and quantity to get total amount.



- 5) Save calculated key figure and add it to the column and execute the report.



ZSC_PART_Q001

Last Data Update: 09.09.2011 13:22:26

Save View | Bookmark | Variable Screen | Exceptions and Conditions | Notes | Export to Microsoft Excel | Export to CSV

Rows

- Customer / Sold to P
- Document Number
- Sales Office

Columns

- Key Figures
- Material

Free Characteristics

Sales Office	Customer / Sold to P	Document Number	Sales Amount	Sales Quantity	PRICE	Total Amount
CUST2	1011	£ 100.00	100.000 EA	£ 1.00	£ 100.00000 EA	
	Result	£ 100.00	100.000 EA	£ 1.00	£ 100.00000 EA	
	Result	£ 100.00	100.000 EA	£ 1.00	£ 100.00000 EA	
CUST2	1017	£ 100.00	100.000 EA	£ 1.00	£ 100.00000 EA	
	Result	£ 100.00	100.000 EA	£ 1.00	£ 100.00000 EA	
CUST2	1023	£ 100.00	100.000 EA	£ 1.00	£ 100.00000 EA	
	Result	£ 100.00	100.000 EA	£ 1.00	£ 100.00000 EA	

Structure:

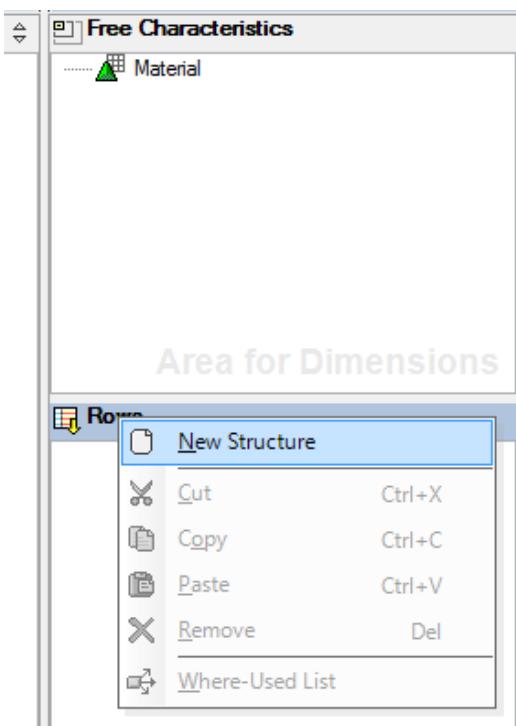
Use:

Structure is collection of multiple key figures or characteristics.

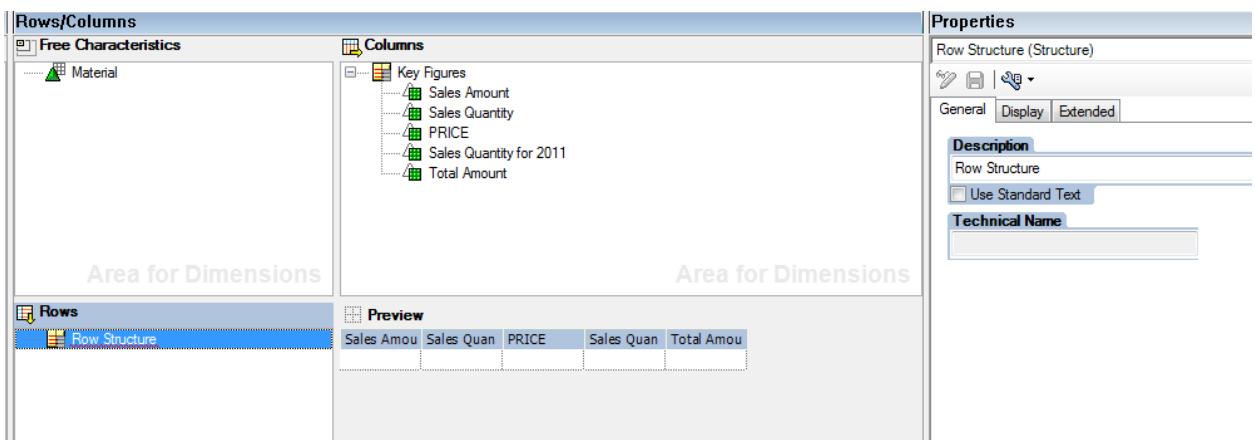
We can reuse global structures in other queries which are built on same infoprovider. Structures can be local as well as global. In a single query we can use maximum of two structures.

Steps:

- 1) Create a new query with name ZSC_PART_Q\$XXX (in this case ZSC_PART_Q001) in query designer.
- 2) Right click on row to create new structure.

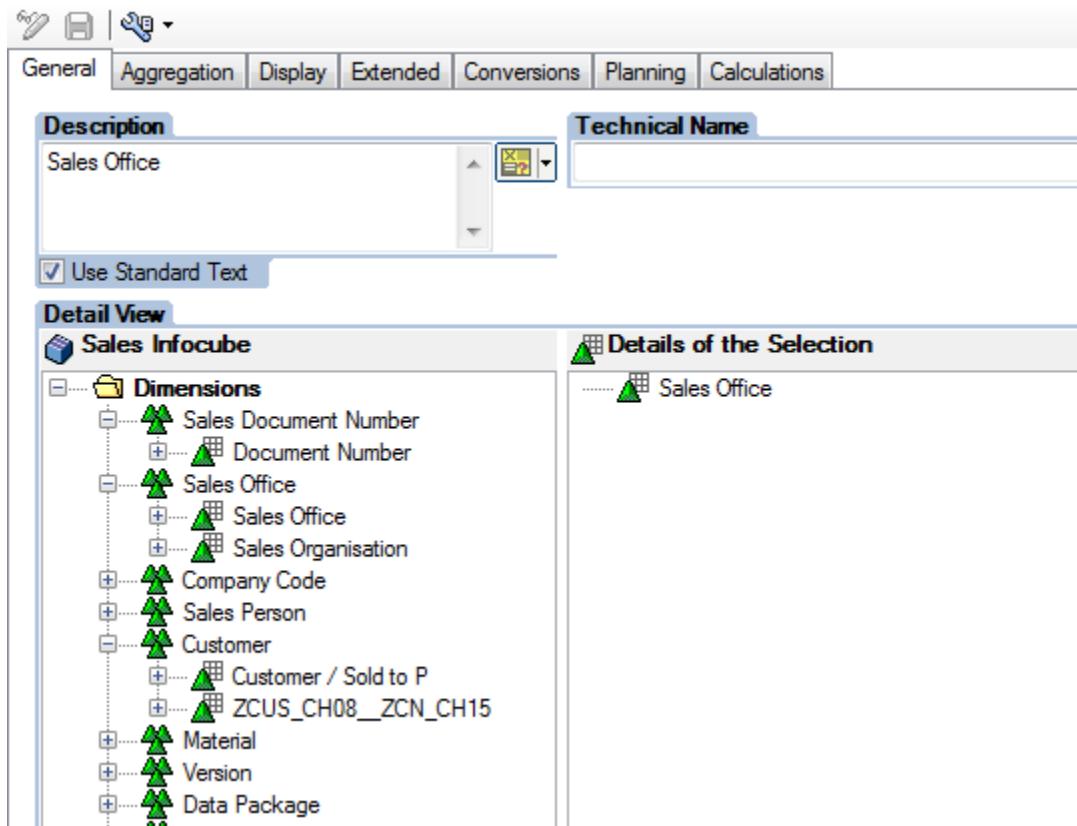


- 3) Give name to Row structure.



Sales Amou	Sales Quan	PRICE	Sales Quan	Total Amou

- 4) Right click on row structure for new selection and insert sales office.



The screenshot shows the SAP BW BEx Web Application interface. At the top, there is a toolbar with icons for search, refresh, and other functions. Below the toolbar is a navigation bar with tabs: General, Aggregation, Display, Extended, Conversions, Planning, and Calculations. The 'General' tab is selected.

In the main area, there are two sections:

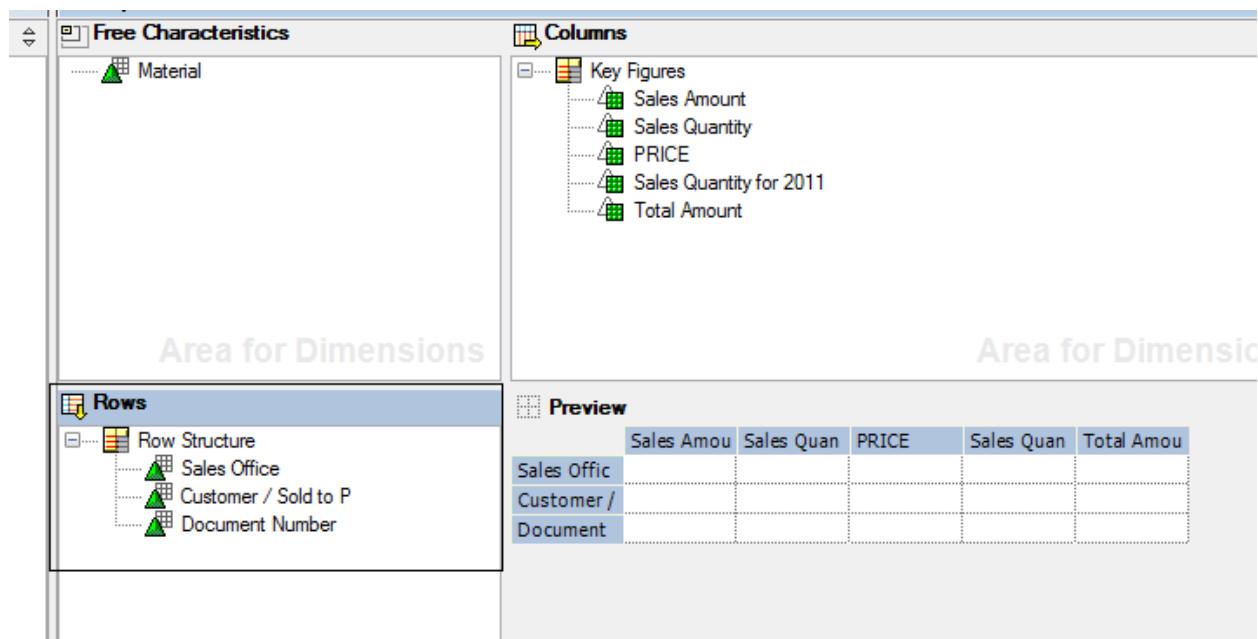
- Description:** A text input field containing "Sales Office". Below it is a checkbox labeled "Use Standard Text" which is checked.
- Technical Name:** An empty text input field.

Below these sections is a section titled "Detail View" with the heading "Sales Infocube". It contains a tree view of dimensions:

- Dimensions:**
 - Sales Document Number
 - Document Number
 - Sales Office
 - Sales Office
 - Sales Organisation
 - Company Code
 - Sales Person
 - Customer
 - Customer / Sold to P
 - ZCUS_CH08_ZCN_CH15
 - Material
 - Version
 - Data Package

To the right of the tree view is a panel titled "Details of the Selection" which shows the selected item: "Sales Office".

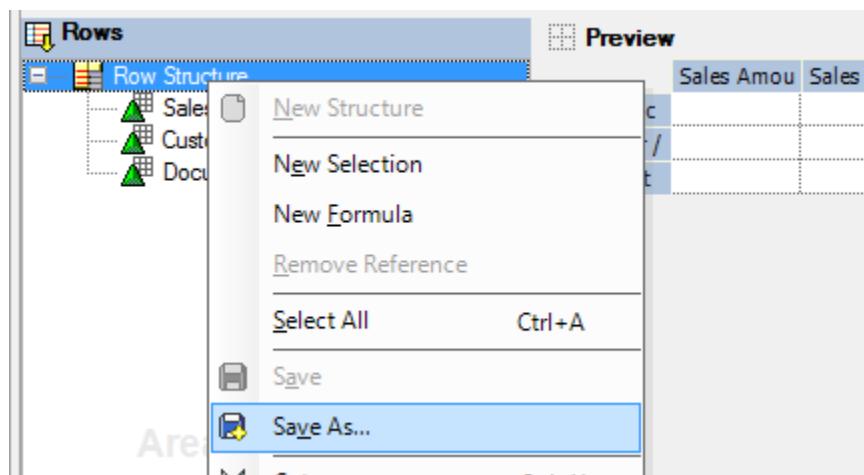
Same way you can insert new selection for Customer and Doc no



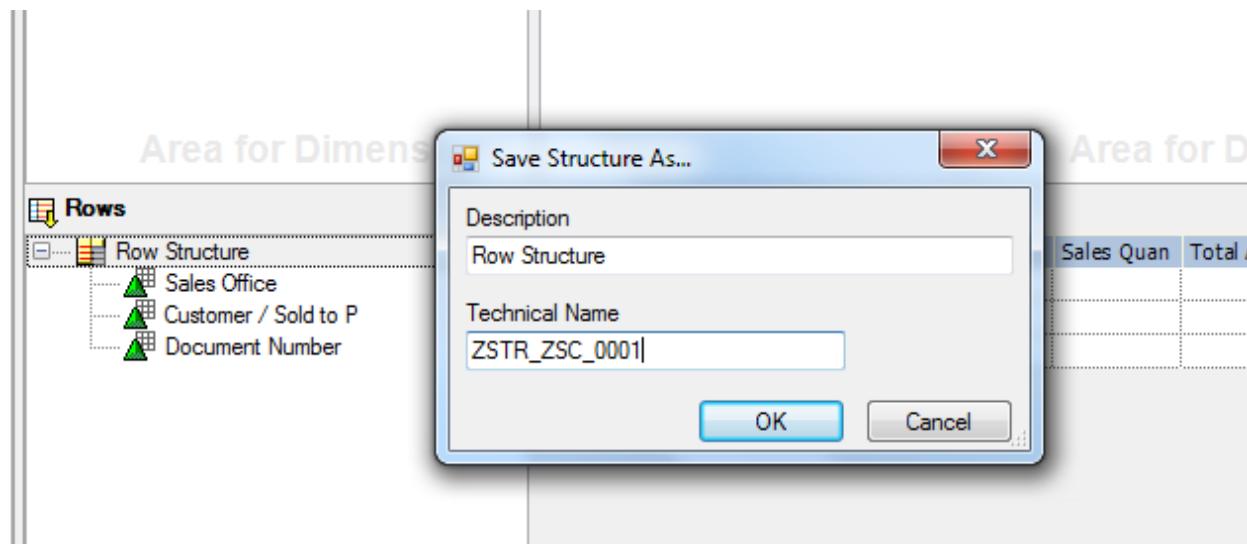
The screenshot shows the SAP BW BEX Query Designer interface. The top left pane is titled "Free Characteristics" and contains a single item: "Material". The top right pane is titled "Columns" and lists several key figures: Sales Amount, Sales Quantity, PRICE, Sales Quantity for 2011, and Total Amount. Below these panes are two large areas labeled "Area for Dimensions". The left "Area for Dimensions" contains a "Rows" section with a "Row Structure" node expanded to show "Sales Office", "Customer / Sold to P", and "Document Number". The right "Area for Dimensions" contains a "Preview" section with a table:

	Sales Amou	Sales Quan	PRICE	Sales Quan	Total Amou
Sales Offic					
Customer /					
Document					

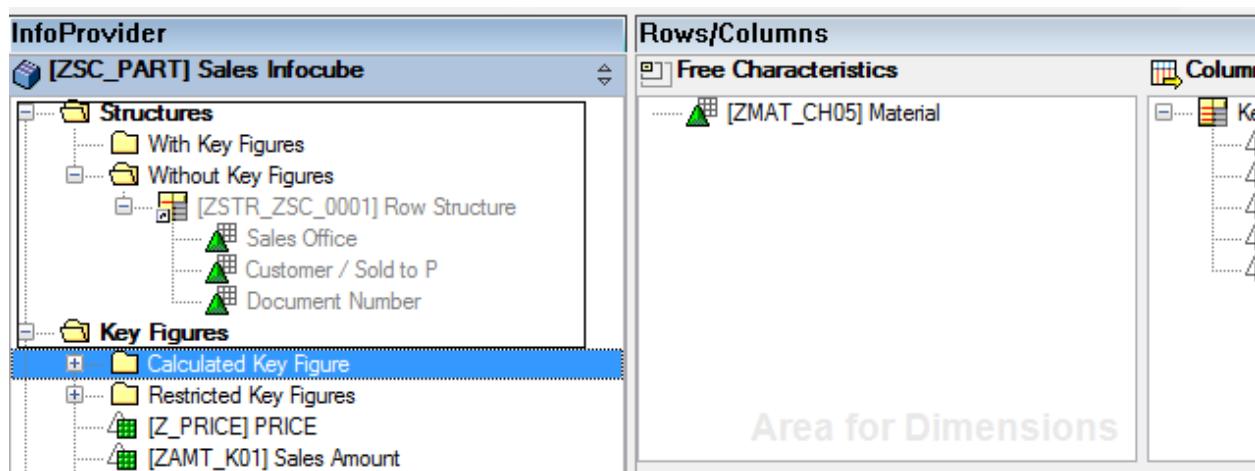
This is local structure to make it as global one, right click on structure and click on save as and give technical name , so this structure is global now. Now it can be accessed across all queries built on the same inforprovider.



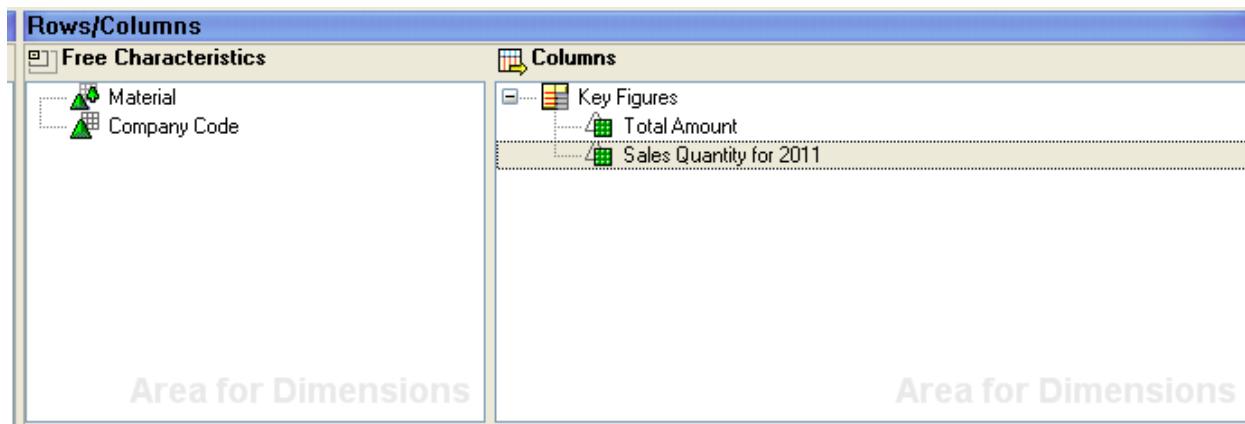
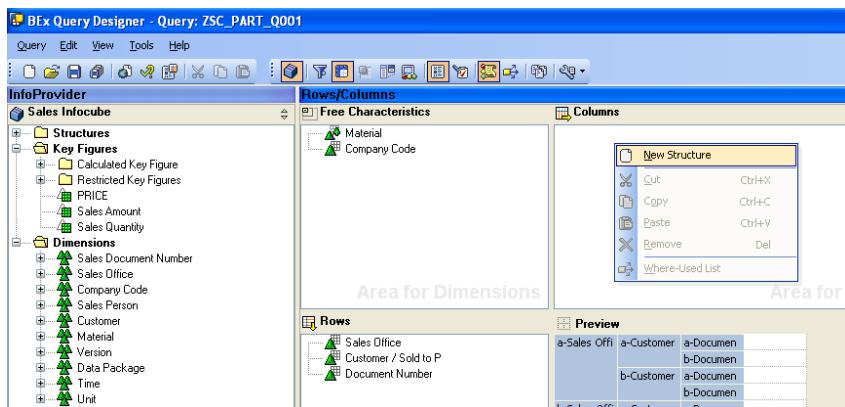
The screenshot shows a context menu for a "Row Structure" node in the "Rows" section of the BEX Query Designer. The menu options are: New Structure, New Selection, New Formula, Remove Reference, Select All (Ctrl+A), Save, and Save As... The "Save As..." option is highlighted with a blue selection bar.



We can see global structure on the left side, shown in the below screenshot.



Similarly we can create Key figure structure in Column and add above mentioned restricted and calculated key figures in it. Check below screenshot for more info.



Integrating Hierarchies:

Prerequisite-

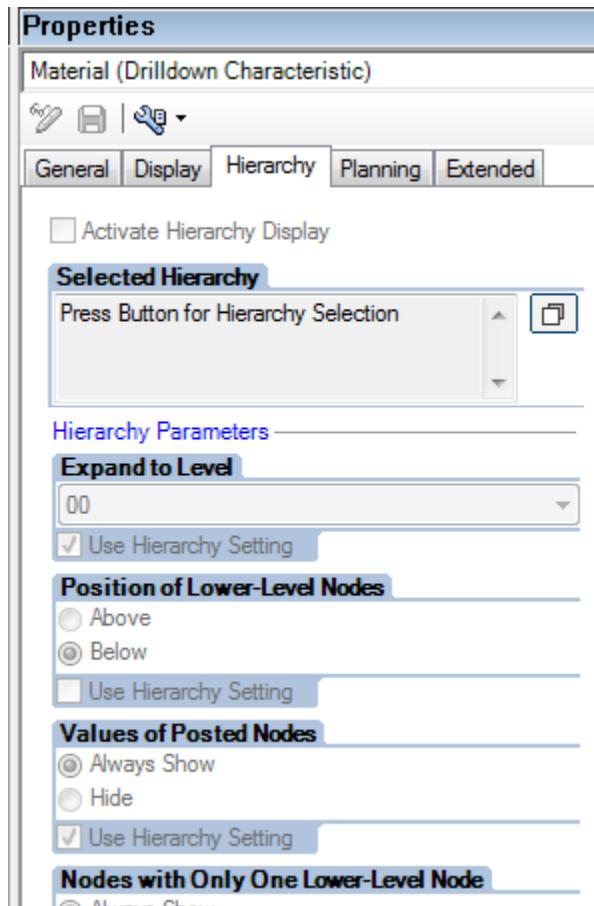
Material hierarchy is already created in backend manually .

Use:

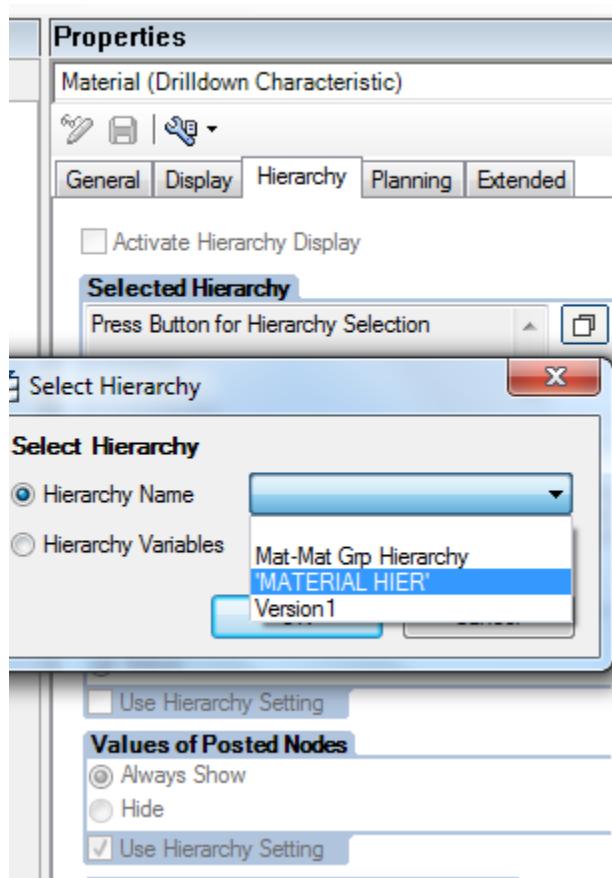
Using this we can display info objects in hierarchy format.

Steps:

- 1) In ZSC_PART_QXXX query drag Material to Free characteristics. Go to material properties and select hierarchy tab.



- 2) Click on selection hierarchy tab and select material hierarchy form dropdown list and click ok.



- 3) Save the query and execute it in RSRT.

4) Drilldown report by Material.

BEx Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

ZSC_PART_Q001 Last Data Update: 09.0

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

	Sales Amount	Sales Quantity	PRICE	Sales Quantity for 2011	Total
Sales Office	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,
Customer / Sold to P	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,
Document Number	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,

Rows Columns Free Characteristics

Material 

Drilldown in the Rows

ZSC_PART_Q001 Last Data Update: 09.09.2011 13:22:26

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

	Material	Sales Amount	Sales Quantity	PRICE	Sales Quantity for 2011	Total Amount
Sales Office	Not Assigned Material (s)	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,900.00000 EA
	#M2	£ 400.00	400.000 EA	£ 4.00	400.000 EA	£ 1,600.00000 EA
	#M8	£ 300.00	300.000 EA	£ 3.00	300.000 EA	£ 900.00000 EA
Customer / Sold to P	Not Assigned Material (s)	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,900.00000 EA
	#M2	£ 400.00	400.000 EA	£ 4.00	400.000 EA	£ 1,600.00000 EA
	#M8	£ 300.00	300.000 EA	£ 3.00	300.000 EA	£ 900.00000 EA
Document Number	Not Assigned Material (s)	£ 700.00	700.000 EA	£ 7.00	700.000 EA	£ 4,900.00000 EA
	#M2	£ 400.00	400.000 EA	£ 4.00	400.000 EA	£ 1,600.00000 EA
	#M8	£ 300.00	300.000 EA	£ 3.00	300.000 EA	£ 900.00000 EA

Rows Columns Free Characteristics

Conclusion:

After going through this doc, we will get to know how to create restricted key figures , calculated key figures , structures and integrating hierarchy in the report.

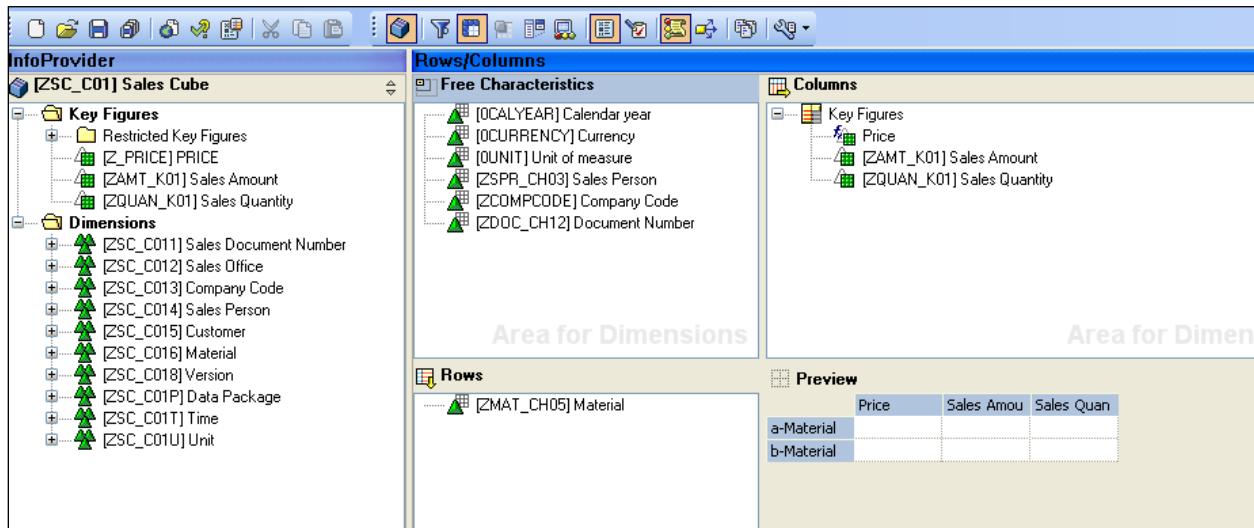
Variable Types, Processing types, Conditions and Exceptions

Use:

Variables are parameters of a query that are defined in the Query Designer and that are filled with values when you execute the query or Web application. They serve as a store for characteristic values, hierarchies, hierarchy nodes, texts and formula elements, and can be processed in different ways.

Characteristics Variable – Characteristic variables represent characteristic values and can be used wherever characteristic values are used.

Step 1: Create a query on Sales Cubes with Material in Rows, and Key Figures in Columns, giving the required filter values and required free characteristics.



In column create one new formula (right click on Key Figure-> New formula i.e local calculated key figure) name it as Price.

General | Aggregation | Display | Extended | Conversions | Planning | Calculations |

Description	Technical Name
Price <input type="checkbox"/> Use Standard Text	
Detail View $'\text{Sales Amount}' / '\text{Sales Quantity}'$	
<input type="button" value="1"/> <input type="button" value="2"/> <input type="button" value="3"/> <input type="button" value="4"/> <input type="button" value="5"/> <input type="button" value="6"/> <input type="button" value="7"/> <input type="button" value="8"/> <input type="button" value="9"/> <input type="button" value="0"/> .	
$+ \quad - \quad * \quad / \quad ** \quad (\quad) \quad \% \quad \%A$	
Available Operands <ul style="list-style-type: none"> Key Figures <ul style="list-style-type: none"> Sales Amount Sales Quantity Formula Variable 	Operators <ul style="list-style-type: none"> Basic Functions Percentage Functions Data Functions Mathematical Functions Trigonometric Functions Boolean Operators

Step 2: Drag Plant to Characteristics restriction area. Right click on it and restrict.

Zap's screen grabber

Prepare screen for grabbing, then press "Grab".

Grab Exit

Sales Cube

Key Figures

- PRICE
- Sales Amount
- Sales Quantity

Dimensions

- Sales Document Number
- Sales Office
- Company Code
- Sales Person
- Customer
- Material
- Version
- Data Package
- Time
- Unit

Characteristics Restrictions

Plant

Restrict...

Remove Reference

Save As...

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Remove Del

Where-Used List

Default Values

- Document Number
- Company Code
- Sales Person
- Unit of measure
- Currency
- Calendar year
- Material

Properties

Plant (Drilldown Characteristic)

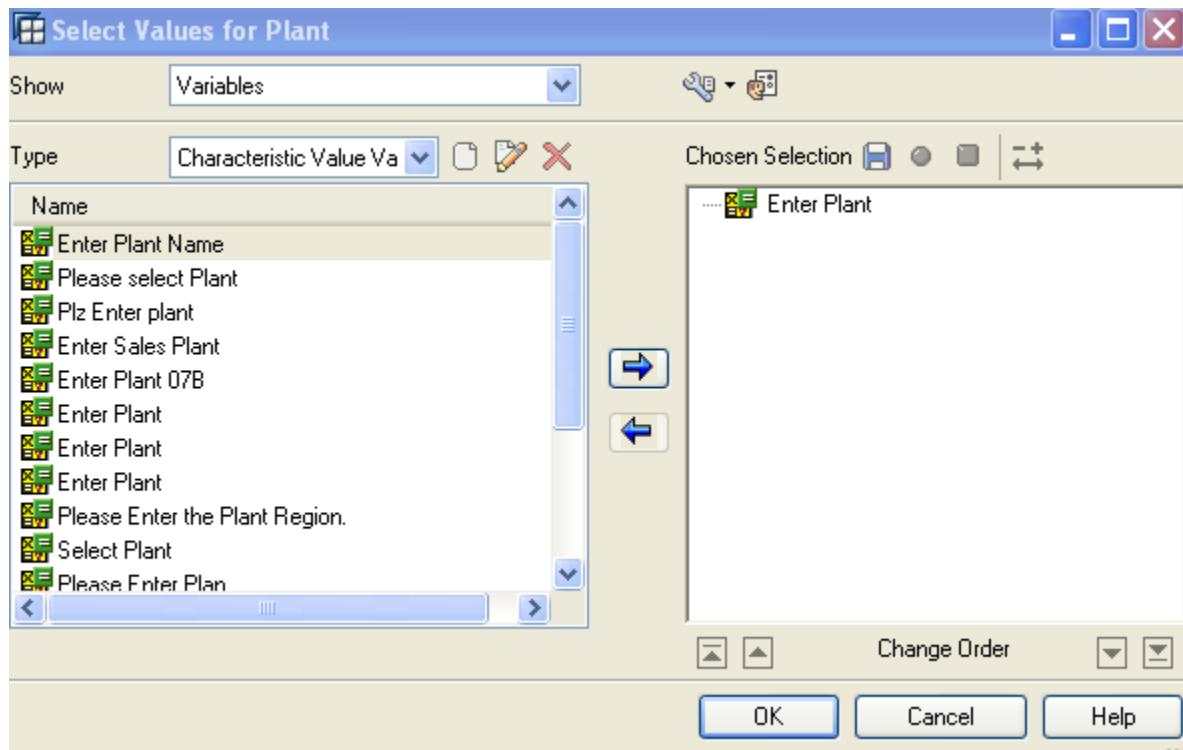
General | Display | Hierarchy | Planning | Extended

Description: Plant

Use Standard Text

Technical Name: ZPLANT

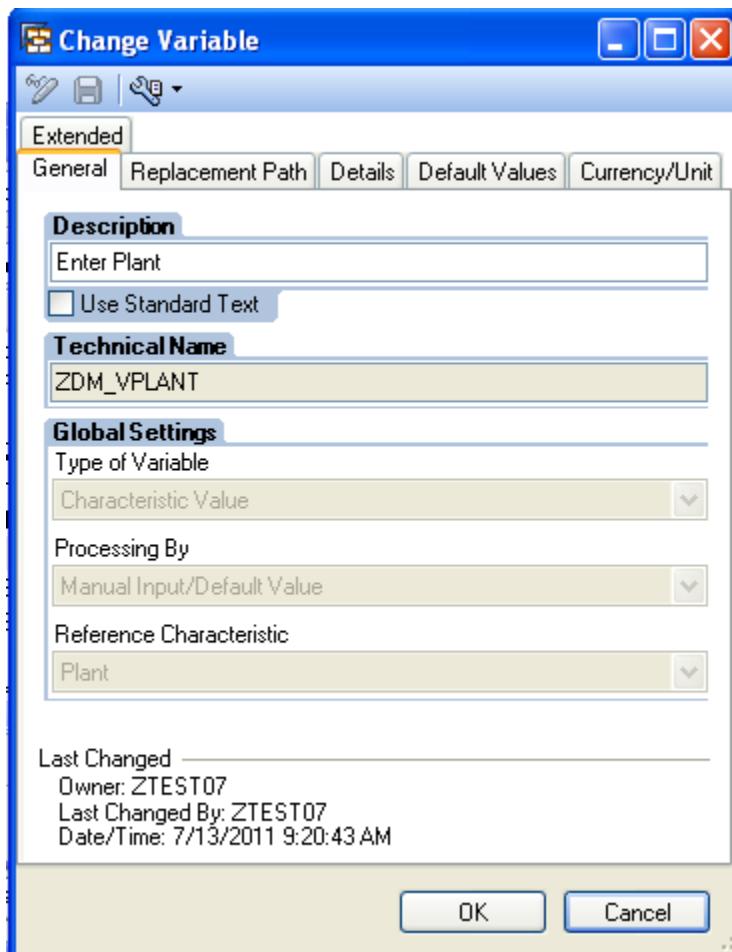
Step 3: Go to Variables from drop down. Then click on Create variable button .

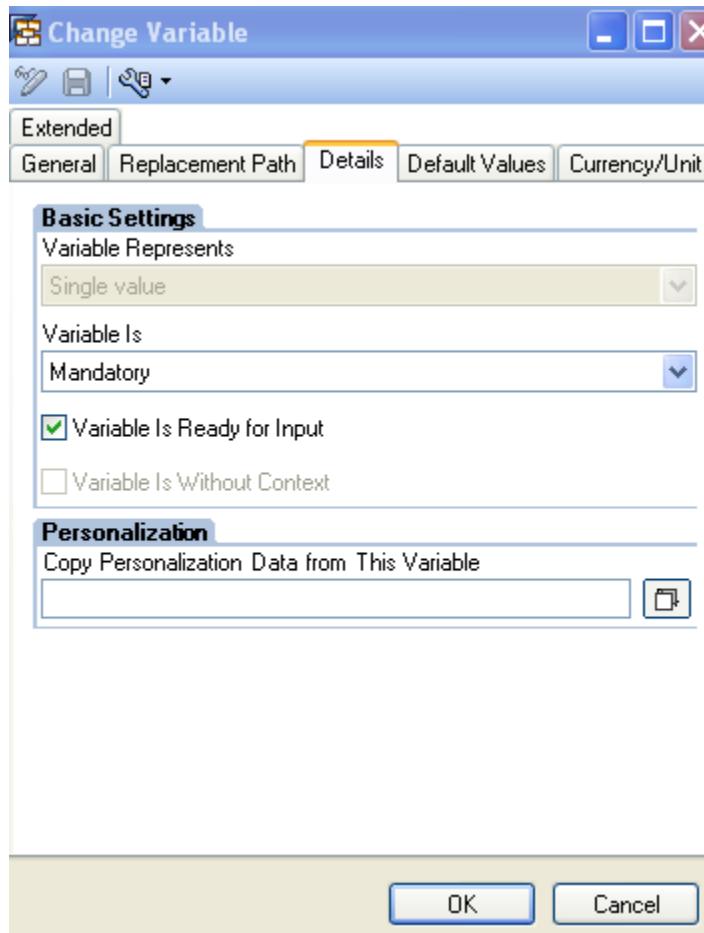


Set parameters as shown below. Technical name you can select as ZDM_VPLANT_XXX.

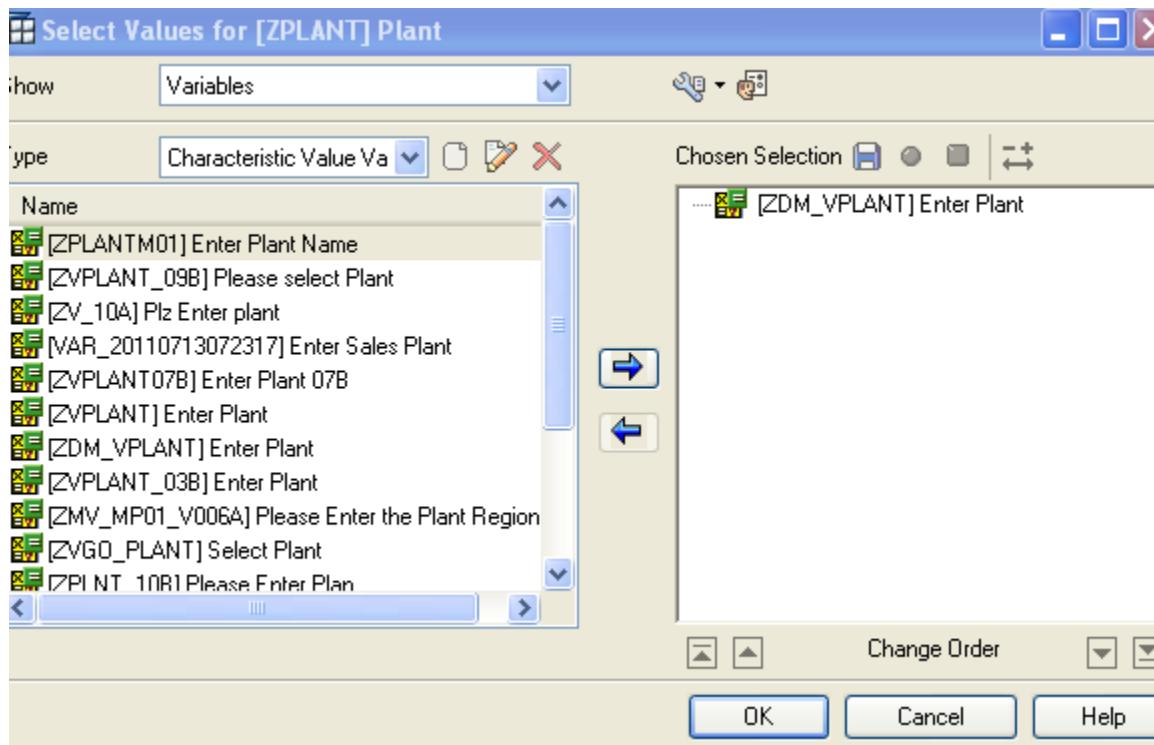
Here we can introduce **Manual input/default value processing type**.

The processing type Manual Entry/Default Value enables you to enter a value manually or to use the default value when defining a variable. This value is then used for the variable when you execute the query or Web application.



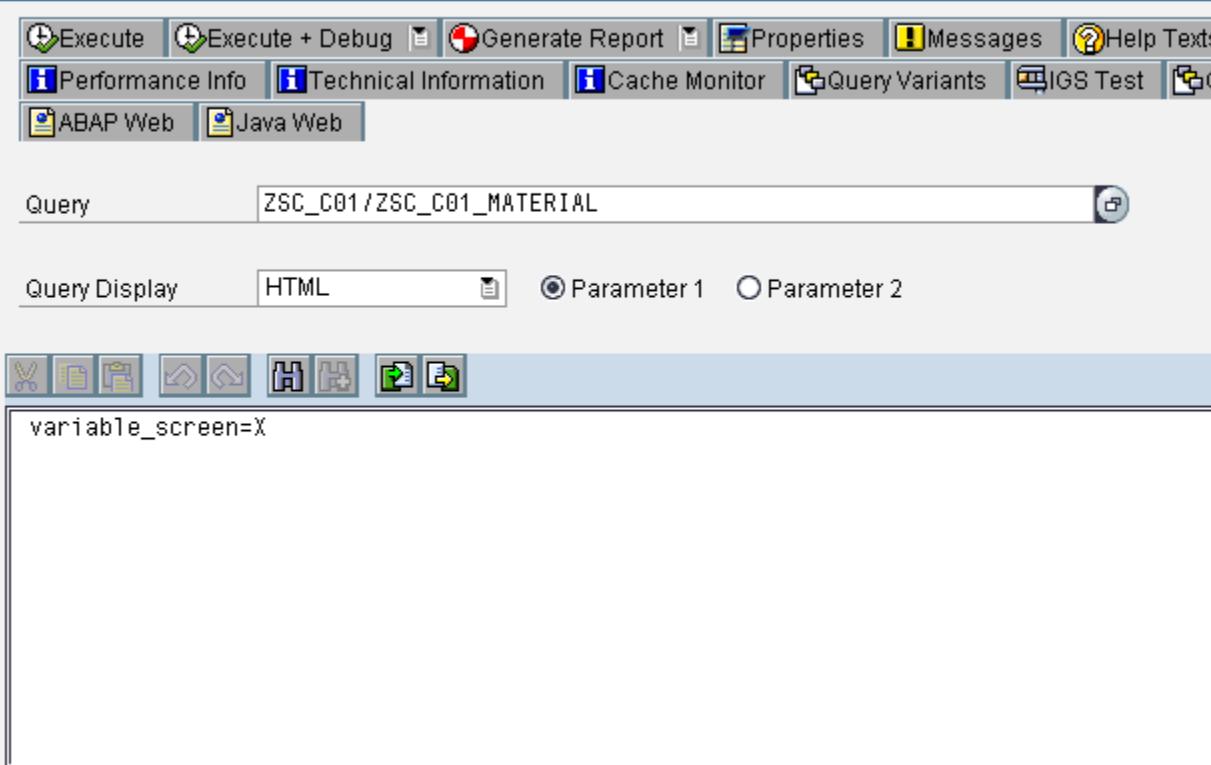


Drag the newly created variable on right hand side and OK.

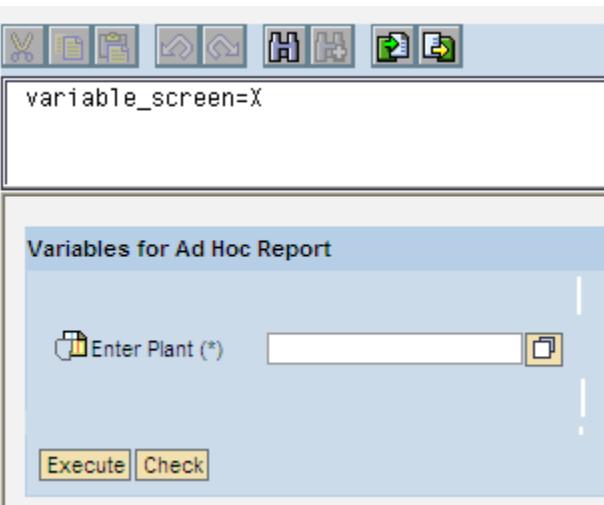


Step 4: Save the query. Name it as ZSC_C01_MATERIAL_XXX. Execute it in RSRT. Enter plant as Not assigned.

Query Monitor



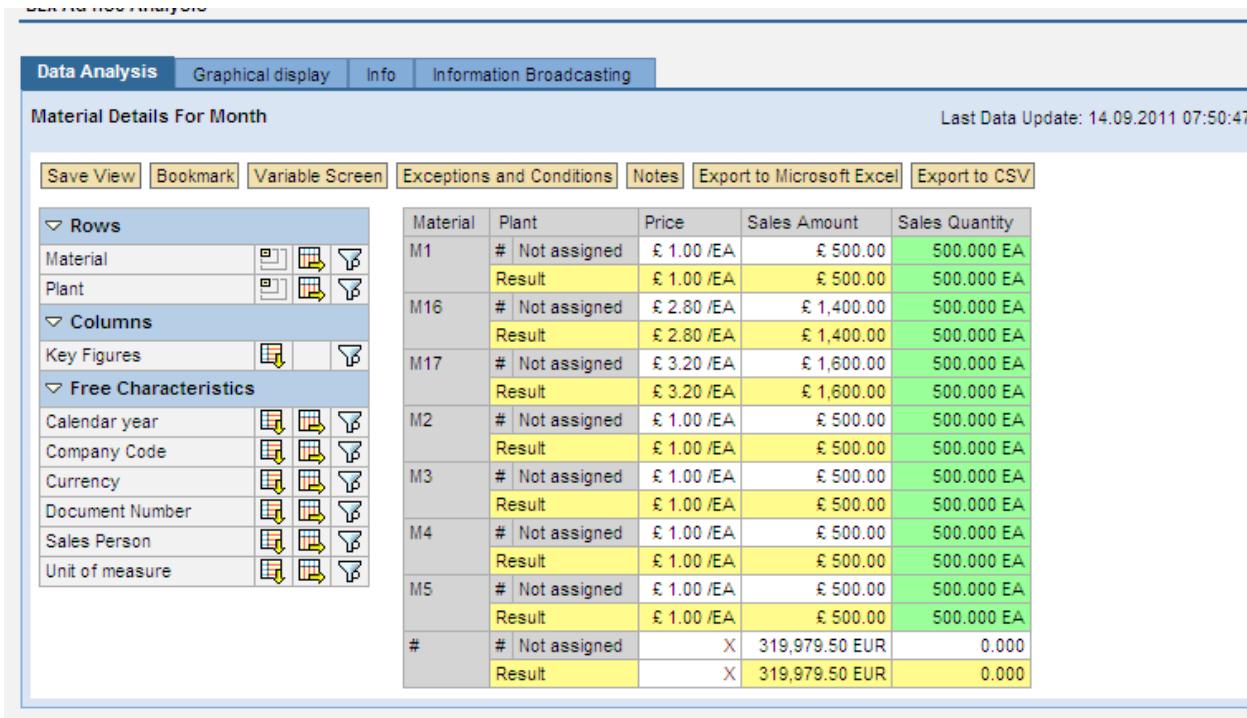
The screenshot shows the SAP Query Monitor interface. The top menu bar includes options like Execute, Execute + Debug, Generate Report, Properties, Messages, Help Texts, Performance Info, Technical Information, Cache Monitor, Query Variants, IGS Test, ABAP Web, and Java Web. A search bar at the top is set to "ZSC_C01/ZSC_C01_MATERIAL". Below it, the "Query Display" is set to "HTML" and "Parameter 1" is selected. The main area contains the query definition: "variable_screen=X".



A modal dialog box titled "Variables for Ad Hoc Report" is displayed. It contains a field labeled "Enter Plant (*)" with a placeholder value. At the bottom are two buttons: "Execute" and "Check".

Check the output. Drill down plant by clicking on  button next to Plant in free characteristics.

Check if output is only for Not assigned plant.



Material	Plant	Price	Sales Amount	Sales Quantity
M1	# Not assigned	€ 1.00 /EA	€ 500.00	500.000 EA
	Result	€ 1.00 /EA	€ 500.00	500.000 EA
M16	# Not assigned	€ 2.80 /EA	€ 1,400.00	500.000 EA
	Result	€ 2.80 /EA	€ 1,400.00	500.000 EA
M17	# Not assigned	€ 3.20 /EA	€ 1,600.00	500.000 EA
	Result	€ 3.20 /EA	€ 1,600.00	500.000 EA
M2	# Not assigned	€ 1.00 /EA	€ 500.00	500.000 EA
	Result	€ 1.00 /EA	€ 500.00	500.000 EA
M3	# Not assigned	€ 1.00 /EA	€ 500.00	500.000 EA
	Result	€ 1.00 /EA	€ 500.00	500.000 EA
M4	# Not assigned	€ 1.00 /EA	€ 500.00	500.000 EA
	Result	€ 1.00 /EA	€ 500.00	500.000 EA
M5	# Not assigned	€ 1.00 /EA	€ 500.00	500.000 EA
	Result	€ 1.00 /EA	€ 500.00	500.000 EA
#	# Not assigned	X	319,979.50 EUR	0.000
	Result	X	319,979.50 EUR	0.000

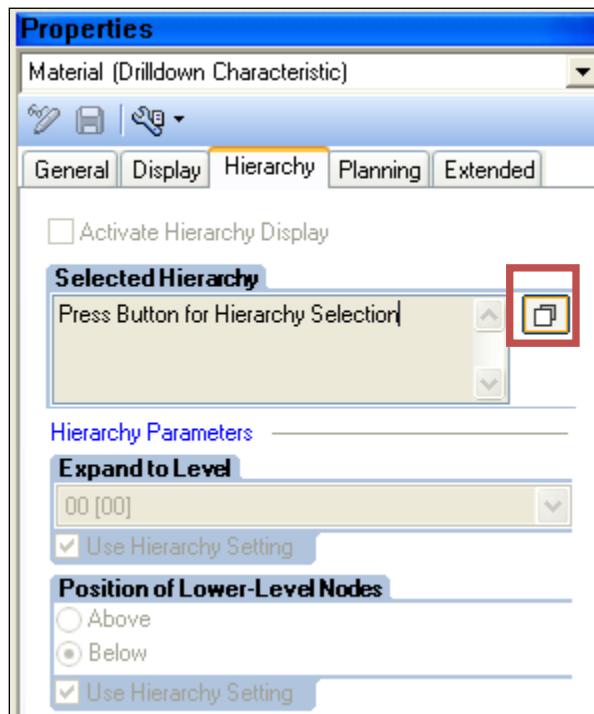
Hierarchy Variable - Hierarchy variables represent hierarchies and can be used wherever hierarchies can be selected.

Process:

Hierarchy Variable – Manual Input Ready Type

Step 5: Continue using same query.

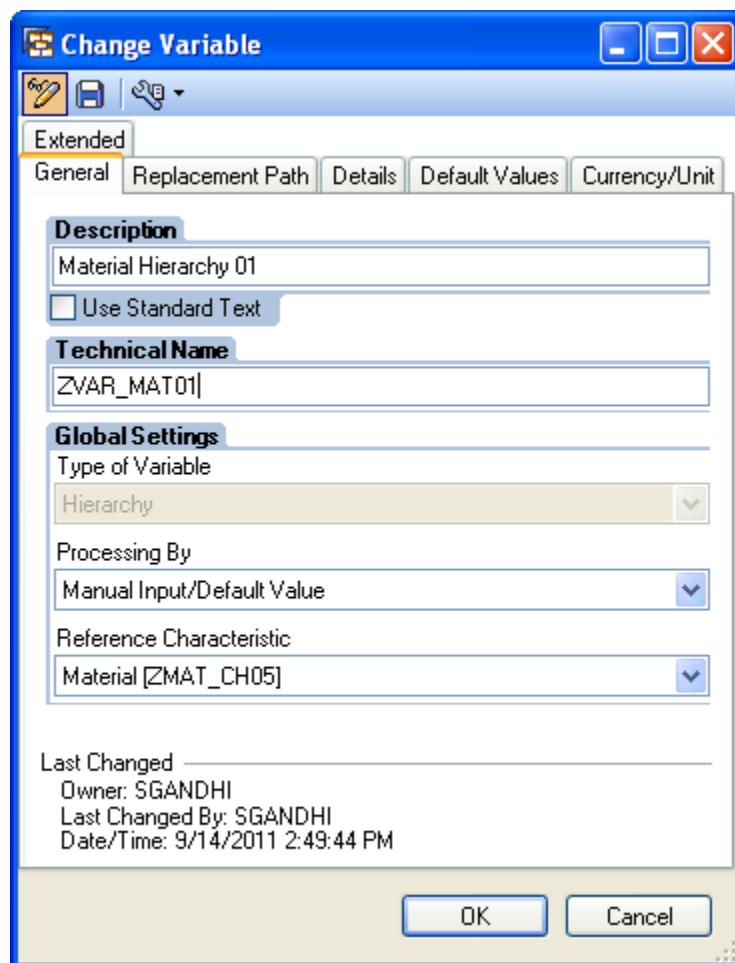
Step 6: Now select the Material Info Object in Rows – section. And go to the properties of the same. Navigate to the Hierarchy Tab of the properties.

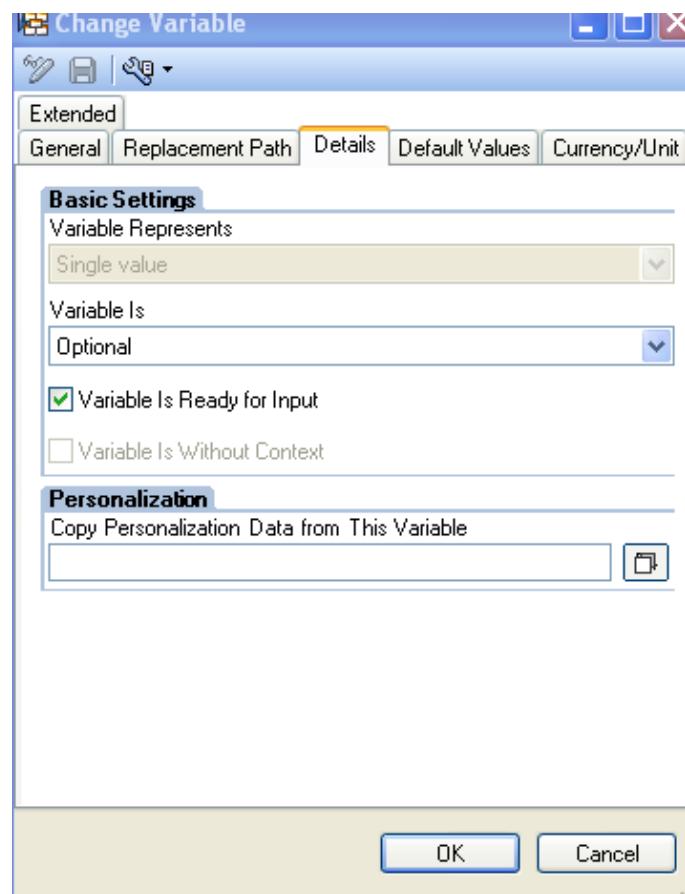


Click on the Hierarchy Selection Button as shown in the red box above. You will get a popup to select the existing hierarchy or to use a Hierarchy Variable, as below.

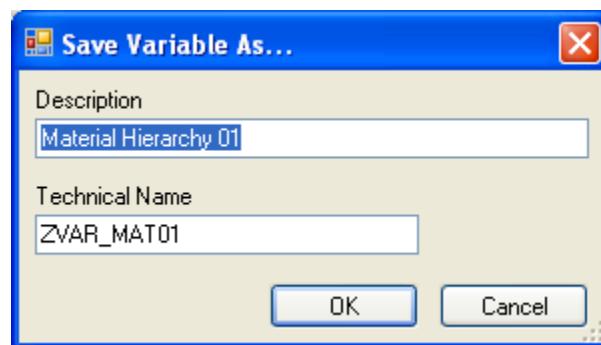


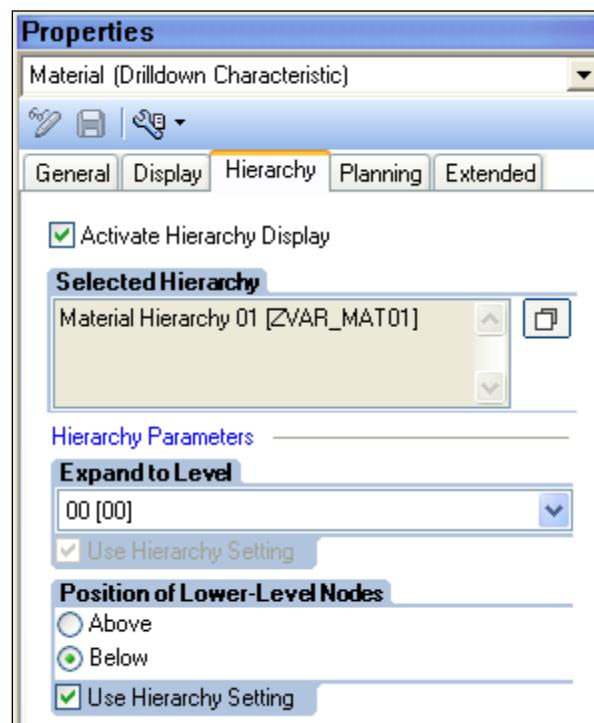
Step 7: To create Hierarchy Variable, select the Variable option in above popup. And in the popup for creation of new variable, fill the required details in General and details tab.

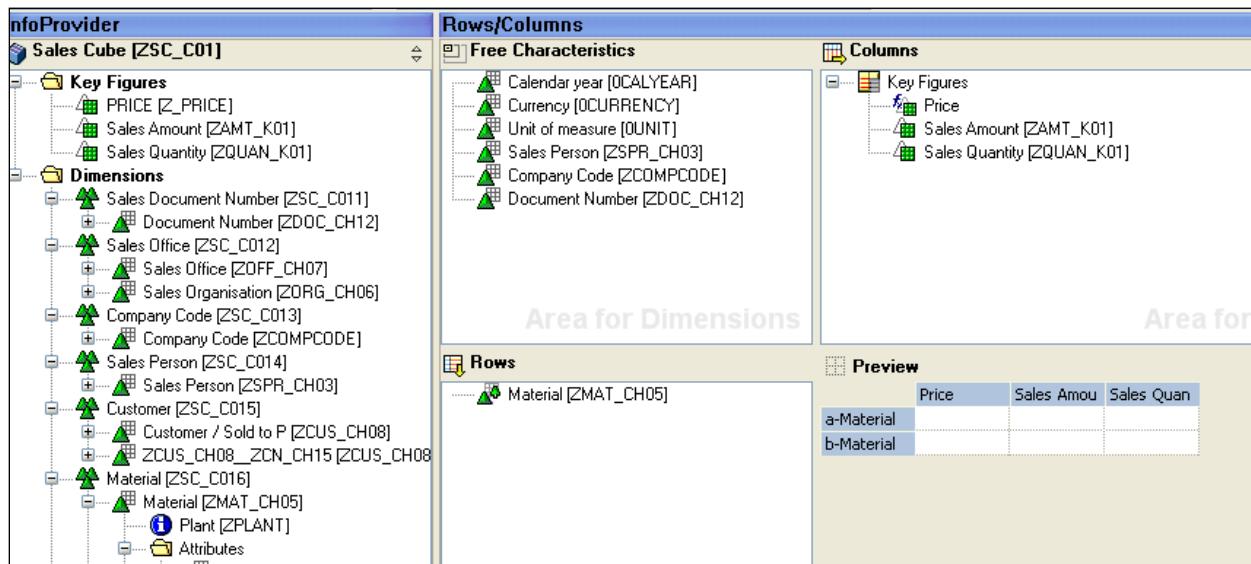




Step 8: Save the variable and check the properties of the Material, which has changed now. The Activate Hierarchy Display Checkbox is active.







Rows/Columns

Free Characteristics

- Calendar year [OCALYEAR]
- Currency [OCURRENCY]
- Unit of measure [OUNIT]
- Sales Person [ZSPR_CH03]
- Company Code [ZCOMPCode]
- Document Number [ZDOC_CH12]

Columns

Key Figures

- Price
- Sales Amount [ZAMT_K01]
- Sales Quantity [ZQUAN_K01]

Area for Dimensions

Rows

- Material [ZMAT_CH05]

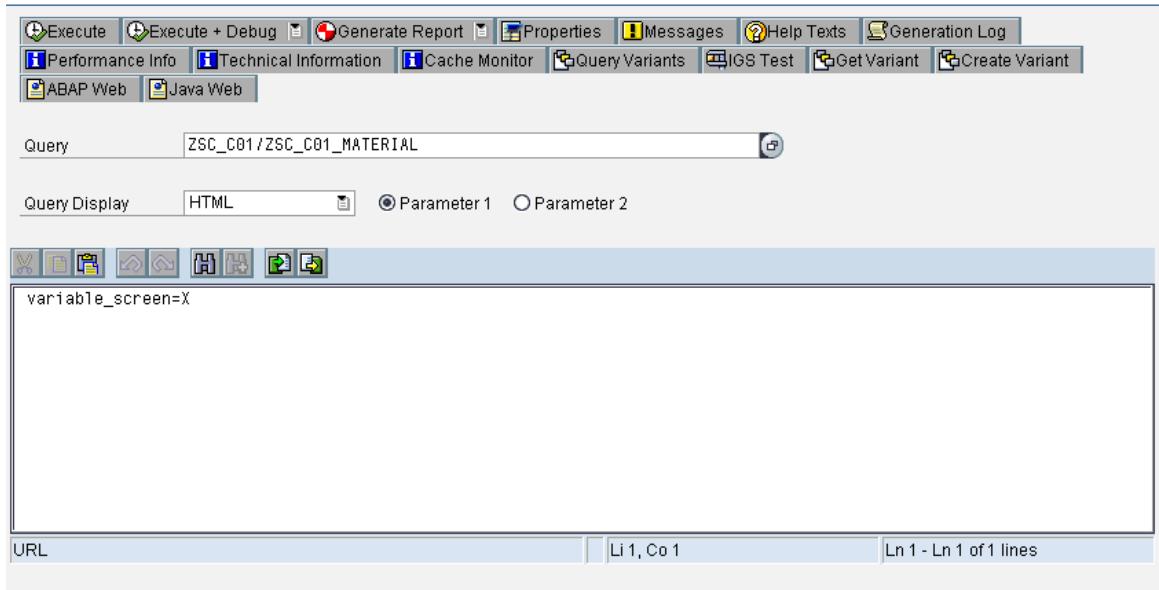
Preview

	Price	Sales Amou	Sales Quan
a-Material			
b-Material			

Area for

Step 9: Execute the query in RSRT transaction .

Query Monitor



Query D

Query Display D Parameter 1 Parameter 2

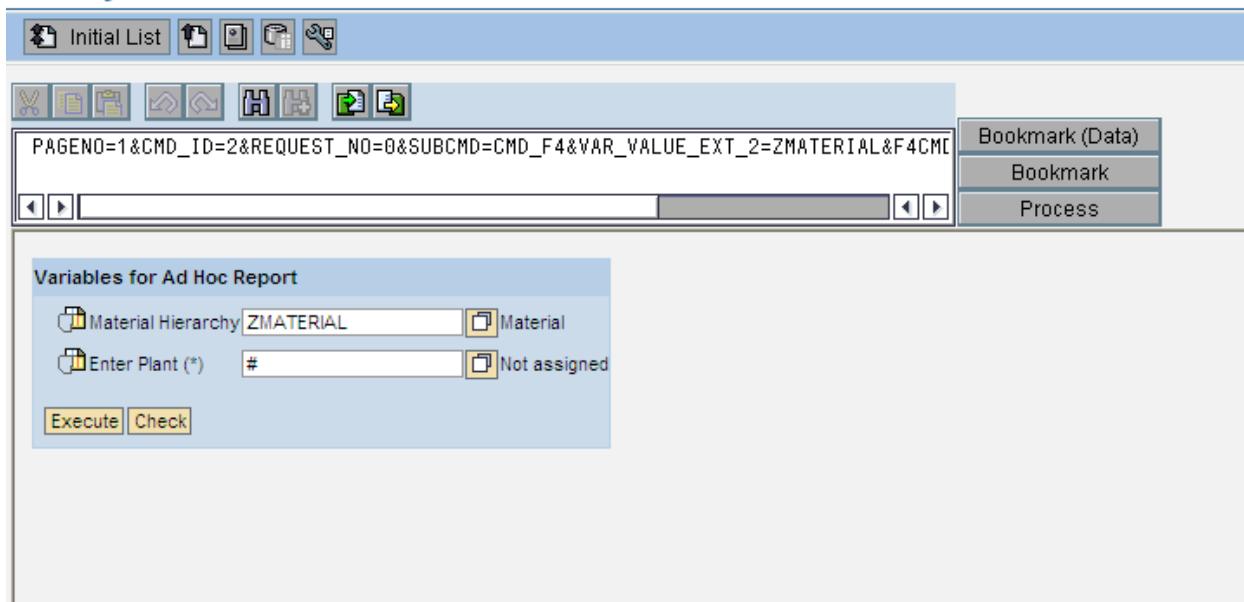
V D P H A B C E F G

```
variable_screen=X
```

URL D Li 1, Co 1 Ln 1 - Ln 1 of 1 lines

Step 6: Select the Hierarchy you have created earlier, in variable screen.

Query



PAGENO=1&CMD_ID=2&REQUEST_NO=0&SUBCMD=CMD_F4&VAR_VALUE_EXT_2=ZMATERIAL&F4CMD

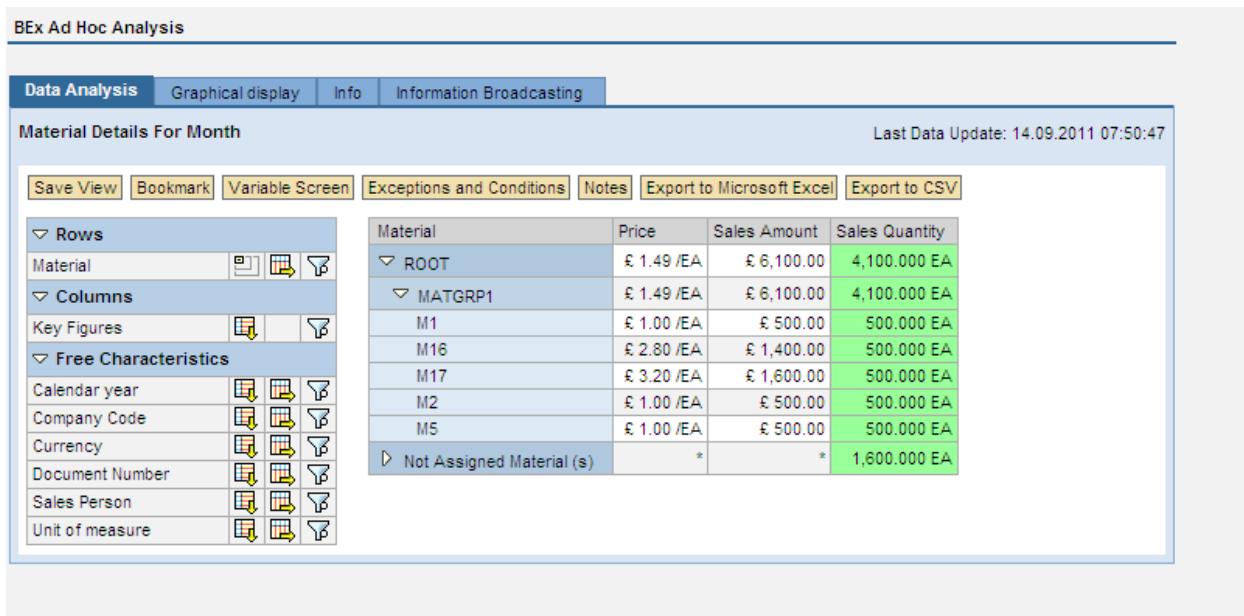
Bookmark (Data)
Bookmark
Process

Variables for Ad Hoc Report

<input type="checkbox"/> Material Hierarchy	ZMATERIAL	<input type="checkbox"/> Material
<input type="checkbox"/> Enter Plant (*)	#	<input type="checkbox"/> Not assigned

Execute Check

Step 10: Check the output. You will see values populated against a hierarchy.

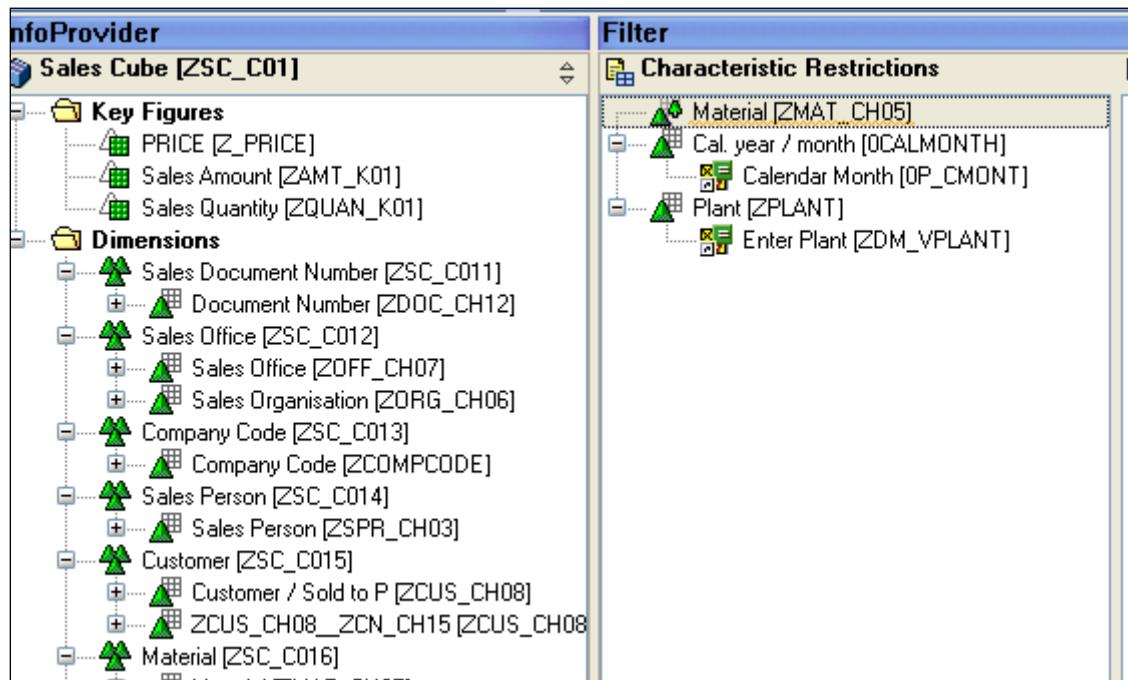


Material	Price	Sales Amount	Sales Quantity
ROOT	£ 1.49 /EA	£ 6,100.00	4,100.000 EA
MATGRP1	£ 1.49 /EA	£ 6,100.00	4,100.000 EA
M1	£ 1.00 /EA	£ 500.00	500.000 EA
M16	£ 2.80 /EA	£ 1,400.00	500.000 EA
M17	£ 3.20 /EA	£ 1,600.00	500.000 EA
M2	£ 1.00 /EA	£ 500.00	500.000 EA
M5	£ 1.00 /EA	£ 500.00	500.000 EA
Not Assigned Material(s)	*	*	1,600.000 EA

Hierarchy Node Variable – Manual Input Type - Optional

Now if you want to see particular nodes of the hierarchy in the output instead of the complete hierarchy, we need Hierarchy Node Variable.

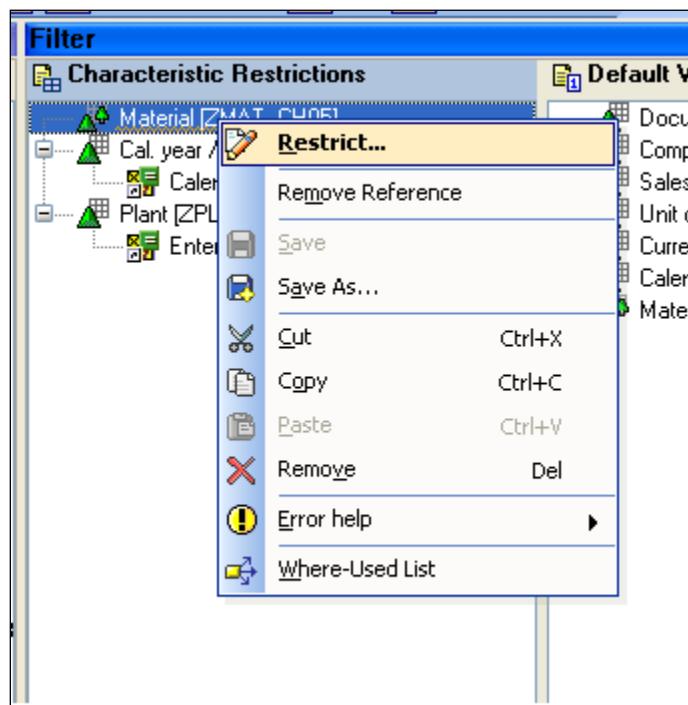
Step 11: In the same query, Include Info Object Material in the Filters (characteristics restrictions).



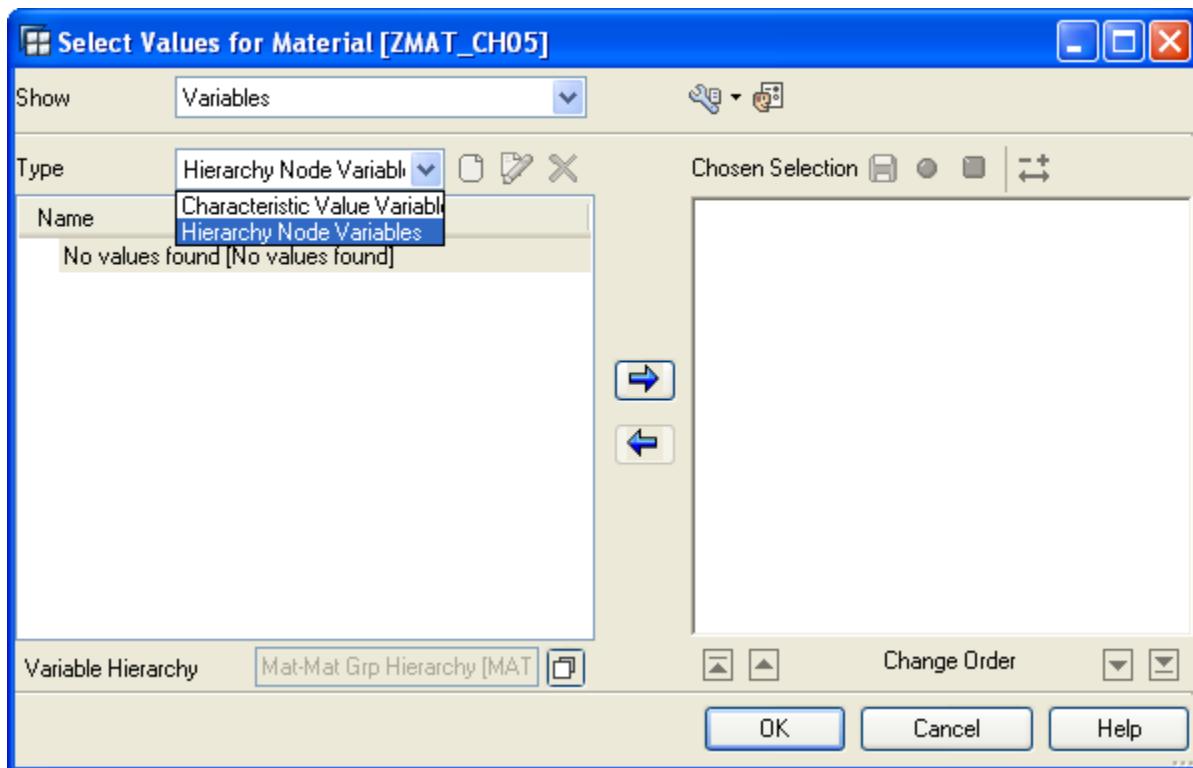
The screenshot shows the SAP BW InfoProvider interface. On the left, the **InfoProvider** tree view displays the **Sales Cube [ZSC_C01]**. It contains two main categories: **Key Figures** and **Dimensions**.

- Key Figures:**
 - PRICE [Z_PRICE]
 - Sales Amount [ZAMT_K01]
 - Sales Quantity [ZQUAN_K01]
- Dimensions:**
 - Sales Document Number [ZSC_C011]
 - Document Number [ZDOC_CH12]
 - Sales Office [ZSC_C012]
 - Sales Office [ZOFF_CH07]
 - Sales Organisation [ZORG_CH06]
 - Company Code [ZSC_C013]
 - Company Code [ZCOMPCODE]
 - Sales Person [ZSC_C014]
 - Sales Person [ZSPR_CH03]
 - Customer [ZSC_C015]
 - Customer / Sold to P [ZCUS_CH08]
 - ZCUS_CH08_ZCN_CH15 [ZCUS_CH08]
 - Material [ZSC_C016]

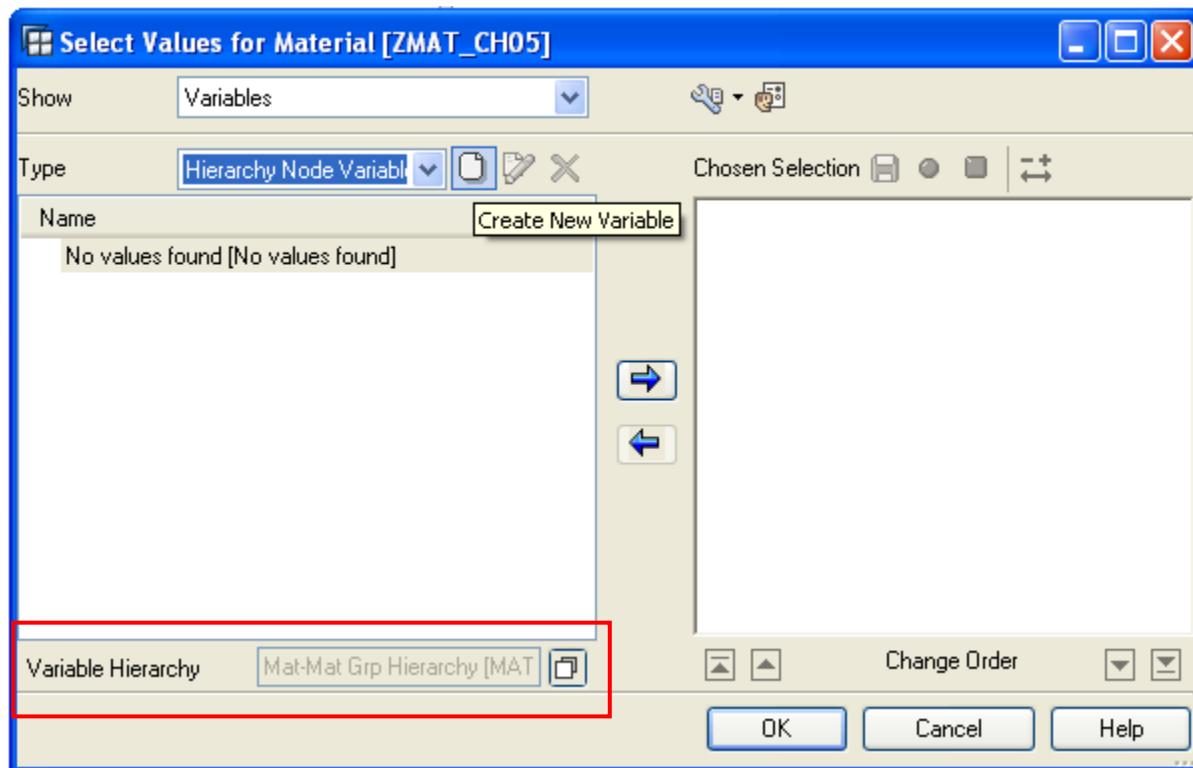
Step 12: Restrict Material with a variable.

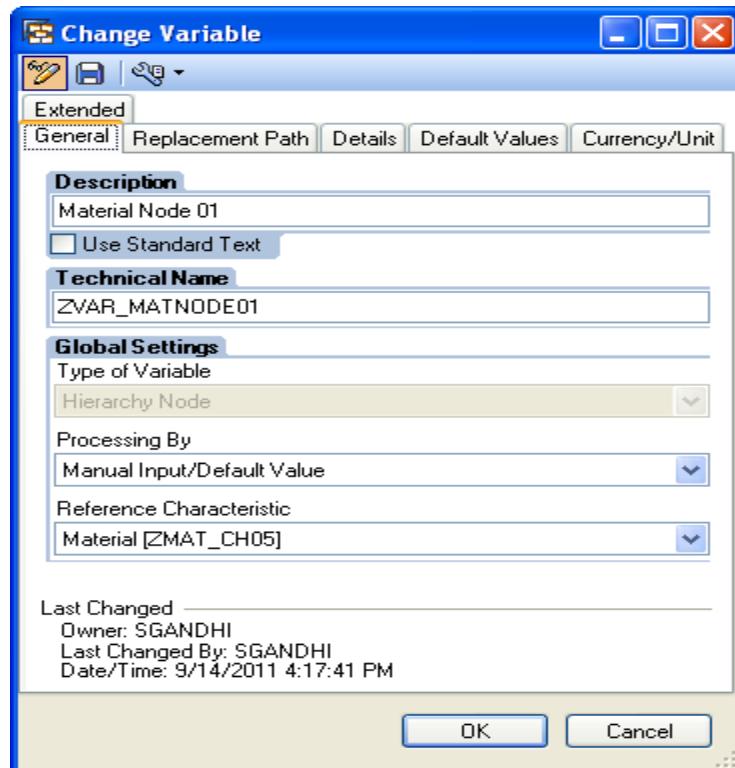


Step 13: In the popup, for the Type – select Hierarchy Node Variable, as shown below.

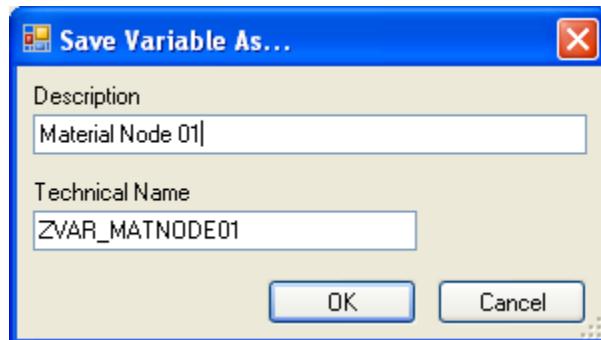


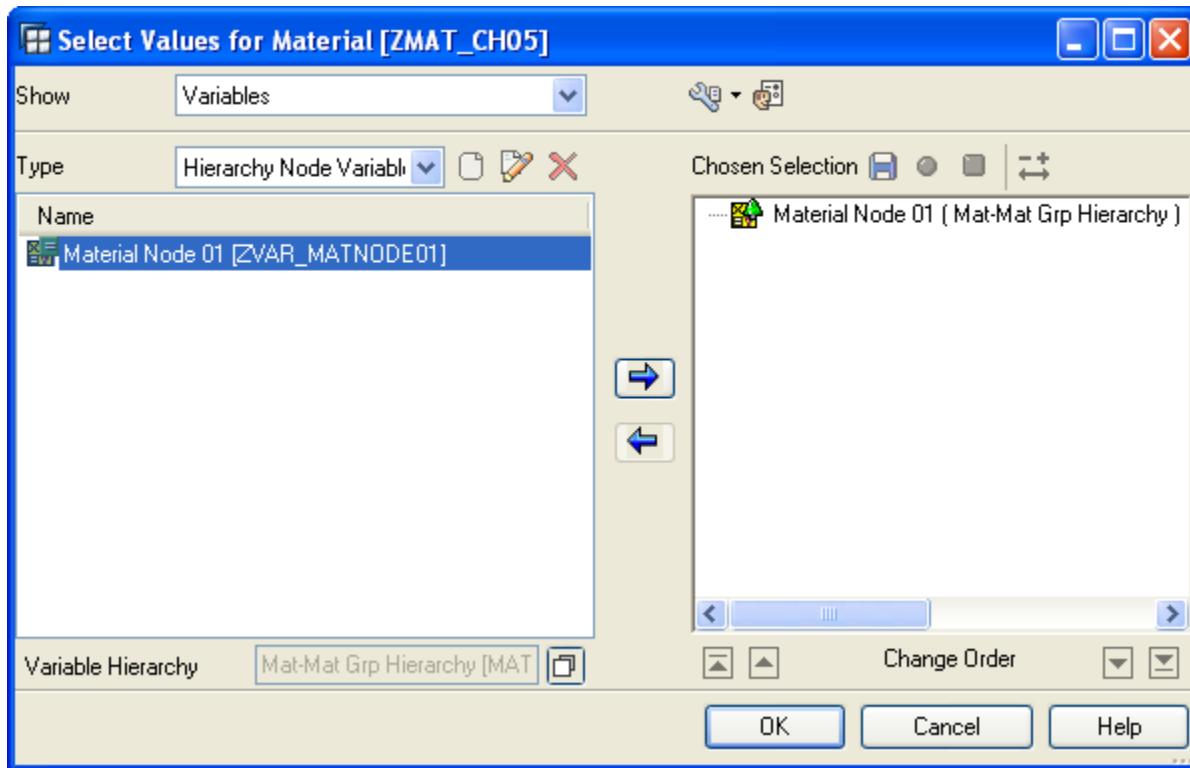
Step 14: Click on the Create Button besides the type drop down, and create a variable. Fill in the required details. Note that you are creating node variable for Variable hierarchy selected at the bottom (It can be a hierarchy variable or constant hierarchy).





Step 15: Save the variable and select it for the Material Info Object from the list of variables.





InfoProvider

Sales Cube [ZSC_C01]

- Key Figures
 - PRICE [Z_PRICE]
 - Sales Amount [ZAMT_K01]
 - Sales Quantity [ZQUAN_K01]
- Dimensions
 - Sales Document Number [ZSC_C011]
 - Document Number [ZDOC_CH12]
 - Sales Office [ZSC_C012]
 - Sales Office [ZOFF_CH07]
 - Sales Organisation [ZORG_CH06]
 - Company Code [ZSC_C013]
 - Company Code [ZCOMPICODE]
 - Sales Person [ZSC_C014]
 - Sales Person [ZSPR_CH03]
 - Customer [ZSC_C015]
 - Customer / Sold to P [ZCUS_CH08]

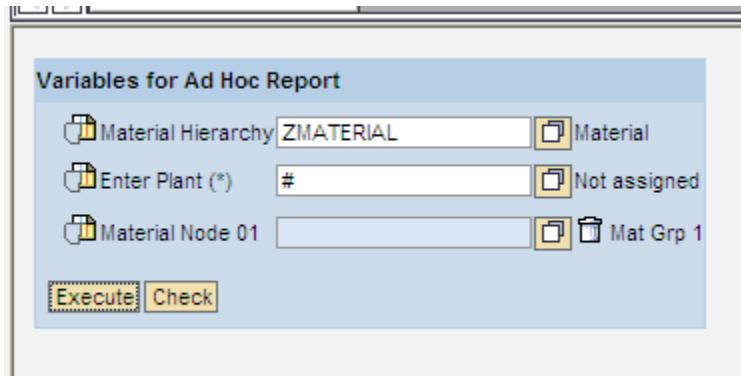
Filter

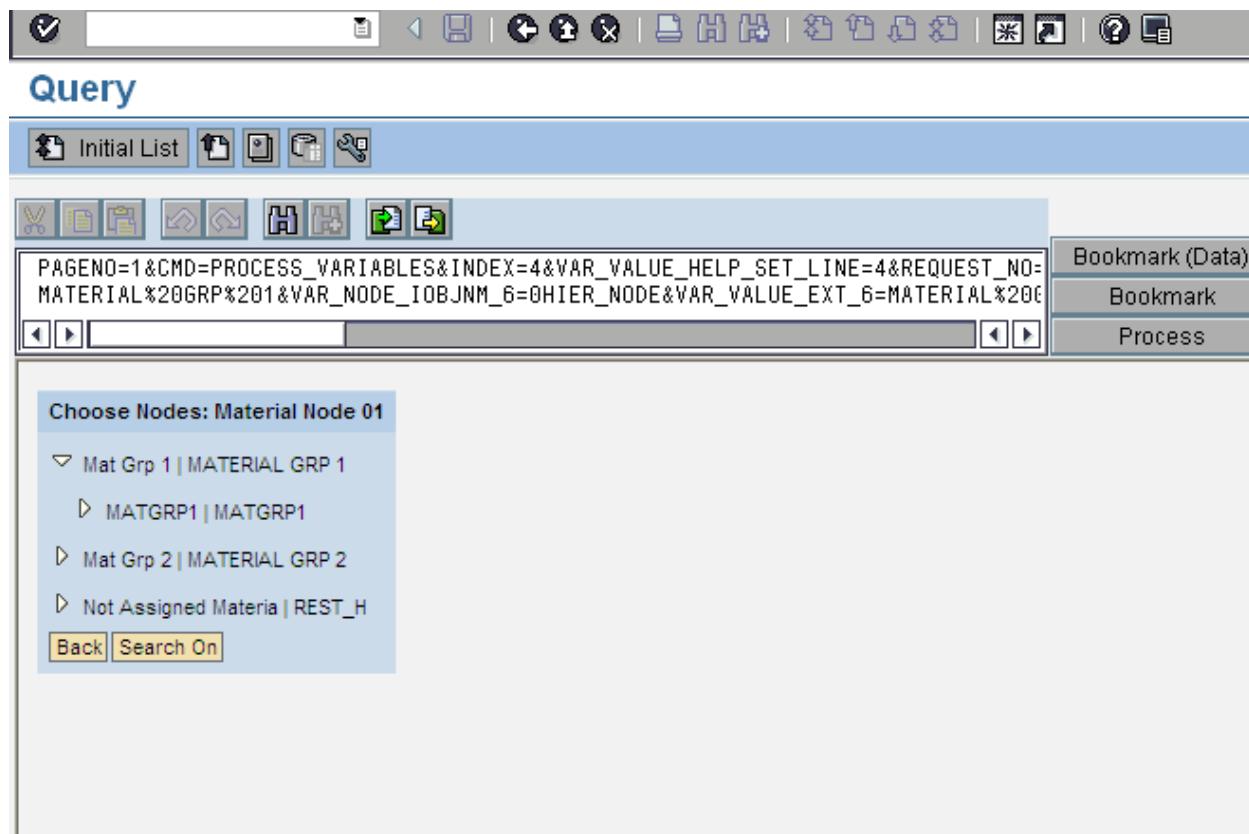
Characteristic Restrictions

- Material [ZMAT_CH05]
 - Material Node 01 (Mat-Mat Grp Hierarchy)
- Cal. year / month [0CALMONTH]
 - Calendar Month [0P_CMONT]
- Plant [ZPLANT]
 - Enter Plant [ZDM_VPLANT]

Step 16: Execute the query in RSRT. First select plan as not assigned, Hierarchy that was selected in step 6 and then F4 for material node.

Select one node and Execute.





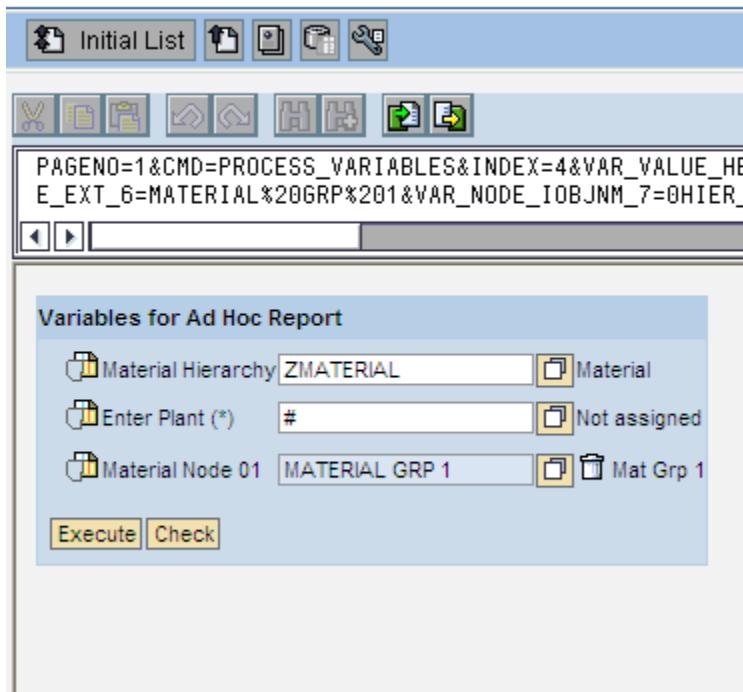
The screenshot shows the SAP BW/BEX Query interface. The title bar says "Query". The toolbar has various icons for file operations like Open, Save, Print, etc. The menu bar is visible with "File", "Edit", "View", "Insert", "Format", "Tools", "Help". The main area displays a hierarchical tree titled "Choose Nodes: Material Node 01". The tree structure is as follows:

- Mat Grp 1 | MATERIAL GRP 1
 - MATGRP1 | MATGRP1
- Mat Grp 2 | MATERIAL GRP 2
- Not Assigned Materia | REST_H

At the bottom of the tree view are two buttons: "Back" and "Search On". To the right of the tree view, there is a vertical panel with three buttons:

- Bookmark (Data)
- Bookmark
- Process

Query



The screenshot shows the SAP BW Query interface. At the top, there are several toolbar icons. Below the toolbar, a URL is displayed: PAGENO=1&CMD=PROCESS_VARIABLES&INDEX=4&VAR_VALUE_HE_E_EXT_6=MATERIAL%20GRP%201&VAR_NODE_I0BJNM_7=0HIER_. The main area is titled "Variables for Ad Hoc Report". It contains three variable entries:

Variable	Value	Description
Material Hierarchy	ZMATERIAL	Material
Enter Plant (*)	#	Not assigned
Material Node 01	MATERIAL GRP 1	Mat Grp 1

At the bottom of this panel are two buttons: "Execute" and "Check".

See the output for only that Hierarchy node.

Text Variable –

Use –

Text variables represent a text and can be used in descriptions of queries, calculated key figures and structural components

You can use text variables in the description of calculated key figures, restricted key figures, selections and formulas when you create them. See [Defining Calculated Key Figures](#), [Defining Restricted Key Figures](#), [Defining Selections](#), and [Defining Formulas](#).

You can change the descriptions in the properties dialog box. See Query Properties Calculated Key Figure Properties Restricted Key Figure Properties, and Selection/Formula Properties.

Scenario:

You have a requirement where Restricted key figure column header needs to display month for which restricted key figure is showing data in the output.

Say for example, if quantity is shown for Jan 2011 month, column header should mention *Sales Quantity for 01.2011*. We have a example query ZSC_C01_MATERIAL_DAY.

We will also show how replacement path variable is used along with Text variable in below steps. This will give you clear idea of scenario's where replacement path variable can be useful.

Process:

Step 1: Use query created in step 1, 2 again. Hide Sales amount and sales quantity by using KF properties.

BEx Query Designer - Query: [ZSC_C01_MATERIAL_DAY] Material Details For Day

Query Edit View Tools Help

InfoProvider [ZSC_C01] Sales Cube

Key Figures

- Restricted Key Figures
 - [Z_PRICE] PRICE
 - [ZAMT_K01] Sales Amount
 - [ZQUAN_K01] Sales Quantity
- Dimensions
 - [ZSC_C011] Sales Document Number
 - [ZSC_C012] Sales Office
 - [ZSC_C013] Company Code
 - [ZSC_C014] Sales Person
 - [ZSC_C015] Customer
 - [ZSC_C016] Material
 - [ZSC_C018] Version
 - [ZSC_C01P] Data Package
 - [ZSC_C01T] Time
 - [ZSC_C01U] Unit

Rows/Columns

Free Characteristics

- [OCALLYEAR] Calendar year
- [OCURRENCY] Currency
- [OUNIT] Unit of measure
- [ZSPR_CH03] Sales Person
- [ZCOMPCode] Company Code
- [ZDOC_CH12] Document Number

Columns

Key Figures

- f Price
- [ZAMT_K01] Sales Amount
- [ZQUAN_K01] Sales Quantity
- [ZRKF_0001] Sales Quantity for &ZVAR_CALMON_TXT&

Area for Dimensions

Area for Dimension

Rows

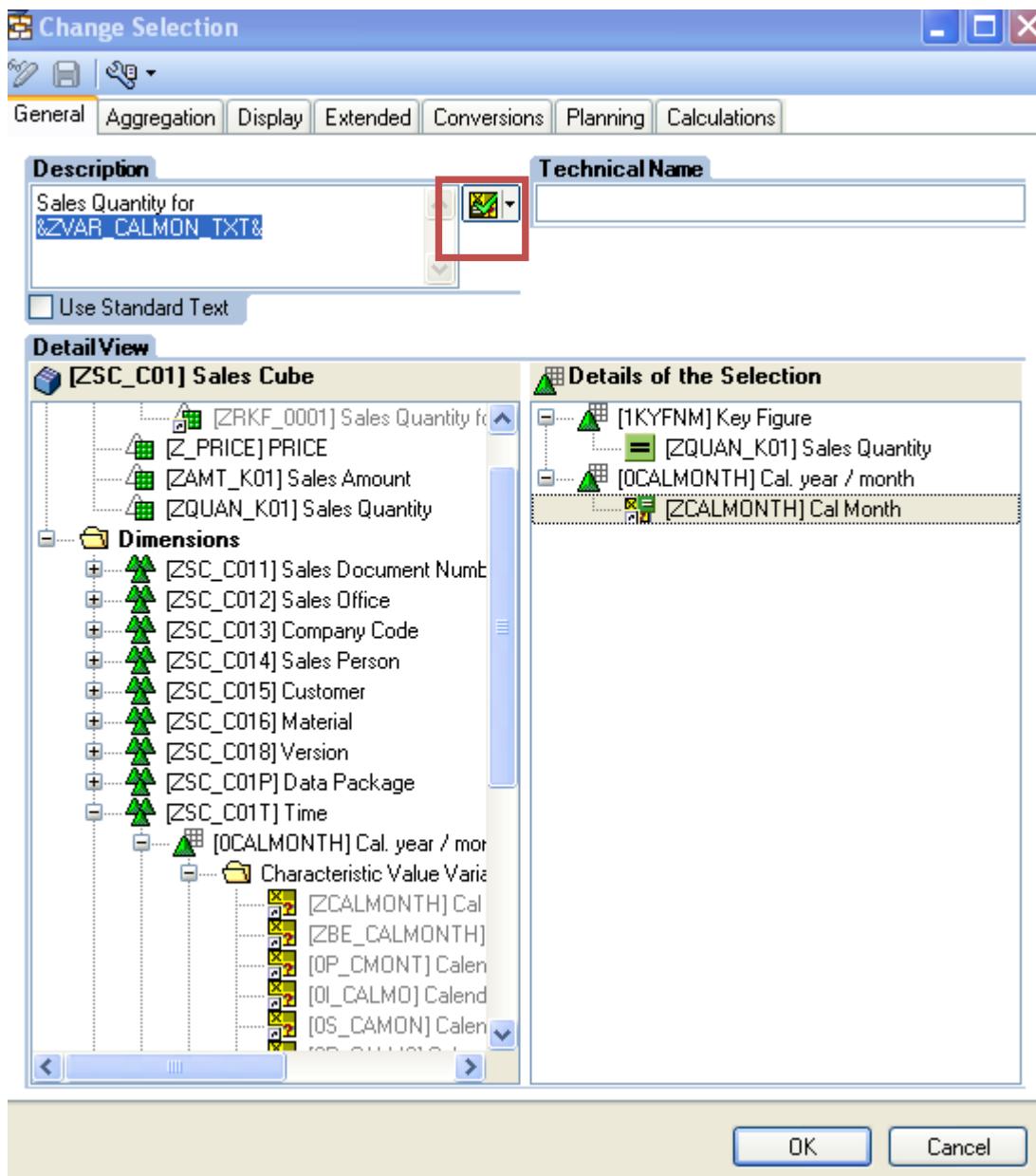
[ZMAT_CH05] Material

Preview

	Price	Sales Quan
a-Material		
b-Material		

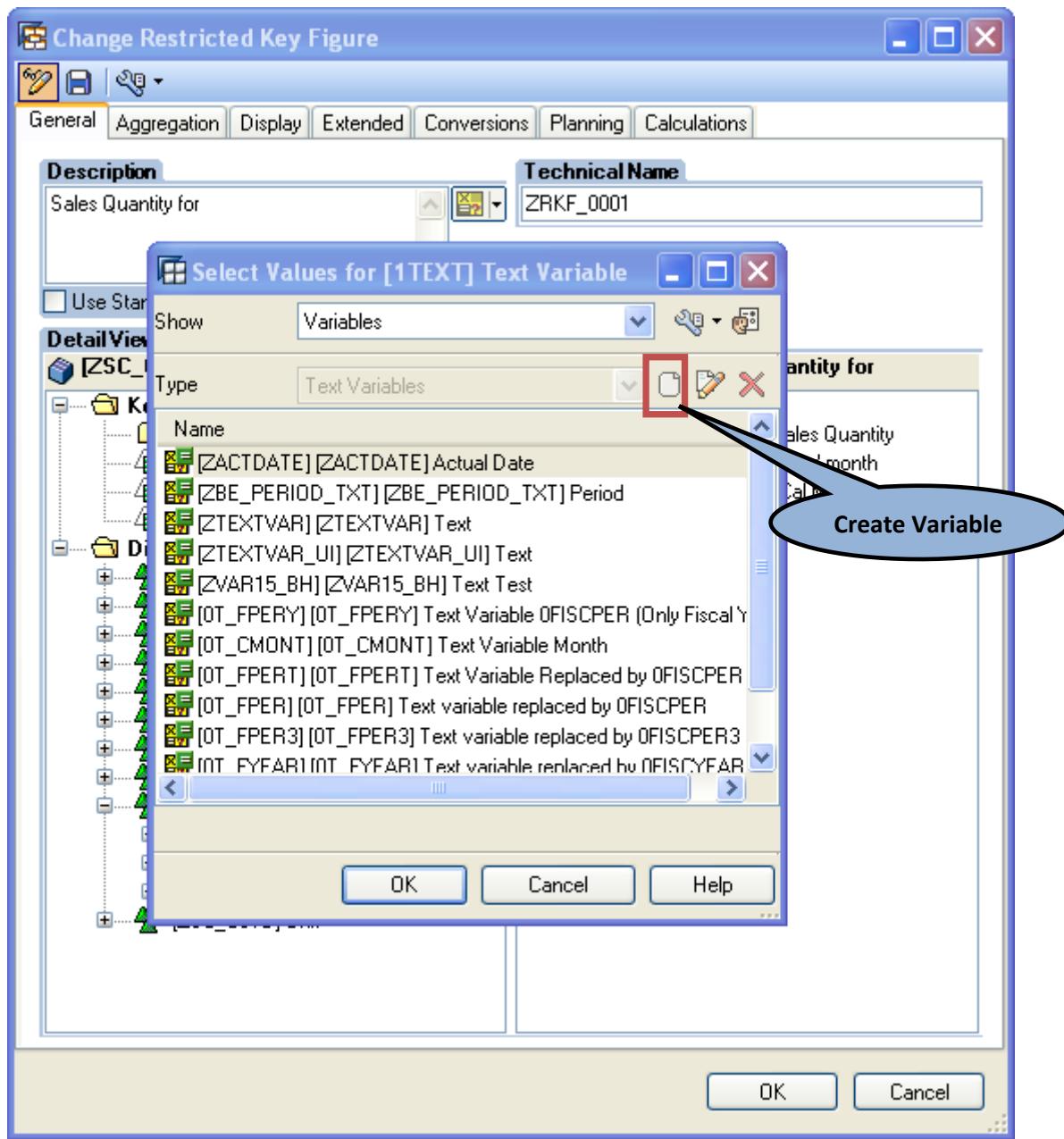
Step 2: Create new selection (right click on Key figures structure -> New selection i.e local restricted key figure). Drag Sales quantity and Restrict Calmonth with User/manual entry variable (create one variable for yourself).

The header of this column should be dynamic, as it should show the value of the month.



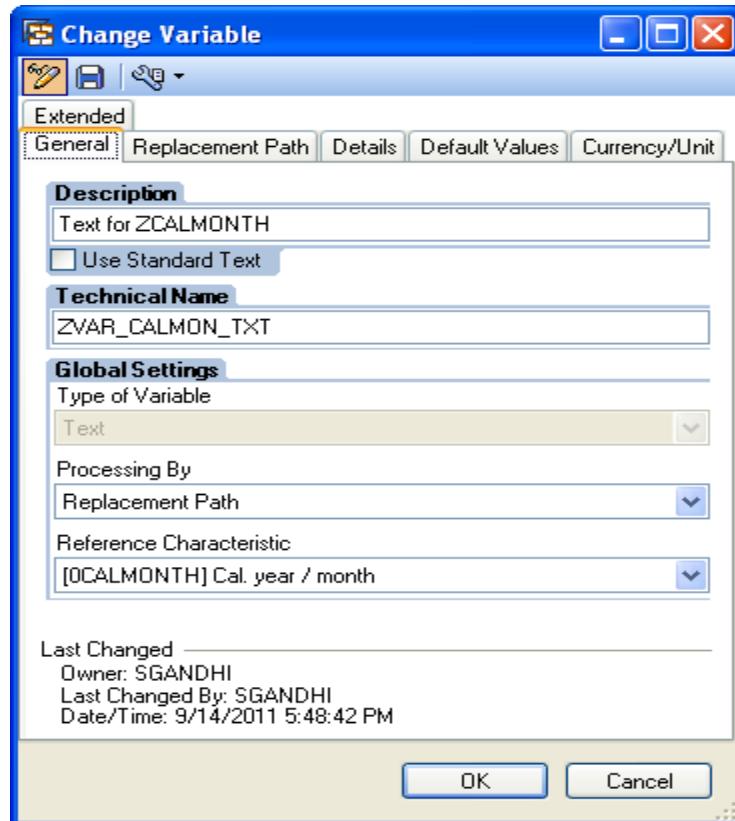
Step 3: To create a variable for getting the value of the month, click on the **Variable Button** besides the Description box.

Create new text variable as below.



Step 4: Select the Processing type as **Replacement Path**, and use the **0CALMONTH** as the Reference Characteristic.

NOTE: The Reference Characteristic **0CALMONTH** is used as it is used in InfoCube.

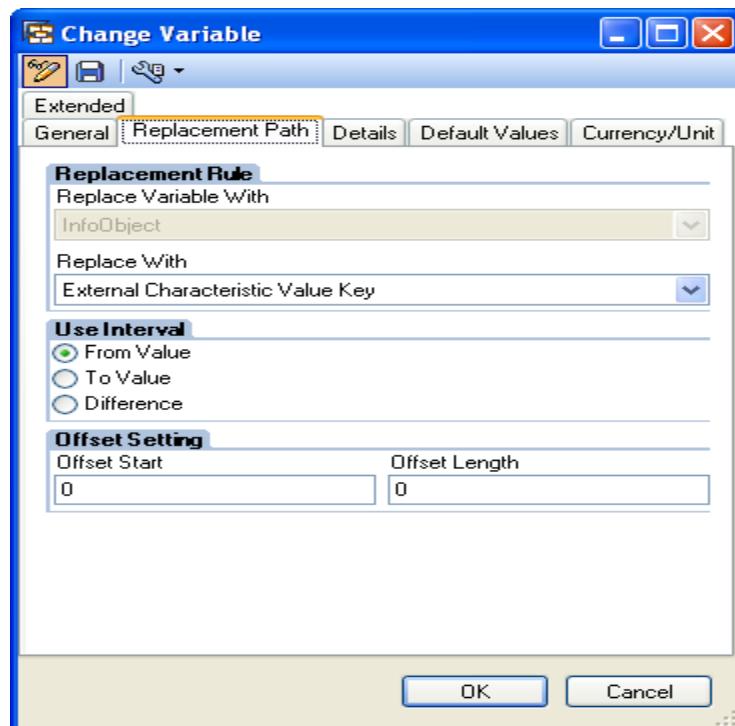


Step 5: In the Replacement Path Tab, for the option Replace with – use External Characteristic Value Key.

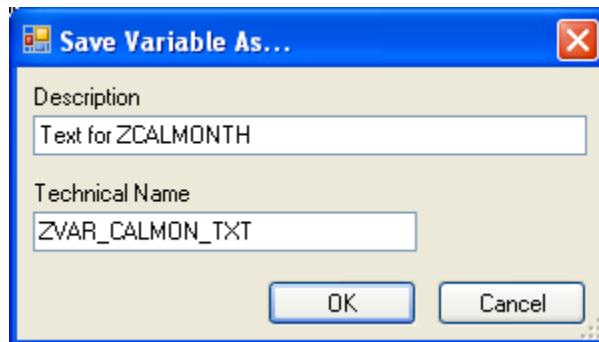
Here we can introduce **Replacement Path processing type**.

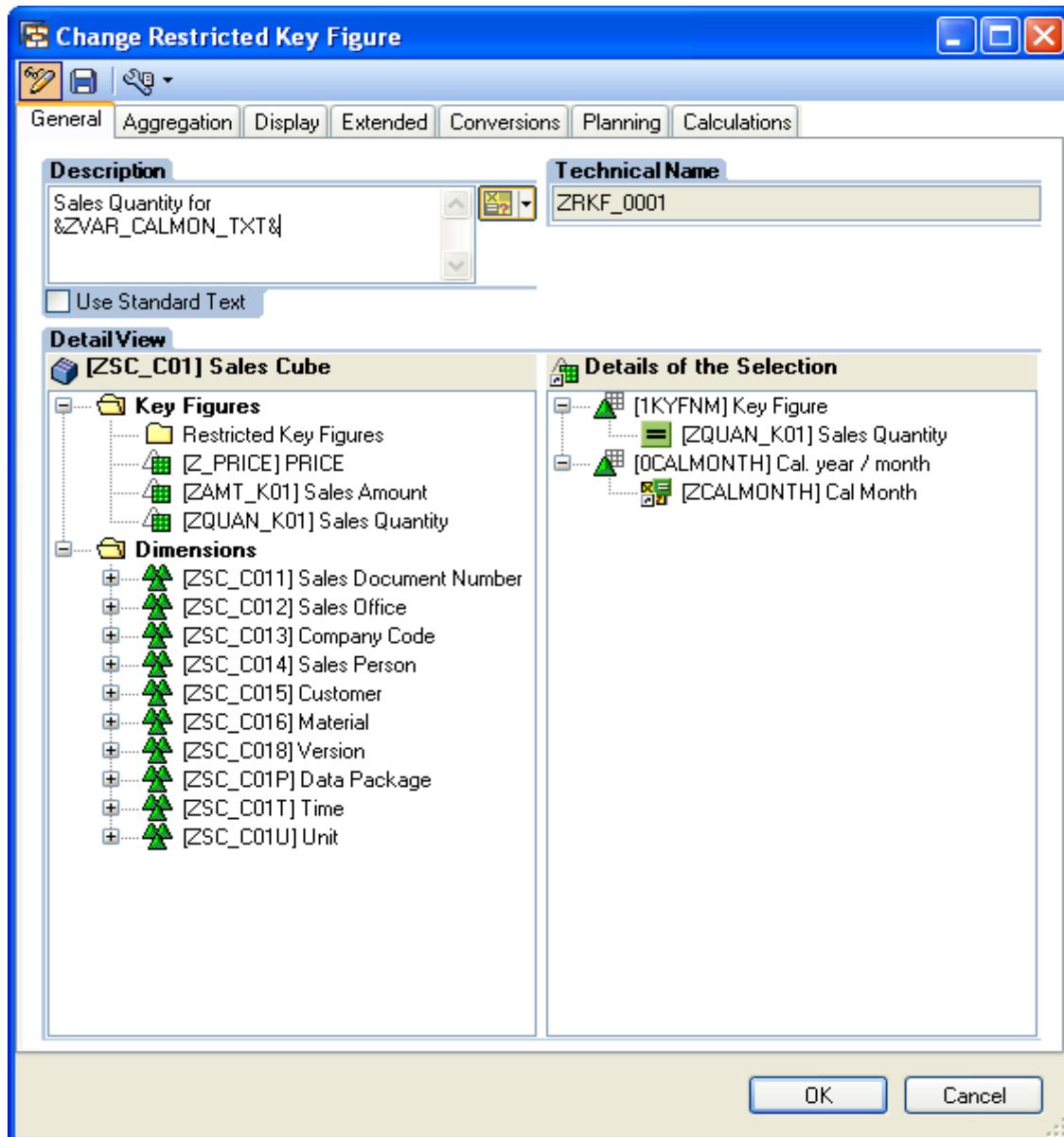
You use the *Replacement Path* to specify the value that automatically replaces the variable when you execute the query or Web application

We are populating (replacing) value of text variable from Calender month.



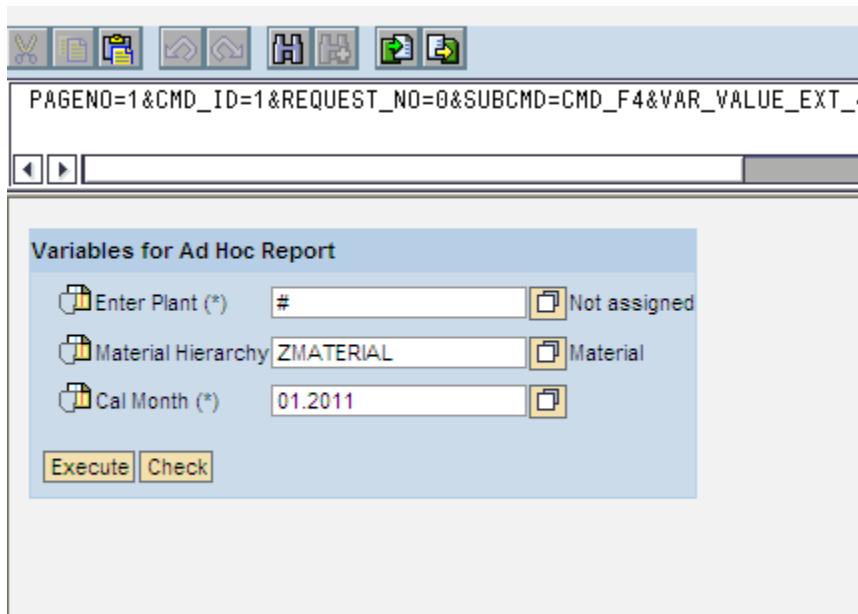
Step 6: Save the variable and check the Key Figure.





Now save the query and execute in RSRT.

Enter calendar month as 01.2011.



Now same calendar month should be visible in the header of sales quantity column.

BEx Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

Material Details For Day Last Data Update: 14.0

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Rows Columns Free Characteristics

Material	Price	Sales Quantity
ROOT	€ 1.49 /EA	700.000 EA
MATGRP1	€ 1.49 /EA	700.000 EA
M1	€ 1.00 /EA	500.000 EA
M10	€ 1.00 /EA	
M11	€ 1.00 /EA	
M12	€ 1.00 /EA	
M16	€ 2.80 /EA	100.000 EA
M17	€ 3.20 /EA	100.000 EA
M2	€ 1.00 /EA	
M5	€ 1.00 /EA	
M6	€ 1.00 /EA	
M7	€ 1.00 /EA	
Not Assigned Material (s)	*	

Processing Types:

Manual Entry:

We have already seen this above where Plant, Hierarchy and hierarchy node was entered by user by using manual entry variable.

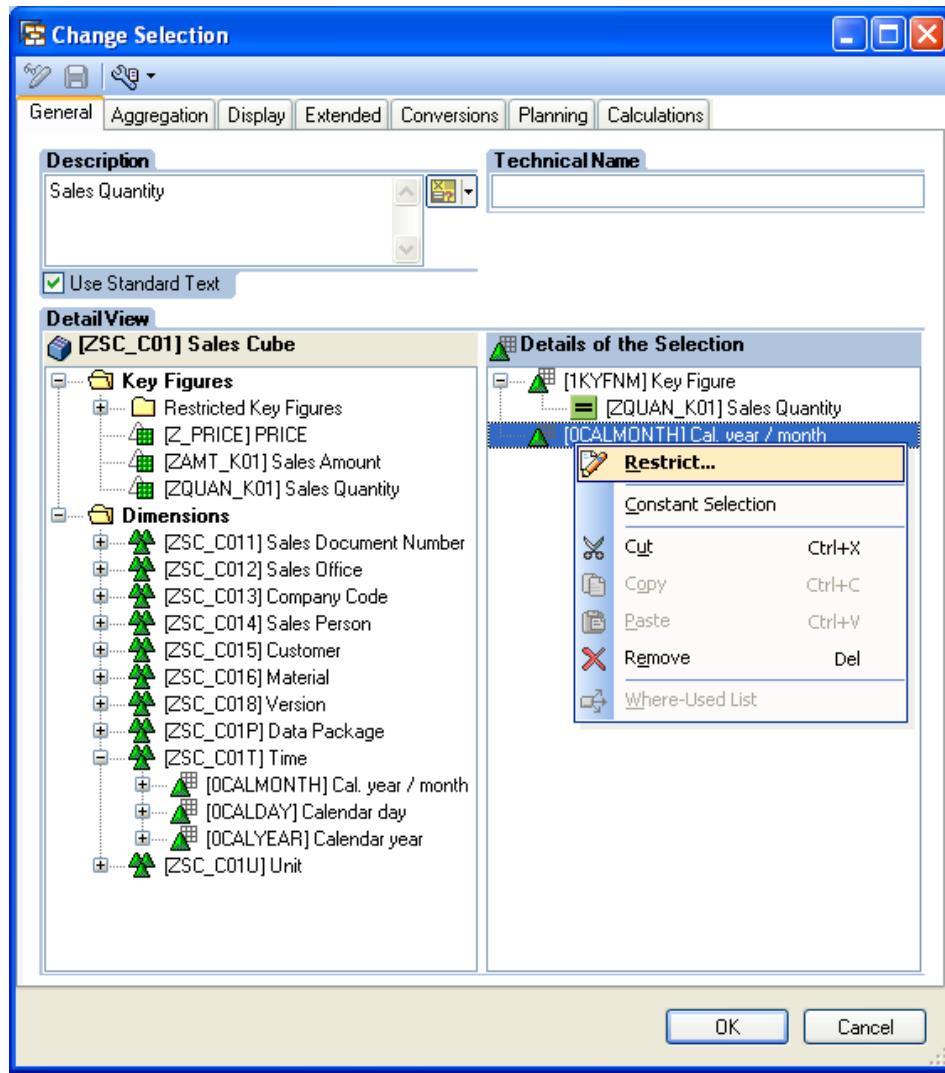
Replacement Path:

We have already seen this above where Text variable is populated with user entered calendar moth by using Replacement path variable.

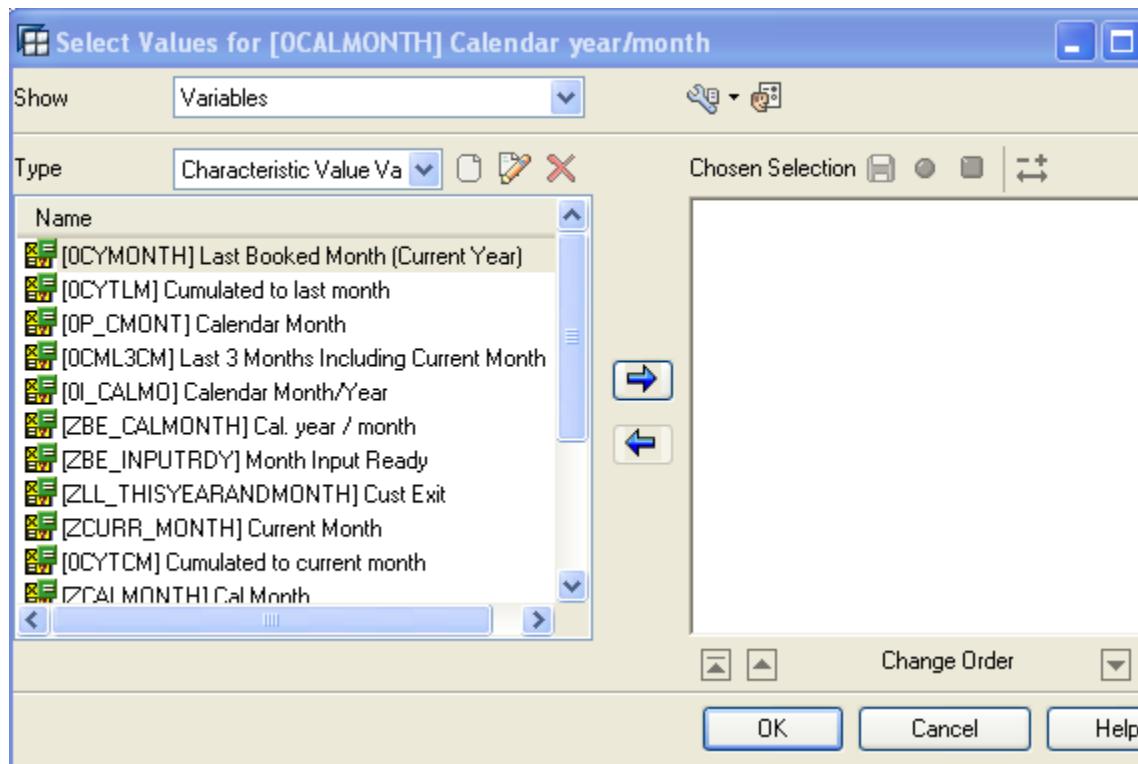
Customer Exit:

Step 1: Use same query used above.

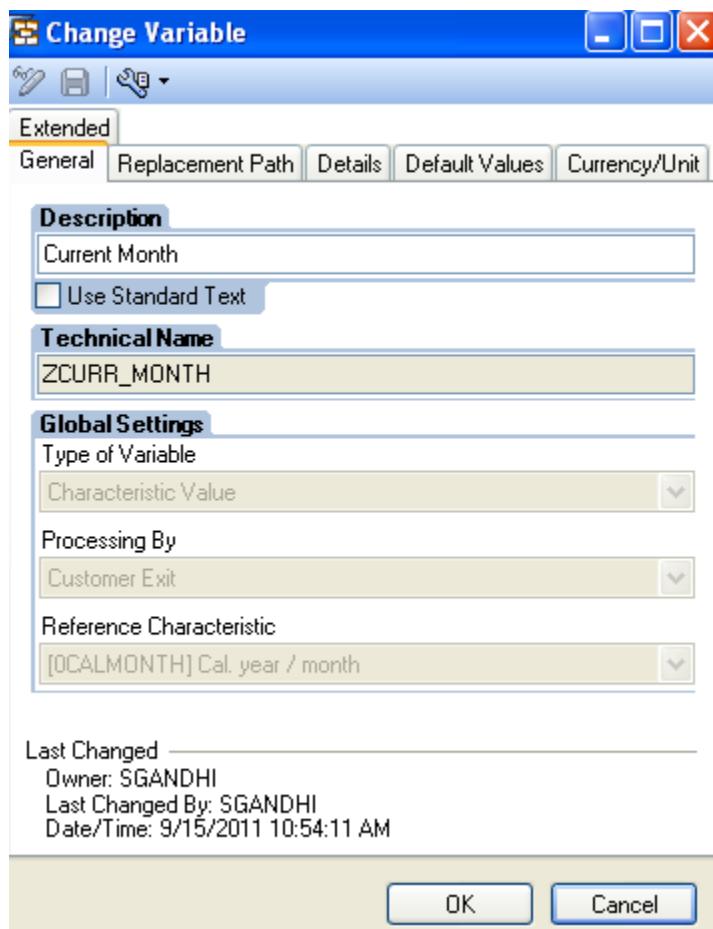
Step 2: Open Sales Quantity column. Delete Existing ZCALMONTH restriction on OCALMONTH and click on restrict.

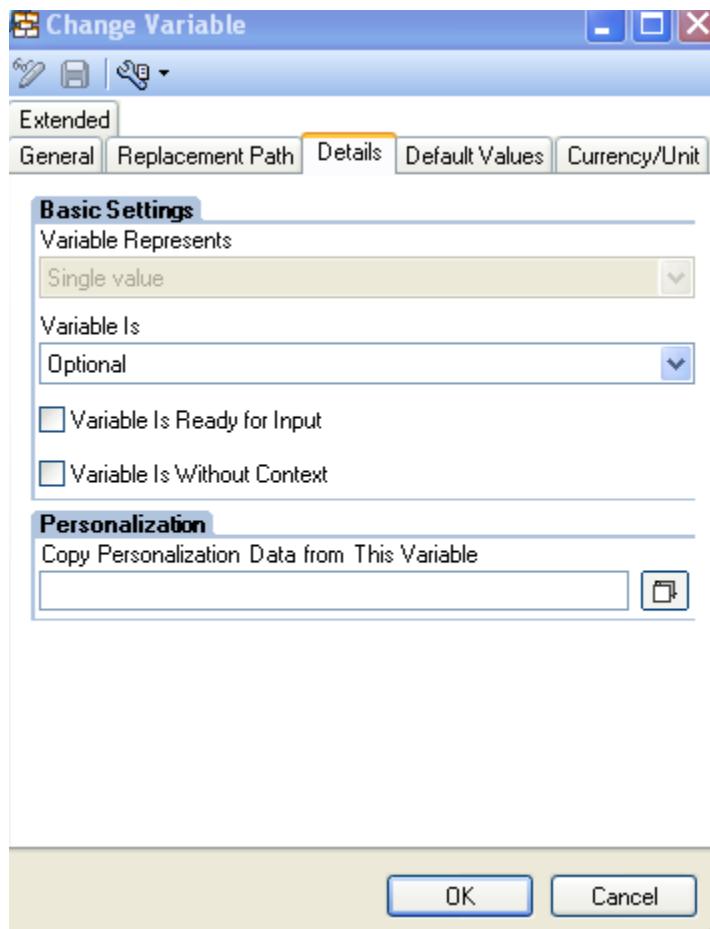


Step 3: Click on create variable .

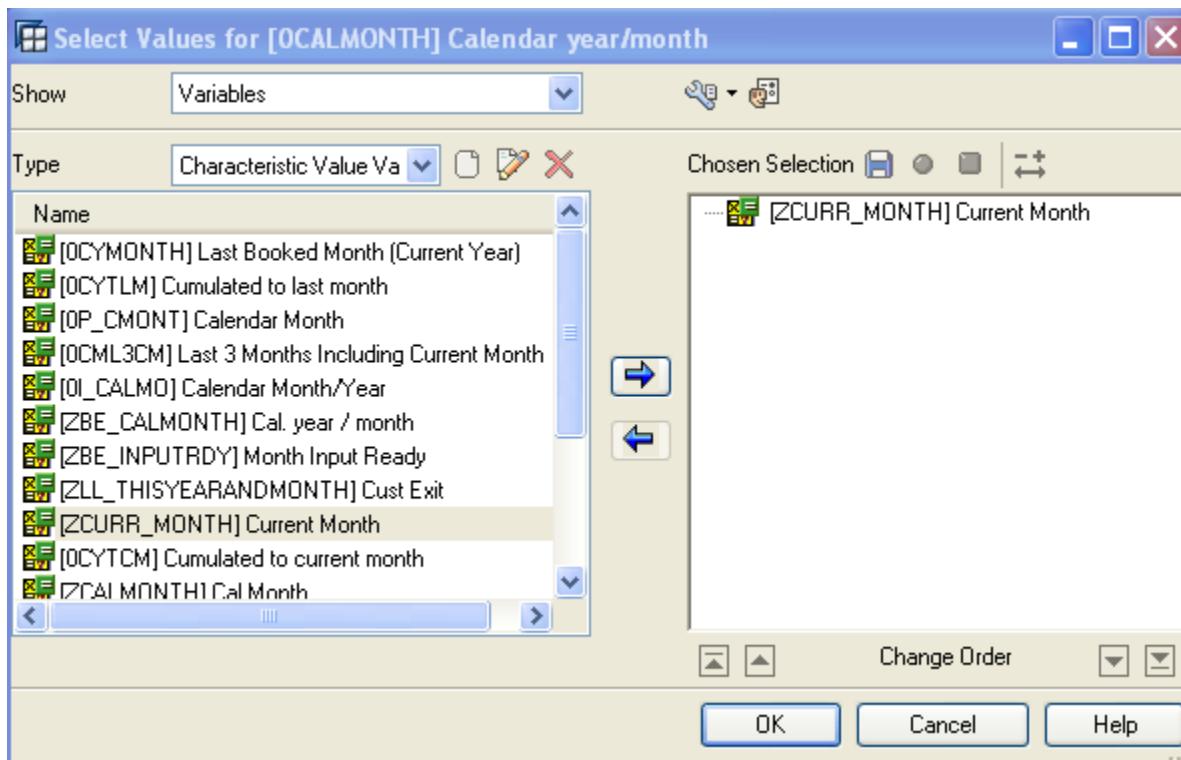


Step 4: Set parameter values as shown below. Technical name as ZCURR_MONTH_XXX.





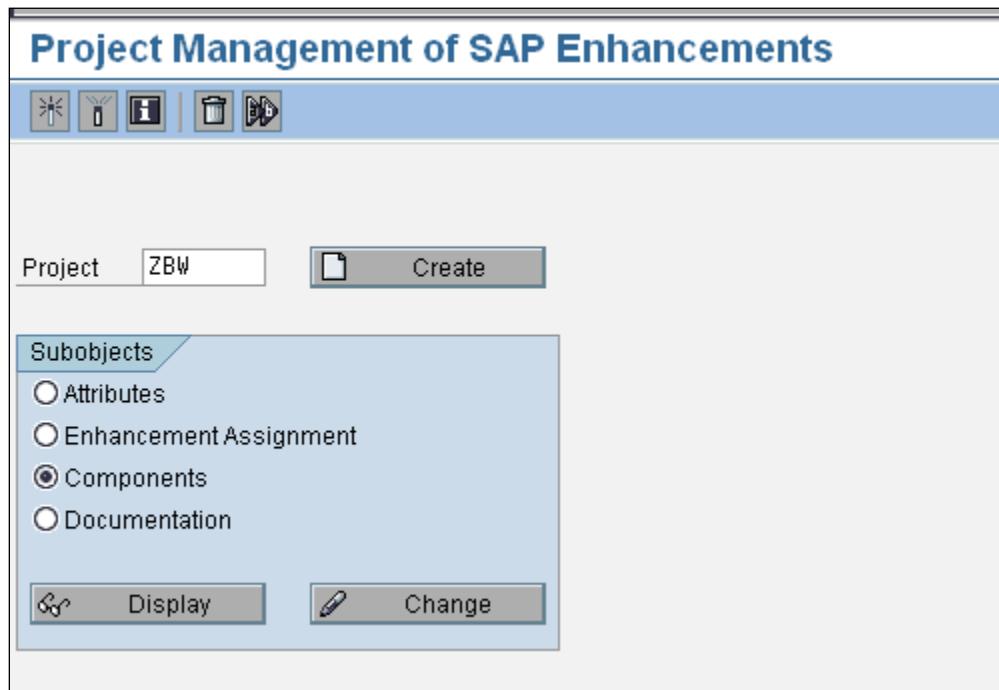
Step 5: Move it to right and click OK and again click OK.



Step 7: ZCURR_MONTH is a customer exit variable. To get the value for ZCURR_MONTH (Current Month), without any input from the user, we need to create the Customer Exit variable where, it gets the value of current month from the system itself.

We would write code to populate the Current month from current calendar day.

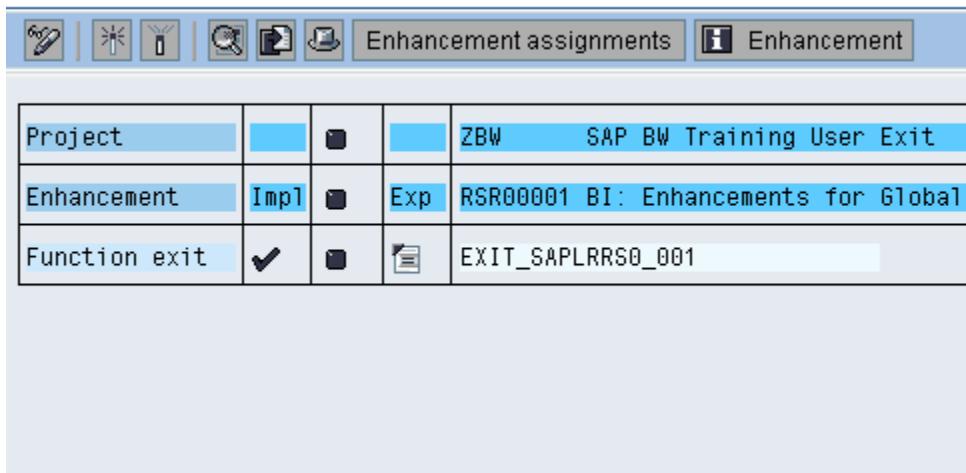
Step 9: Run the T-Code CMOD. Display the Components for the existing Project that is being used. In your case get project from the trainer.



Step 10: Open the function exit for Global Variables, and write the routine for the Current Month variable that is newly created – ZCURR_MONTH.

EXIT_SAPLRRS0_001 -> double click-> Include ZXRSRU01 -> double click on ZXRSRU01.

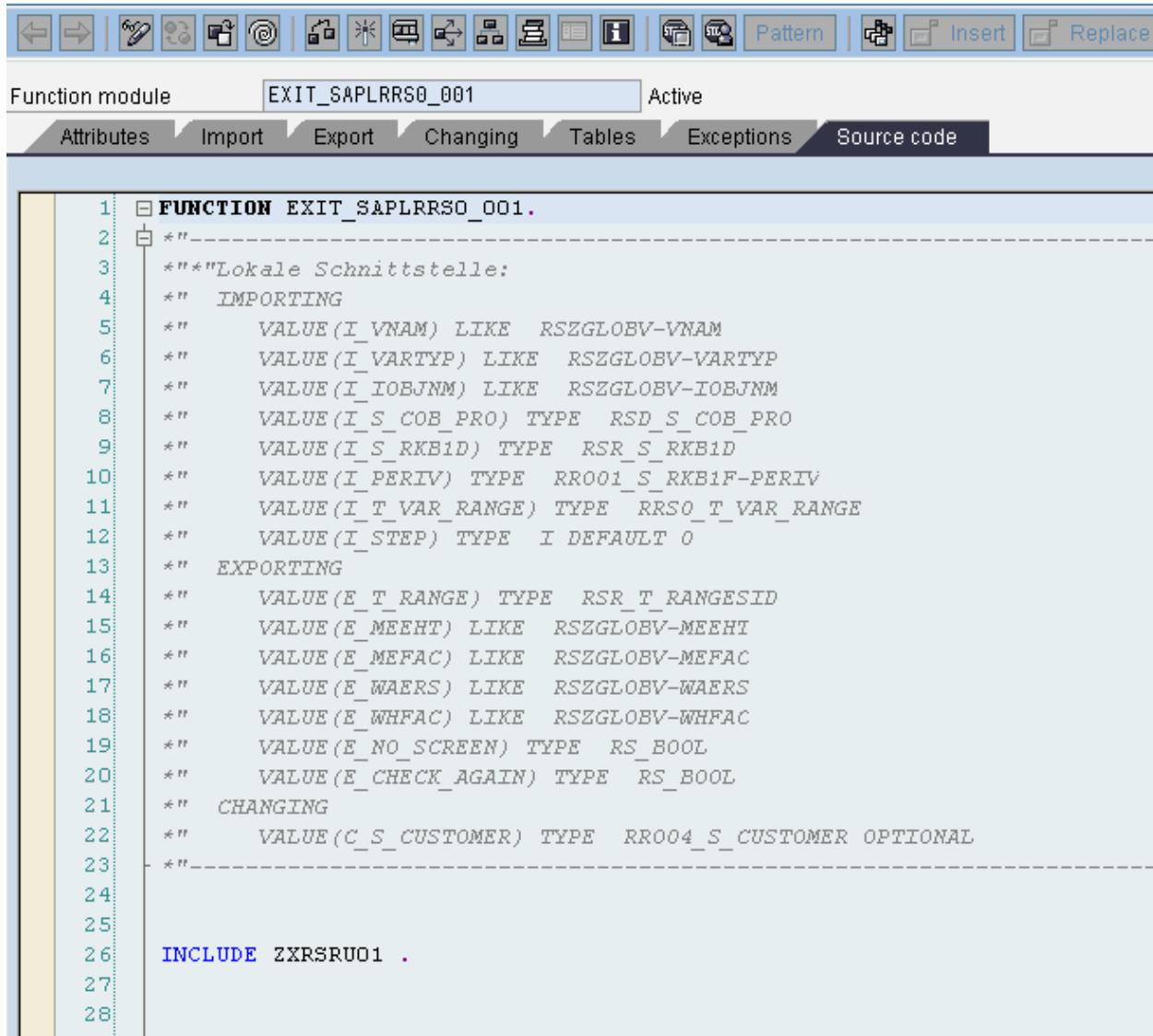
Change ZBW



The screenshot shows a SAP BW interface titled "Change ZBW". The top menu bar includes icons for edit, copy, paste, search, and enhancement assignments, followed by the text "Enhancement assignments" and "Enhancement". The main area displays a table with three rows:

Project				ZBW	SAP BW Training	User Exit
Enhancement	Impl		Exp	RSR00001	BI: Enhancements for Global	
Function exit	✓			EXIT_SAPLRRSO_001		

Function Builder: Display EXIT_SAPLRRS0_001



The screenshot shows the SAP Function Builder interface with the function module EXIT_SAPLRRS0_001 selected. The code editor displays the following ABAP code:

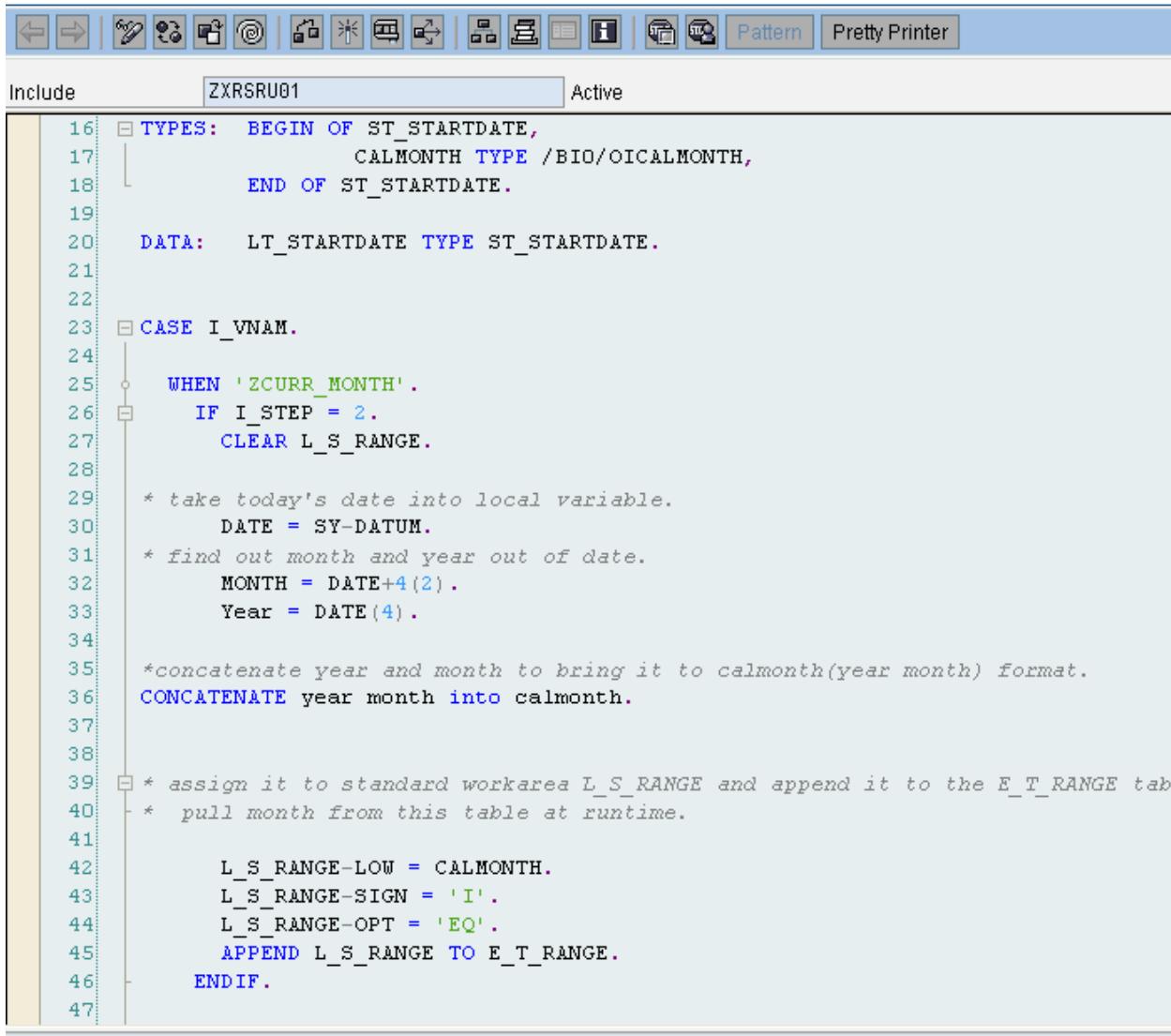
```

1  FUNCTION EXIT_SAPLRRS0_001.
2  *"-*
3  **"Lokale Schnittstelle:
4  **" IMPORTING
5  **"   VALUE(I_VNAM) LIKE RSZGLOBV-VNAM
6  **"   VALUE(I_VARTYP) LIKE RSZGLOBV-VARTYP
7  **"   VALUE(I_IOBJNM) LIKE RSZGLOBV-IOBJNM
8  **"   VALUE(I_S_COB_PRO) TYPE RSD_S_COB_PRO
9  **"   VALUE(I_S_RKB1D) TYPE RSR_S_RKB1D
10 **"  VALUE(I_PERIV) TYPE RR001_S_RKB1F-PERIV
11 **"  VALUE(I_T_VAR_RANGE) TYPE RRSO_T_VAR_RANGE
12 **"  VALUE(I_STEP) TYPE I DEFAULT 0
13 **" EXPORTING
14 **"   VALUE(E_T_RANGE) TYPE RSR_T_RANGESID
15 **"   VALUE(E_MEEHT) LIKE RSZGLOBV-MEEHT
16 **"   VALUE(E_MEFAC) LIKE RSZGLOBV-MEFAC
17 **"   VALUE(E_WAERS) LIKE RSZGLOBV-WAERS
18 **"   VALUE(E_WHFA) LIKE RSZGLOBV-WHFA
19 **"   VALUE(E_NO_SCREEN) TYPE RS_BOOL
20 **"   VALUE(E_CHECK AGAIN) TYPE RS_BOOL
21 **" CHANGING
22 **"   VALUE(C_S_CUSTOMER) TYPE RR004_S_CUSTOMER OPTIONAL
23 *"-*
24
25
26 INCLUDE ZXRSRU01 .
27
28

```

To populate the Current Month Variable,

ABAP Editor: Display Include ZXRSRU01



```

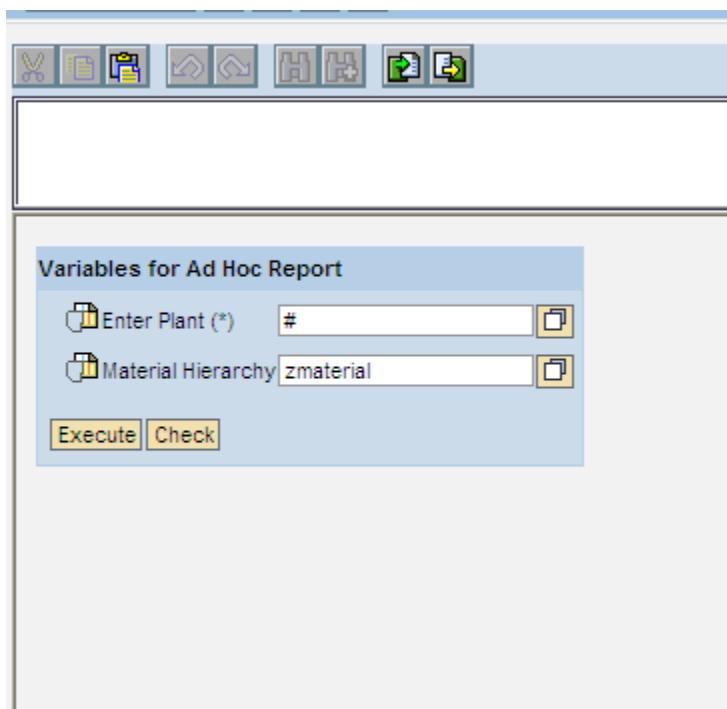
Include ZXRSRU01 Active
16  □ TYPES: BEGIN OF ST_STARTDATE,
17      CALMONTH TYPE /BIO/OICALMONTH,
18      END OF ST_STARTDATE.
19
20  DATA: LT_STARTDATE TYPE ST_STARTDATE.
21
22
23  □ CASE I_VNAM.
24
25  ○ WHEN 'ZCURR_MONTH'.
26  □ IF I_STEP = 2.
27      CLEAR L_S_RANGE.
28
29  * take today's date into local variable.
30  DATE = SY-DATUM.
31  * find out month and year out of date.
32  MONTH = DATE+4(2).
33  Year = DATE(4).
34
35  *concatenate year and month to bring it to calmonth(year month) format.
36  CONCATENATE year month into calmonth.
37
38
39  □ * assign it to standard workarea L_S_RANGE and append it to the E_T_RANGE tab.
40  * pull month from this table at runtime.
41
42      L_S_RANGE-LOW = CALMONTH.
43      L_S_RANGE-SIGN = 'I'.
44      L_S_RANGE-OPT = 'EQ'.
45      APPEND L_S_RANGE TO E_T_RANGE.
46  ENDIF.
47

```

Copy- Paste the code from Appendix.

Step 11: Save query and execute in RSRT.

As you can see no user entry variable for Calender month still output is shown for 09.2011 (current month).



BEX Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

Material Details For Day Last Data Update: 14.09.2011 07:50:47

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Material	Price	Sales Quantity for 09.2011
ROOT	€ 1.49 /EA	
MATGRP1	€ 1.49 /EA	
M1	€ 1.00 /EA	
M10	€ 1.00 /EA	
M11	€ 1.00 /EA	
M12	€ 1.00 /EA	
M16	€ 2.80 /EA	
M17	€ 3.20 /EA	
M2	€ 1.00 /EA	
M5	€ 1.00 /EA	
M6	€ 1.00 /EA	
M7	€ 1.00 /EA	
Not Assigned Material(s)		300.000 EA

Authorisation:

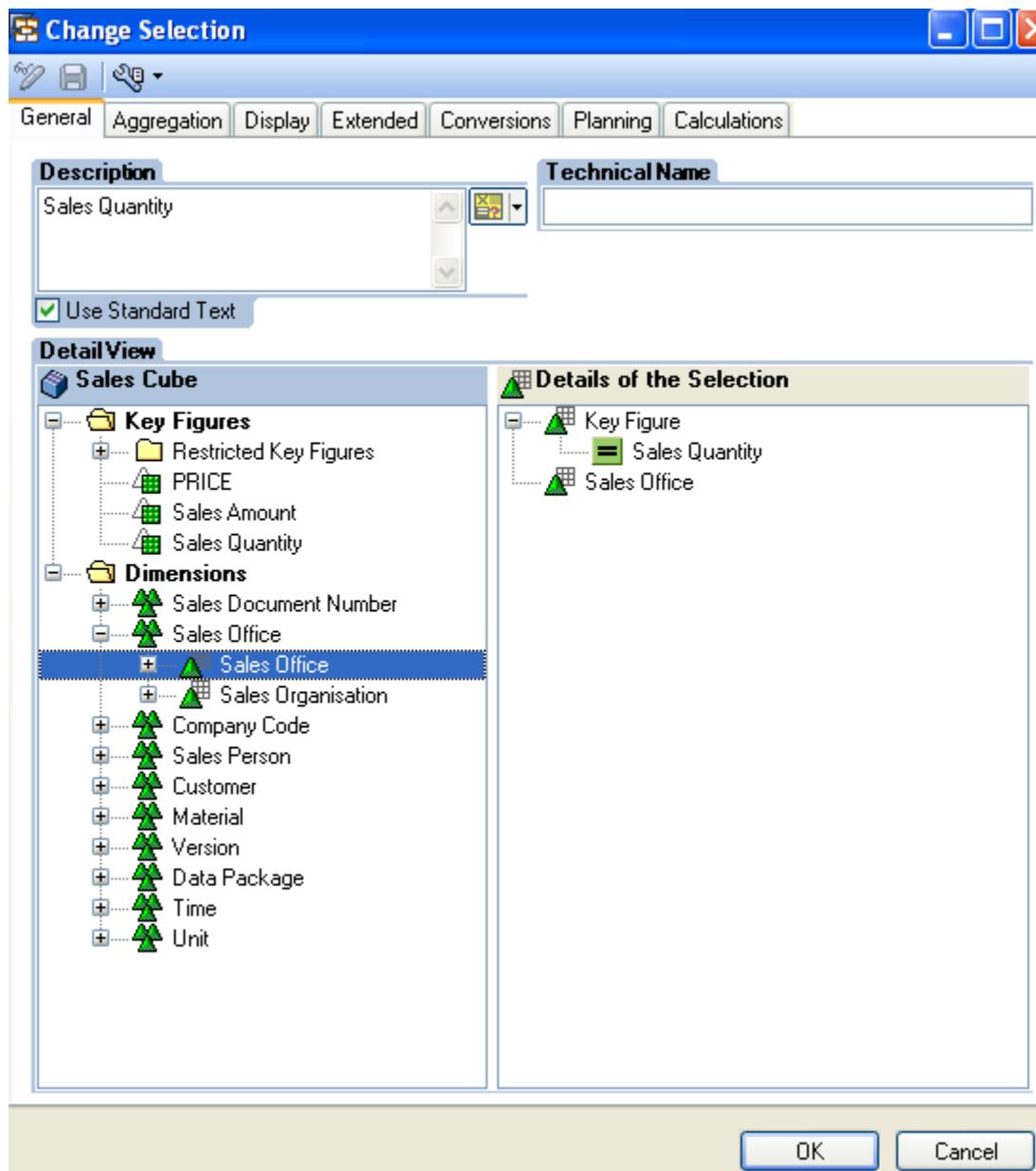
Use:

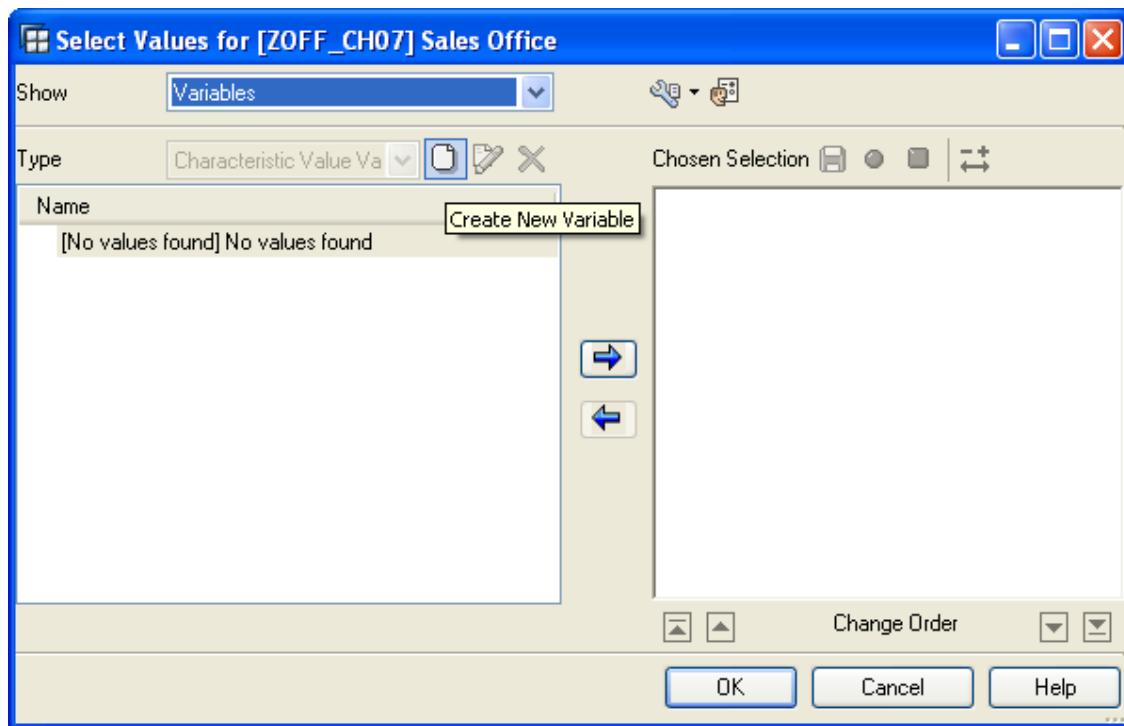
The processing type *Authorization* enables variables to be filled with values automatically from the user authorization

When you create a variable, if you choose *Process with Authorization*, the variable is automatically filled with the values of the user's authorization. When the user opens a query, the data is selected automatically according to his or her authorizations.

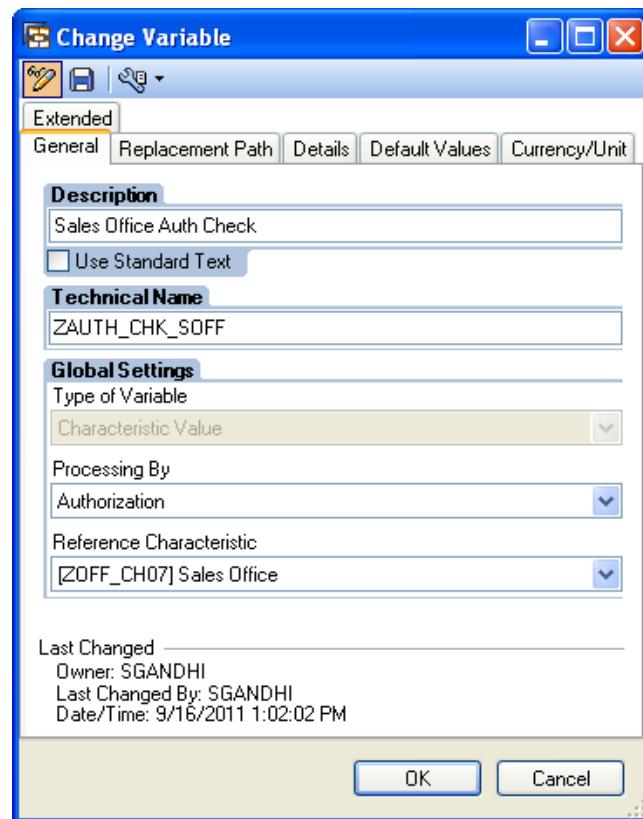
In this exercise we would only show how authorization processing type is created. As authorizations are not in place in system we can not execute it.

Step 1: To create an Authorization Variable, select the Info Object for which you need to check the authorizations, and restrict it with a variable. Create new selection in same query used above and drag Sales quantity and Sales office to right.

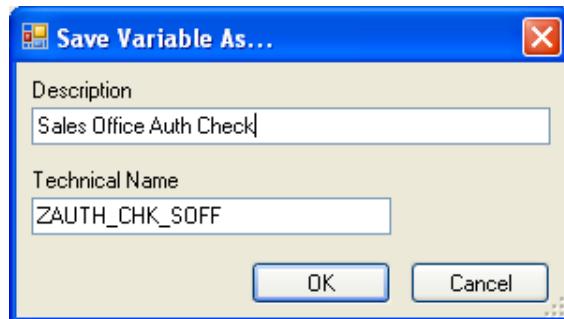


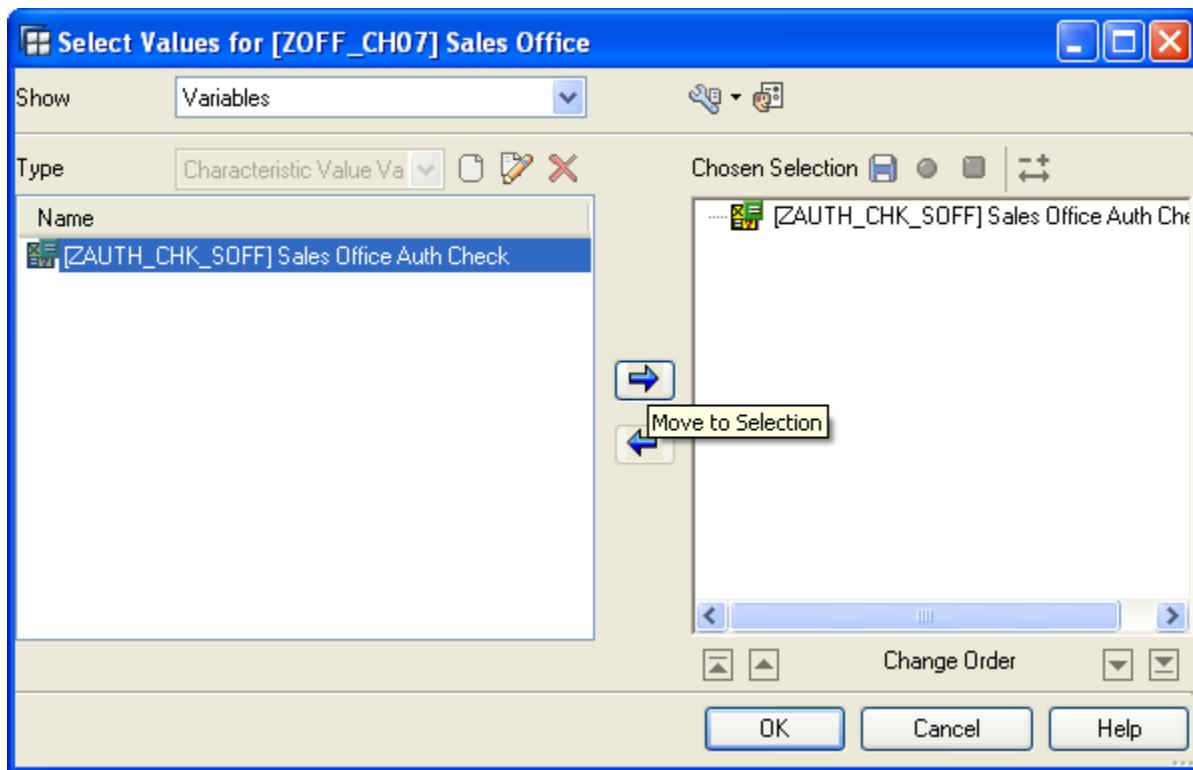


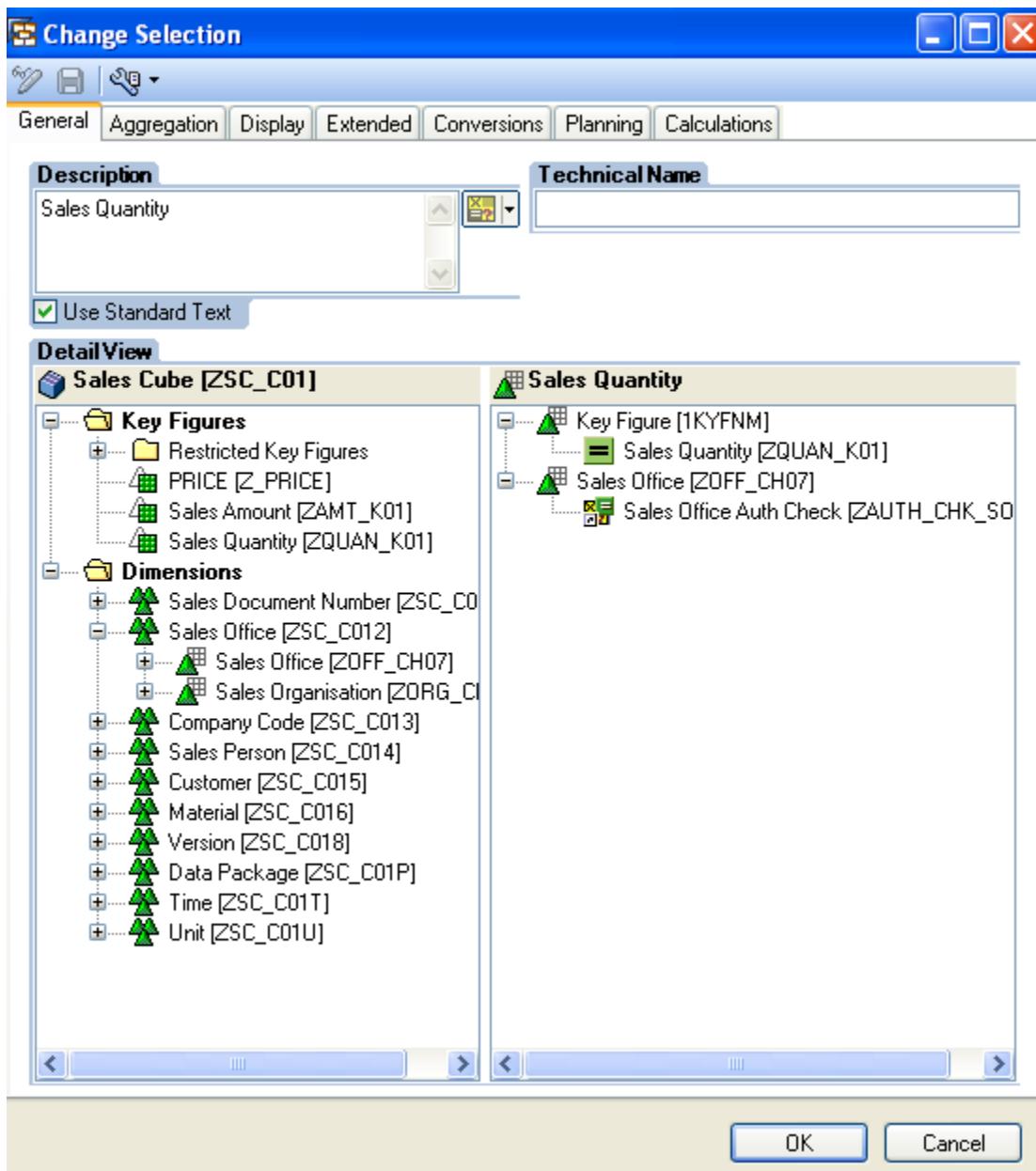
Step 2: Create a variable for the selected info object. Select the Processing Type Authorization for the variable.



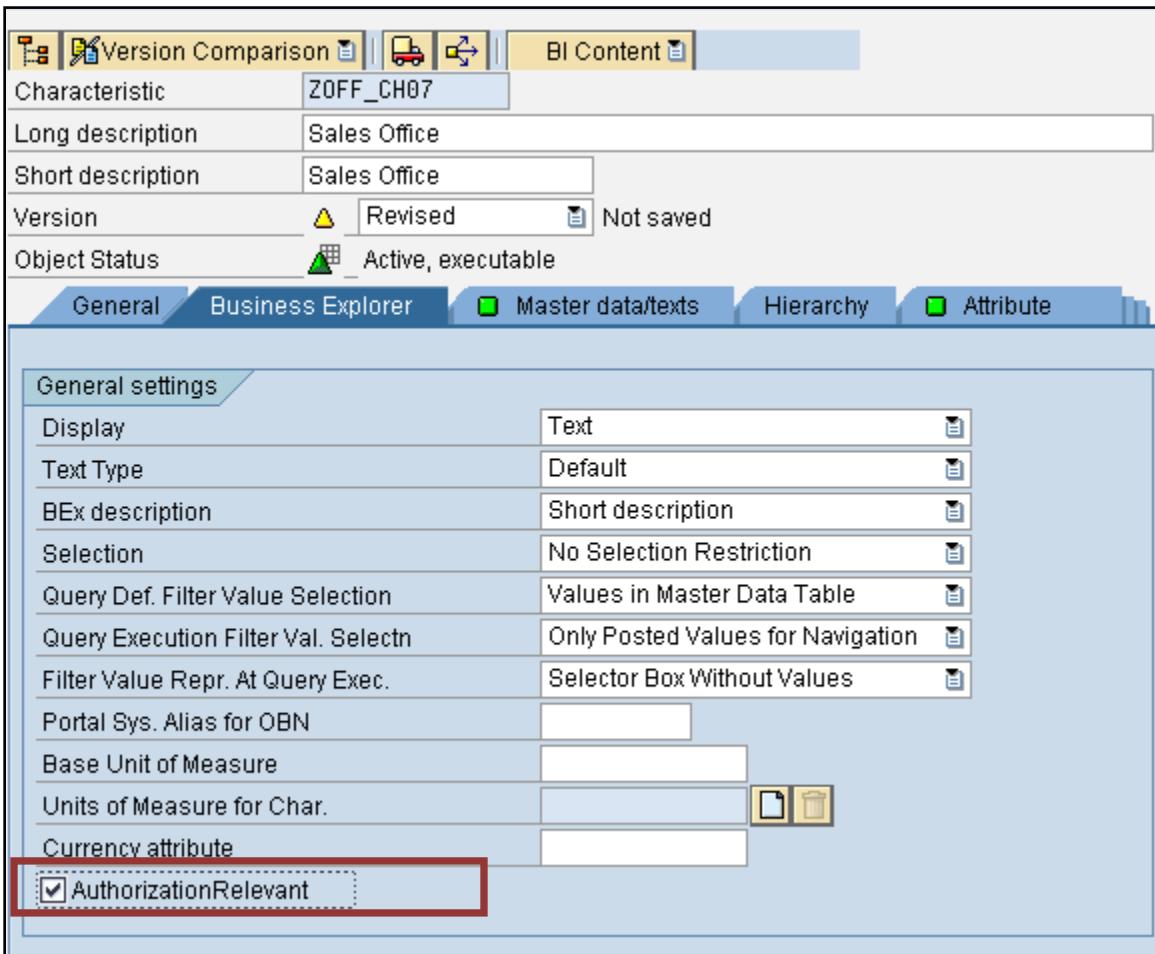
Step 3: Save the variable.







Note: Sales Office must be Authorization Relevant Info Object. This setting is done while changing an info object in RSD1.



The screenshot shows the SAP BI Content dialog for a characteristic named ZOFF_CH07. The characteristic has a long description of "Sales Office" and a short description of "Sales Office". It is marked as "Revised" and "Not saved". The object status is "Active, executable". The dialog has tabs for General, Business Explorer, Master data/texts (selected), Hierarchy, and Attribute.

General settings	
Display	Text
Text Type	Default
BEx description	Short description
Selection	No Selection Restriction
Query Def. Filter Value Selection	Values in Master Data Table
Query Execution Filter Val. Selectn	Only Posted Values for Navigation
Filter Value Repr. At Query Exec.	Selector Box Without Values
Portal Sys. Alias for OBN	
Base Unit of Measure	
Units of Measure for Char.	<input type="button" value="New"/> <input type="button" value="Delete"/>
Currency attribute	
<input checked="" type="checkbox"/> AuthorizationRelevant	

This authorizations will work when a user is given the access to just specific Sales offices, and not to all that is available in the Master Data. For this, Role for the query is created and the user authorizations are maintained in that role. We are not including authorizations part in this document.

Note that when they are automatically filled, variables do not have to be ready-for-input, which means a variables screen does not necessarily appear when you open the query or Web application. The user opens the query with the authorization variable, and can see only the data that corresponds to his or her authorizations.

SAP Exit:

The *SAP Exit* processing type is contained in variables delivered by SAP BW within the Business Content framework.

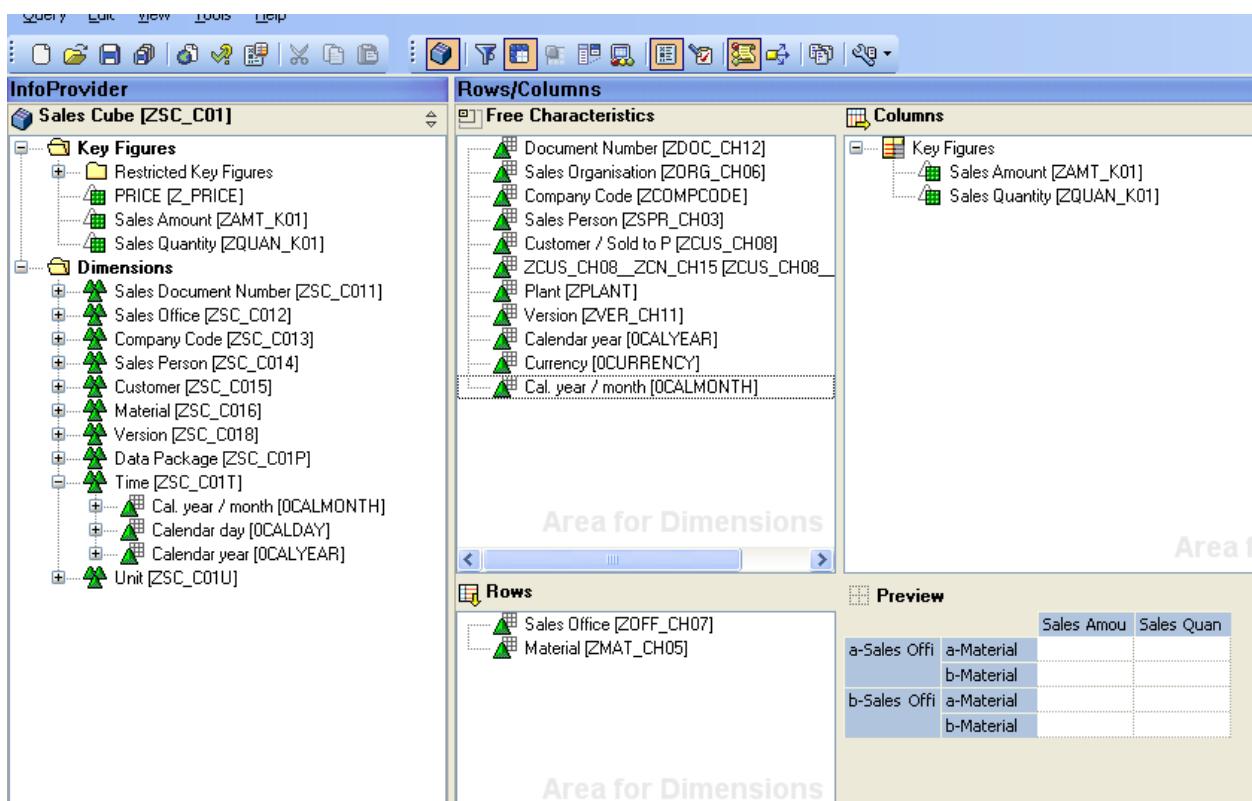
Process:

The technical name of a delivered SAP object always begins with a number.

Design a report that shows the sales amount, for the current month, per sales office and material.

Step 1: SAP provides a exit variable OCMONTH – for Current Month. We will run the report for Current Month, where we can use this variable.

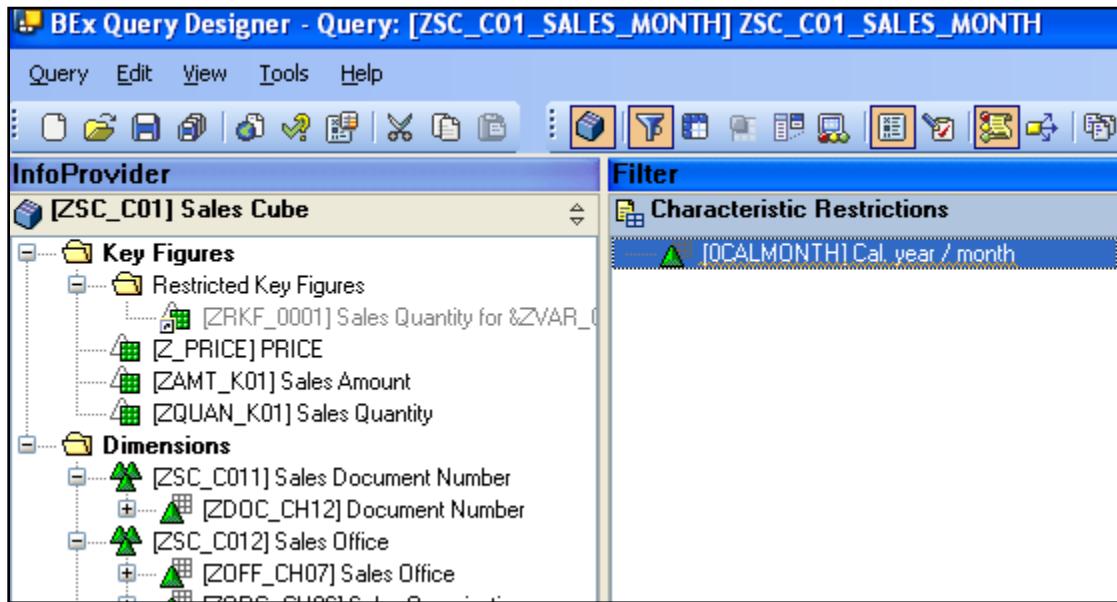
Create new query as shown below. Name it as ZSC_C01_SALES_MONTH_XXX.



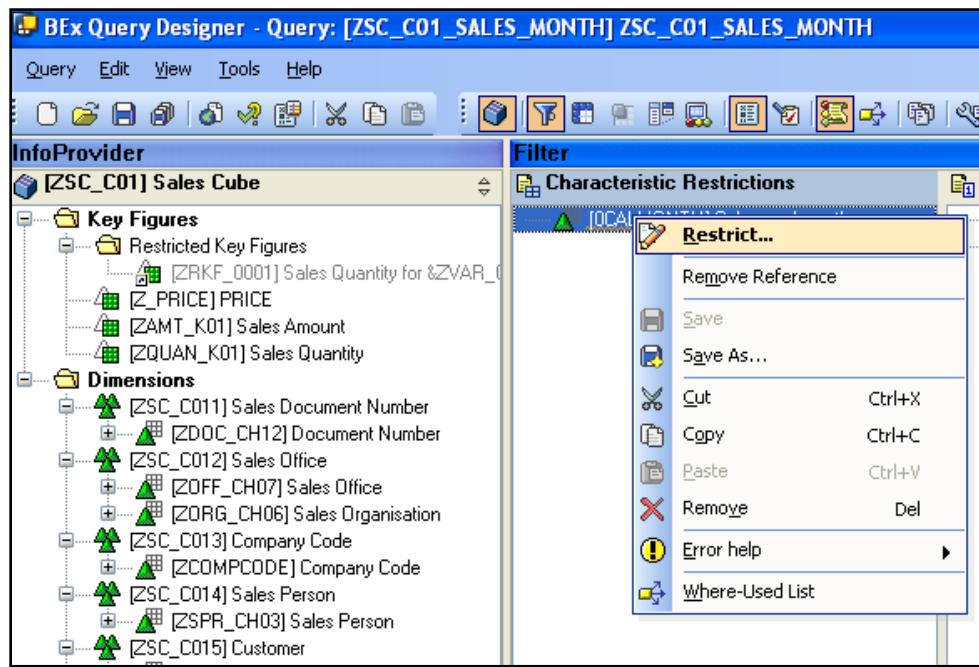
The screenshot shows the SAP BW InfoProvider interface. On the left, the 'InfoProvider' pane lists the 'Sales Cube [ZSC_C01]' with sections for 'Key Figures' (including 'Restricted Key Figures', 'PRICE [Z_PRICE]', 'Sales Amount [ZAMT_K01]', 'Sales Quantity [ZQUAN_K01]') and 'Dimensions' (including 'Sales Document Number [ZSC_C011]', 'Sales Office [ZSC_C012]', 'Company Code [ZSC_C013]', 'Sales Person [ZSC_C014]', 'Customer [ZSC_C015]', 'Material [ZSC_C016]', 'Version [ZSC_C018]', 'Data Package [ZSC_C01P]', 'Time [ZSC_C01T]', 'Cal. year / month [OCALMONTH]', 'Calendar day [OCALDAY]', 'Calendar year [OCALYEAR]', 'Unit [ZSC_C01U]'). The 'Rows/Columns' pane on the right shows 'Free Characteristics' like 'Document Number [ZDOC_CH12]', 'Sales Organisation [ZORG_CH06]', etc., and 'Columns' showing 'Key Figures' like 'Sales Amount [ZAMT_K01]' and 'Sales Quantity [ZQUAN_K01]'. The 'Preview' section at the bottom shows a table with columns 'Sales Amou' and 'Sales Quan' and rows for 'a-Sales Offi', 'a-Material', 'b-Sales Offi', and 'b-Material'.

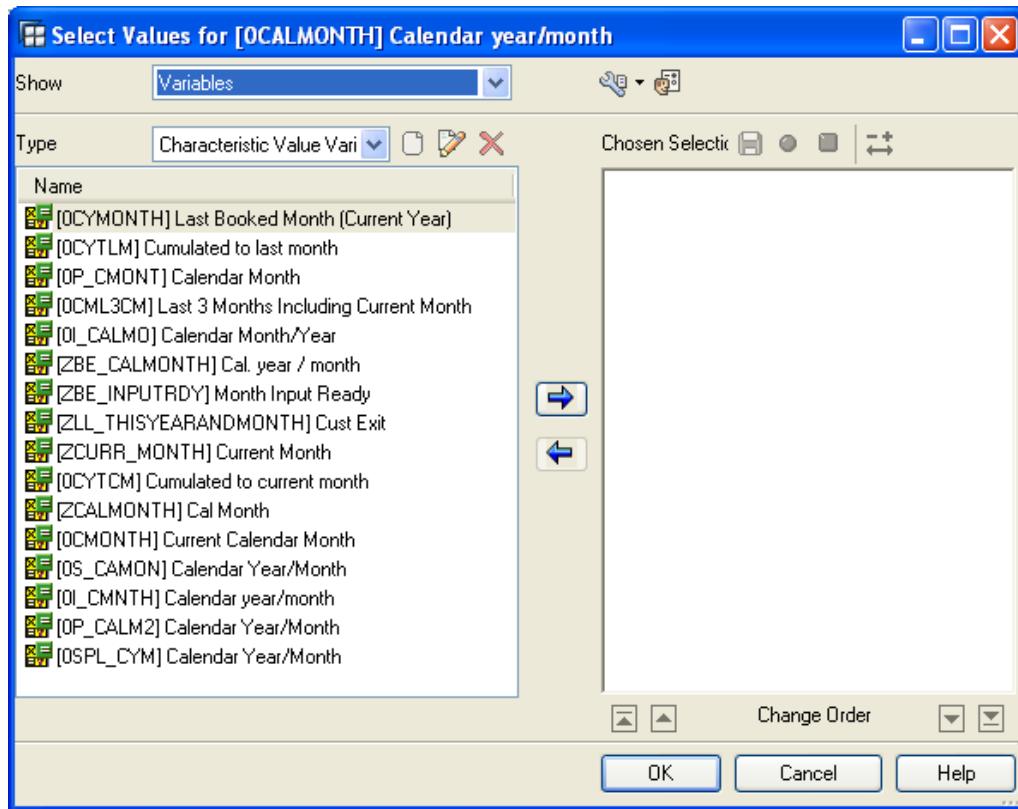
	Sales Amou	Sales Quan
a-Sales Offi	a-Material	
b-Sales Offi	a-Material	
	b-Material	

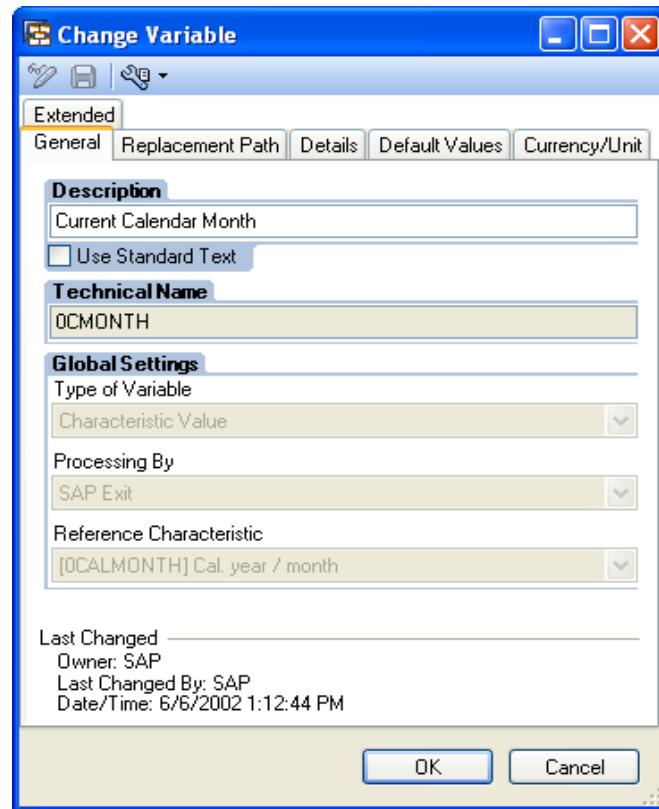
and Drag OCALMONTH in characteristics restrictions area.

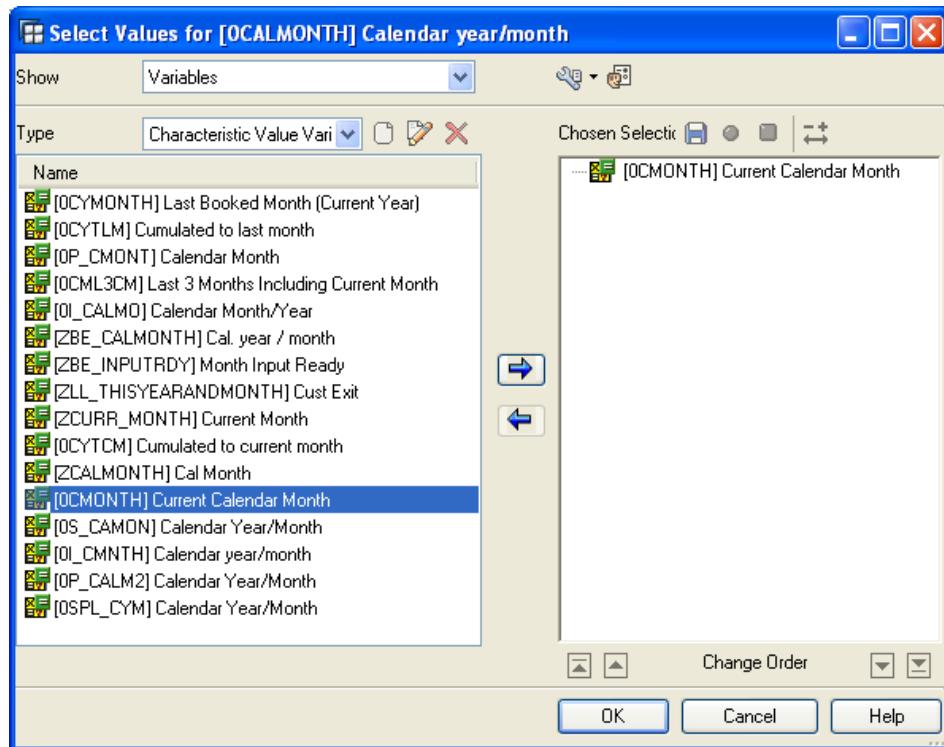


Step 2: Restrict OCALMONTH info object with the variable, in the filter section of the query.

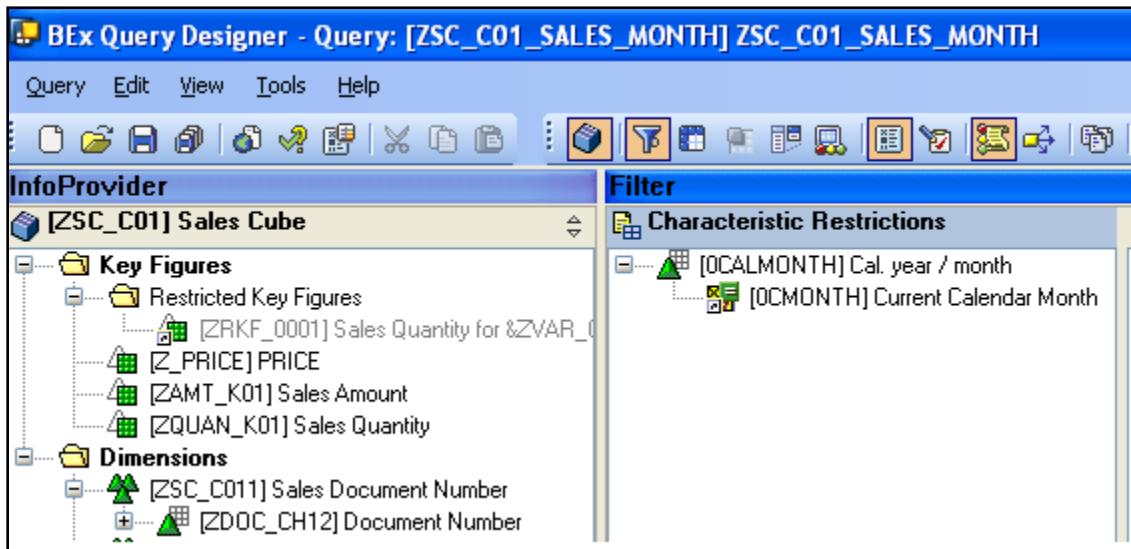






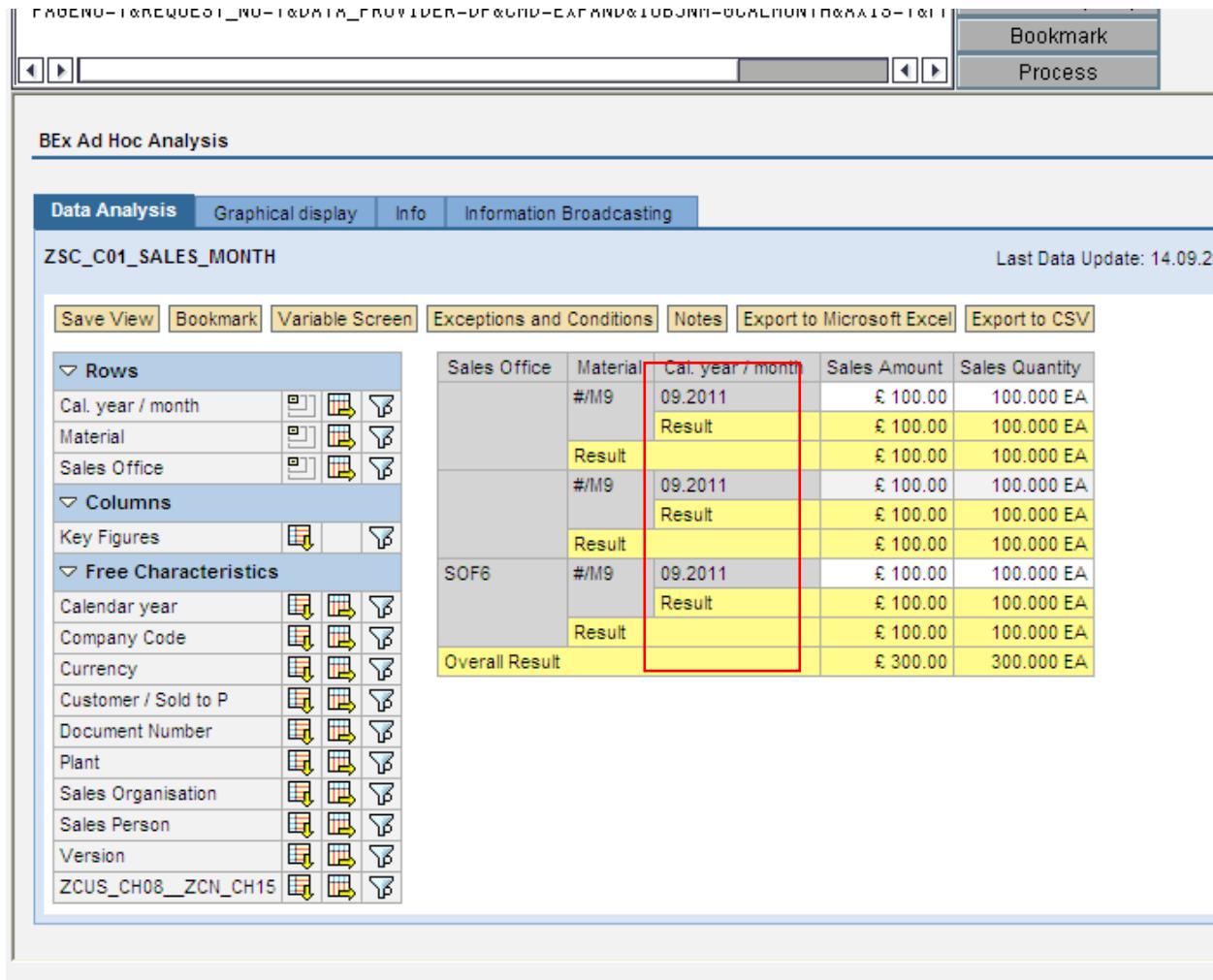


Step 3: Save the query and execute it to test the result.



Execute query in RSRT.

Drill down calender month to rows. As you can see output is shown for current month 09.2011.



The screenshot shows the BEx Ad Hoc Analysis interface with the following details:

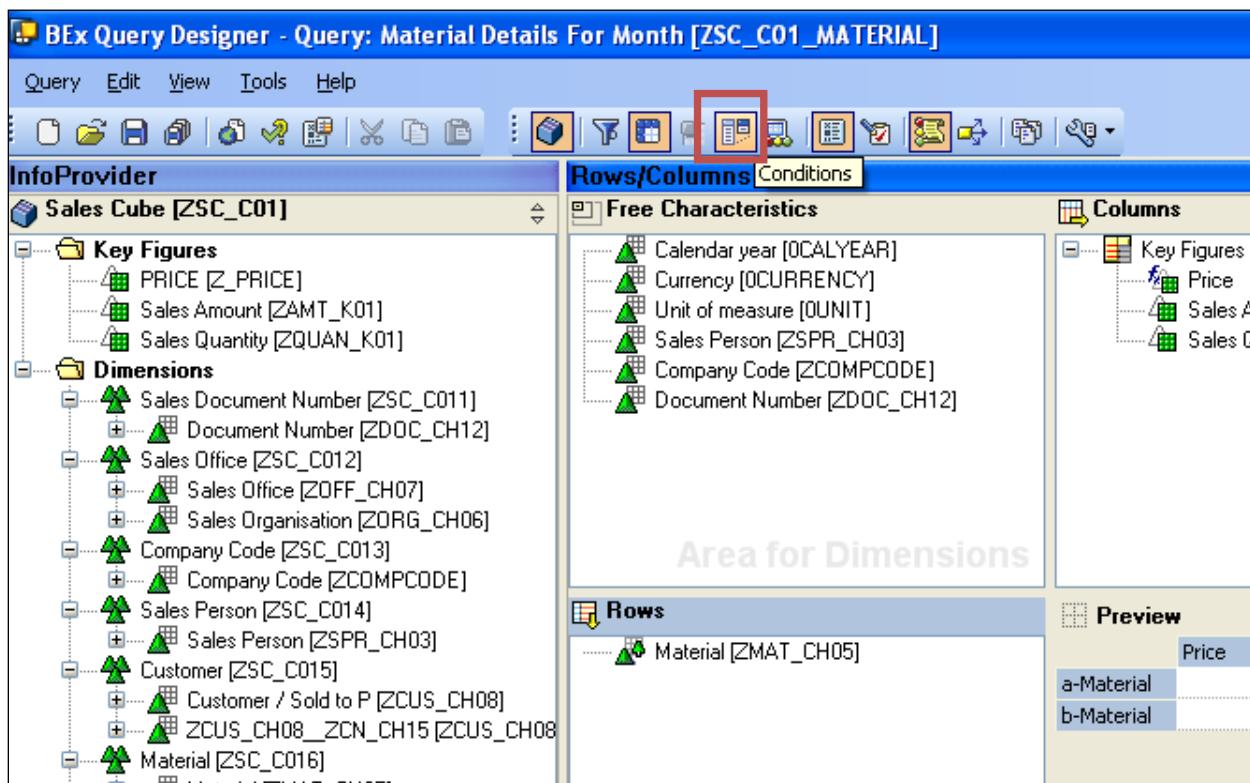
- Toolbar:** Includes standard SAP icons for search, refresh, and navigation.
- Header:** Shows the title "BEx Ad Hoc Analysis" and the query name "ZSC_C01_SALES_MONTH".
- Header Buttons:** Data Analysis, Graphical display, Info, Information Broadcasting.
- Status Bar:** Last Data Update: 14.09.2011.
- Action Buttons:** Save View, Bookmark, Variable Screen, Exceptions and Conditions, Notes, Export to Microsoft Excel, Export to CSV.
- Row Filter:** A tree view for "Rows" with categories like Cal. year / month, Material, Sales Office, and Key Figures.
- Column Filter:** A tree view for "Columns" with categories like Calendar year, Company Code, Currency, Customer / Sold to P, Document Number, Plant, Sales Organisation, Sales Person, Version, and ZCUS_CH08_ZCN_CH15.
- Table Data:** A grid showing sales data. The columns are Sales Office, Material, Cat. year / month, Sales Amount, and Sales Quantity. The "Cat. year / month" column is highlighted with a red border, showing values for 09.2011 and Result. The "Sales Amount" and "Sales Quantity" columns also show results for 09.2011 and Result. The "Overall Result" row at the bottom shows a total of £ 300.00 and 300.000 EA.

Sales Office	Material	Cat. year / month	Sales Amount	Sales Quantity
	#/M9	09.2011	£ 100.00	100.000 EA
		Result	£ 100.00	100.000 EA
	#/M9	09.2011	£ 100.00	100.000 EA
		Result	£ 100.00	100.000 EA
	#/M9	09.2011	£ 100.00	100.000 EA
		Result	£ 100.00	100.000 EA
SOF6		Overall Result	£ 300.00	300.000 EA

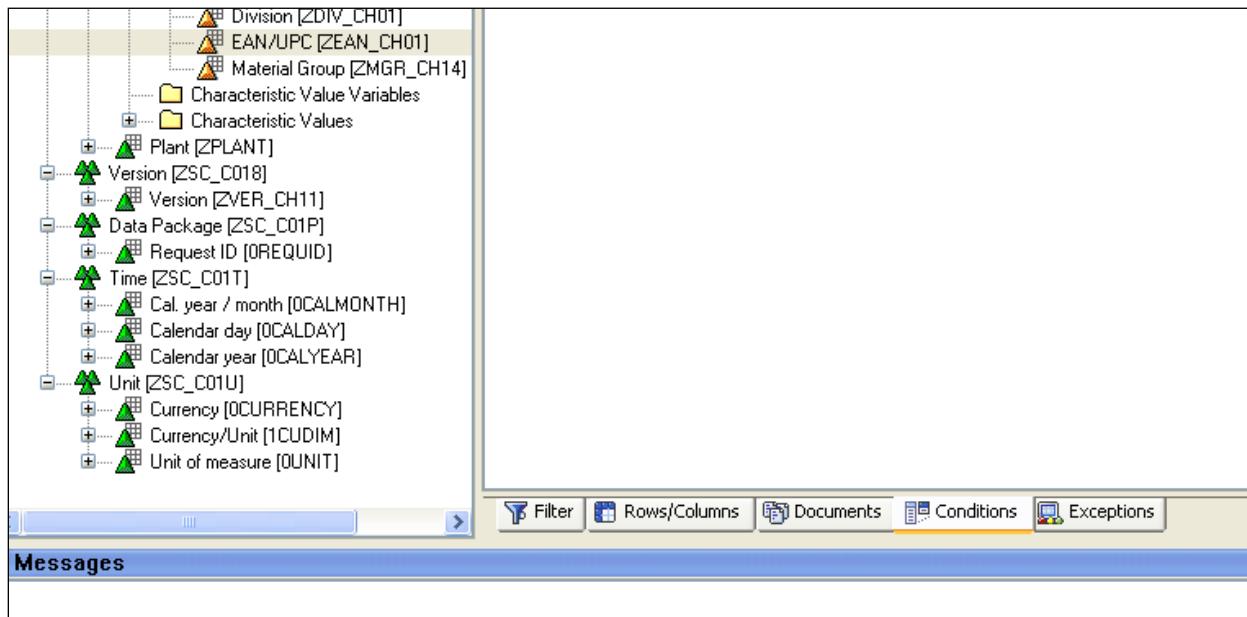
Conditions

For a query output, we want to see only those material's whose Sales Amount is greater than or equal to 500, we will use conditions.

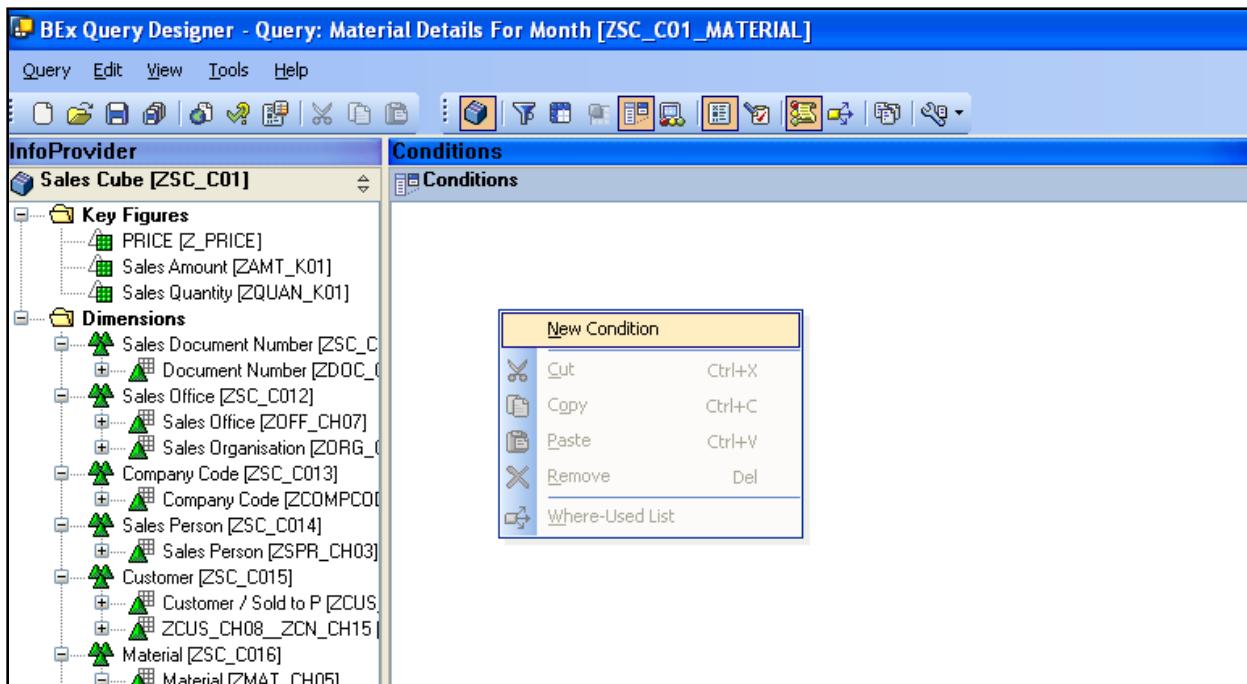
Step 1: Click on the Conditions Button available on the toolbar, as shown below.

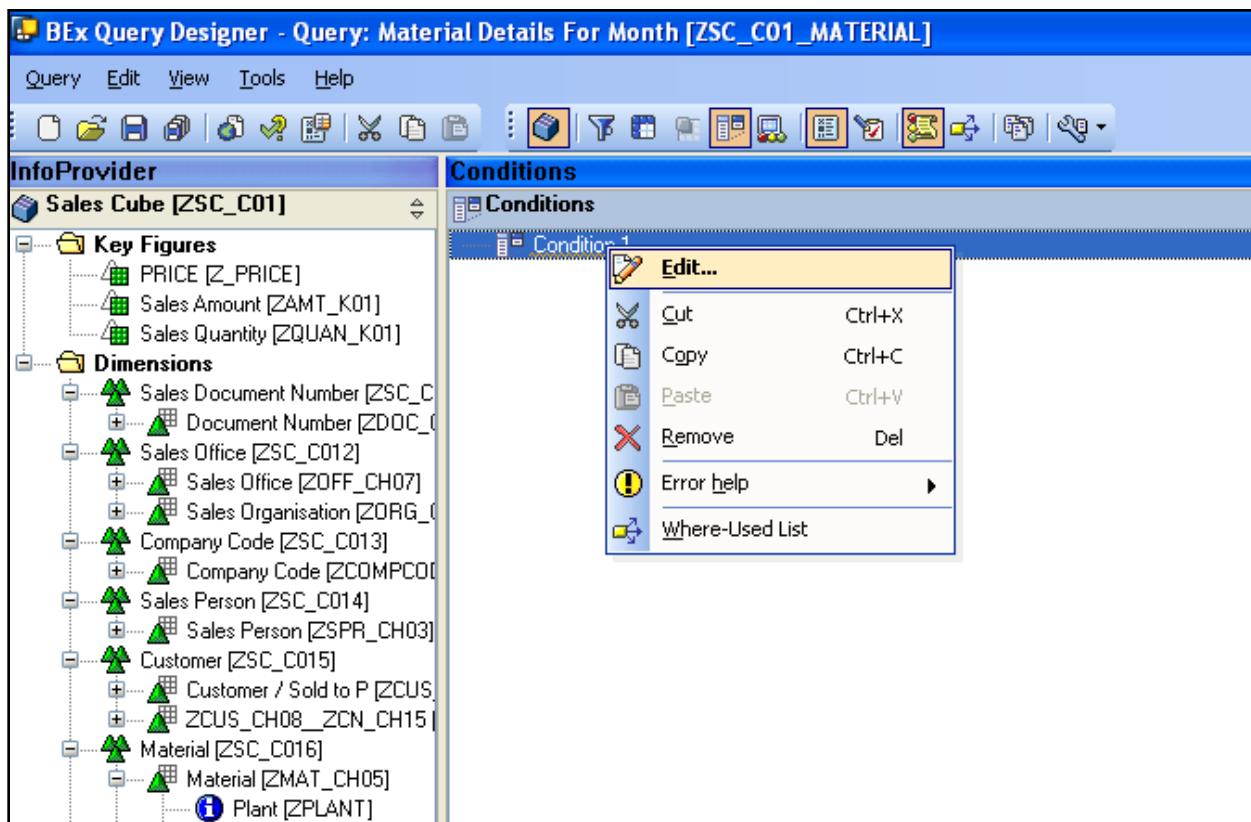


You will see a new tab available in the design area of the query designer.



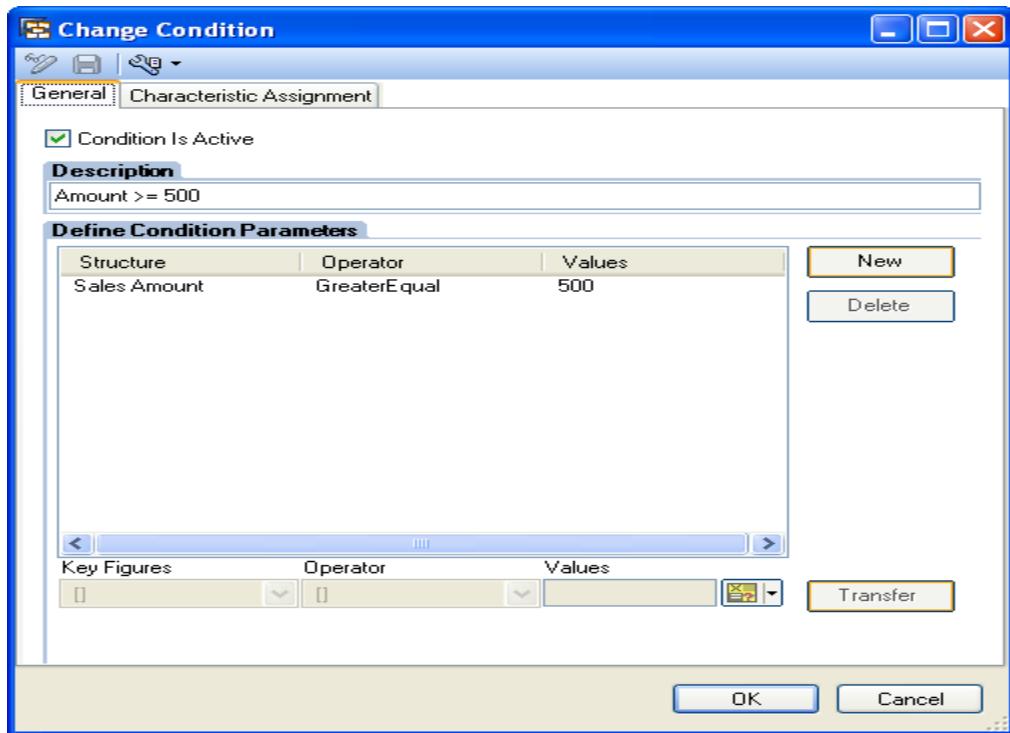
Step 2: Goto Conditions Tab. Create a new condition – Condition 1, and then edit the same.





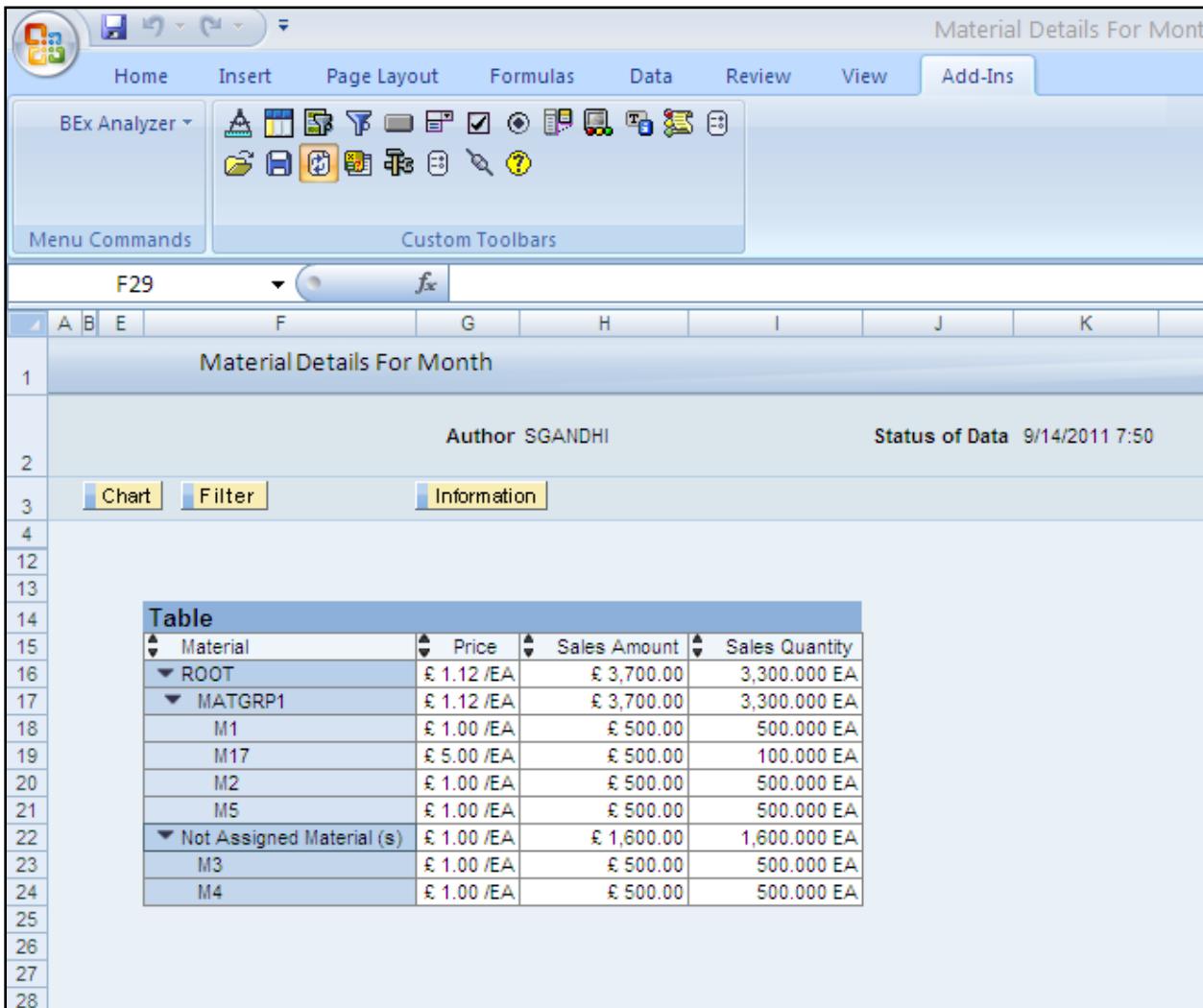
Step 3: In the below section, Use the Key Figure for which a condition needs to be created (Sales Amount in this example), in operator use Greater than or equal option, and in values box, either use the variable or directly input the number.

Then Transfer the condition.



InfoProvider		Conditions
Sales Cube [ZSC_C01] <ul style="list-style-type: none"> Key Figures <ul style="list-style-type: none"> PRICE [Z_PRICE] Sales Amount [ZAMT_K01] Sales Quantity [ZQUAN_K01] Dimensions <ul style="list-style-type: none"> Sales Document Number [ZSC_C] <ul style="list-style-type: none"> Document Number [ZDOC_CH01] Sales Office [ZSC_C012] <ul style="list-style-type: none"> Sales Office [ZOFF_CH07] Sales Organisation [ZORG_CH08] Company Code [ZSC_C013] <ul style="list-style-type: none"> Company Code [ZCOMPCH09] Sales Person [ZSC_C014] <ul style="list-style-type: none"> Sales Person [ZSPR_CH03] Customer [ZSC_C015] <ul style="list-style-type: none"> Customer / Sold to P [ZCUS_CH10] ZCUS_CH08_ZCN_CH15 		Conditions <ul style="list-style-type: none"> Amount >= 500

Step 4: Execute the query and test the result. You will see only Sales amounts that are greater than or equal to 500.



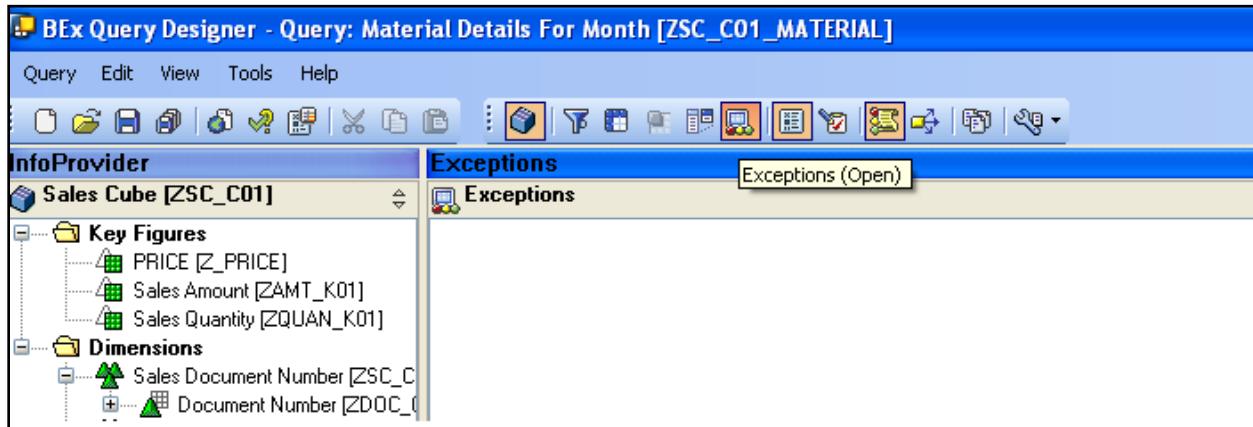
The screenshot shows the SAP BEx Analyzer interface with the title "Material Details For Month". The table displays sales data for various materials, with rows for ROOT, MATGRP1, and individual materials M1, M2, M3, M4, and M5. The "Not Assigned Material(s)" row also appears. The table includes columns for Material, Price, Sales Amount, and Sales Quantity.

Material	Price	Sales Amount	Sales Quantity
ROOT	£ 1.12 /EA	£ 3,700.00	3,300.000 EA
MATGRP1	£ 1.12 /EA	£ 3,700.00	3,300.000 EA
M1	£ 1.00 /EA	£ 500.00	500.000 EA
M17	£ 5.00 /EA	£ 500.00	100.000 EA
M2	£ 1.00 /EA	£ 500.00	500.000 EA
M5	£ 1.00 /EA	£ 500.00	500.000 EA
Not Assigned Material(s)	£ 1.00 /EA	£ 1,600.00	1,600.000 EA
M3	£ 1.00 /EA	£ 500.00	500.000 EA
M4	£ 1.00 /EA	£ 500.00	500.000 EA

Exceptions

Exceptions are used to highlight a particular value in a particular column, or show Alerts in the query result. Say for example, if the Quantity of any material is greater than or equal to 500, show it GREEN.

Step 1: Click on the Exceptions button available on the designer toolbar, as shown below.



Step 2: Create a new Exception – Exception 1, and edit the same.

BEx Query Designer - Query: Material Details For Month [ZSC_C01_MATERIAL]

Query Edit View Tools Help

InfoProvider: Sales Cube [ZSC_C01]

Exceptions

New Exception

	Cut	Ctrl+X
	Copy	Ctrl+C
	Paste	Ctrl+V
	Remove	Del
	Where-Used List	

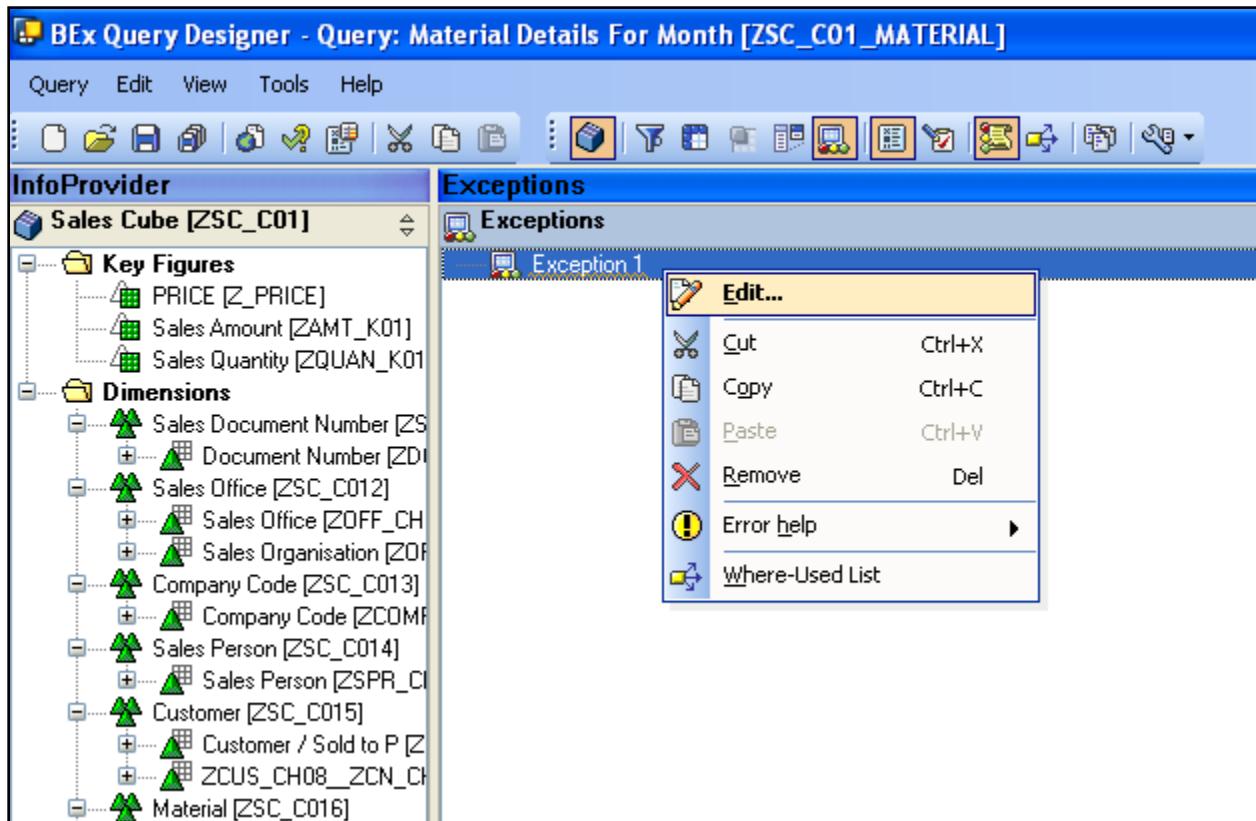
Key Figures

- PRICE [Z_PRICE]
- Sales Amount [ZAMT_K01]
- Sales Quantity [ZQUAN_K01]

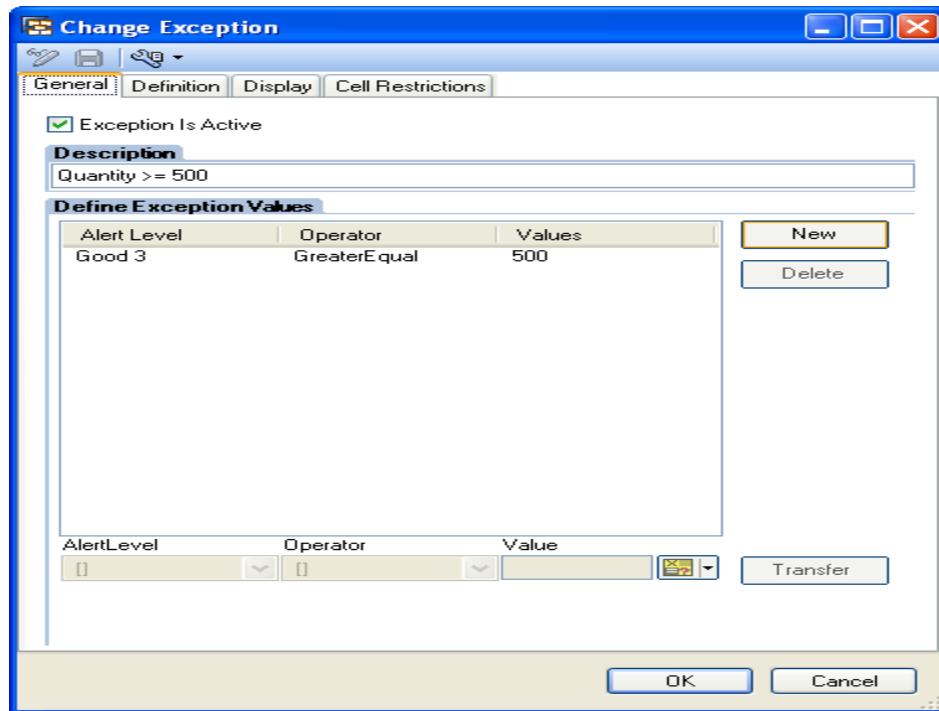
Dimensions

- Sales Document Number [ZS]
 - Document Number [ZD]
- Sales Office [ZSC_C012]
 - Sales Office [ZOFF_CH]
 - Sales Organisation [ZOF]
- Company Code [ZSC_C013]
 - Company Code [ZCOMP]
- Sales Person [ZSC_C014]
 - Sales Person [ZSPR_CI]
- Customer [ZSC_C015]
 - Customer / Sold to P [ZC]
 - ZCUS_CH08_ZCN_CH
- Material [ZSC_C016]
 - Material [ZMAT_CH05]
 - Plant [ZPLANT]
 - Attributes
 - Division [ZDI]
 - EAN/UPC [ZUPC]
 - Material Group [ZMATERIAL]
 - Characteristic Value [ZCHARVAL]
 - Characteristic Value [ZCHARVAL]
 - Plant [ZPLANT]
 - Version [ZSC_C018]
 - Version [ZVER_CH11]
- Data Package [ZSC_C01P]
 - Request ID [0REQUID]
- Time [ZSC_C01T]
 - Cal. year / month [0CAL]
 - Calendar day [0CALDAY]
 - Calendar year [0CALYE]
- Unit [ZSC_C01U]
 - Currency [0CURRENCY]
 - Currency/Unit [1CLUDIM]
 - Unit of measure [0UNIT]

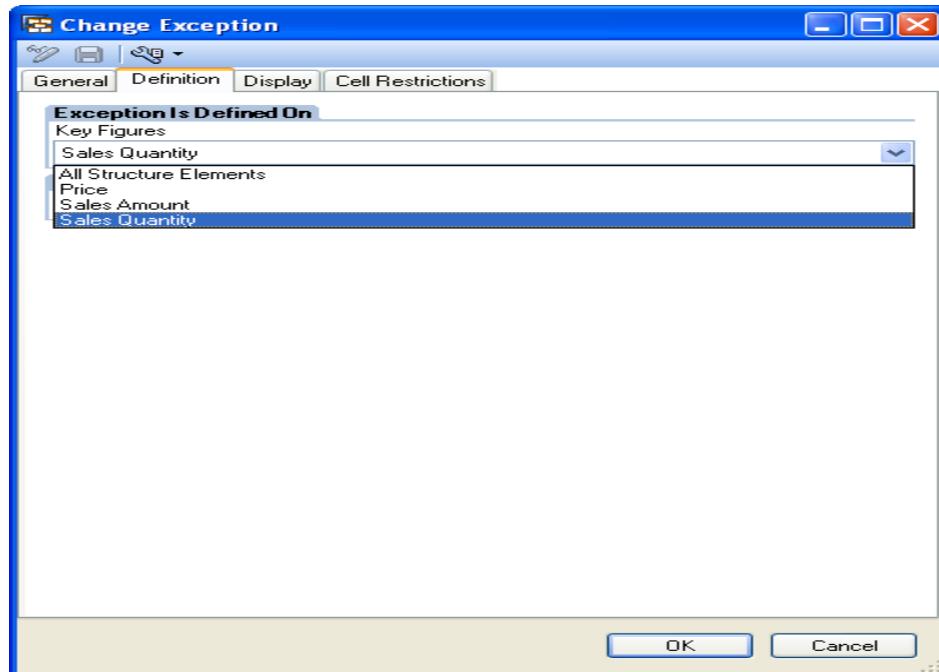
Filter Rows/Columns Documents Conditions Exceptions



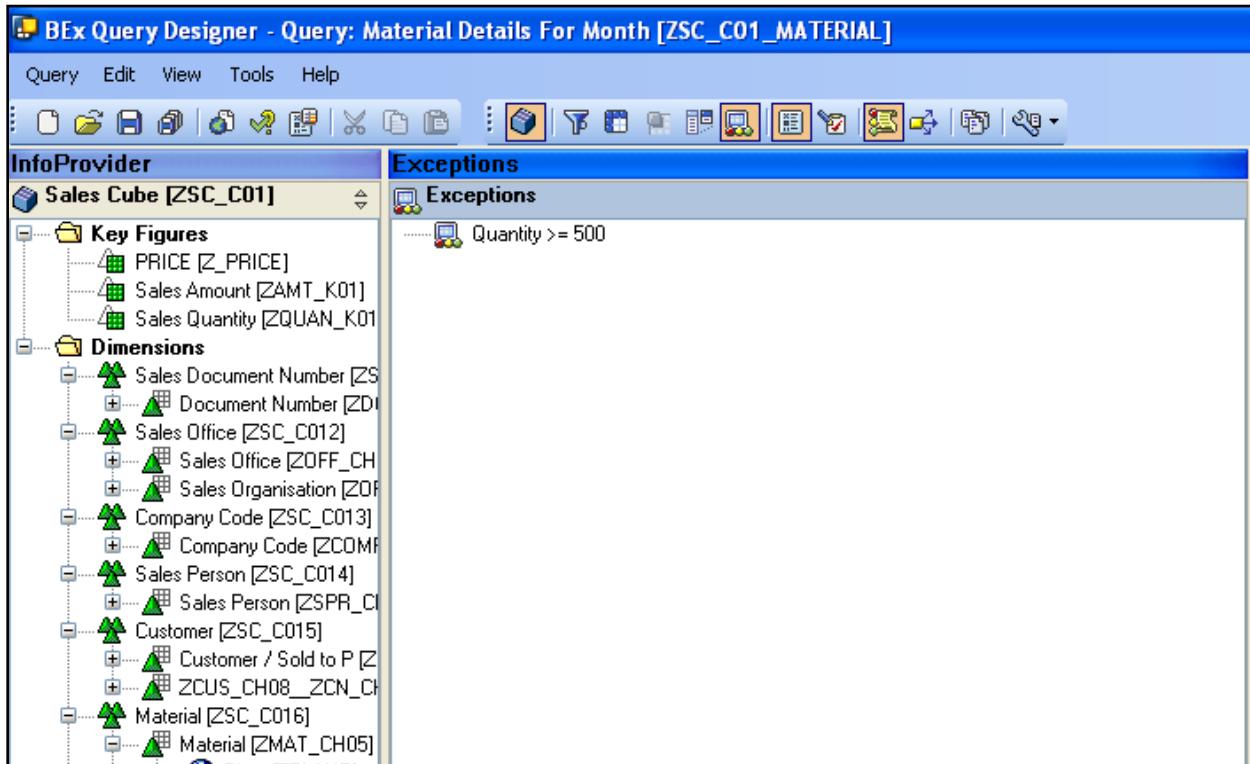
Step 3: Click on NEW. In the section below, for the Alert Level, give the type of alert that needs to be displayed for any column. Then pass the operator and the value for the same. Transfer the exception.



Step 4: In the Definitions Tab, select the key figure for which alert is generated.



Step 5: Save the exception and execute the query in Analyzer.



Material Details For Month

Author SGANDHI Status of Data 9/14/2011 7:50

Table

Material	Price	Sales Amount	Sales Quantity
ROOT	€ 1.12 /EA	€ 3,700.00	3,300.000 EA
MATGRP1	€ 1.12 /EA	€ 3,700.00	3,300.000 EA
M1	€ 1.00 /EA	€ 500.00	500.000 EA
M10	€ 1.00 /EA	€ 300.00	300.000 EA
M11	€ 1.00 /EA	€ 300.00	300.000 EA
M12	€ 1.00 /EA	€ 300.00	300.000 EA
M16	€ 1.00 /EA	€ 100.00	100.000 EA
M17	€ 5.00 /EA	€ 500.00	100.000 EA
M2	€ 1.00 /EA	€ 500.00	500.000 EA
M5	€ 1.00 /EA	€ 500.00	500.000 EA
M6	€ 1.00 /EA	€ 400.00	400.000 EA
M7	€ 1.00 /EA	€ 300.00	300.000 EA
Not Assigned Material (s)	€ 1.00 /EA	€ 1,600.00	1,600.000 EA
M3	€ 1.00 /EA	€ 500.00	500.000 EA
M4	€ 1.00 /EA	€ 500.00	500.000 EA
M8	€ 1.00 /EA	€ 300.00	300.000 EA
M9	€ 1.00 /EA	€ 300.00	300.000 EA

Conclusion:

Variables allow users to see the report output for their expected characteristic values/hierarchy/hierarchy nodes.

The processing type of a variable determines how a variable is filled with a value for the runtime of the query or Web application

Text variable gives more information regarding the shown data in the text form.

Conditions and exceptions help facilitate the query result for better understanding and visibility of the data.

Appendix:

```

DATA: DATE TYPE SY-DATUM,
      month(2) type n,
      year(4) type n,
      calMONTH TYPE /BI0/OICALMONTH.

CASE I_VNAM.

  WHEN 'ZCURR_MONTH'.
    IF I_STEP = 2.
      CLEAR L_S_RANGE.

* take today's date into local variable.
  DATE = SY-DATUM.
* find out month and year out of date.
  MONTH = DATE+4(2).
  Year = DATE(4).

*concatenate year and month to bring it to calmonth(year month) format.
CONCATENATE year month into calmonth.

* assign it to standard workarea L_S_RANGE and append it to the E_T_RANGE table.
* It is a standard process. Query designer will
* pull month from this table at runtime.

  L_S_RANGE-LOW = CALMONTH.
  L_S_RANGE-SIGN = 'I'.
  L_S_RANGE-OPT = 'EQ'.

```

```
APPEND L_S_RANGE TO E_T_RANGE.  
ENDIF.
```

Endcase.

Cell Editor:

Use:

Basically cell editor is used when you want to restrict particular cells explicitly.

Example:

Using cell editor please develop Region wise sales Report. Below is the format:

Region	Sales Amount	Sales Amount with Tax
North		Sales amount+sales amount/100*10.5
West		Sales amount (no tax)
South		Sales amount+sales amount/100*5.5
East		Sales amount (no tax)
Total		

Requirement:

- Regions are categorised by Sales office as below:

North = SOF1, SOF2

West = SOF5

South = SOF4

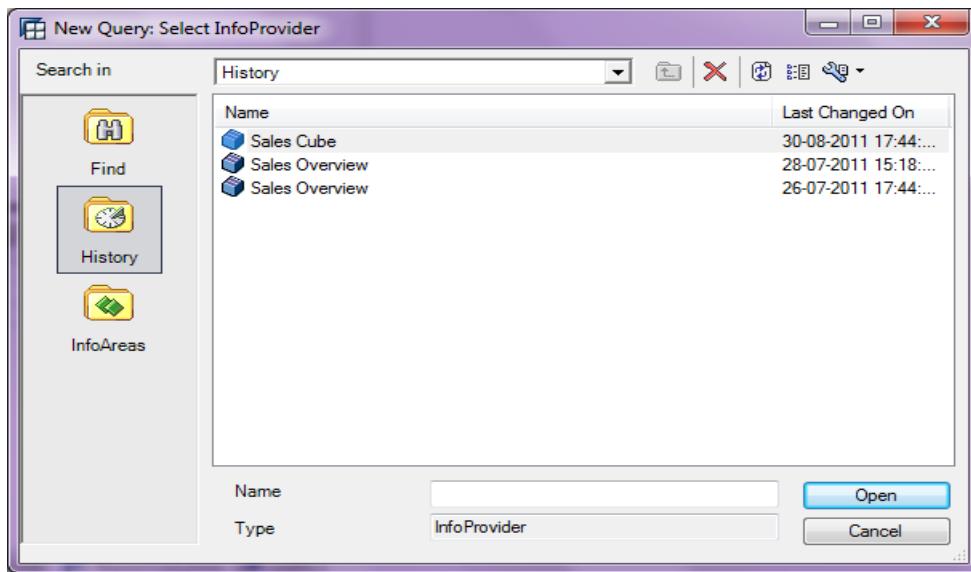
East = SOF6, SOF3

Calculations for Key figures are as below:

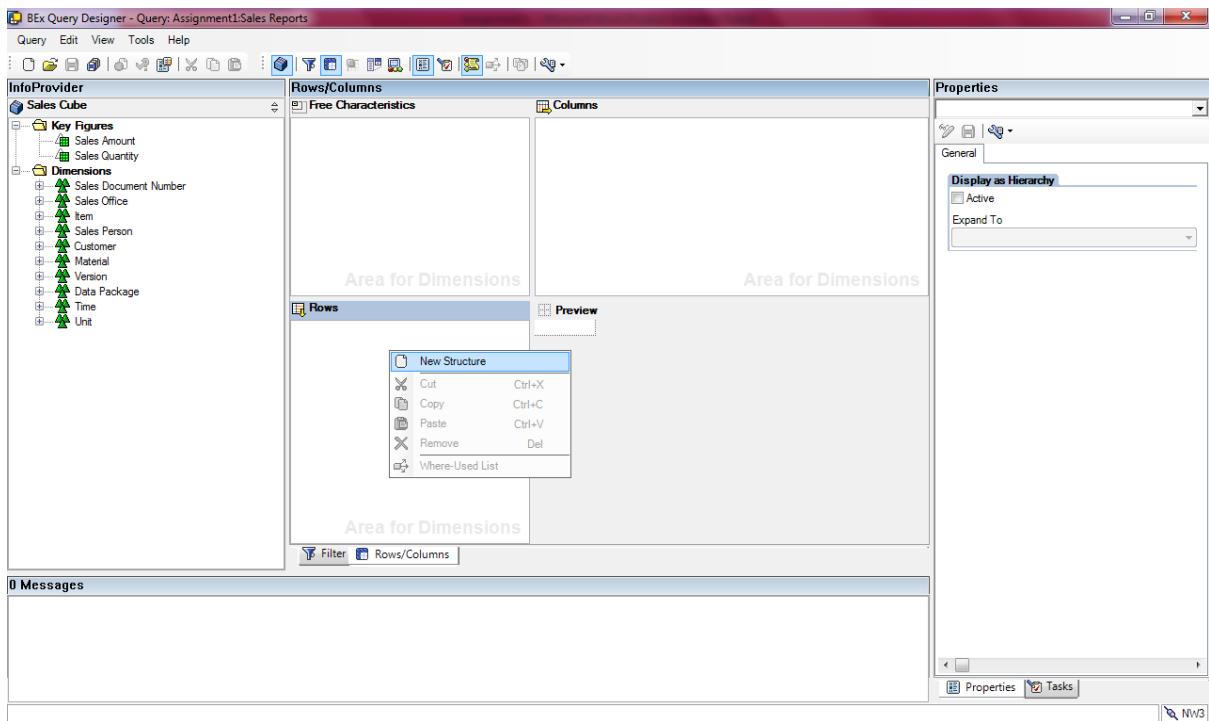
- Sales Amount = ZAMT_KF1
- Sales Amount with Tax =Calculation as shown in above table.

Steps to follow:

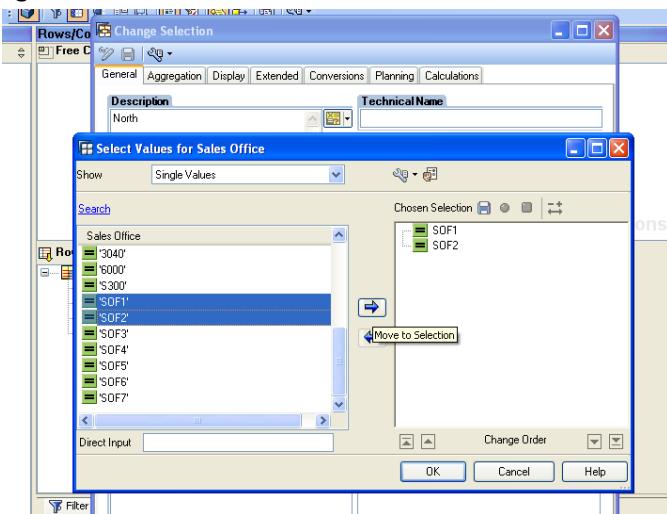
- Create new query using Cube ZSC_C01

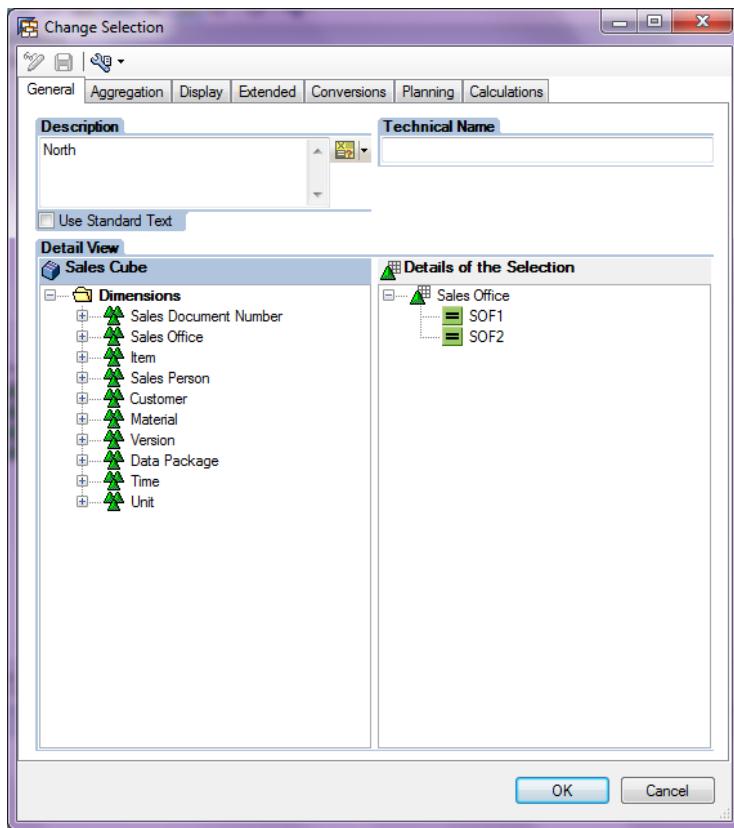


2. Create Structure in Row. Then right click on structure .



3. Create Selection for Regions North, South, East, West. Right click on structure and select New Selection. Drag 'Sales Office' from left to right pane.
4. Right click on Sales office in right pane and click restrict. Select SOF1 and SOF2 and move to right and click OK.





5. Repeat same steps for other regions. Use below restrictions,

West = SOF5

South = SOF4

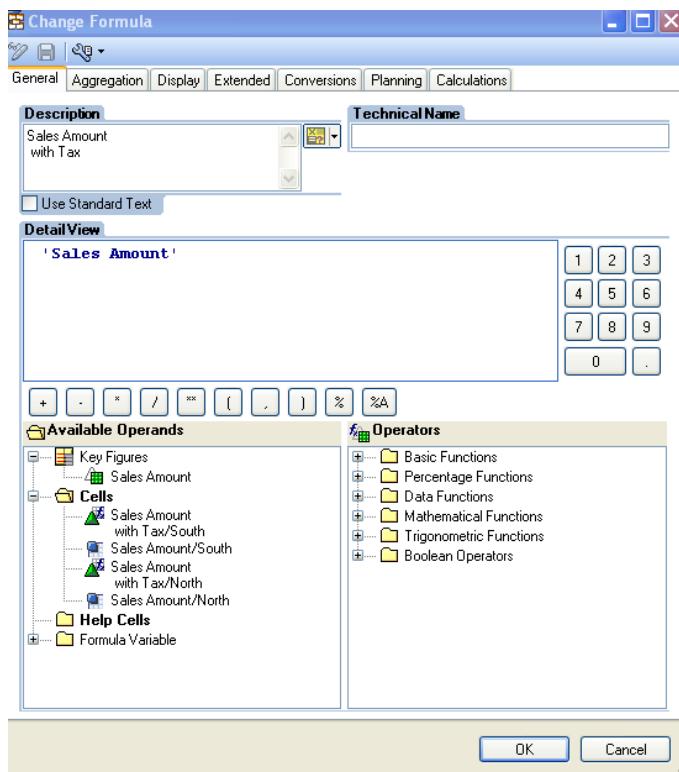
East = SOF6, SOF3

6. To create Key Figures for Sales Amount & Sales Amount with Tax.

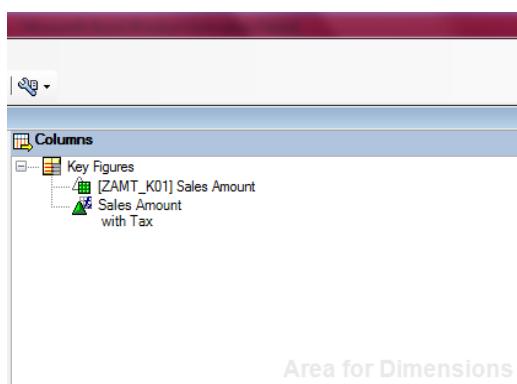
-> Drag Sales Amount from Infoprovider area to columns.

-> Right click on Key figure structure in column and select New formula

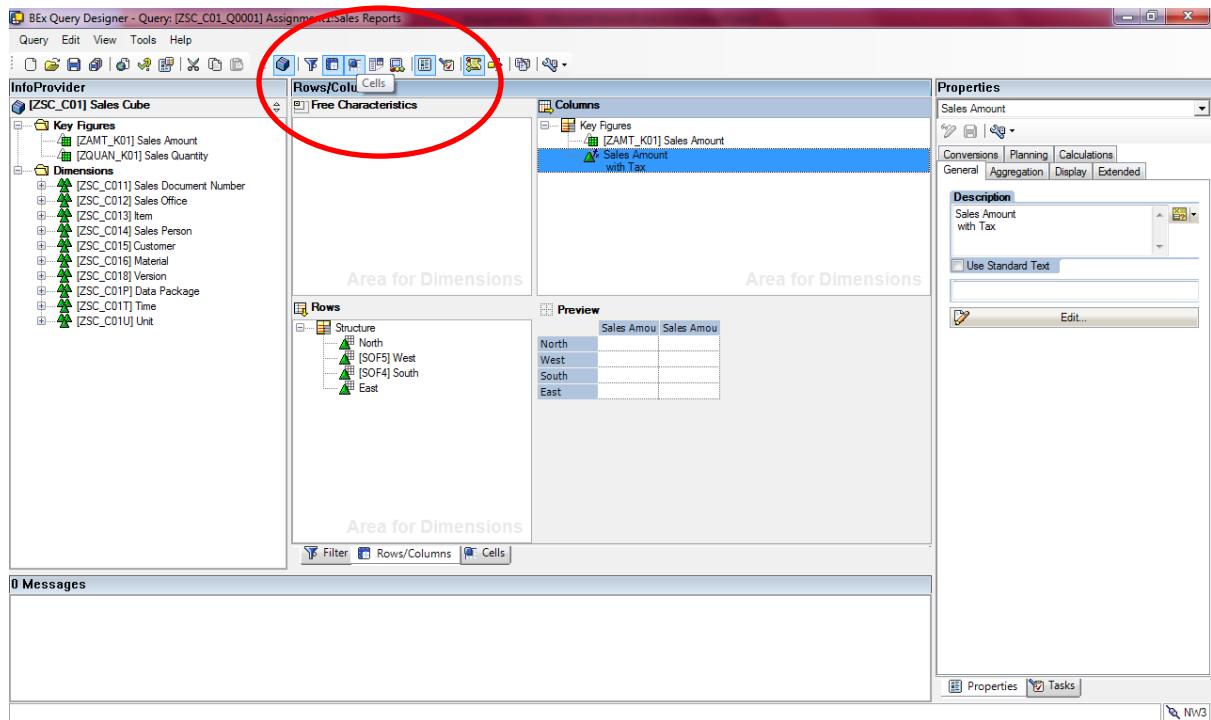
-> Drag Sales Amount to Detail View.



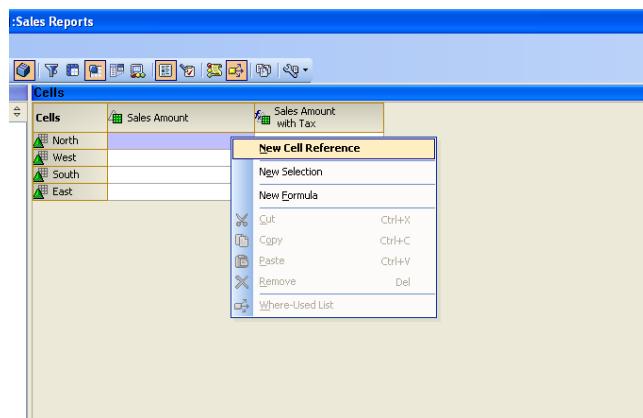
This means that now both the columns have same Key figure as Sales Amount. So unless defined different formulae in Cell editor both columns will show same value on each record level. This is where cell editor comes into picture.



7. Click on Cell button from menu bar. It will open 3rd tab besides Filter & Row/Column



8. Go to Cell Tab. Right click on the cell that exist where 'North' row and 'Sales Amount' column intersects as shown in the screenshot and click on New Cell Reference.

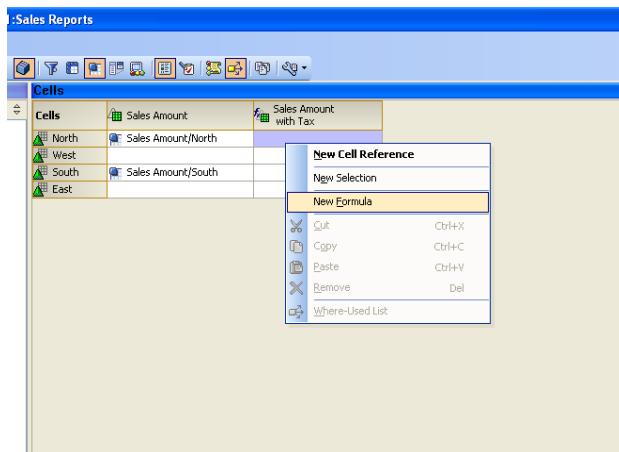


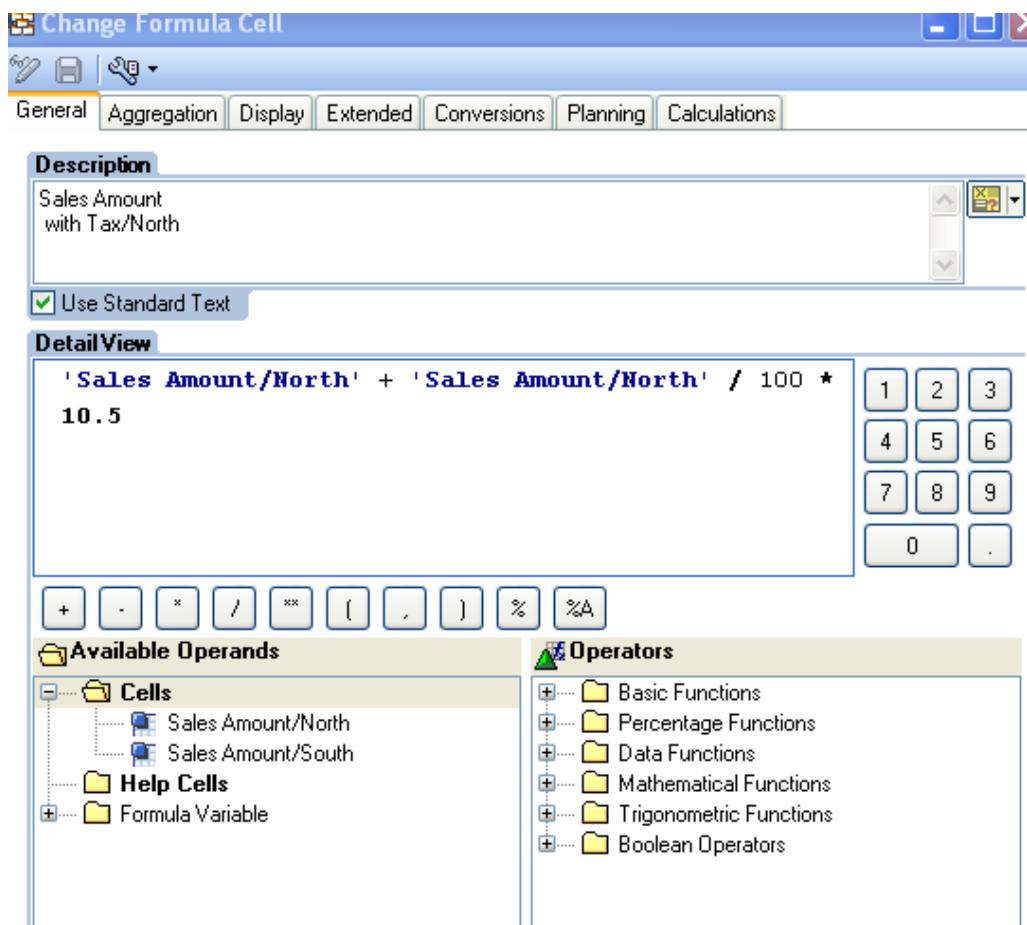
Repeat same for Cell at the intersections of South and Sales Amount.

Cell Reference for selected cell will be used to create formula for Sales Amount with Tax for North and South Region. This can be handled for each cell.

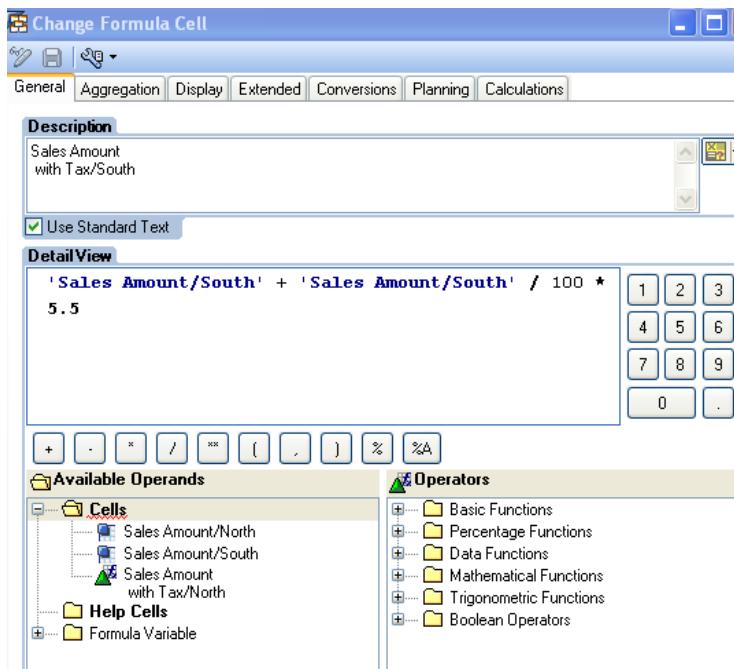
Cells		
Cells	Sales Amount	Sales Amount with Tax
North	Sales Amount/North	
West		
South	Sales Amount/South	
East		

9. Right click and create formula as shown in screenshot below:



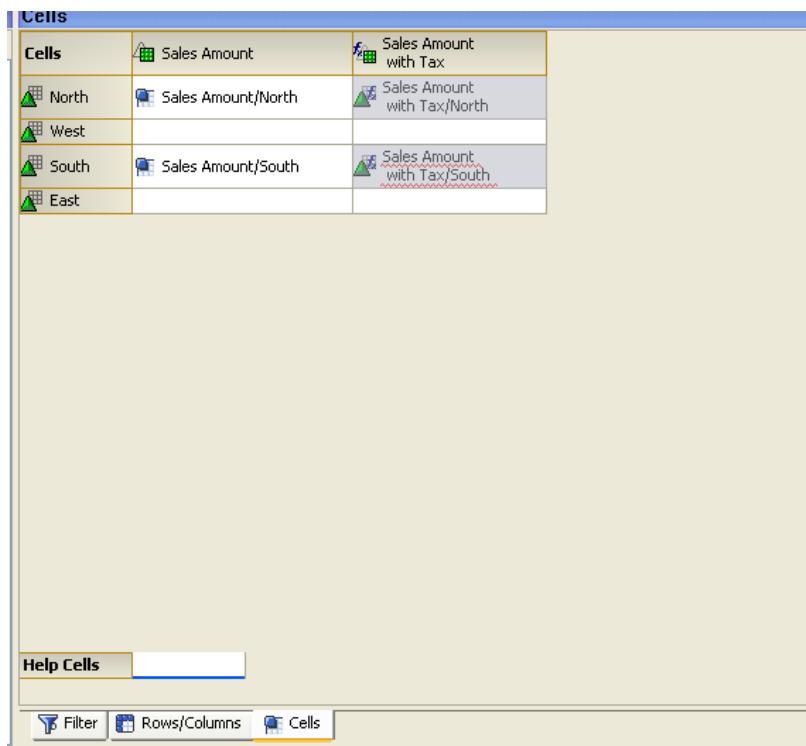


Same way create it for South Region with its cell reference.



10. Query designer should look like this:

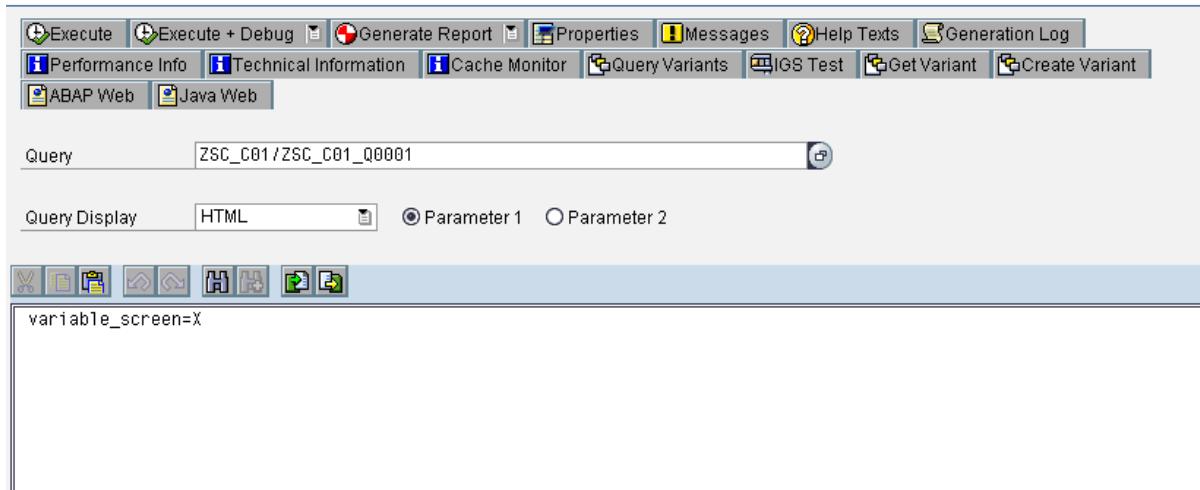
Cell Editor Part should look like this:



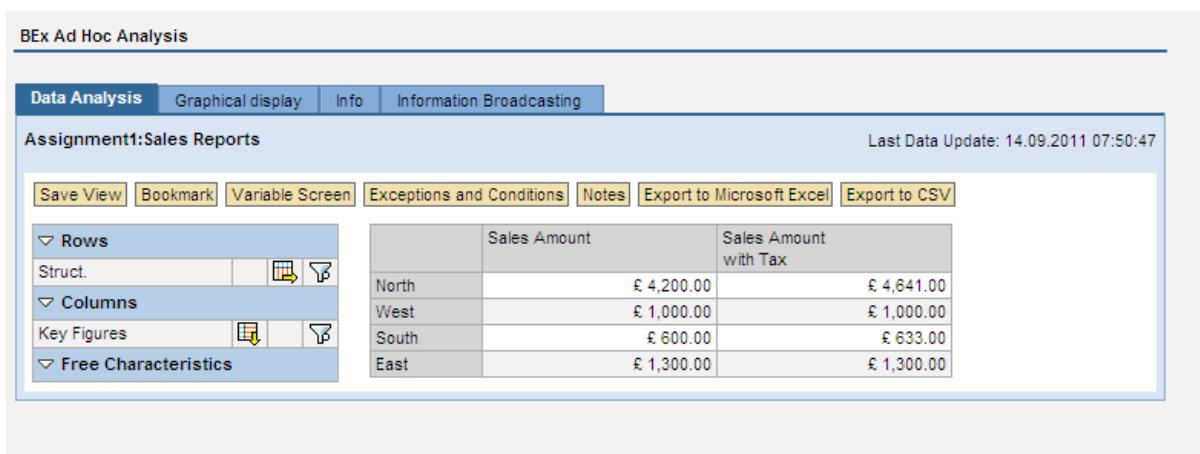
Report output:

Go to RSRT transaction -> enter ZSC_C01_Q0001 name -> Select HTML query display-> Execute.

Query Monitor



The screenshot shows the SAP Query Monitor interface. At the top, there is a toolbar with various icons and menu items like "Execute", "Properties", "Messages", etc. Below the toolbar, the "Query" field contains "ZSC_C01/ZSC_C01_Q0001". Under "Query Display", "HTML" is selected. There are two radio buttons for "Parameter 1" and "Parameter 2", with "Parameter 1" selected. A toolbar below these options includes icons for saving, opening, and printing. The main area displays the query code: "variable_screen=X".



The screenshot shows the SAP BEx Ad Hoc Analysis interface. The title bar says "BEx Ad Hoc Analysis". The main area has tabs for "Data Analysis", "Graphical display", "Info", and "Information Broadcasting". The "Data Analysis" tab is active, showing a report titled "Assignment1:Sales Reports". The report was last updated on "14.09.2011 07:50:47". Below the report title, there are several buttons: "Save View", "Bookmark", "Variable Screen" (which is highlighted in yellow), "Exceptions and Conditions", "Notes", "Export to Microsoft Excel", and "Export to CSV". On the left, there is a navigation pane with sections for "Rows", "Columns", "Key Figures", and "Free Characteristics". To the right, there is a table with four rows and three columns. The columns are labeled "Sales Amount" and "Sales Amount with Tax". The data is as follows:

	Sales Amount	Sales Amount with Tax
North	€ 4,200.00	€ 4,641.00
West	€ 1,000.00	€ 1,000.00
South	€ 600.00	€ 633.00
East	€ 1,300.00	€ 1,300.00

As you can see in the output, Sales amount with Tax is same as Sales Amount (0% tax) for West and East region whereas for North 10.5% and South 5.5%.

Conclusion:

- After this topic, we will understand how to create cell editor in query designer. We will also know how to use new cell reference to create new formula in cell editor and how cell editor can be used restrict cells selectively.

BEx Analyser and Workbook

Workbook :

Use:

1. Output of the queries can be saved in the workbook locally or on server.
2. BEX reports can be formatted as per need, like making bold, creating your own layout, adding image i.e. all excel functions. Workbook gets refreshed when new data is loaded to data target.

Prerequisite:

1. Make sure that the cubes and the queries are created before inserting the query output in the workbook.
2. For training purpose, we have created the cubes Customer (ZSC_C04) and Customer Detail (ZSC_C05).

ZSC_C04 -

InfoCube		Techn. name / value	Fu...	O...	Appe...	Data...	L...	Key Fi...	C...	N...	Ag...	Ex...	Reference...	Unit...	Alias Name...	Cu...
Customer	ZSC_C04															
Object Information																
Version	In Process															
Save	Saved															
Revised Version	Active Version															
Object Status	Active, executable															
Settings																
Dimensions																
Data Package	ZSC_C04P															
Time	ZSC_C04T															
Calendar day	0CALDAY		DAT	08								0DATE				
Unit	ZSC_C04U															
Unit of measure	0UNIT		UNIT	03								0UNIT				
Sold to	ZSC_C041															
Customer / Sold to Party	ZCUS_CH06		CHAR	10								ZCUS_CH...				
Country	ZSD_CH17		CHAR	03								ZSD_CH17				
Navigation Attributes																
Key Figures																
Sales Quantity	ZQUAN_K01		QUAN	09	Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SUM	SUM			0UNIT		ZQUAN_K01		

ZSC_C05-

InfoCube	Techn. name / value	Fu...	O...	Appe...	Data...	L...	Key Fi...	C...	N...	Ag...	Ex...	Reference...	Unit	Alias Name	Cu...
Customer Detail	ZSC_C05														
Object Information															
Version	◊ In Process														
Save	◊ Saved														
Revised Version	◊ Active Version														
Object Status	◊ Active, executable														
Settings															
Dimensions															
Data Package	ZSC_C05P														
Time	ZSC_C05T														
Calendar day	0CALDAY	DATS	08								0DATE				
Unit	ZSC_C05U														
Sold to	ZSC_C051														
Customer / Sold to Party	ZCUS_CH06	CHAR	10								ZCUS_CH...				
Sales Doc	ZSC_C052														
Document Number	ZDOC_CH12	CHAR	10								ZDOC_CH...				
Sales Item	ZITM_CH18	CHAR	03								ZITM_CH18				
Material	ZSC_C053														
Material	ZMAT_CH05	CHAR	18								ZMAT_CH05				
Plant	ZPLANT	CHAR	04								ZPLANT				
Navigation Attributes															
Key Figures															
Sales Amount	ZAMT_K01	CURR	09	Amount	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SUM	SUM			0CURREN...	ZAMT_K01			

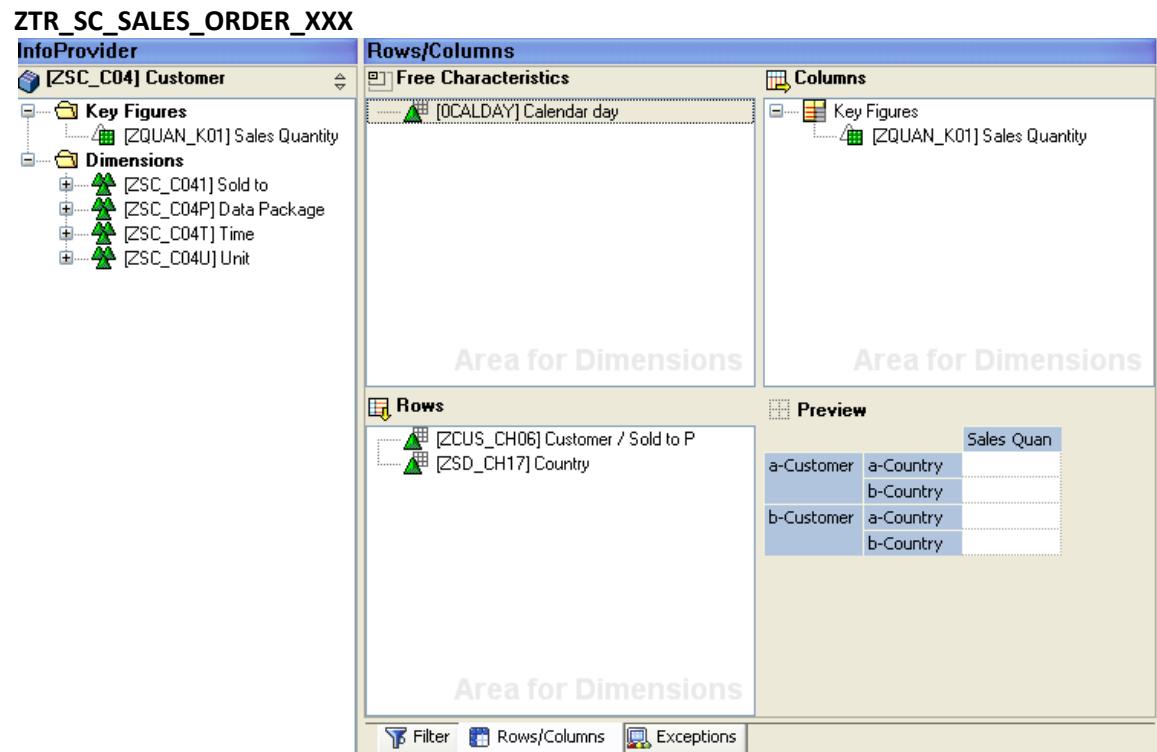
3. Also, we have created two queries : Customer (ZTR_SC_SALES_ORDER) and Customer Details (ZTR_SC_SALES_ORDER_DETAIL)

Procedure:

66. Log onto the BEX Analyzer using your BI credentials.

67. Create new query with name ZTR_SC_SALES_ORDER_XXX and ZTR_SC_SALES_ORDER_DETAIL_XXX with below structure.

ZTR_SC_SALES_ORDER_XXX



InfoProvider

[ZSC_C04] Customer

- Key Figures**
 - [ZQUAN_K01] Sales Quantity
- Dimensions**
 - [ZSC_C041] Sold to
 - [ZSC_C04P] Data Package
 - [ZSC_C04T] Time
 - [ZSC_C04U] Unit

Rows/Columns

Free Characteristics

- [0CALDAY] Calendar day

Columns

Key Figures

- [ZQUAN_K01] Sales Quantity

Area for Dimensions

Rows

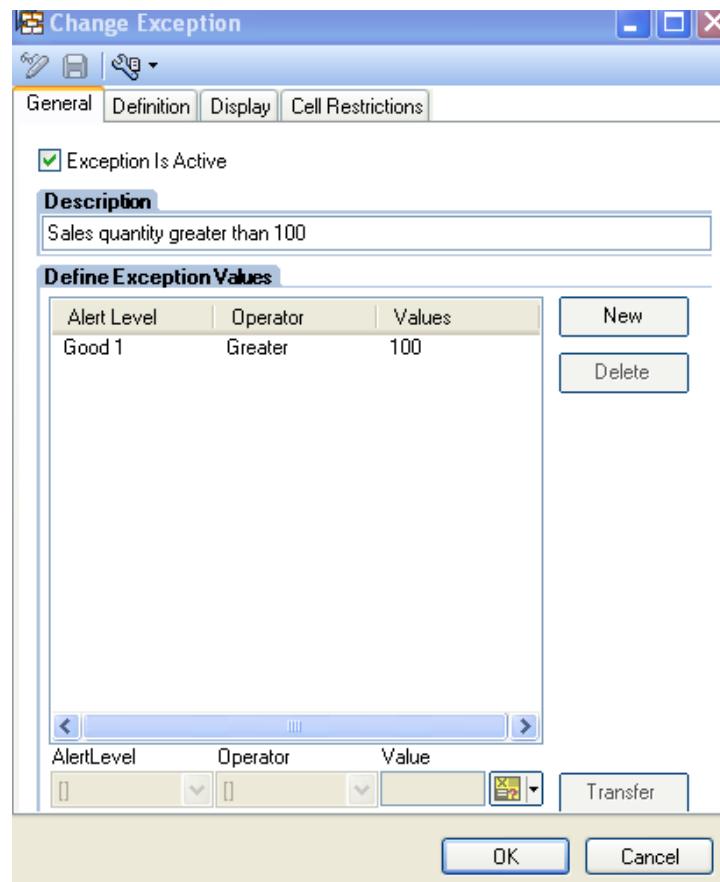
- [ZCUS_CH06] Customer / Sold to P
- [ZSD_CH17] Country

Preview

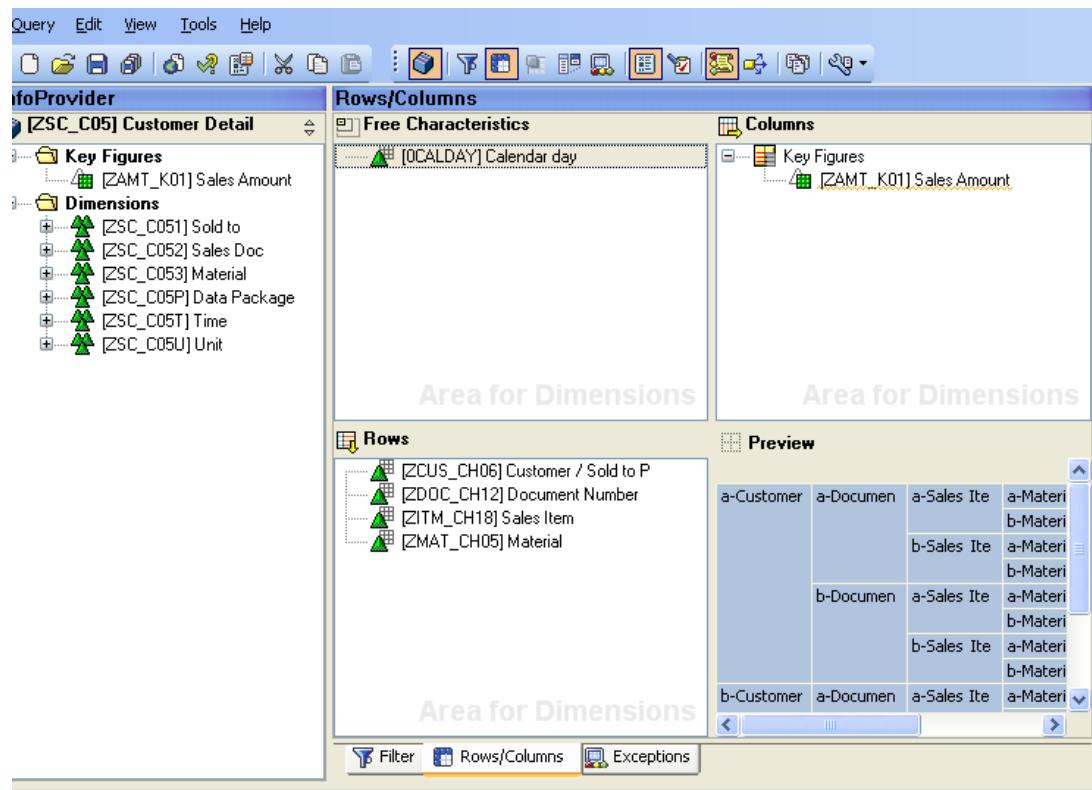
		Sales Quan
a-Customer	a-Country	
	b-Country	
b-Customer	a-Country	
	b-Country	

Area for Dimensions

Exception



ZTR_SC_SALES_ORDER_DETAIL_XXX



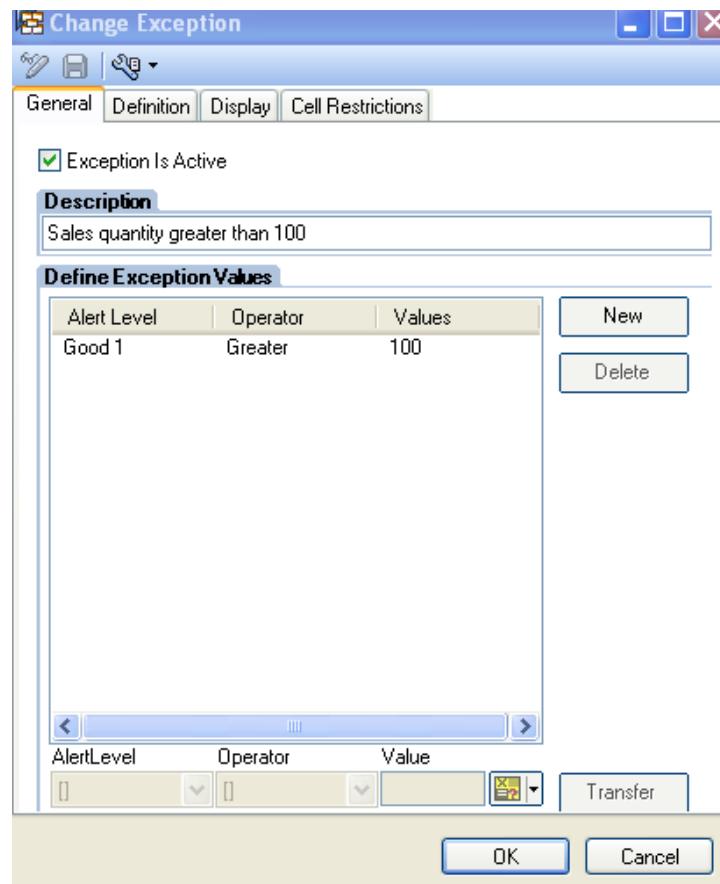
The screenshot shows the SAP BW BEX Analyzer interface. On the left, the InfoProvider [ZSC_C05] Customer Detail is selected. Under Key Figures, [ZAMT_K01] Sales Amount is chosen. Under Dimensions, several items are listed: [ZSC_C051] Sold to, [ZSC_C052] Sales Doc, [ZSC_C053] Material, [ZSC_C05P] Data Package, [ZSC_C05T] Time, and [ZSC_C05U] Unit.

The main area is divided into four sections:

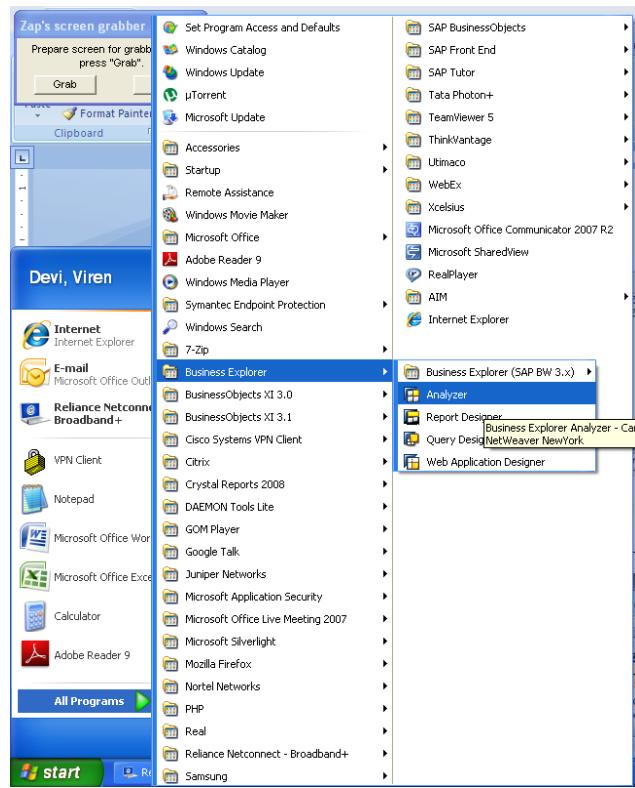
- Free Characteristics:** Contains [OCALDAY] Calendar day.
- Columns:** Contains Key Figures and [ZAMT_K01] Sales Amount.
- Rows:** Contains [ZCUS_CH06] Customer / Sold to P, [ZDOC_CH12] Document Number, [ZITM_CH18] Sales Item, and [ZMAT_CH05] Material.
- Preview:** Shows a grid of data with columns: a-Customer, a-Documen, a-Sales Ite, a-Materi, b-Sales Ite, a-Materi, b-Materi, b-Documen, a-Sales Ite, a-Materi, b-Materi, b-Sales Ite, a-Materi, b-Materi, b-Customer, a-Documen, a-Sales Ite, a-Materi.

At the bottom, there are buttons for Filter, Rows/Columns, and Exceptions. The 'Rows/Columns' button is highlighted.

Exception



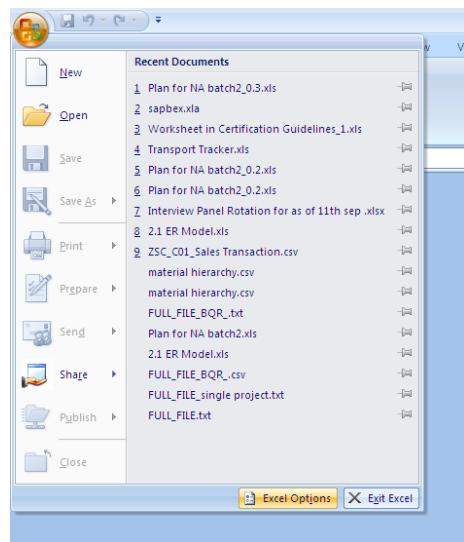
68. Now go to BEx analyser by following path,



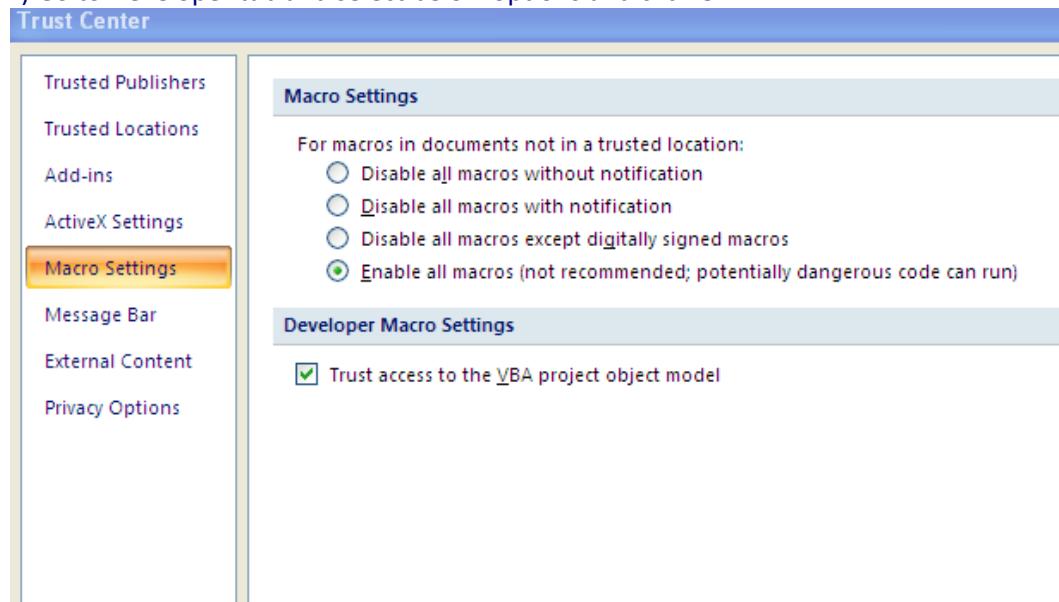
69. Open the query Customer - ZTR_SC_SALES_ORDER as shown in the snapshot below.

P.S some time it gives security error follow below steps,

- 1) Excel Options -> Tick 'show Developer tab in ribbon' option.



2) Go to Developer tab and select below options and click OK.



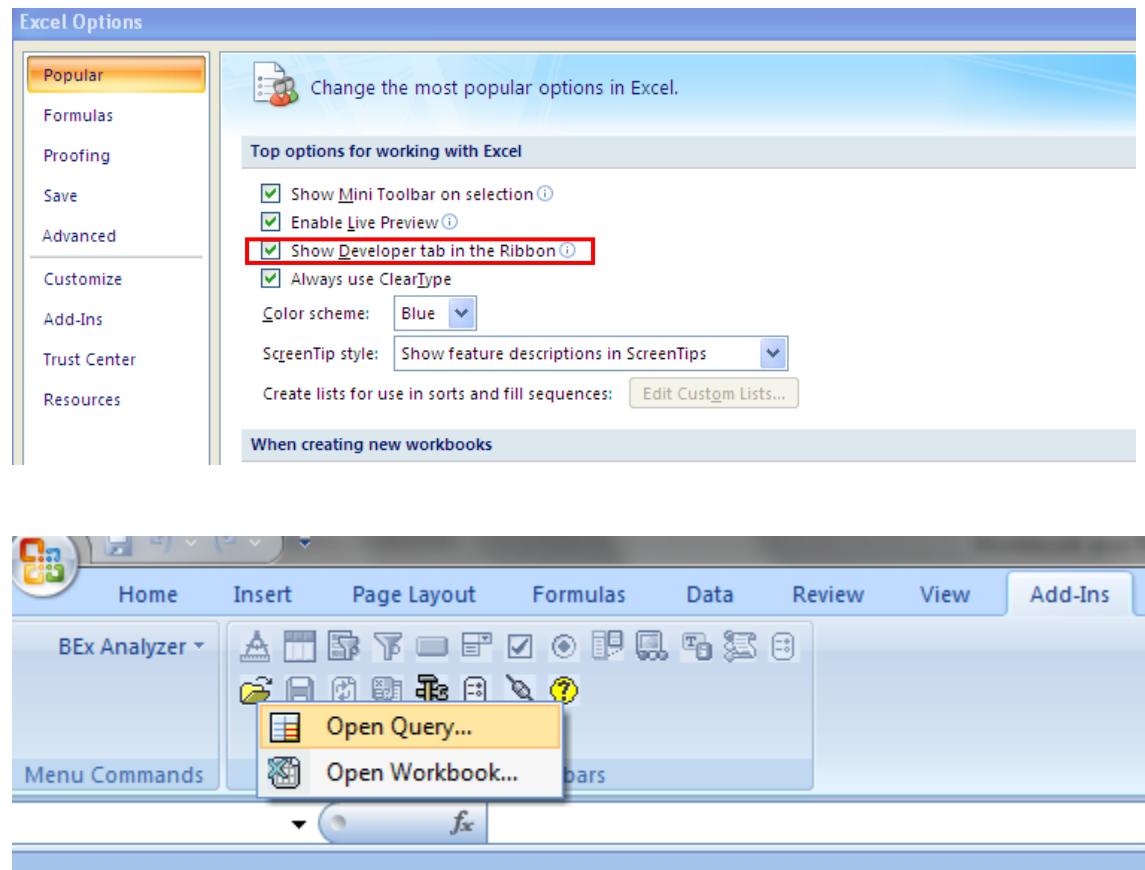
Macro Settings

For macros in documents not in a trusted location:

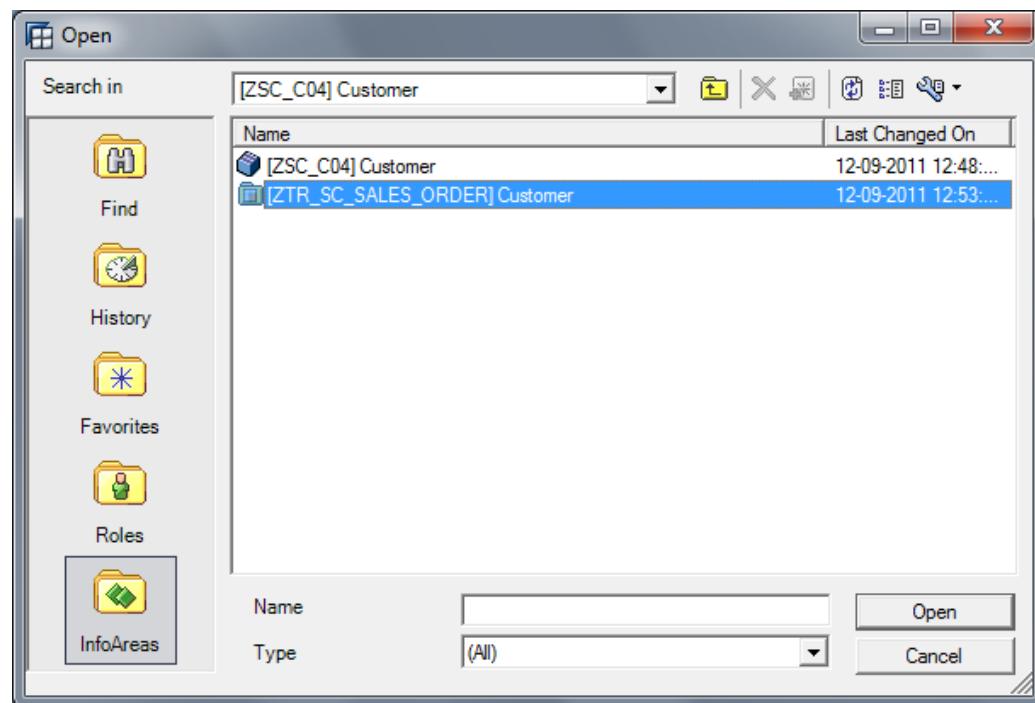
- Disable all macros without notification
- Disable all macros with notification
- Disable all macros except digitally signed macros
- Enable all macros (not recommended; potentially dangerous code can run)

Developer Macro Settings

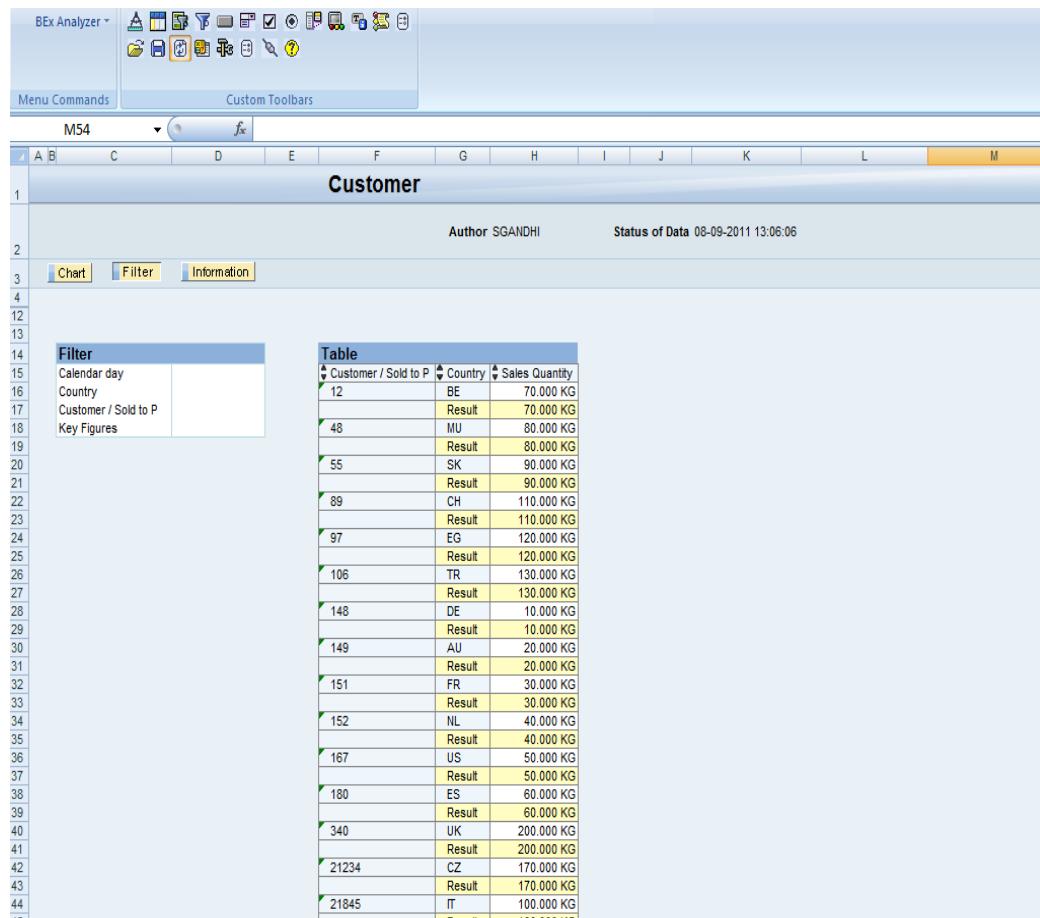
Trust access to the VBA project object model



70. Click on Infoarea (in the bottom left side) → [ZSALES_IA01] Sales Info area → [ZSC_C04] Customer. Then select the query ZTR_SC_SALES_ORDER and click on open.



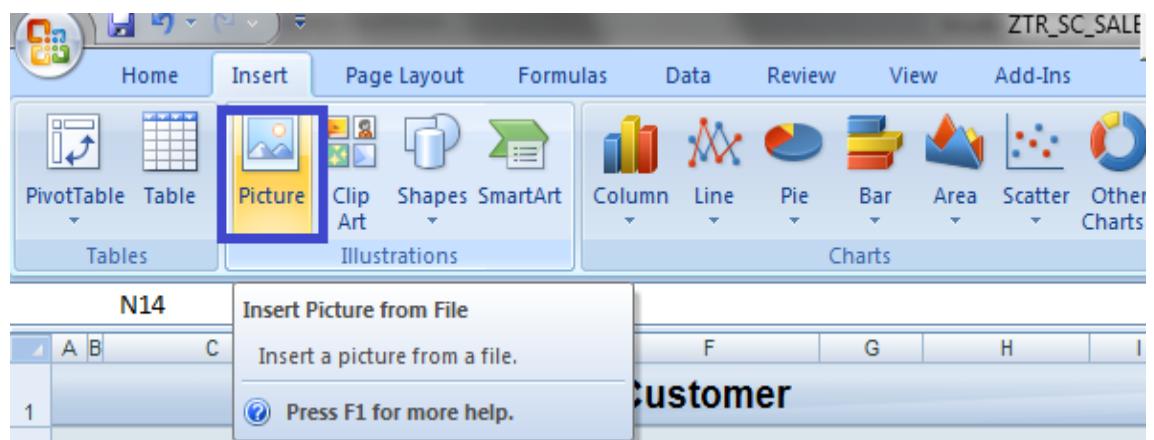
71. You can also open the query by clicking the Find (in the top left side) and entering the technical name of the query.
72. You will see the query output as :



The screenshot shows the SAP BEx Analyzer interface. The title bar says "BEx Analyzer". The menu bar has "Menu Commands" and "Custom Toolbars". The toolbar below includes icons for various functions like copy, paste, search, etc. The worksheet is titled "Customer". Row 1 contains the header "Customer". Row 2 contains "Author SGANDHI" and "Status of Data 08-09-2011 13:06:06". Row 3 has tabs for "Chart", "Filter", and "Information". Row 14 is a "Filter" dialog with fields for "Calendar day", "Country", "Customer / Sold to P", and "Key Figures". To the right is a "Table" showing sales data:

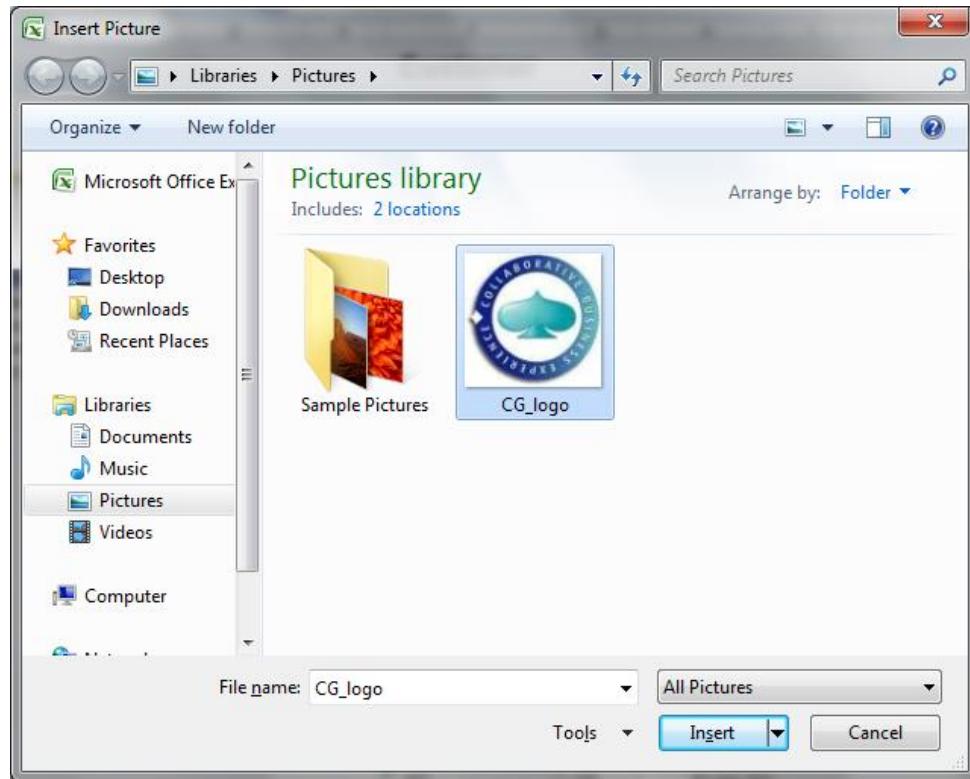
	Customer / Sold to P	Country	Sales Quantity
12	BE	70.000 KG	
	Result	70.000 KG	
48	MU	80.000 KG	
	Result	80.000 KG	
55	SK	90.000 KG	
	Result	90.000 KG	
89	CH	110.000 KG	
	Result	110.000 KG	
97	EG	120.000 KG	
	Result	120.000 KG	
106	TR	130.000 KG	
	Result	130.000 KG	
148	DE	10.000 KG	
	Result	10.000 KG	
149	AU	20.000 KG	
	Result	20.000 KG	
151	FR	30.000 KG	
	Result	30.000 KG	
152	NL	40.000 KG	
	Result	40.000 KG	
167	US	50.000 KG	
	Result	50.000 KG	
180	ES	60.000 KG	
	Result	60.000 KG	
340	UK	200.000 KG	
	Result	200.000 KG	
21234	CZ	170.000 KG	
	Result	170.000 KG	
21845	IT	100.000 KG	
	Result	100.000 KG	

73. To insert LOGO, go to Insert and click on Picture:

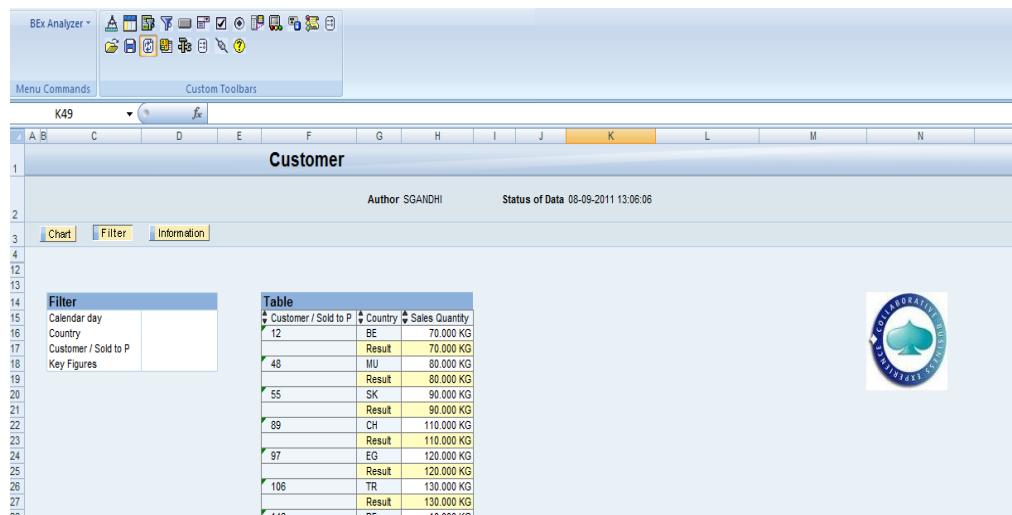


The screenshot shows the Microsoft Excel ribbon with the "Insert" tab selected. The "Illustrations" group is open, showing icons for Picture, Clip Art, Shapes, SmartArt, and Art. The "Picture" icon is highlighted with a yellow box. Below the ribbon is a spreadsheet with a cell labeled "N14". A tooltip window titled "Insert Picture from File" is displayed over the cell, containing the text "Insert a picture from a file." and "Press F1 for more help." The background shows other cells and a title "Customer".

74. Select the LOGO that you want to insert:



75. The LOGO is inserted in the query output.



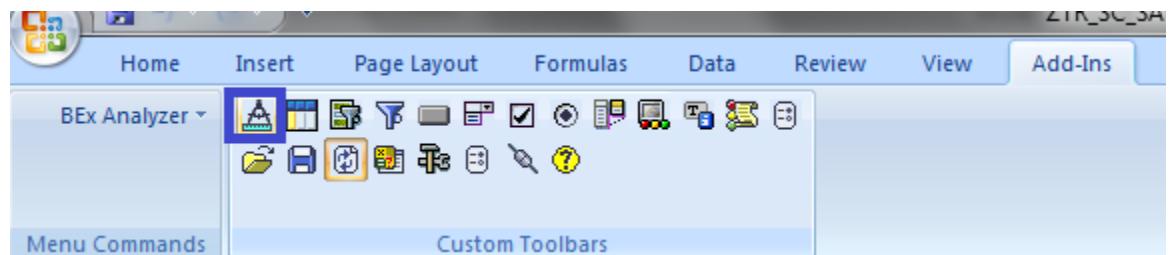
The screenshot shows the BEx Analyzer interface. At the top, there's a toolbar with various icons. Below it is a menu bar with 'BEx Analyzer' and 'Custom Toolbars'. The main area is titled 'Customer' and displays a table with the following data:

	Customer / Sold to P	Country	Sales Quantity
12	BE	70.000 KG	
	Result	70.000 KG	
48	MU	80.000 KG	
	Result	80.000 KG	
55	SK	90.000 KG	
	Result	90.000 KG	
89	CH	110.000 KG	
	Result	110.000 KG	
97	EG	120.000 KG	
	Result	120.000 KG	
106	TR	130.000 KG	
	Result	130.000 KG	
140	nc	10.000 KG	

On the left, there's a 'Filter' sidebar with options like 'Calendar day', 'Country', 'Customer / Sold to P', and 'Key Figures'. On the right, there's a watermark logo for 'COLLABORATING EXPERTISE'.

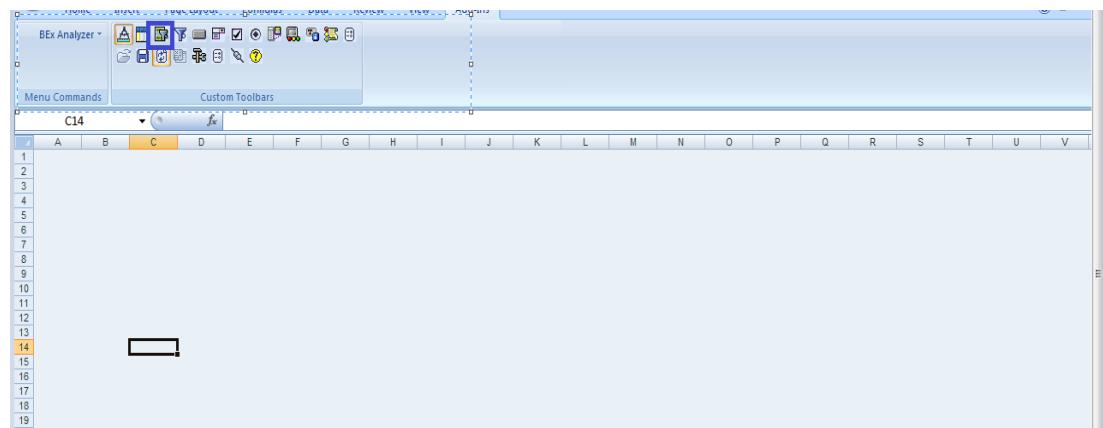
76. Let's create new similar workbook on different sheet. Go to new sheet.

77. Now, go to the design mode as shown below :

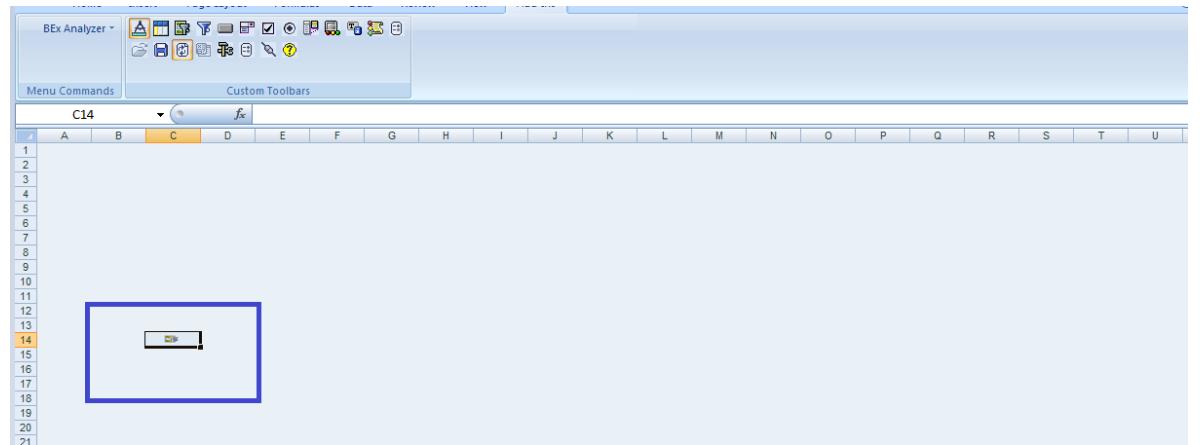


The screenshot shows the Microsoft Excel ribbon. The 'Design' tab is highlighted in blue. Below the ribbon, there's a toolbar with various icons, including one that is highlighted in blue.

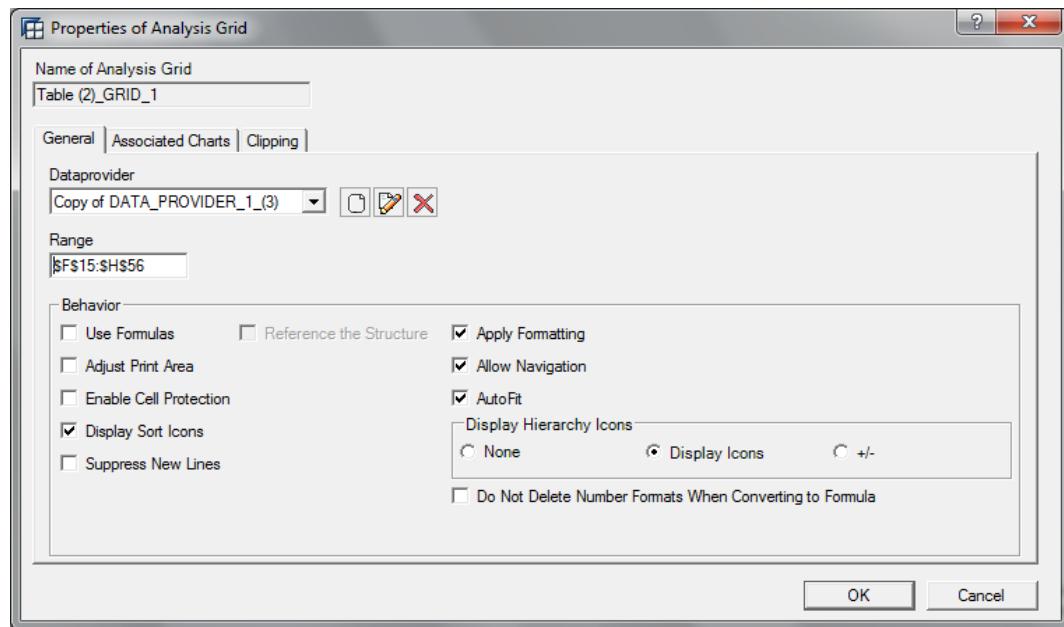
78. Click on the Filter icon as shown below:



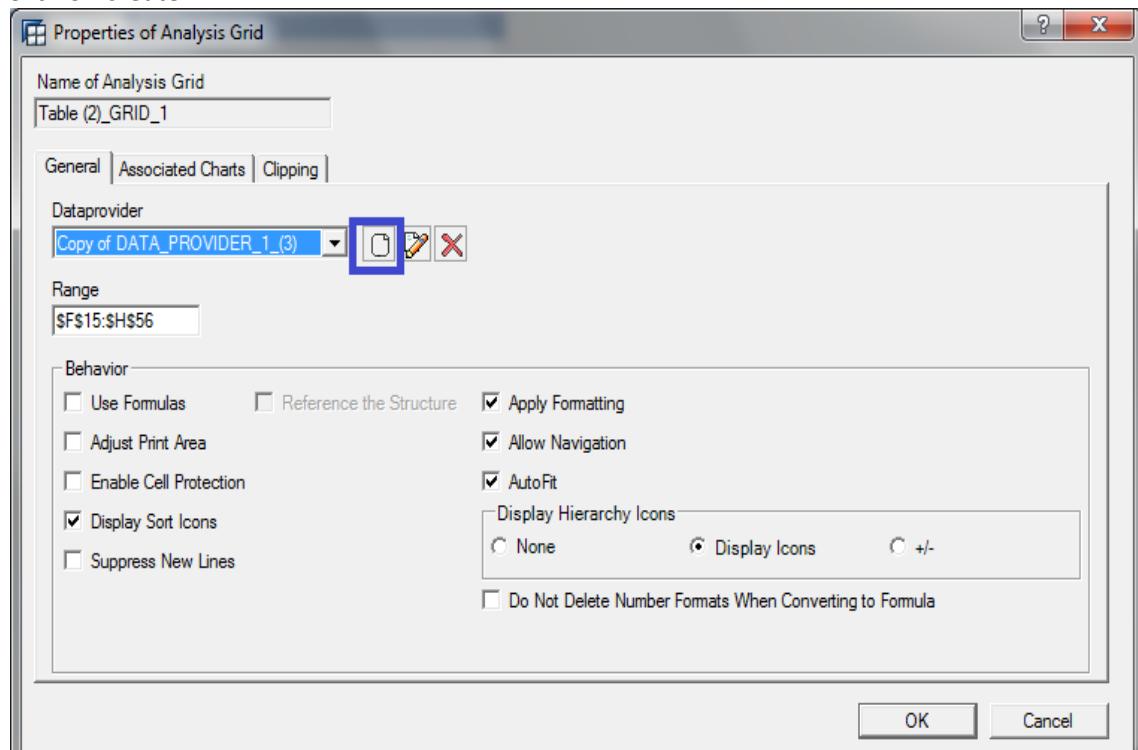
79. The screen will look like



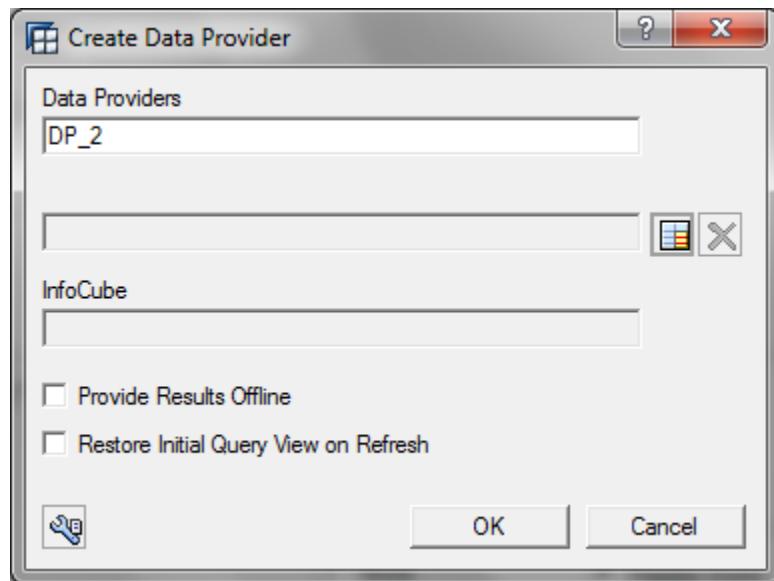
80. Click on it, you will get the following screen



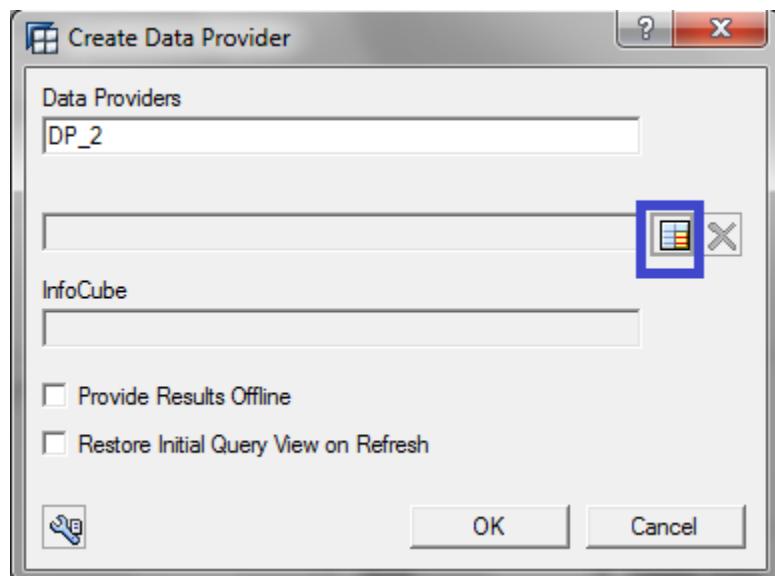
81. Click on create:



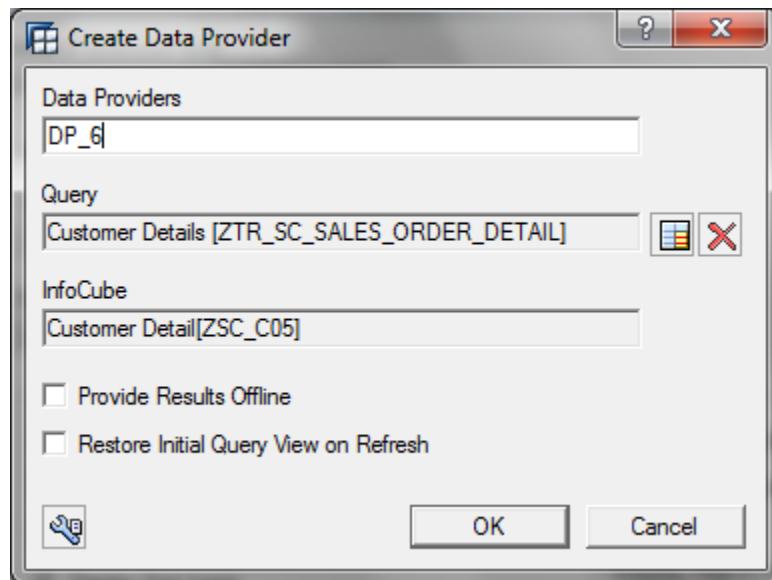
82. Enter the some text in Data Provider text box



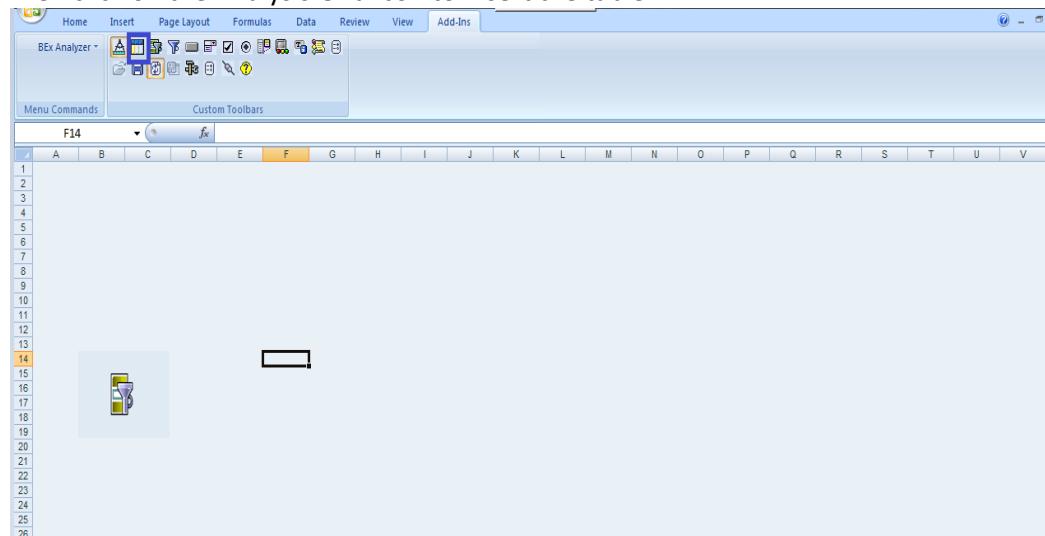
83. Click on the query button.



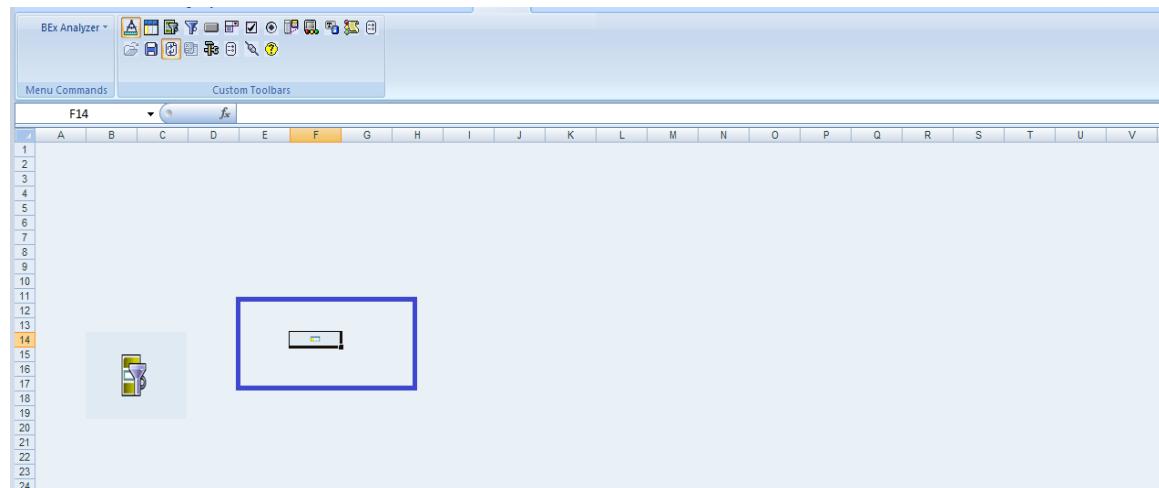
84. Enter the other query name i.e. Customer details ZTR_SC_SALES_ORDER_DETAIL and click on OK.



85. Then click on the Analysis Grid icon to insert the table:

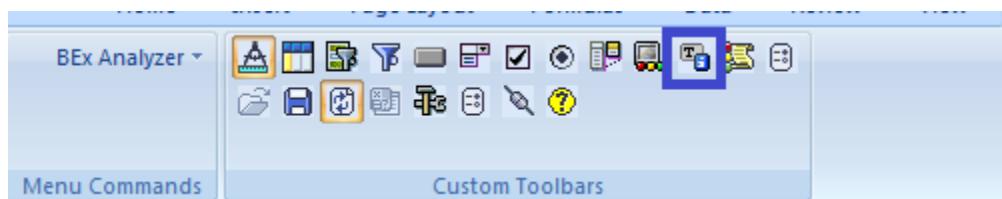


86. The screen will look like as:

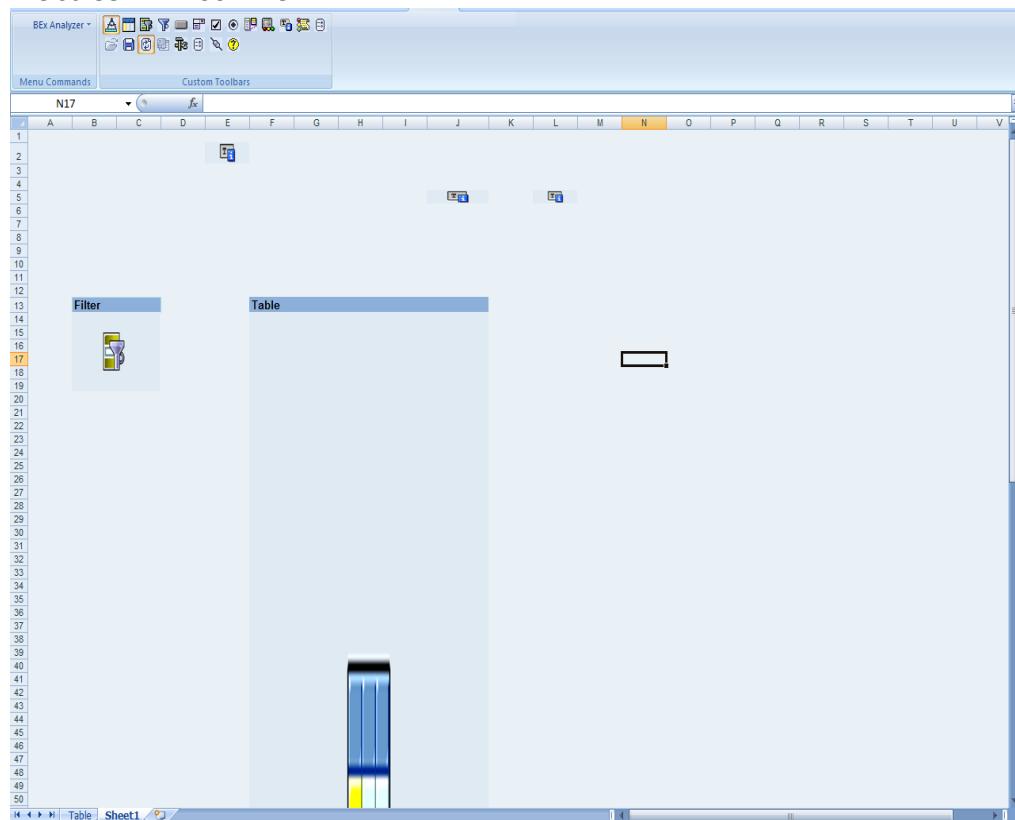


87. Again click on the on the grid and assign the data provider as you did in step 17.

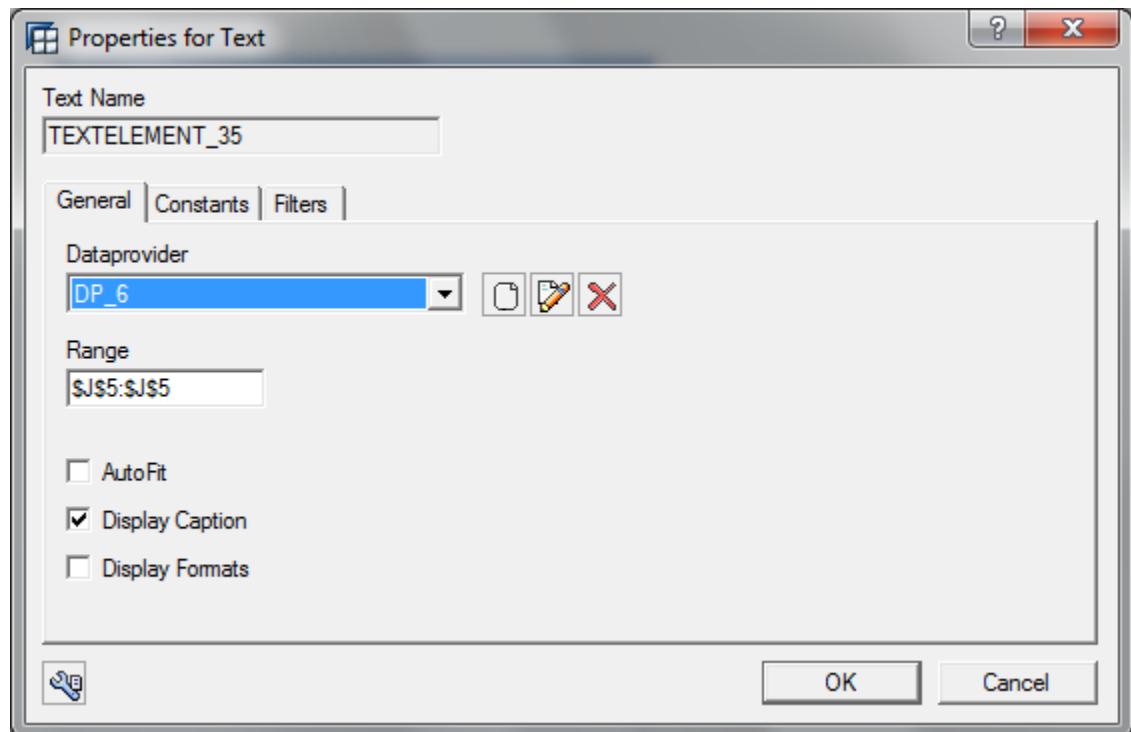
88. Click on the text box icon to insert text.



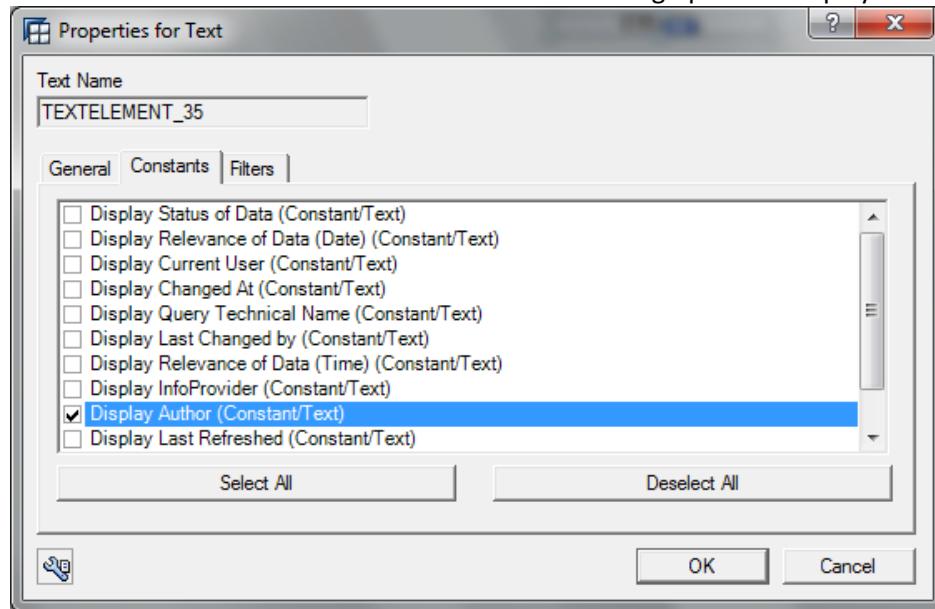
89. The screen will look like



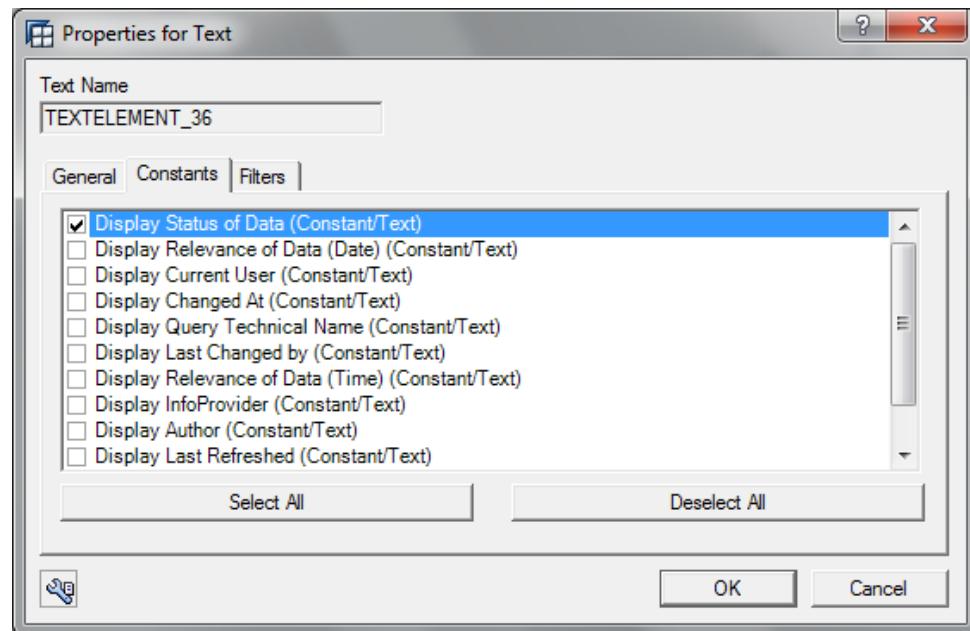
90. Click on the text box and enter the same Data Provider name that was given in step 17 and check the Display Caption option.



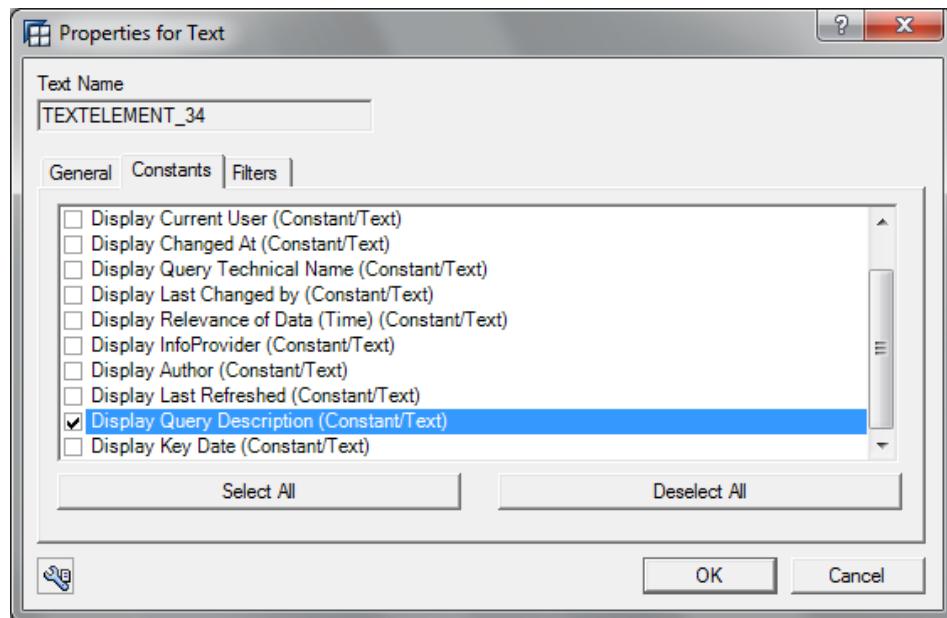
91. Go to the “Constants” tab and then check the following option to display Author name:



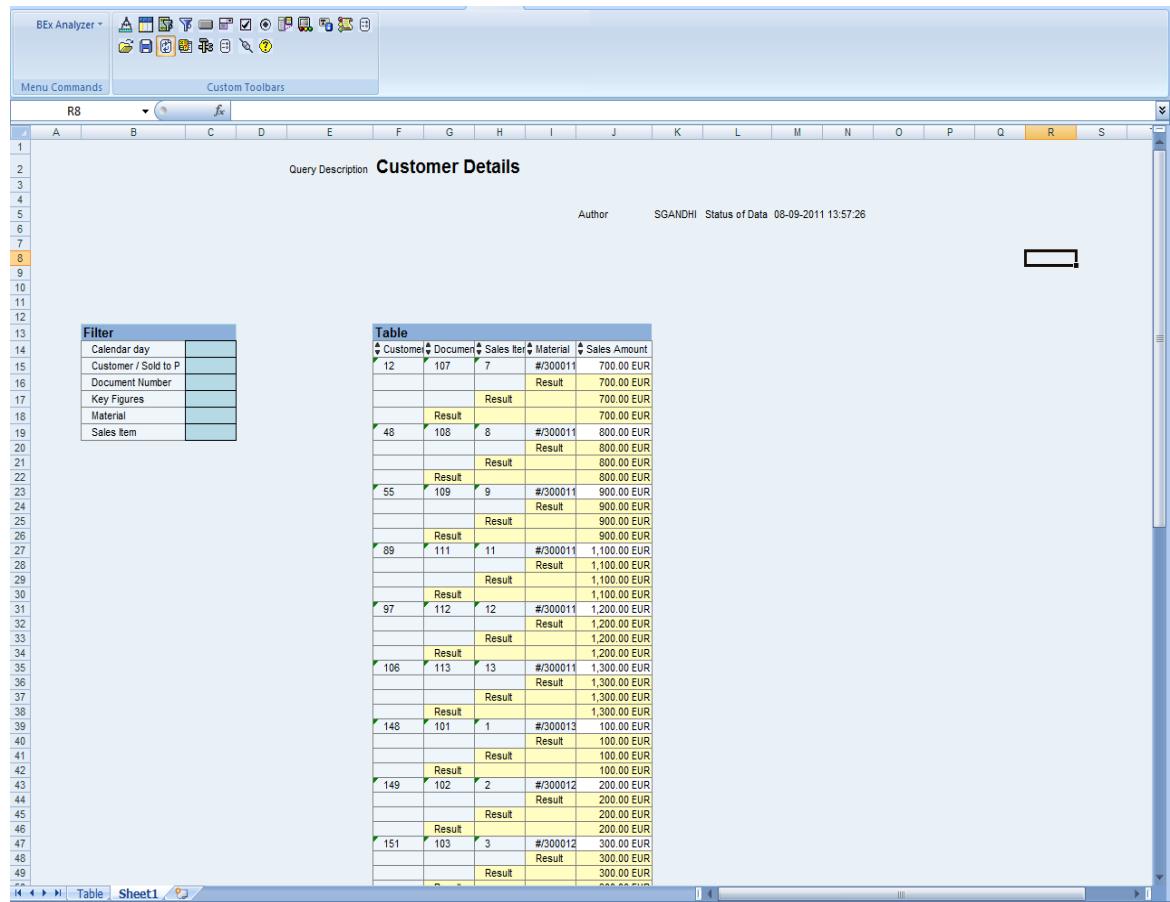
92. Click on other text box and check the status checkbox.



93. Click on other text box and select Query description:



94. Come out of the design mode by clicking on  button. You will see the following screen:



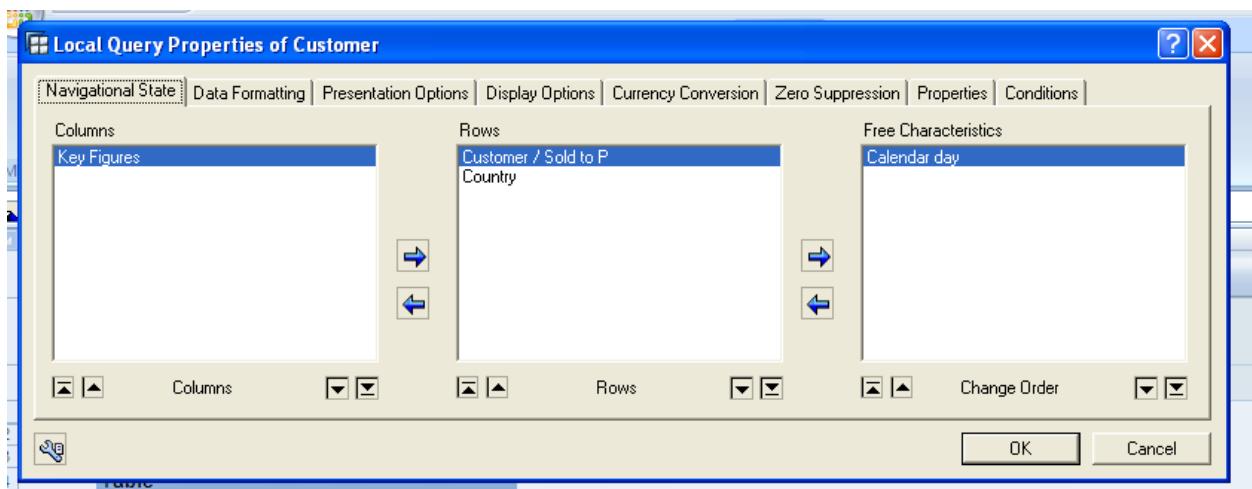
The screenshot shows the BEx Analyzer interface. At the top, there's a toolbar with various icons for file operations like Open, Save, Print, and Filter. Below the toolbar is a menu bar with 'BEx Analyzer' and 'File'. The main area has a grid layout. Row 1 contains column headers A through S. Row 2 is labeled 'Query Description Customer Details'. Row 3 is blank. Row 4 contains the text 'Author SGANDHI Status of Data 08-09-2011 13:57:26'. Row 5 is blank. Row 6 is highlighted in orange. Row 7 is blank. Row 8 is highlighted in orange. Row 9 is blank. Row 10 is blank. Row 11 is blank. Row 12 is blank. Row 13 is labeled 'Filter'. Row 14 contains a table with columns 'Calendar day', 'Customer / Sold to P', 'Document Number', 'Key Figures', 'Material', and 'Sales Item'. Row 15 is blank. Row 16 is blank. Row 17 is blank. Row 18 is blank. Row 19 is blank. Row 20 is blank. Row 21 is blank. Row 22 is blank. Row 23 is blank. Row 24 is blank. Row 25 is blank. Row 26 is blank. Row 27 is blank. Row 28 is blank. Row 29 is blank. Row 30 is blank. Row 31 is blank. Row 32 is blank. Row 33 is blank. Row 34 is blank. Row 35 is blank. Row 36 is blank. Row 37 is blank. Row 38 is blank. Row 39 is blank. Row 40 is blank. Row 41 is blank. Row 42 is blank. Row 43 is blank. Row 44 is blank. Row 45 is blank. Row 46 is blank. Row 47 is blank. Row 48 is blank. Row 49 is blank. Row 50 is blank. Row 51 is blank. Row 52 is blank. Row 53 is blank. Row 54 is blank. Row 55 is blank. Row 56 is blank. Row 57 is blank. Row 58 is blank. Row 59 is blank. Row 60 is blank. Row 61 is blank. Row 62 is blank. Row 63 is blank. Row 64 is blank. Row 65 is blank. Row 66 is blank. Row 67 is blank. Row 68 is blank. Row 69 is blank. Row 70 is blank. Row 71 is blank. Row 72 is blank. Row 73 is blank. Row 74 is blank. Row 75 is blank. Row 76 is blank. Row 77 is blank. Row 78 is blank. Row 79 is blank. Row 80 is blank. Row 81 is blank. Row 82 is blank. Row 83 is blank. Row 84 is blank. Row 85 is blank. Row 86 is blank. Row 87 is blank. Row 88 is blank. Row 89 is blank. Row 90 is blank. Row 91 is blank. Row 92 is blank. Row 93 is blank. Row 94 is blank. Row 95 is blank. Row 96 is blank. Row 97 is blank. Row 98 is blank. Row 99 is blank. Row 100 is blank. Row 101 is blank. Row 102 is blank. Row 103 is blank. Row 104 is blank. Row 105 is blank. Row 106 is blank. Row 107 is blank. Row 108 is blank. Row 109 is blank. Row 110 is blank. Row 111 is blank. Row 112 is blank. Row 113 is blank. Row 114 is blank. Row 115 is blank. Row 116 is blank. Row 117 is blank. Row 118 is blank. Row 119 is blank. Row 120 is blank. Row 121 is blank. Row 122 is blank. Row 123 is blank. Row 124 is blank. Row 125 is blank. Row 126 is blank. Row 127 is blank. Row 128 is blank. Row 129 is blank. Row 130 is blank. Row 131 is blank. Row 132 is blank. Row 133 is blank. Row 134 is blank. Row 135 is blank. Row 136 is blank. Row 137 is blank. Row 138 is blank. Row 139 is blank. Row 140 is blank. Row 141 is blank. Row 142 is blank. Row 143 is blank. Row 144 is blank. Row 145 is blank. Row 146 is blank. Row 147 is blank. Row 148 is blank. Row 149 is blank. Row 150 is blank. Row 151 is blank.

	Customer	Document	Sales Item	Material	Sales Amount
12	107	7	#300011	700.00 EUR	
			Result	700.00 EUR	
			Result	700.00 EUR	
48	108	8	#300011	800.00 EUR	
			Result	800.00 EUR	
			Result	800.00 EUR	
55	109	9	#300011	900.00 EUR	
			Result	900.00 EUR	
			Result	900.00 EUR	
89	111	11	#300011	1,100.00 EUR	
			Result	1,100.00 EUR	
			Result	1,100.00 EUR	
			Result	1,100.00 EUR	
97	112	12	#300011	1,200.00 EUR	
			Result	1,200.00 EUR	
			Result	1,200.00 EUR	
106	113	13	#300011	1,300.00 EUR	
			Result	1,300.00 EUR	
			Result	1,300.00 EUR	
148	101	1	#300013	100.00 EUR	
			Result	100.00 EUR	
			Result	100.00 EUR	
149	102	2	#300012	200.00 EUR	
			Result	200.00 EUR	
			Result	200.00 EUR	
151	103	3	#300012	300.00 EUR	
			Result	300.00 EUR	
			Result	300.00 EUR	

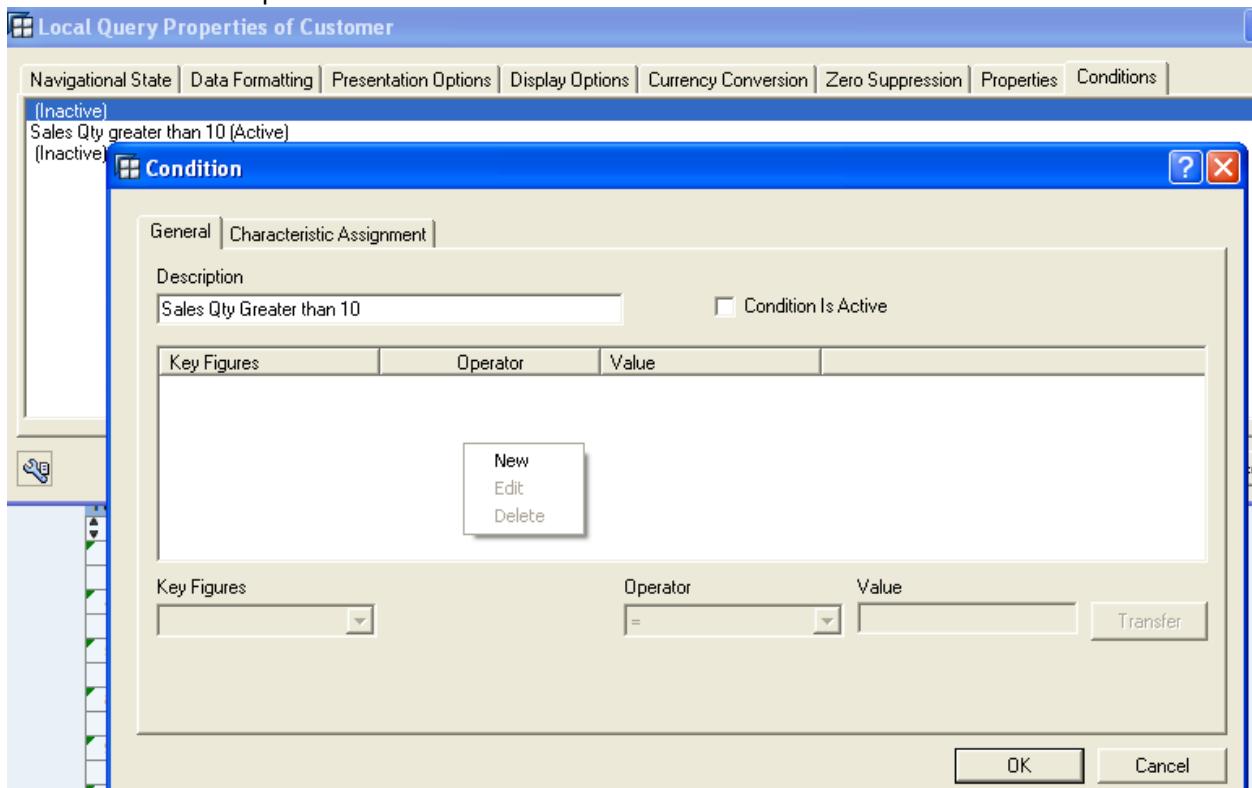
This way we have created example workbook using basic items.

Conditions and Exceptions

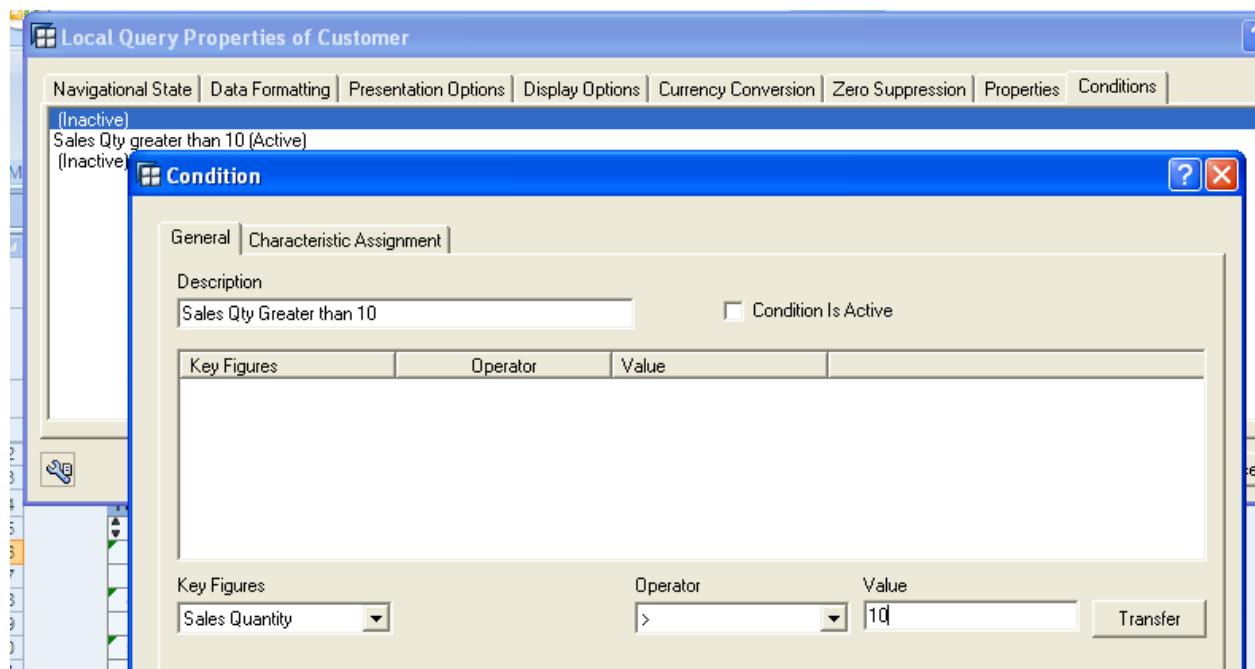
95. To Create a Condition in the BEx Analyzer, choose 'Query Properties' by right-clicking on a particular excel cell and select 'Condition' tab:



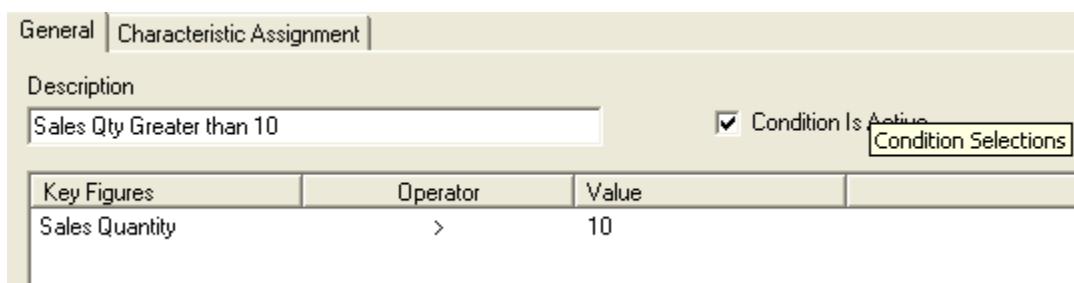
96. Enter a description of the condition and select 'New' from the Context menu



97. Define the condition and click on 'Transfer'.



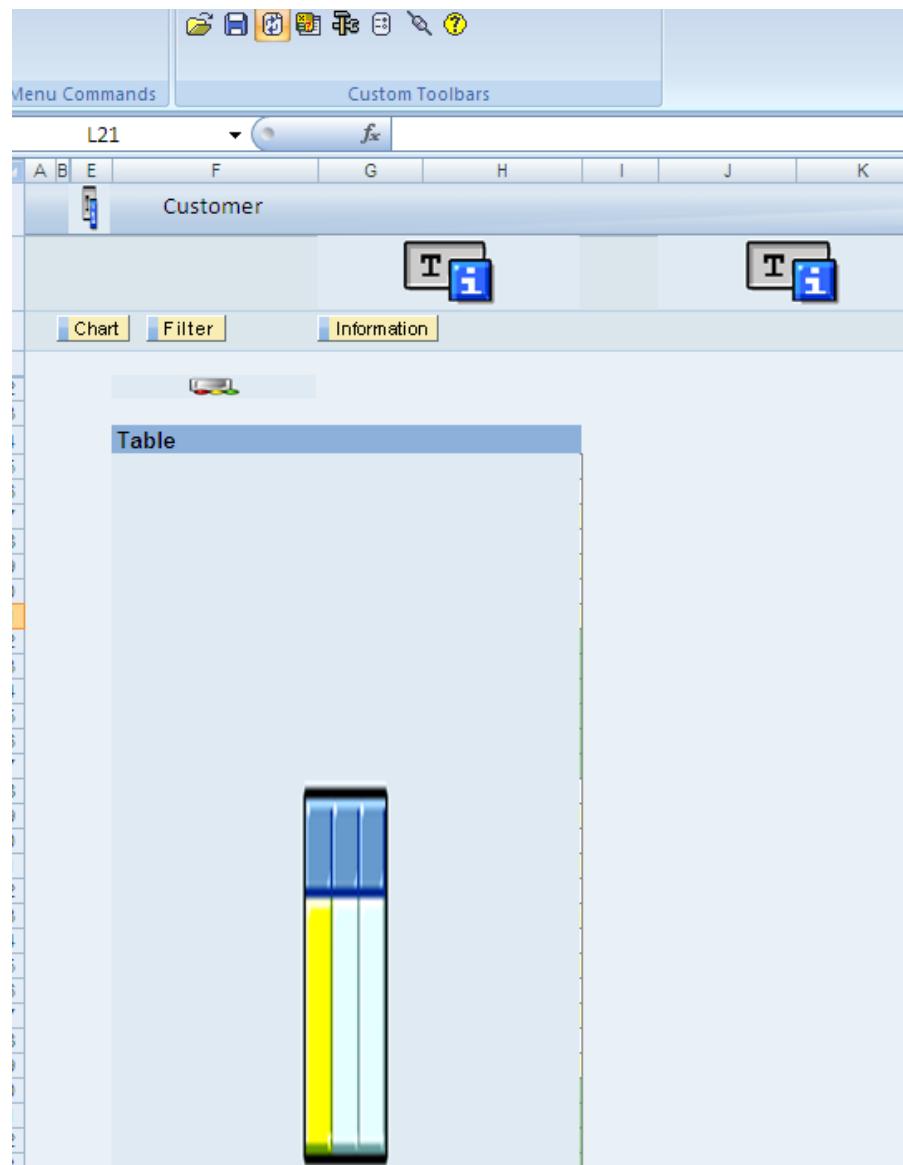
98. Click on checkbox 'Condition is active' to activate the condition.

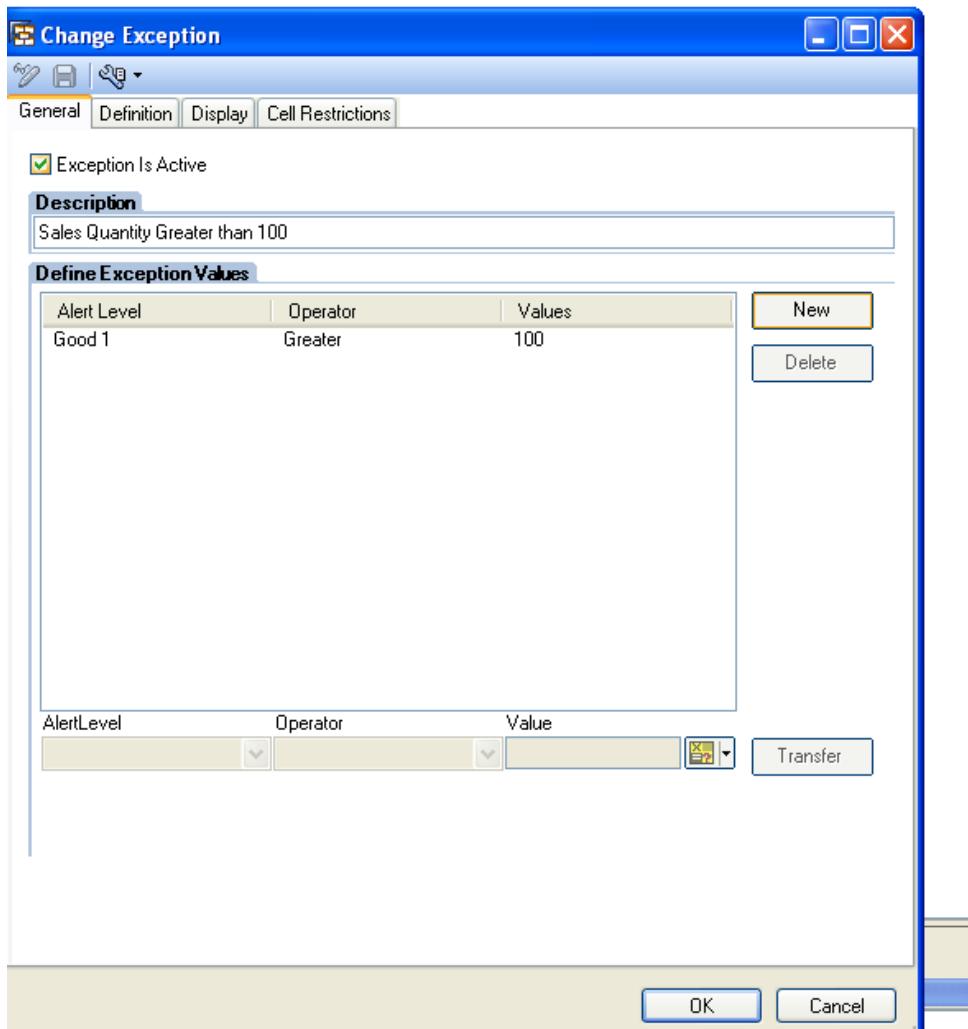


99. Click Ok to see that the Query result now displays Sales Quantity greater than 10 only.

100. **Exceptions-** Exceptions created in a BEx query designer can be activated or deactivated in analyzer. For instance, an exception to highlight the Sales Quantity greater

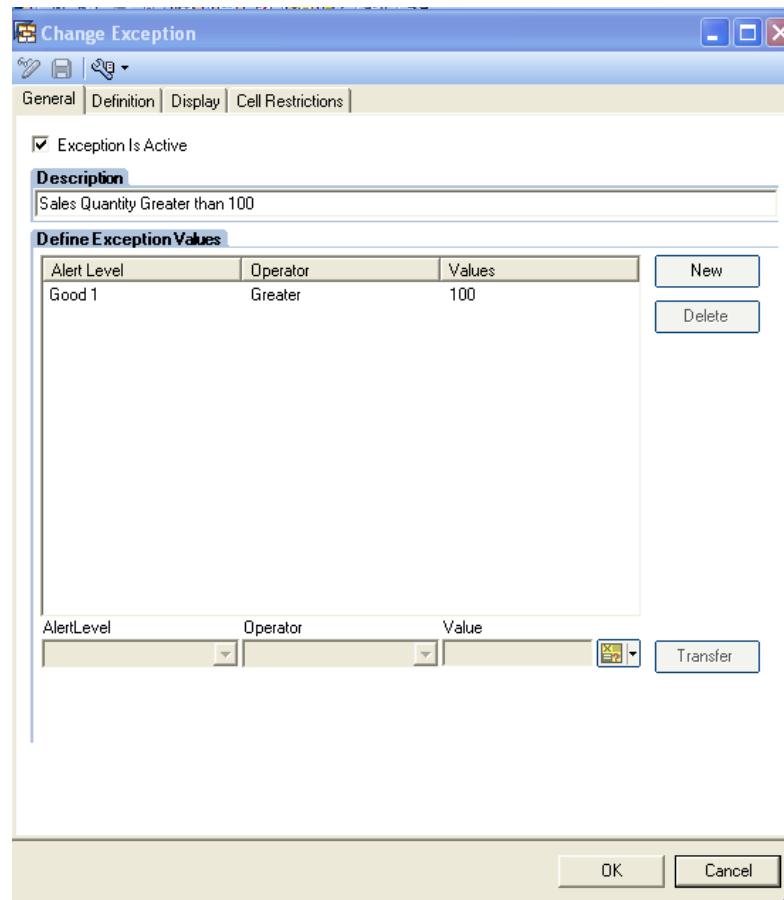
than 100 is created in query designer. Put mouse pointer on excel cell and from the Design toolbox select 'list of exceptions' i.e.  button.





101. On exiting the design mode, there appears an option for ONLY activating/deactivating the exception.

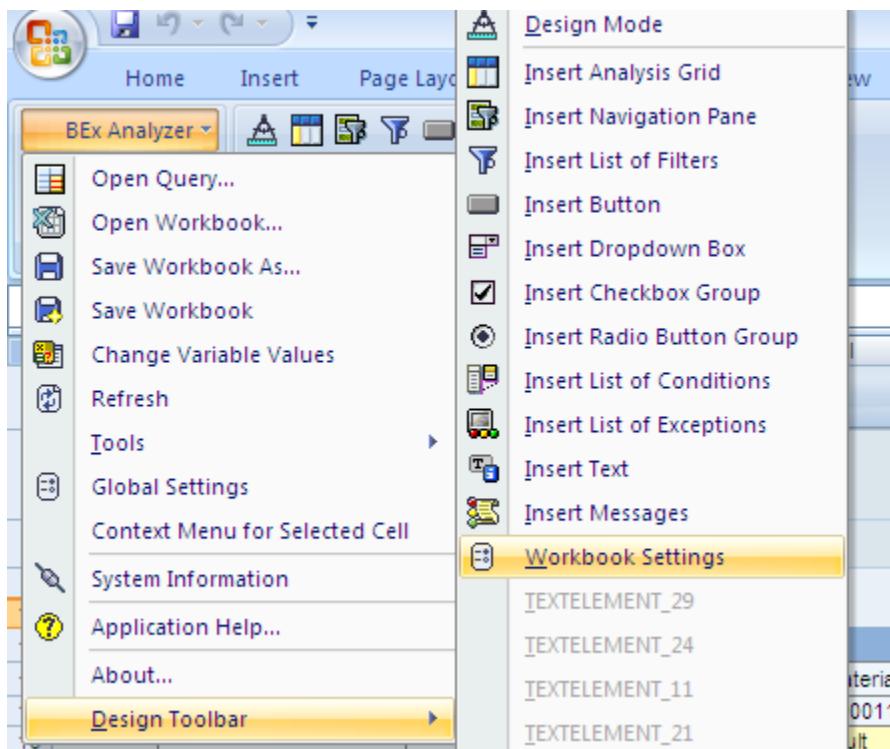
Exception in query designer



Customer			
	Author SGANDHI	Status	
	Chart	Filter	
	Information		
Sales Quantity Greater than Active			
	Customer / Sold to P	Country	Sales Quantity
12	BE	70.000 KG	
	Result	70.000 KG	
48	MU	80.000 KG	
	Result	80.000 KG	
55	SK	90.000 KG	
	Result	90.000 KG	
89	CH	110.000 KG	
	Result	110.000 KG	
97	EG	120.000 KG	

Workbook Settings

102. There are some important workbook settings which can be applied. They can be accessed from design toolbar and are used to refresh data, variables, applying themes by clicking on check-boxes.



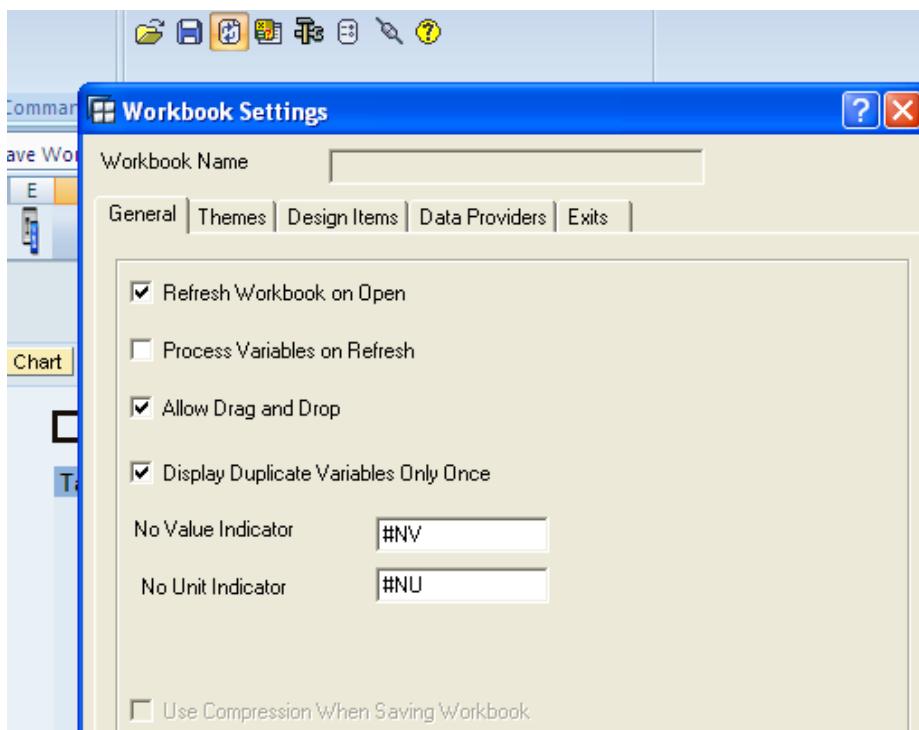
38. On the General tab,

Refresh Workbook on Open - If this indicator is selected, when you open a workbook from the server, the workbook is automatically refreshed with values from the server. If this indicator is not selected, you have to manually update the workbook after you open it to retrieve the most current results.

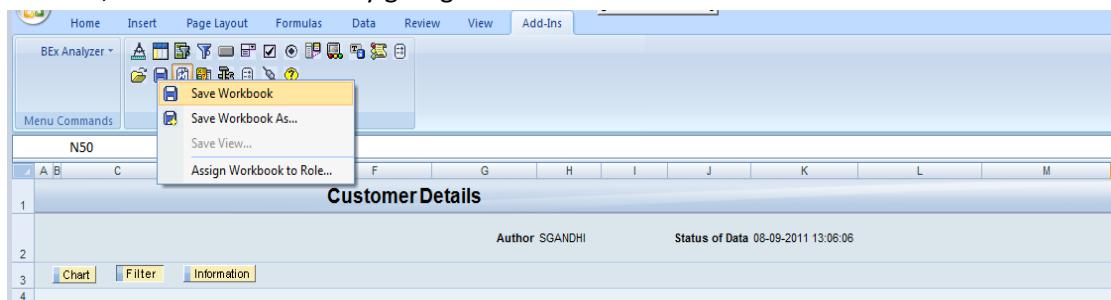
Process Variables on Refresh - If any query in your workbook contains variables, any current values set for the variables are part of the query view definition and are therefore stored in the workbook.

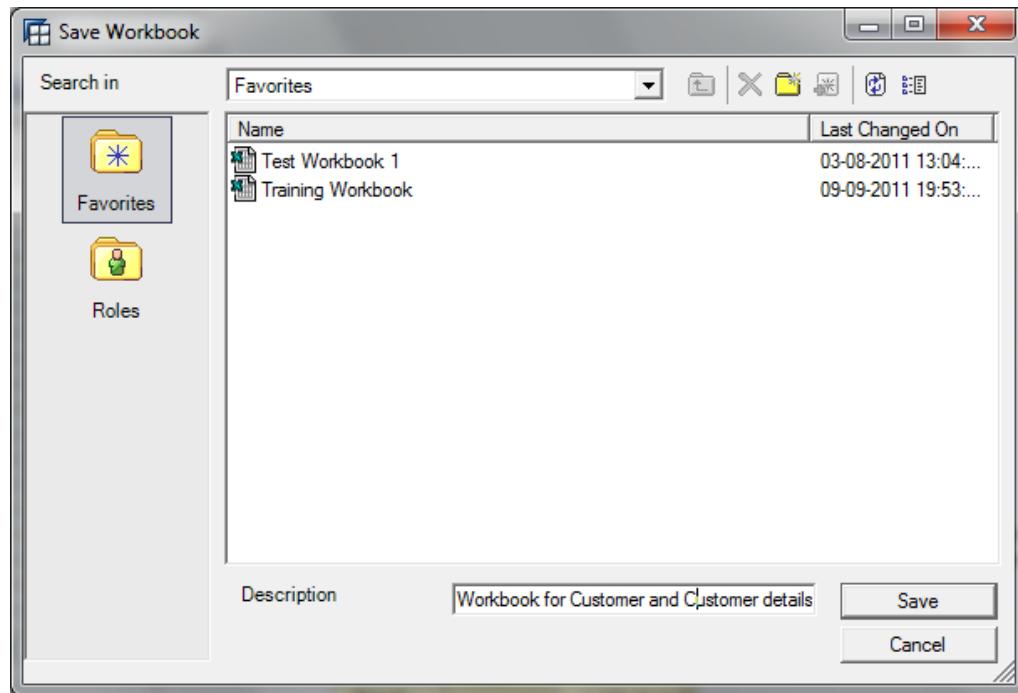
Allow Drag and Drop - This indicator is set by default. If you do not select this indicator, you cannot use drag and drop functions to navigate in the analysis grid and navigation pane of your query.

Display Duplicate Variables Only Once - If a workbook contains multiple queries that use the same variable, you are prompted to enter the variable values again for each query. To avoid this, select the *Display Duplicate Variables Only Once* indicator.

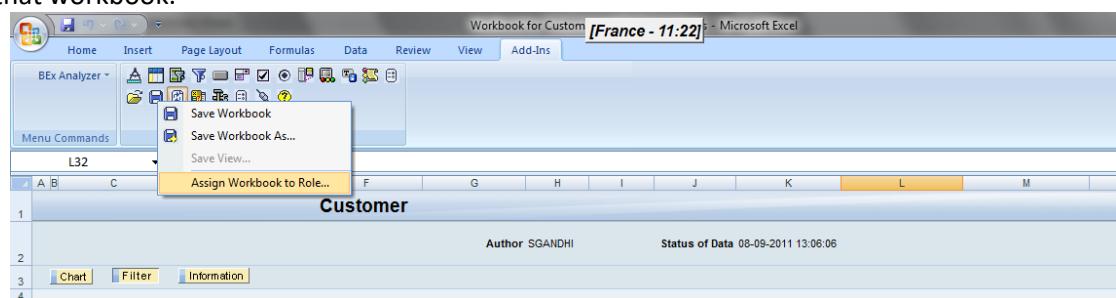


39. Now, save the workbook by giving some name:



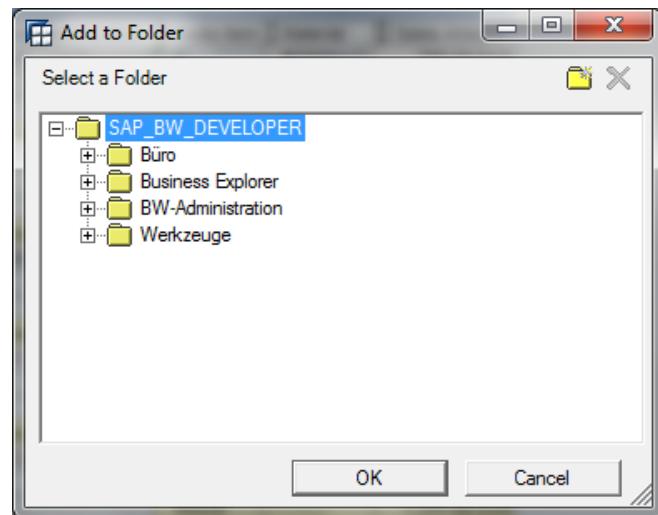


40. Assign the workbook to the Roles so that any other user who has that role will be able to access that workbook.

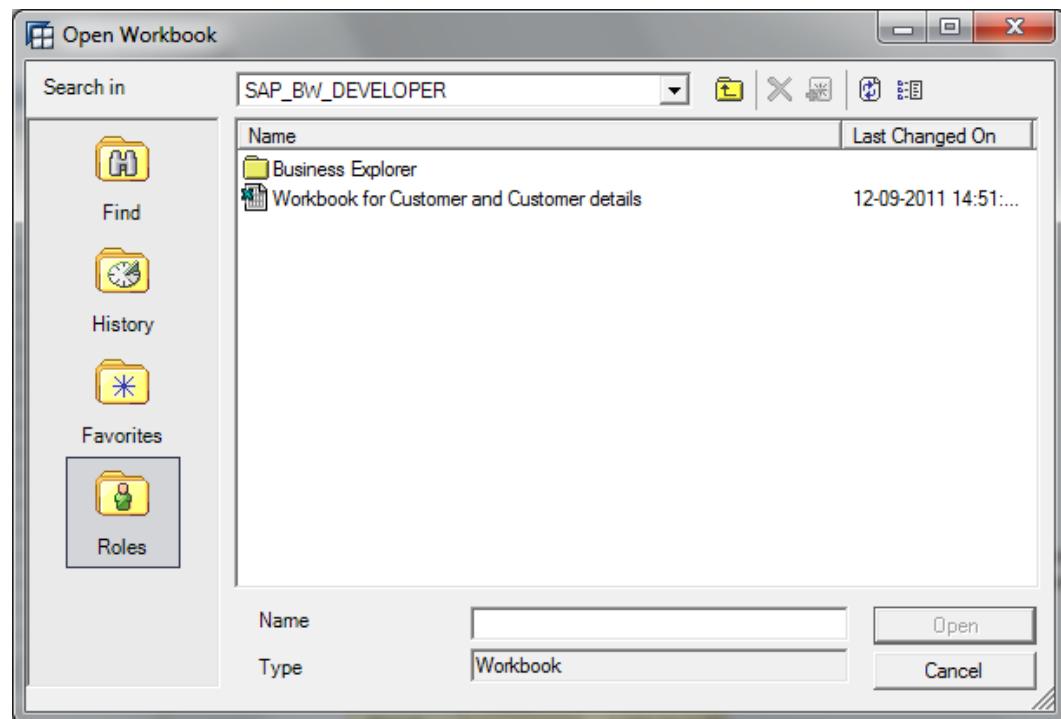


The screenshot shows the Microsoft Excel ribbon with the 'File' tab selected. In the 'Save' dropdown menu, the 'Assign Workbook to Role...' option is highlighted. The main workspace shows a table titled 'Customer' with columns A through L. The status bar at the bottom indicates 'Author SGANDHI' and 'Status of Data 08-09-2011 13:06:06'.

41. We have assigned the workbook to the role SAP_BW_DEVELOPER.



42. Open the workbook again, you will see that it is assigned to the above mentioned role.



Conclusion:

We have inserted the queries in the workbook. Similarly we can insert other queries in the same workbook. In case you want to share workbook with other user id's it need to be assigned to role. To get access of the workbook you would need to get access to particular role first.

Bex WAD, WEB Items and Templates.

Use:

BEx Web Application Designer, is used to create Web applications, to generate HTML pages that contain BW-specific content such as tables, charts or maps. You can save the Web applications as a URL and access them from an intranet or on mobile devices. In addition, you can save Web applications as iViews and integrate them into an Enterprise Portal.

Pre-requisites:

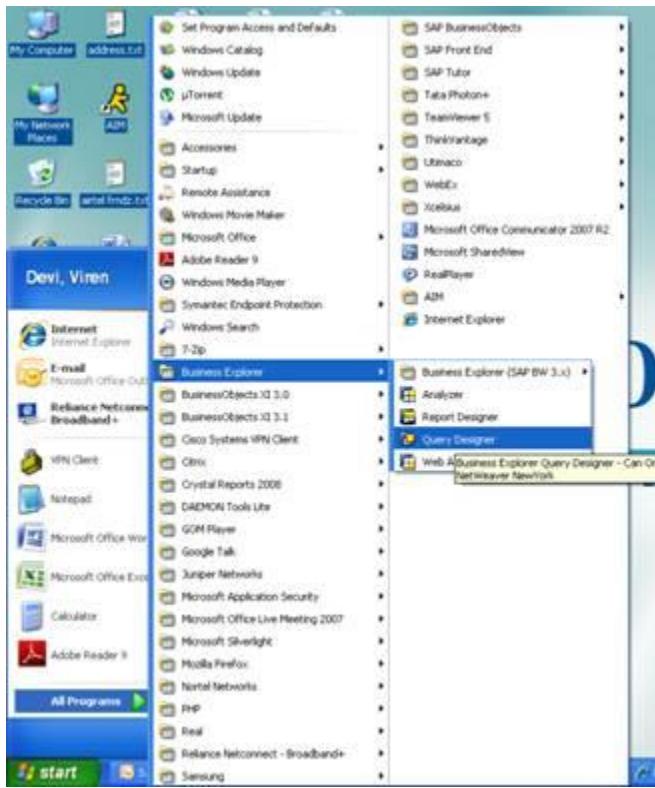
DSO ZSD_O01 should be available and loaded.

Procedure :

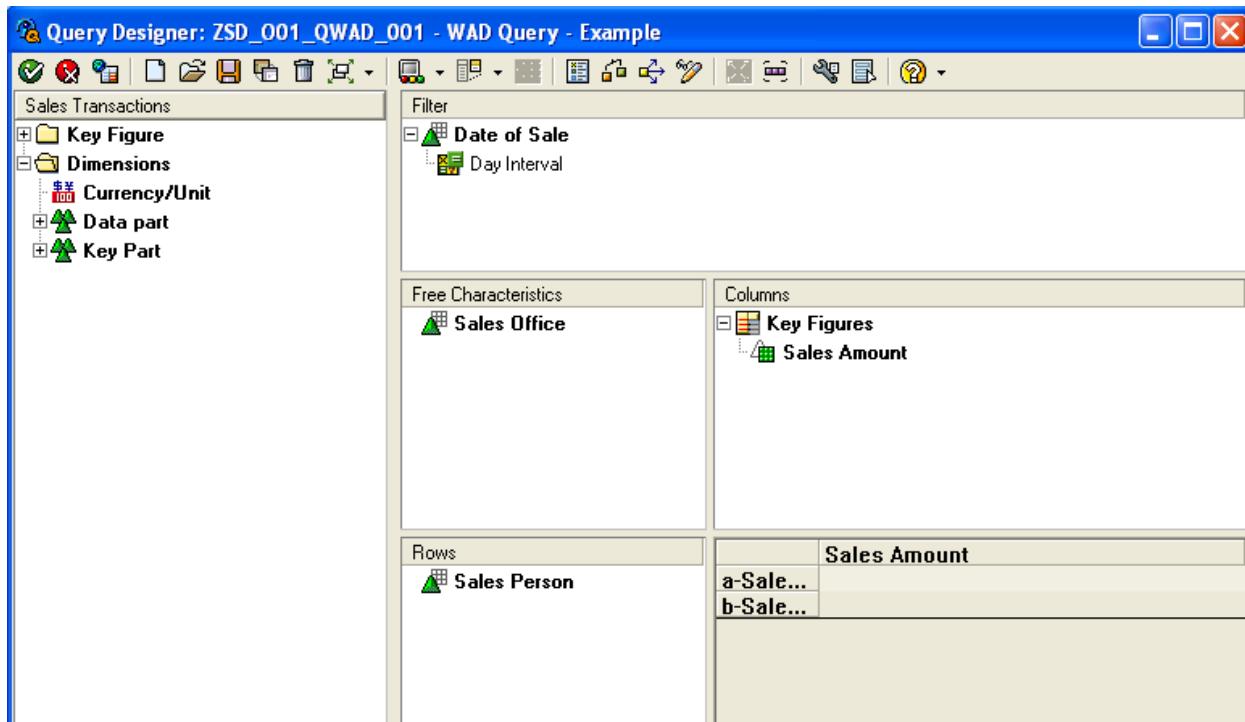
In this case we will create a new query but you can use existing any 7.0 query that you had created in earlier exercises.

Create a 3.X query. : We will create 3.X query first on which BEx WAD will be based.

- 1) Go to 3.x Bex designer. (In our server portal is not working with 7.0 BEx tools so use 3.x for learning purpose).



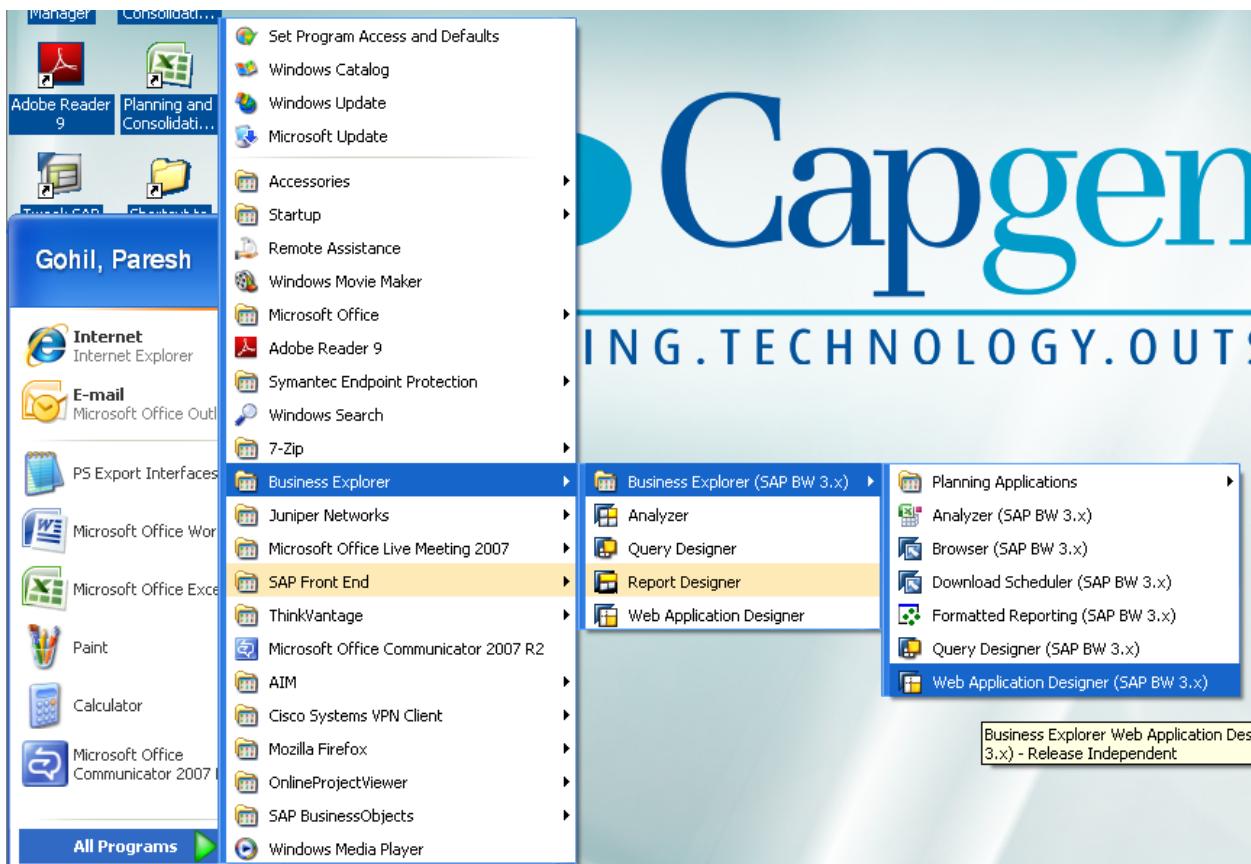
- 2) Provide your login credentials.
- 3) Click on create  button on top left.
- 4) Go to Find  and enter ZSD_O01 (in your case dso you have already created).
- 5) Click find and ok.
- 6) Pull Sales Person to Rows and Sales Amount to columns. Pull Sales Document Date on the Filter and rename it to date of Sale and restrict with the variable 0IDAYIN. Pull Sales Office to free Characteristics
Save  the query and name it as **DSONAME_QWAD_XXX**.



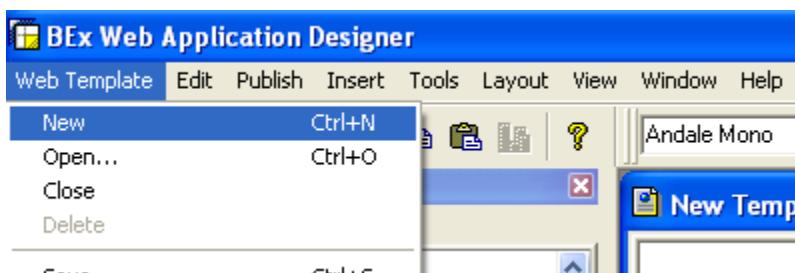
Result : You have a query created with filters and free characteristics.

Create Bex WAD.

Log onto the BI system through WAD 3.X.



1. Go to Web Template → New → Blank Web template.

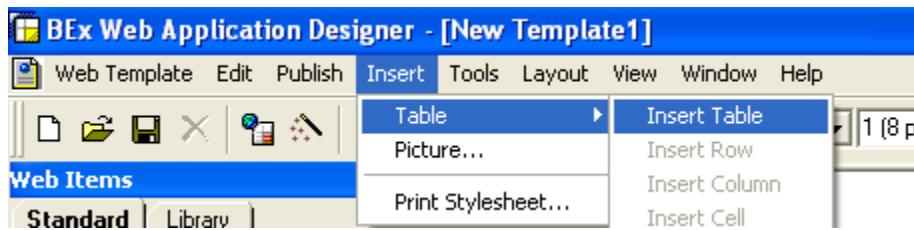


2. Web Items Analysis , Chart, Filter Pane and Drop Down Box will be used inside a table to have the desired alignment.

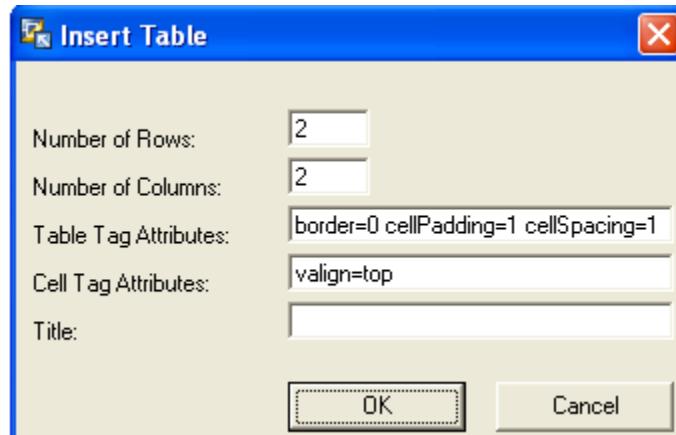
3. Click on Insert button in the tool bar and choose Table→Insert Table.

We will need a table with 2 rows and 2 Columns column to accommodate the 4 web items .

The table is needed for proper alignment of web items in the template.



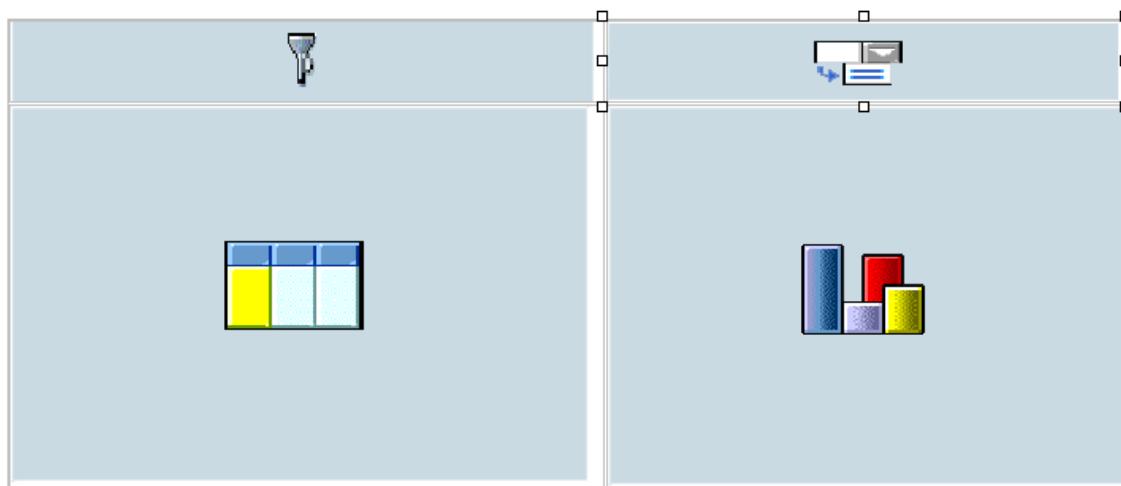
4. A Pop up for defining table properties will open up. Default values of 2 rows and 2 columns will open up. Click ok.



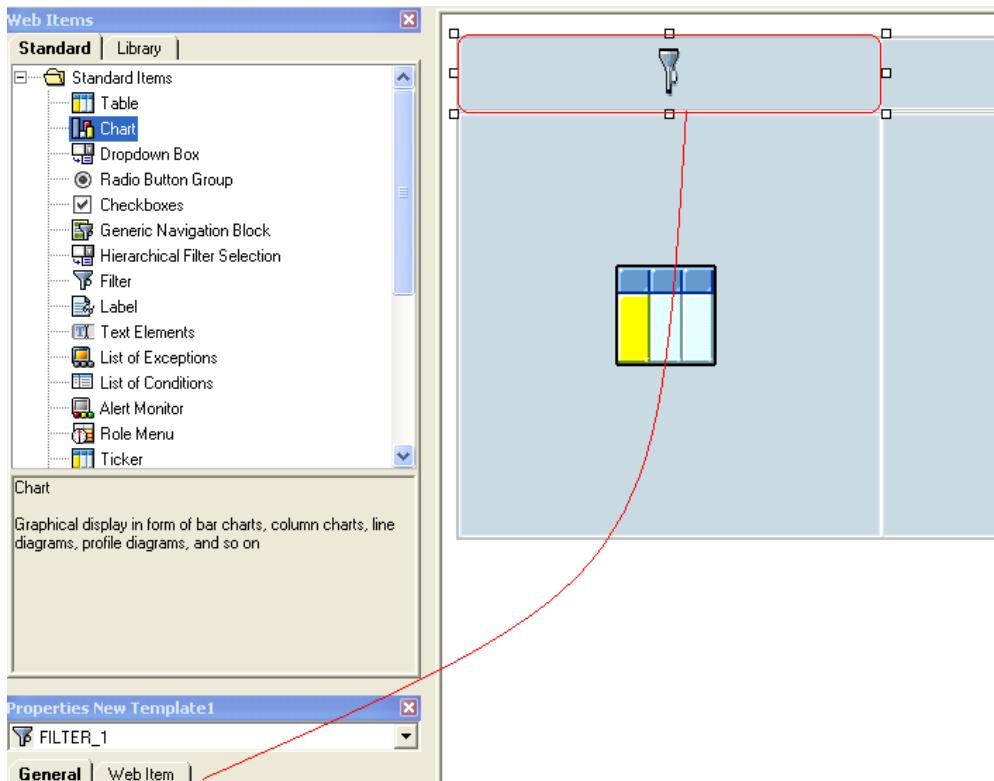
Result → 2*2 cells



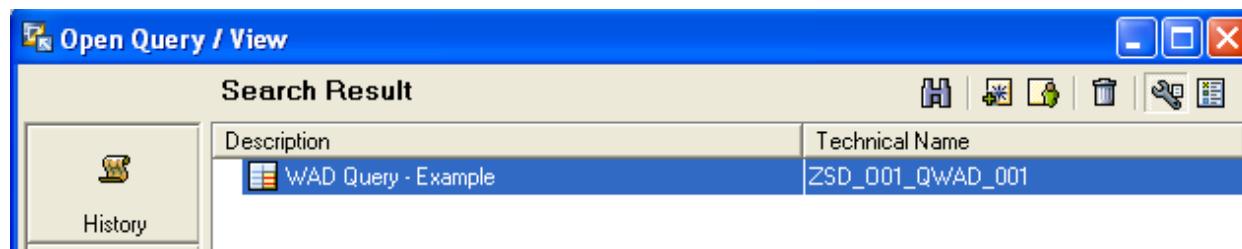
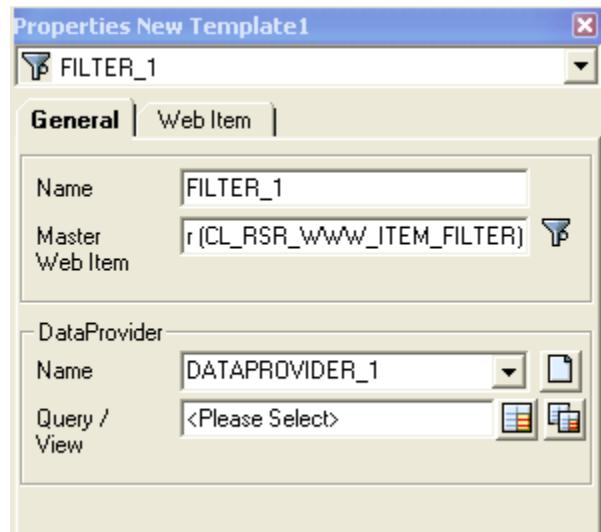
5. Drag drop Web items  ,   and  to the 4 boxes created from tables on the right hand side as shown below.



6. Select the web item 'Filter', the properties of the Filter will be displayed in the bottom left as shown below. Web item 'Filter' shows the dynamic filters defined in current view of the query.

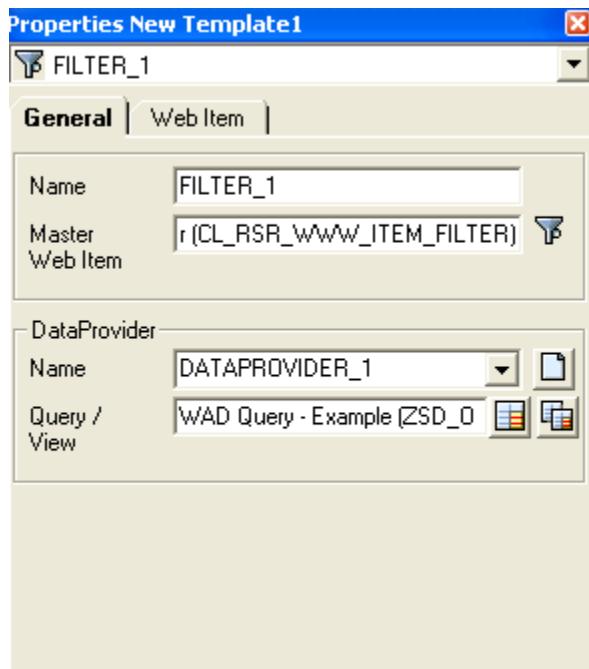


7. In the General Tab, we need to specify the Query/View name that will be a Data provider for this web item. In this case the query is the Bex 3.X that we created i,e ZSD_O01_QWAD_001. Select the  button to choose the query. Search the query using  and select click ok. (You can select 7.0 query that you had created earlier).

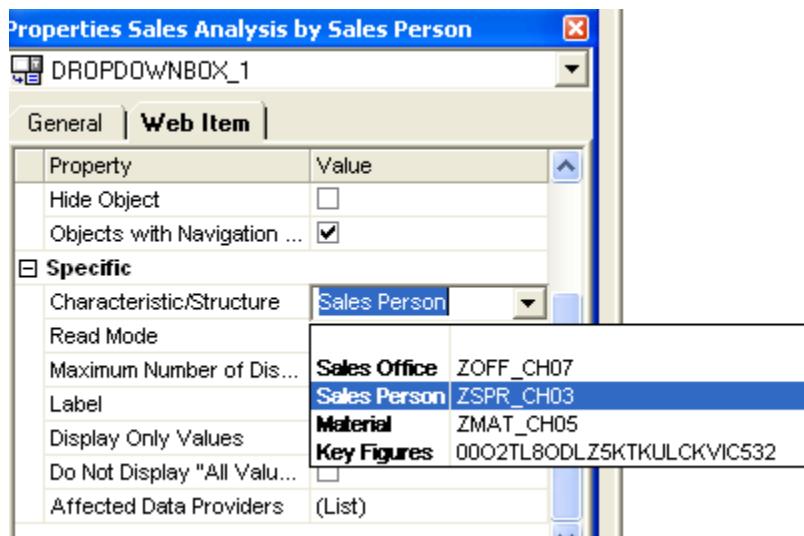


The system chooses the data provider name; in this case the DATAPROVIDER_1 is already displayed and is linked to the query ZSD_001_QWAD_001. So same data provider is used for all the other web items by default. You can create a dataplayer by clicking on and give a new query/view name to it.

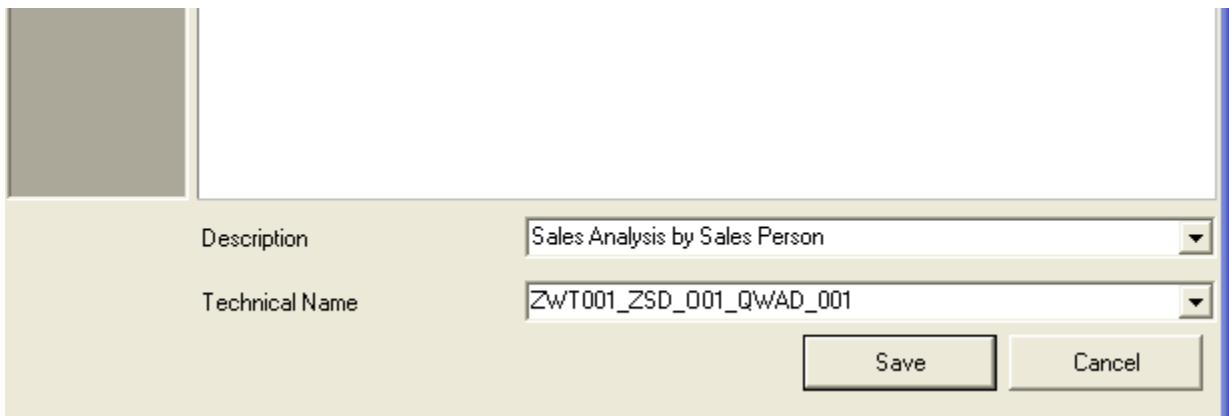
Make sure same data provider is assigned to all the elements by clicking on them and checking properties on left side.



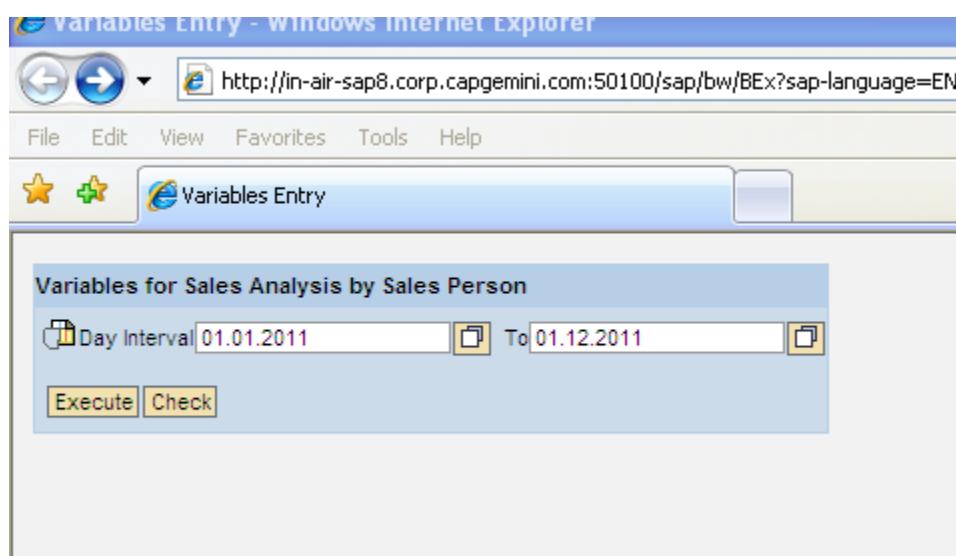
8. Select the Drop Down Web item, go to the tab web item and specify the characteristic that you want to have. We will select Sales Person.



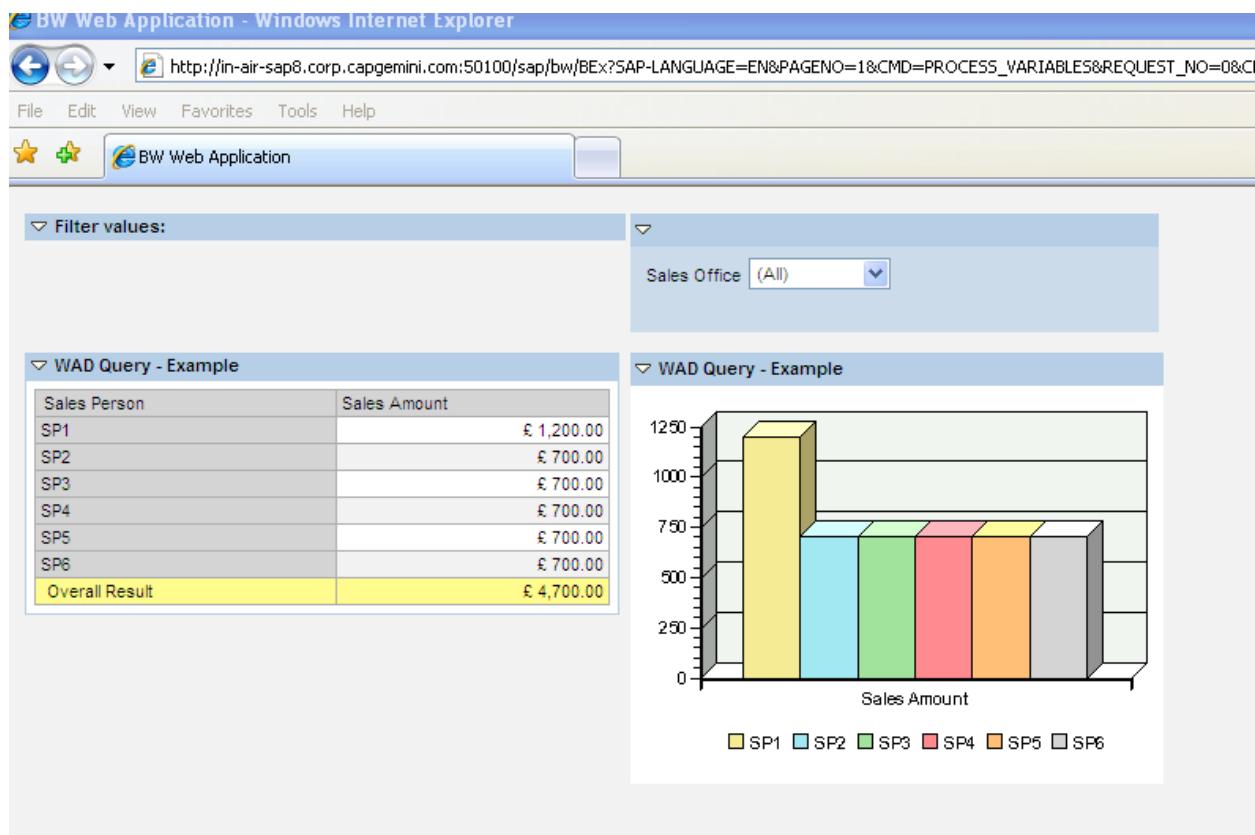
9. Now Save the Web template and execute it using  in the toolbar.



10. Following input screen will be displayed in the Internet Explorer. Enter values as shown below and press Execute. (In your case it might show you direct output based on if you have variable in filter in query)



11. Filter area is blank as there are no dynamic filters (we only have static filter as 'Day Interval') in the current view of the query.



The screenshot shows the SAP BW Web Application interface. At the top, there's a browser header with the URL http://in-air-sap8.corp.capgemini.com:50100/sap/bw/BEx?SAP-LANGUAGE=EN&PAGENO=1&CMD=PROCESS_VARIABLES&REQUEST_NO=0&CI. Below it is a menu bar with File, Edit, View, Favorites, Tools, Help. A toolbar below the menu has icons for star, plus, and a refresh button, followed by 'BW Web Application'. The main area has two sections: 'Filter values:' (dropdown set to Sales Office (All)) and 'WAD Query - Example'. The 'WAD Query - Example' section contains a table and a bar chart.

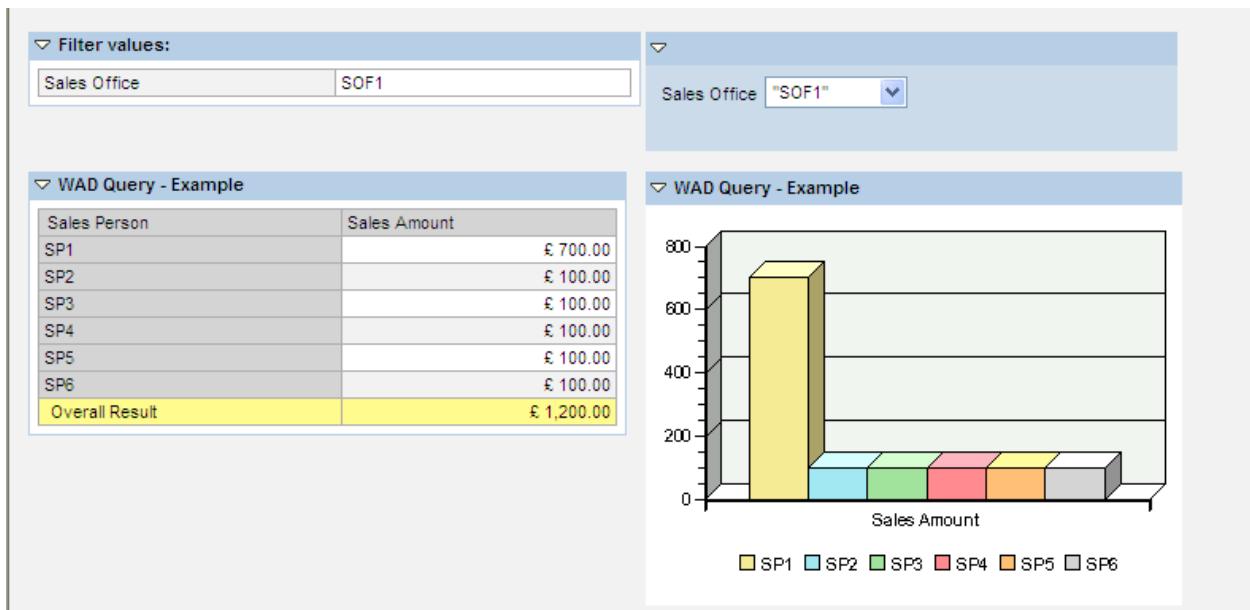
WAD Query - Example (Table):

Sales Person	Sales Amount
SP1	€ 1,200.00
SP2	€ 700.00
SP3	€ 700.00
SP4	€ 700.00
SP5	€ 700.00
SP6	€ 700.00
Overall Result	€ 4,700.00

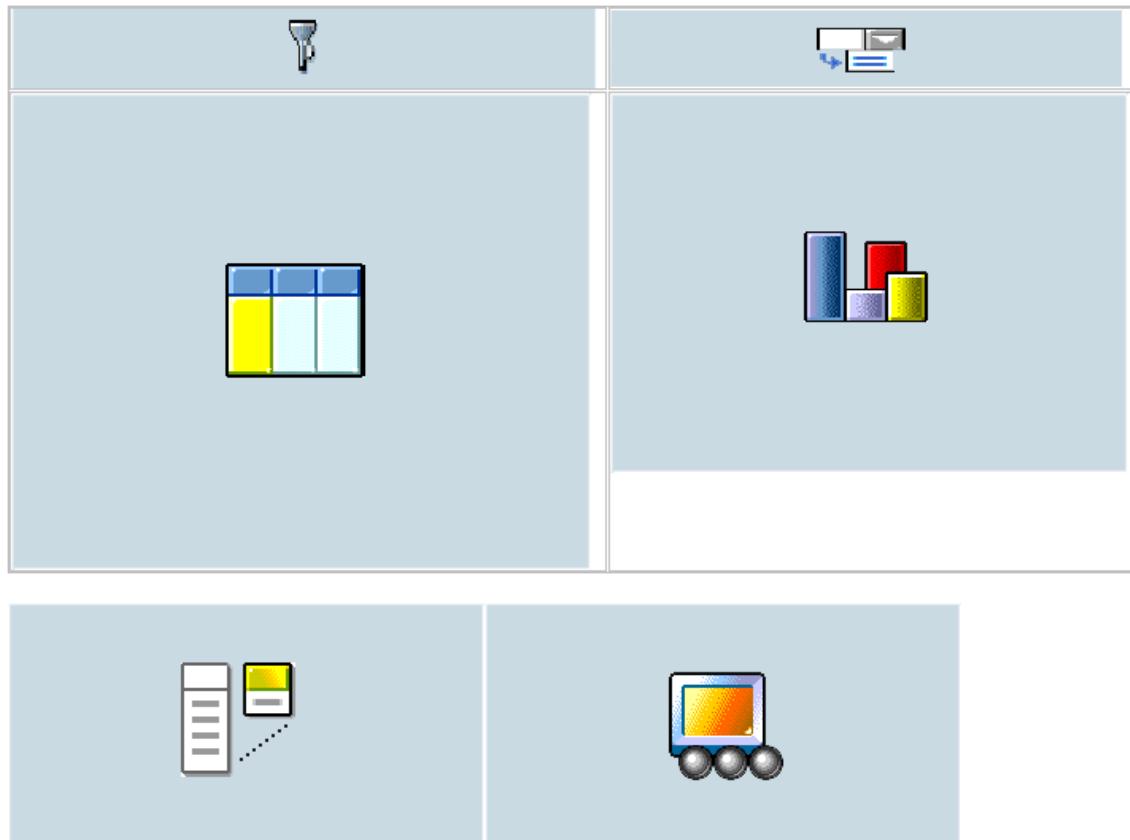
WAD Query - Example (Bar Chart):

A bar chart titled 'Sales Amount' showing sales for six sales persons (SP1 to SP6). The Y-axis ranges from 0 to 1250. The bars are colored yellow, cyan, green, red, orange, and grey respectively. The chart visually represents the data from the table.

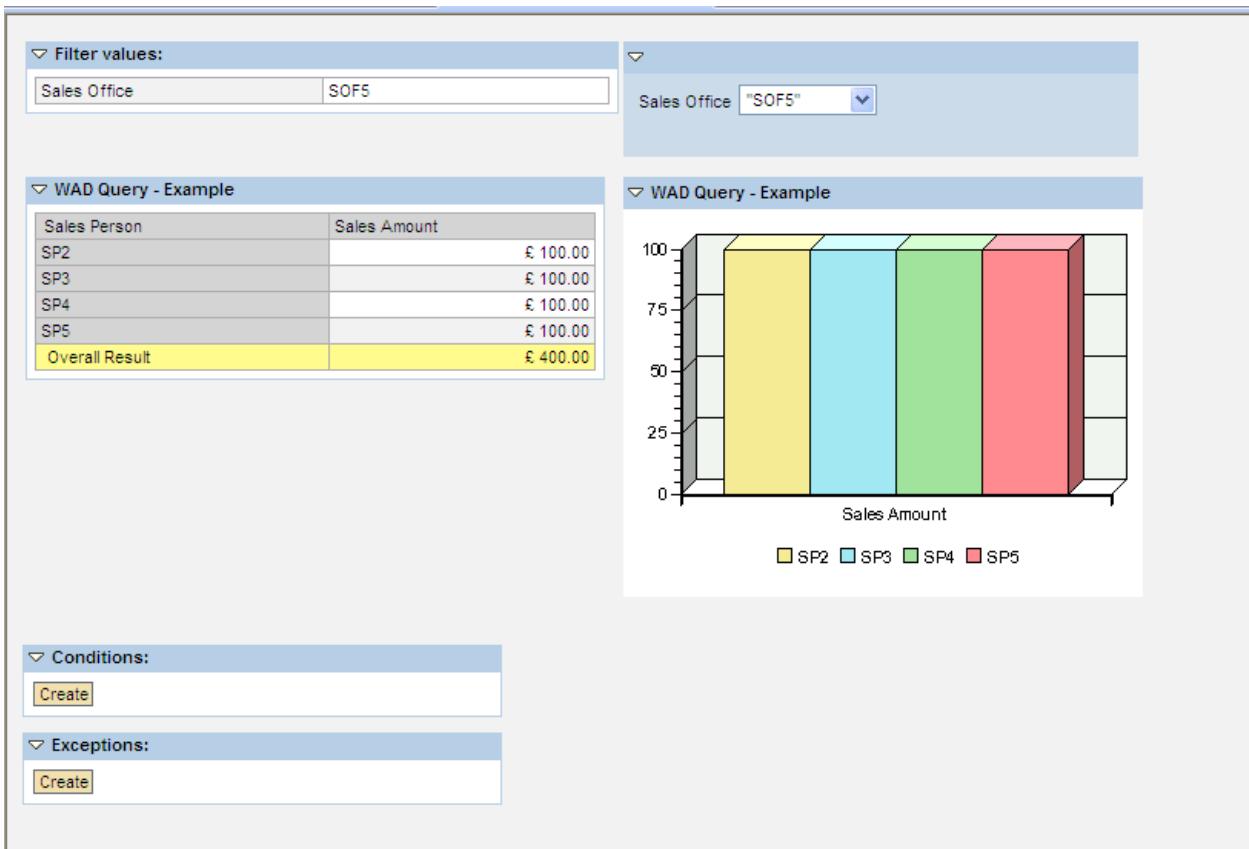
12. Select Sales office SOF1 from the drop down as shown below and the filter area will show the Characteristic Filter and the value by which the Query is currently filtered on.



13. You can enhance the reporting features of WAD by giving the user the option of creating exceptions and conditions. Add  List of Exceptions and  List of Conditions web items to the template save and execute.



Result→

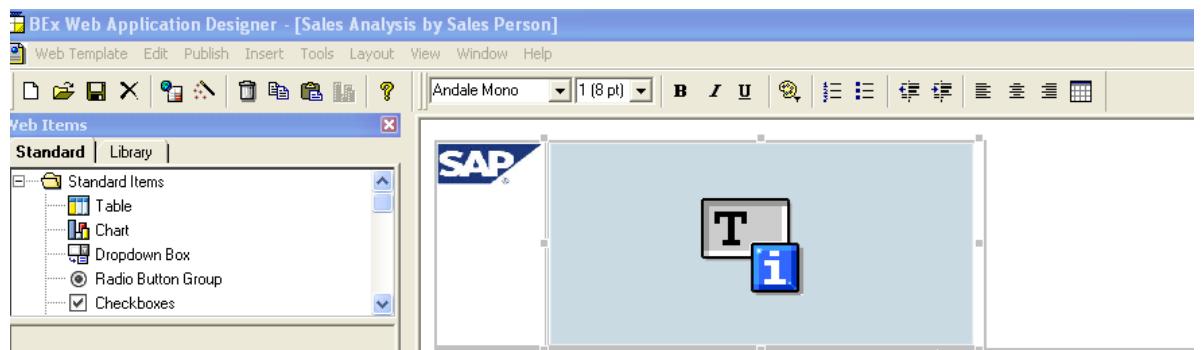
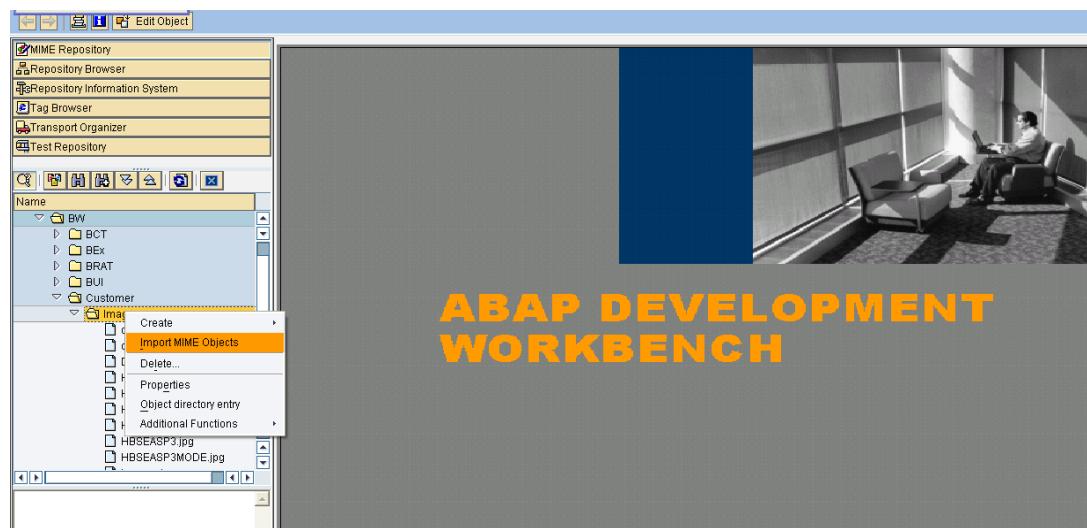


14. You can also make some improvements to the look and feel of the report using report Header and a Company logo and aligning those using tables.

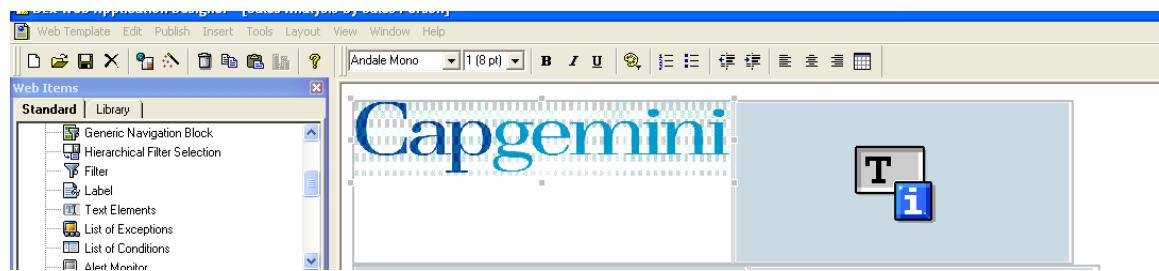
Create one (1 * 2) table and insert Text element web item into it by drag and drop.

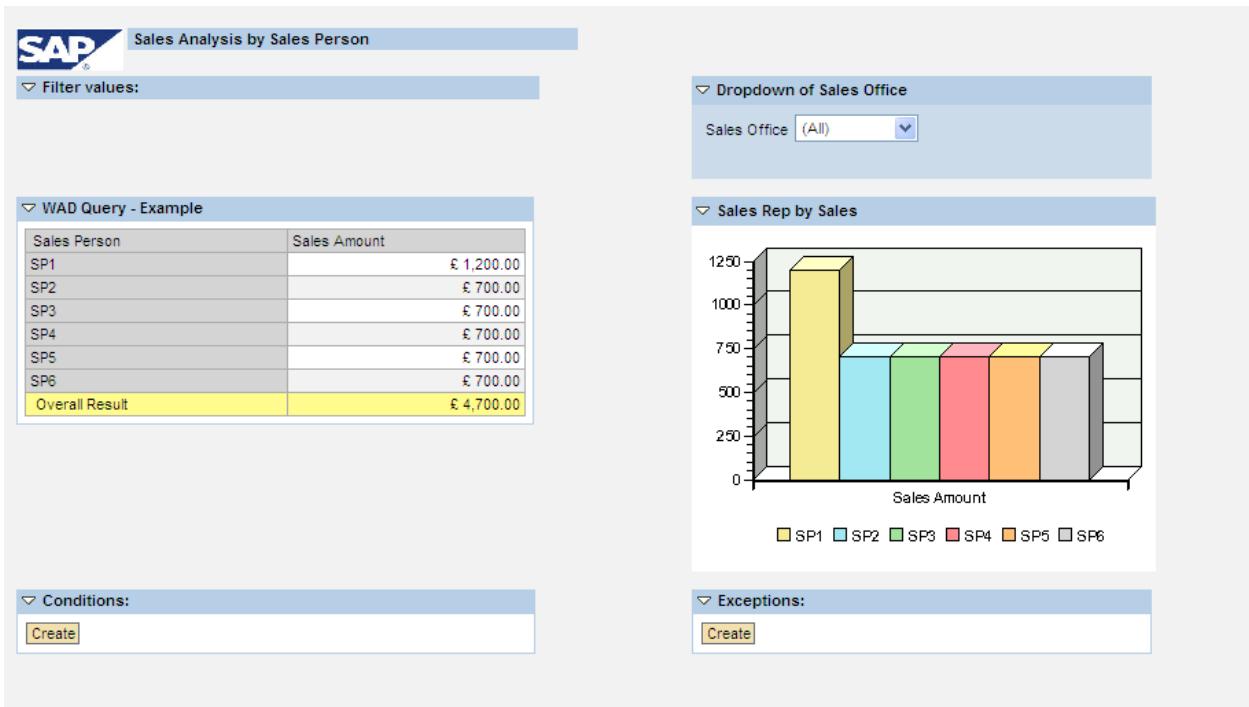
To add your personal logo follow below steps,

- 1) Store personal logo on your desktop.
- 2) Go to SE80 transaction in BW backend system.
- 3) MIME Repository -> SAP -> BW -> Customer -> Images -> Right click 'Insert MIME objects'.
- 4) Once added here, it would appear in WAD.
- 5) Keep mouse pointer in table cell, go to Insert (on top side)-> Picture -> select your logo.



OR





SAP Sales Analysis by Sales Person

Filter values:

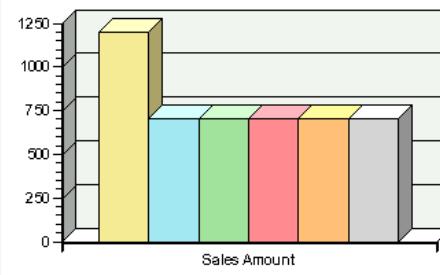
WAD Query - Example

Sales Person	Sales Amount
SP1	£ 1,200.00
SP2	£ 700.00
SP3	£ 700.00
SP4	£ 700.00
SP5	£ 700.00
SP6	£ 700.00
Overall Result	£ 4,700.00

Dropdown of Sales Office

Sales Office (All)

Sales Rep by Sales



Sales Person	Sales Amount
SP1	1200
SP2	700
SP3	700
SP4	700
SP5	700
SP6	700

Conditions:

Create

Exceptions:

Create

Conclusion:

We learnt how **Web Application Designer** is used to create Web applications, to generate HTML pages that contain BW-specific contents such as tables, charts Filter, Drop down, Conditions and Exceptions .

Document Integration

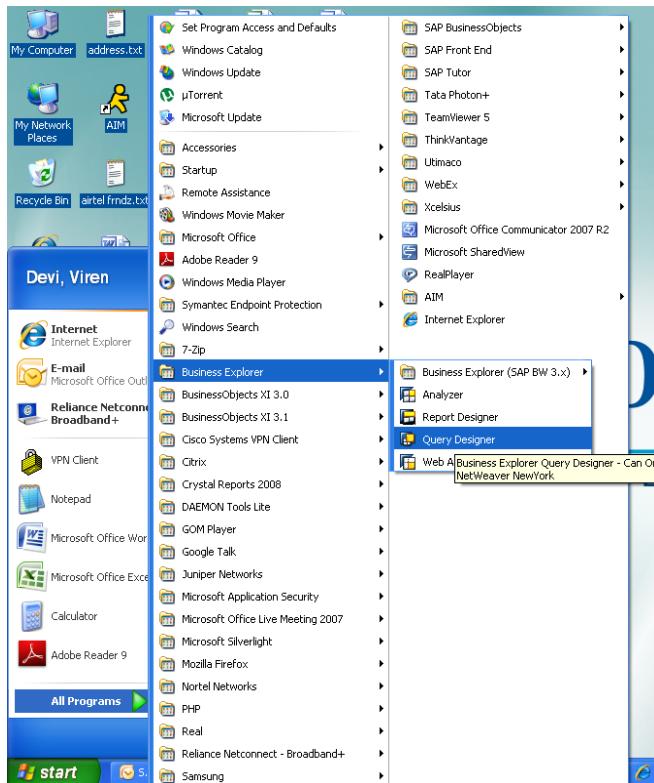
Use –

Using document integration functionality we can perform following tasks,

- 1) Upload comments and documents (like .pdf, .doc etc.) on the BI server via portal and excel workbooks.
- 2) Online displaying, editing and creation of documents
- 3) Assignment of documents to characteristics combinations and hierarchy nodes.

Steps:

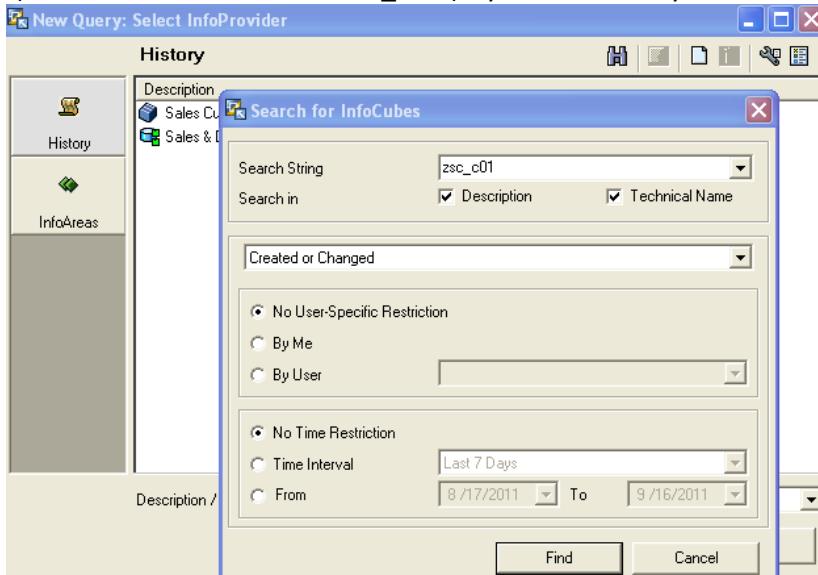
- 1) Go to 3.x Bex designer. (In our server portal is not working with 7.0 BEx tools so use 3.x for learning purpose).



2) Provide your login credentials.

3) Click on create  button on top left.

4) Go to Find  and enter ZSC_C01 (in your case cube you have already created).



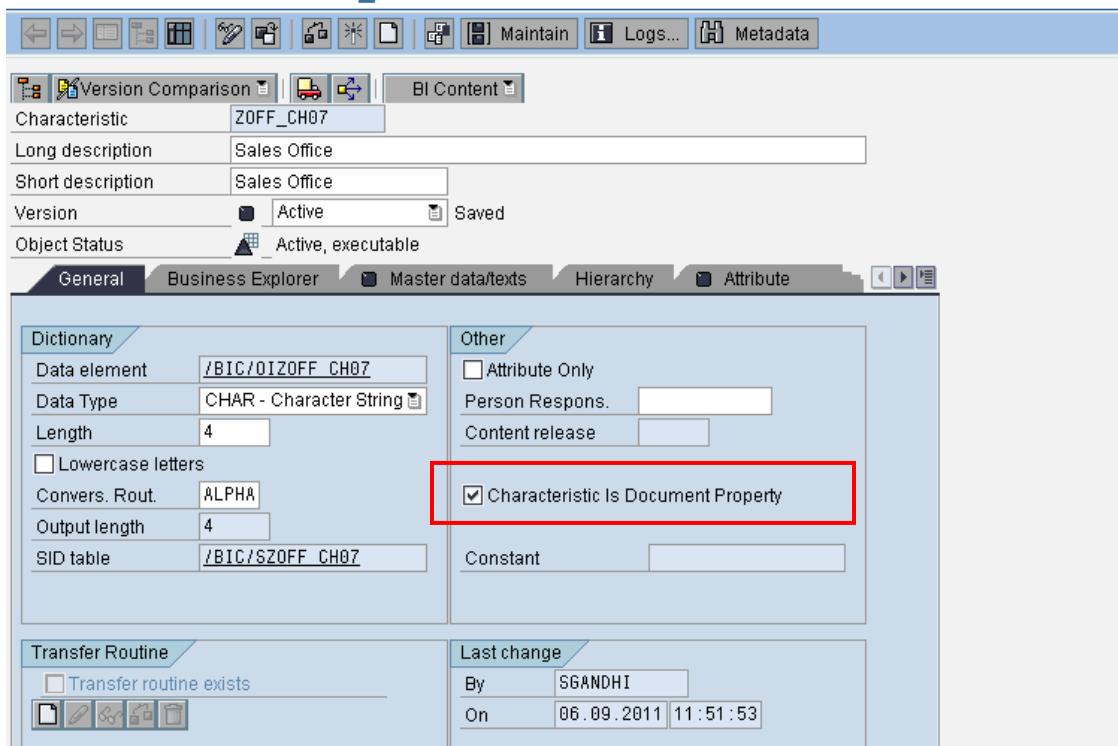
5) Click find and ok.

6) Pull Document number, Customer/Sold to P and Sales Office to Rows AND Sales quantity and Sale amount to columns. Save  the query and name it as **Cube name_QDOC_XXX**.

7) Now to we need to activate the Document property on characteristics used in the Query. Go to RSD1 transaction. Enter technical name of Sales office and click Maintain.

Click Characteristic is document property as shown in the screen shot below. Activate  the characteristic.

Edit Characteristic ZOFF_CH07: Details



Characteristic ZOFF_CH07

Long description Sales Office

Short description Sales Office

Version Active Saved

Object Status Active, executable

Dictionary

- Data element /BIC/0IZOFF_CH07
- Data Type CHAR - Character String
- Length 4
- Lowercase letters
- Convers. Rout. ALPHA
- Output length 4
- SID table /BIC/SZOFF_CH07

Other

- Attribute Only
- Person Respons.
- Content release
- Characteristic Is Document Property

Transfer Routine

- Transfer routine exists

Last change

By	SGANDHI
On	06.09.2011 11:51:53

Repeat same steps for Document number and Customer/sold to party info objects.

8) Now return back to Query designer. Click  button. This will export it to portal.

BEx Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

Document integration example Last Data Update: 14.09.2011 07:50:47

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Rows
Customer / Sold to P Document Number Sales Office
Columns
Key Figures
Free Characteristics

Sales Office	Document Number	Customer / Sold to P	Sales Quantity	Sales Amount
1000	4969	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4971	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4974	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4978	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4980	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4983	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4990	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5001	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5003	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5004	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5008	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5010	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5016	Not assigned	0.000	0.00 EUR

Row 1 / 15639

9) Right click on characteristic column and click Enhance menu -> Query properties.

BEx Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

Document integration example Last Data Update: 14.09.2011 07:50:47

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

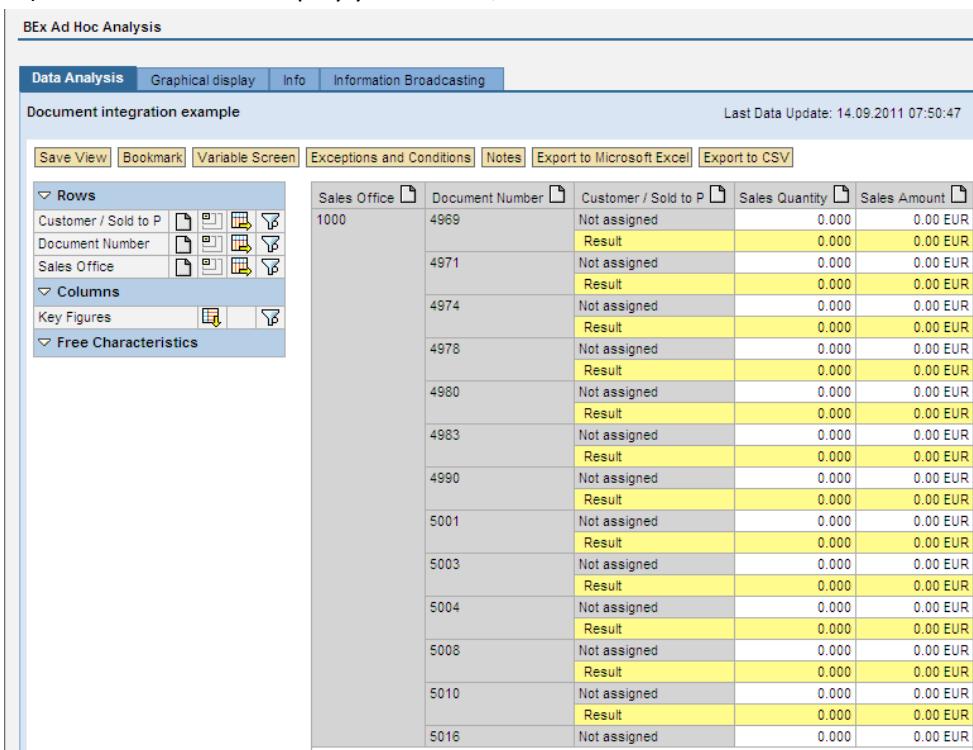
Rows
Customer / Sold to P Document Number Sales Office
Columns
Key Figures
Free Characteristics

Sales Office	Document Number	Customer / Sold to P	Sales Quantity	Sales Amount
1000	4967	Keep Filter Value	0.000	0.00 EUR
		Select Filter Value	0.000	0.00 EUR
	497	Remove Drilldown	0.000	0.00 EUR
		Sort Document Number	0.000	0.00 EUR
	497	Goto	0.000	0.00 EUR
		Bookmark	0.000	0.00 EUR
	498	Distribute	0.000	0.00 EUR
		Enhanced Menu	0.000	0.00 EUR
	4983	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4990	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5001	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5003	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5004	Not assigned	0.000	0.00 EUR

10) Tick boxes shown below and Transfer. Display will refresh so wait for a second.



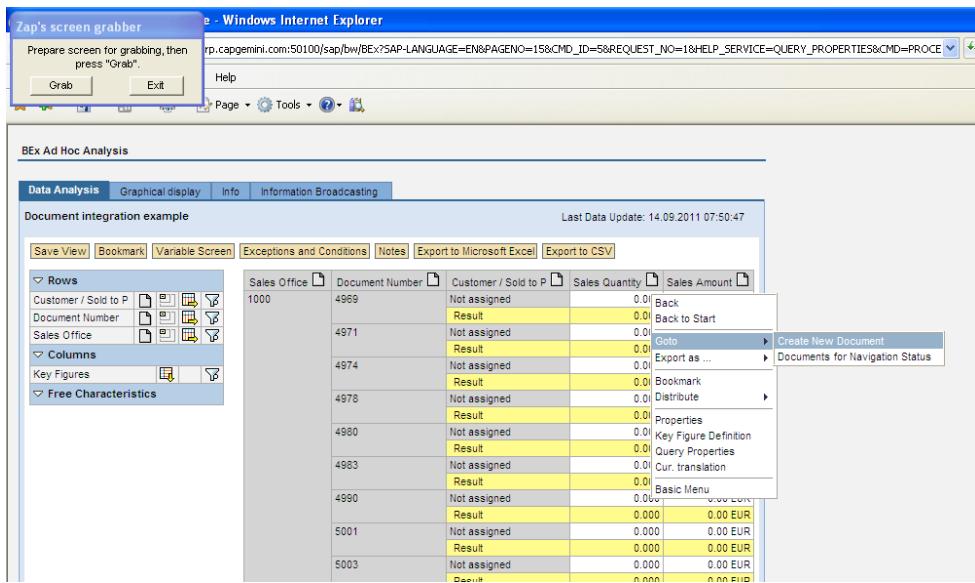
11) Below will be the display you will see,



Sales Office	Document Number	Customer / Sold to P	Sales Quantity	Sales Amount
1000	4969	Not assigned	0.000	0.00 EUR
	4971	Result	0.000	0.00 EUR
	4974	Not assigned	0.000	0.00 EUR
	4978	Result	0.000	0.00 EUR
	4980	Not assigned	0.000	0.00 EUR
	4983	Result	0.000	0.00 EUR
	4990	Not assigned	0.000	0.00 EUR
	4992	Result	0.000	0.00 EUR
	5001	Not assigned	0.000	0.00 EUR
	5003	Result	0.000	0.00 EUR
	5004	Not assigned	0.000	0.00 EUR
	5006	Result	0.000	0.00 EUR
	5010	Not assigned	0.000	0.00 EUR
	5016	Result	0.000	0.00 EUR
		Not assigned	0.000	0.00 EUR

10) Let's create comment for Sales office 1000, Document number 4971 and not assigned customer number on Sales Quantity key figure.

Right click on the intersection of above char values and Key figure -> go to -> Create new document->
Enter the comment and details- > Save -> Close and return.



The screenshot shows a SAP BEX Ad Hoc Analysis interface. A context menu is open over a data grid, specifically over a cell in the 'Customer / Sold to P' column. The menu items visible include 'Create New Document', 'Documents for Navigation Status', 'Properties', 'Key Figure Definition', 'Query Properties', 'Cur. translation', 'Basic Menu', and 'View ECRP'. The data grid displays rows with Sales Office codes (1000, 4969, 4971, 4974, 4978, 4980, 4983, 4990, 5001, 5003) and various status and quantity values.

Change Document

Title

Contents:

Sales Quantity Zero is not acceptable. We have to improve our sales figures for 1000 Sales office.

Document Displayed for...

Customer / Sold to P	(Not Assigned)	<input type="button" value=""/>
Document Number	4969	<input type="button" value=""/>
Sales Office	1000	<input type="button" value=""/>
InfoProvider	Sales Cube	<input type="button" value=""/>
Key Figure	Sales Quantity	<input type="button" value=""/>
Query	Document integration example	<input type="button" value=""/>
Document Type	<input type="text"/>	<input type="button" value=""/>

You can see document icon .

BEx Ad Hoc Analysis

Data Analysis Graphical display Info Information Broadcasting

Document integration example Last Data Update: 14.09.2011 07:50:47

Save View Bookmark Variable Screen Exceptions and Conditions Notes Export to Microsoft Excel Export to CSV

Sales Office	Document Number	Customer / Sold to P	Sales Quantity	Sales Amount
1000	4969	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4971	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4974	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4978	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4980	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4983	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	4990	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR
	5001	Not assigned	0.000	0.00 EUR
		Result	0.000	0.00 EUR

11) You can again open the document and edit it by clicking on .

Create Document Properties On Selection On
Close and Return

Comment 

Sales Quantity Zero is not acceptable. We have to improve our sales figures for 1000 Sales office.

Conclusion-

We learnt how to store, edit comments/documents on BI server so that it can be accessed by other users for reference purpose.

Report Report Interface (RRI):

Use:

- With the help of the RRI, the user can jump from a report into another report in order to drill down into more details.

Prerequisite:

- Make sure that the cubes and the queries are created before using RRI.
- For training purpose, we have created the cubes Customer (ZSC_C04) and Customer Detail (ZSC_C05). You can give cube names as ZSC_C04_XX and ZSC_C05_XX respectively.

ZSC_C04_XX –

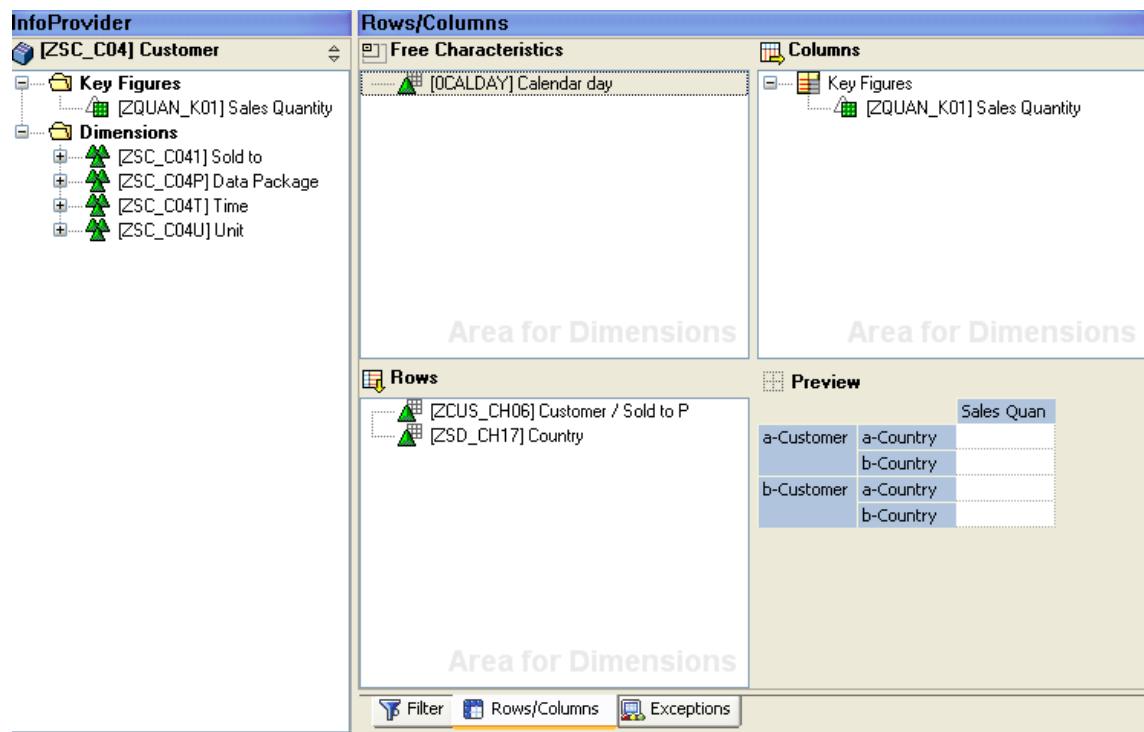
InfoCube		Techn. name / value	Fu...	O...	Appe...	Data...	L...	Key Fi...	C...	N...	Ag...	Ex...	Reference...	Unit	Alias Name	Cu...
Customer	ZSC_C04															
Object Information																
Version	In Process															
Save	Saved															
Revised Version	Active Version															
Object Status	Active, executable															
Settings																
Dimensions																
Data Package	ZSC_C04P															
Time	ZSC_C04T															
Calendar day	OCALDAY	DAT8	08										ODATE			
Unit	ZSC_C04U															
Unit of measure	QUNIT	UNIT	03										QUNIT			
Sold to	ZSC_C041															
Customer / Sold to Party	ZCUS_CH06	CHAR	10										ZCUS_CH..			
Country	ZSD_CH17	CHAR	03										ZSD_CH17			
Navigation Attributes																
Key Figures																
Sales Quantity	ZQUAN_K01	QUAN	09	Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SUM	SUM					QUNIT		ZQUAN_K01	

ZSC_C05_XX-

InfoCube	Techn. name / value	Fu...	O...	Appe...	Data...	L...	Key Fi...	C...	N...	Ag...	Ex...	Reference...	Unit...	Alias Name...	Cu...
Customer Detail	ZSC_C05														
Object Information															
Version	◊ In Process														
Save	◊ Saved														
Revised Version	◊ Active Version														
Object Status	◊ Active, executable														
Settings															
Dimensions															
Data Package	ZSC_C05P														
Time	ZSC_C05T														
Calendar day	0CALDAY	DAT	08									0DATE			
Unit	ZSC_C05U														
Sold to	ZSC_C051														
Customer / Sold to Party	ZCUS_CH06	CHAR	10									ZCUS_CH...			
Sales Doc	ZSC_C052														
Document Number	ZDOC_CH12	CHAR	10									ZDOC_CH...			
Sales Item	ZITM_CH18	CHAR	03									ZITM_CH18			
Material	ZSC_C053														
Material	ZMAT_CH05	CHAR	18									ZMAT_CH05			
Plant	ZPLANT	CHAR	04									ZPLANT			
Navigation Attributes															
Key Figures															
Sales Amount	ZAMT_K01	CURR	09	Amount	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SUM	SUM				0CURREN...	ZAMT_K01		

Also, we have created two queries : Customer (ZTR_SC_SALES_ORDER) and Customer Details (ZTR_SC_SALES_ORDER_DETAIL). You can name queries as ZTR_SC_SALES_ORDER_XXX and ZTR_SC_SALES_ORDER_DETAIL_XXX.

ZTR_SC_SALES_ORDER_XXX



InfoProvider

- [ZSC_C04] Customer
- Key Figures**
 - [ZQUAN_K01] Sales Quantity
- Dimensions**
 - [ZSC_C041] Sold to
 - [ZSC_C04P] Data Package
 - [ZSC_C04T] Time
 - [ZSC_C04U] Unit

Rows/Columns

- Free Characteristics**
 - [OCALDAY] Calendar day
- Columns**
 - Key Figures**
 - [ZQUAN_K01] Sales Quantity

Area for Dimensions

Rows

- [ZCUS_CH06] Customer / Sold to P
- [ZSD_CH17] Country

Area for Dimensions

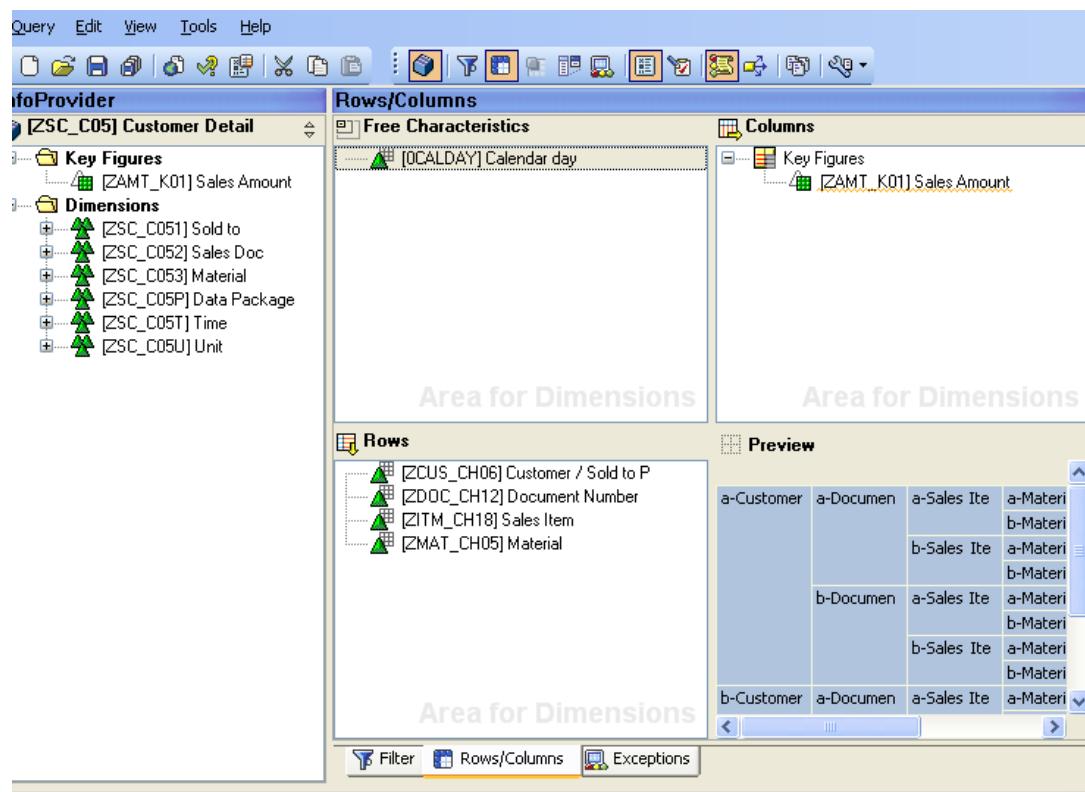
Preview

	Sales Quan	
a-Customer	a-Country	b-Country
b-Customer	a-Country	b-Country

Area for Dimensions

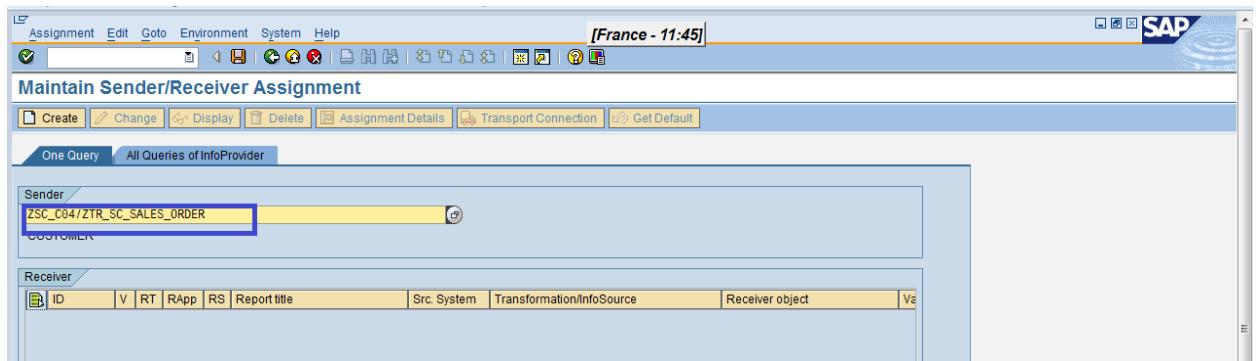
Filter Rows/Columns Exceptions

ZTR_SC_SALES_ORDER_DETAIL_XXX

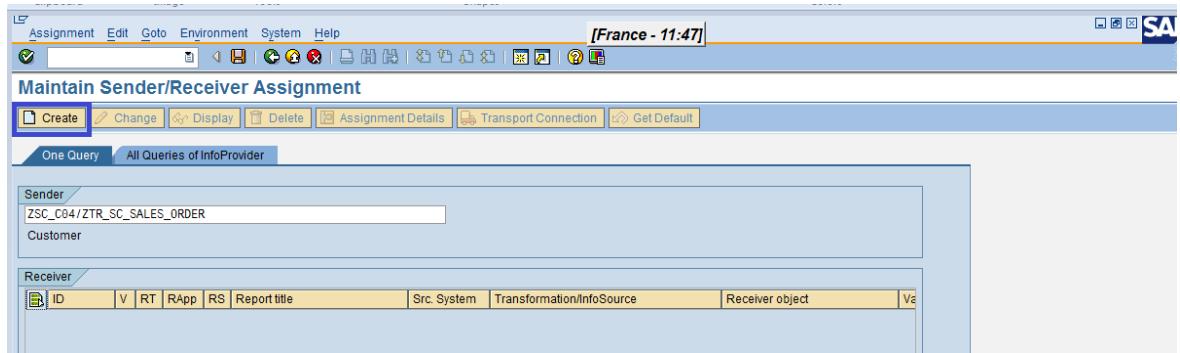


Procedure:

1. Logon to BI system.
2. Go to Tcode RSBBS.
3. In the sender field, enter the name of the first query i.e. Customer ZTR_SC_SALES_ORDER from the F4 Help.



4. Click on Create.



5. You will get the following screen:

Maintain Sender/Receiver Assignment

Version: New

Target System

Local

Source System
 Any Source Systems

Report Type

BW Query
 BEx Web Application
 BW 3.x Web Application
 Crystal Report
 BW XCelsius
 InfoSet Query
 Transaction
 ABAP Report
 Web Dynpro
 Web Address

Report

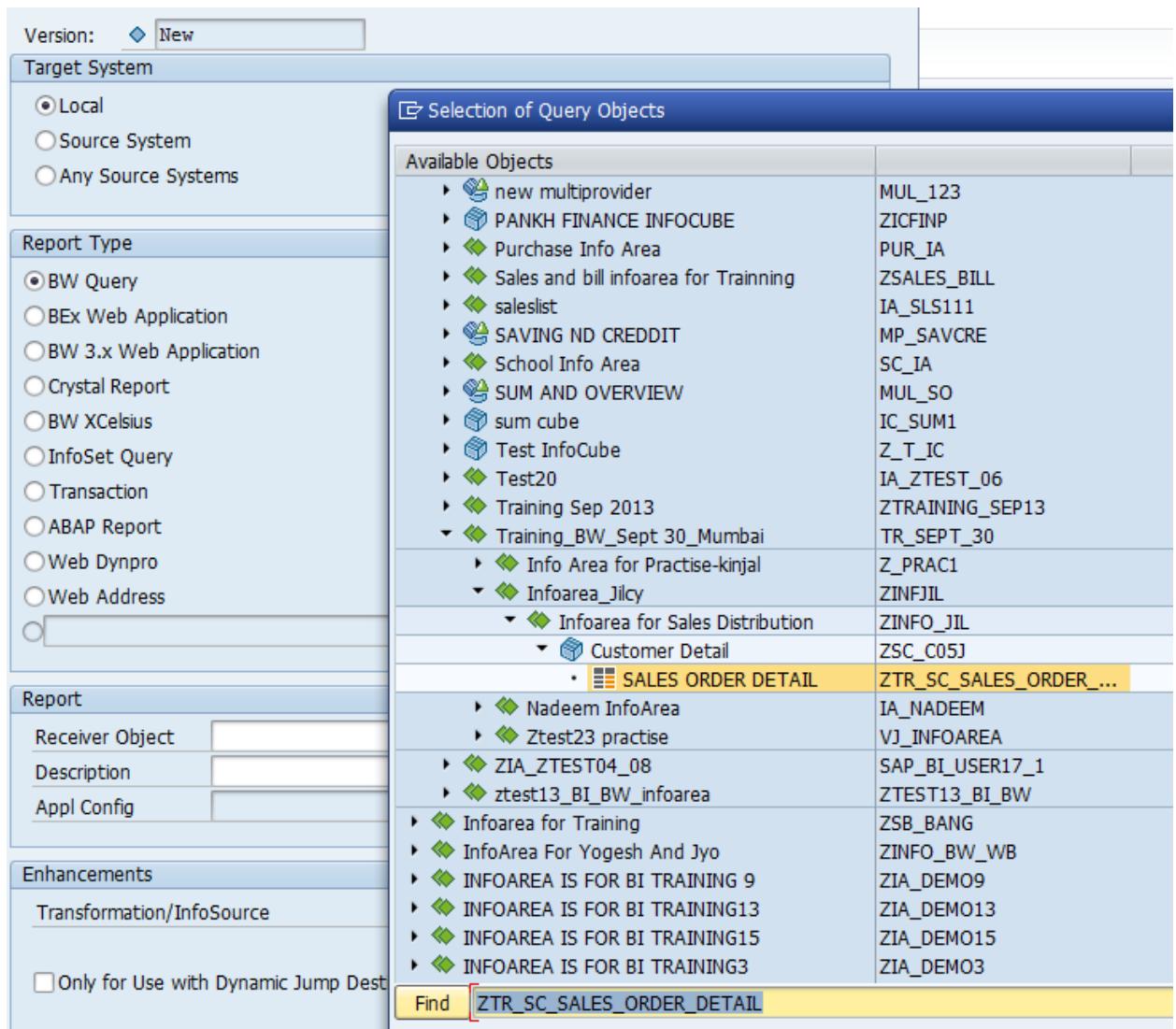
Receiver Object
Description
Appl Config

Enhancements

Transformation/InfoSource
 Only for Use with Dynamic Jump Destination

Apply Assignment Details Cancel

6. Select the query Customer Details ZTR_SC_SALES_ORDER_DETAIL in the Receiver Object field.



Available Objects	
► new multiprovider	MUL_123
► PANKH FINANCE INFOCUBE	ZICFINP
► Purchase Info Area	PUR_IA
► Sales and bill infoarea for Training	ZSALES_BILL
► saleslist	IA_SLS111
► SAVING ND CREDIT	MP_SAVCRE
► School Info Area	SC_IA
► SUM AND OVERVIEW	MUL_SO
► sum cube	IC_SUM1
► Test InfoCube	Z_T_IC
► Test20	IA_ZTEST_06
► Training Sep 2013	ZTRAINING_SEP13
► Training_BW_Sept 30_Mumbai	TR_SEPT_30
► Info Area for Practise-kinjal	Z_PRAC1
► Infoarea_Jilcy	ZINFO_JIL
► Infoarea for Sales Distribution	ZINFO_JIL
► Customer Detail	ZSC_C05J
• SALES ORDER DETAIL	ZTR_SC_SALES_ORDER....
► Nadeem InfoArea	IA_NADEEM
► Ztest23 practise	VJ_INFOAREA
► ZIA_ZTEST04_08	SAP_BI_USER17_1
► ztest13_BI_BW_infoarea	ZTEST13_BI_BW
► Infoarea for Training	ZSB_BANG
► InfoArea For Yogesh And Jyo	ZINFO_BW_WB
► INFOAREA IS FOR BI TRAINING 9	ZIA_DEMO9
► INFOAREA IS FOR BI TRAINING13	ZIA_DEMO13
► INFOAREA IS FOR BI TRAINING15	ZIA_DEMO15
► INFOAREA IS FOR BI TRAINING3	ZIA_DEMO3

Find **ZTR_SC_SALES_ORDER_DETAIL**

7. The query appears in the Receiver Object field:

Maintain Sender/Receiver Assignment

Version:

Target System

Local

Source System

Any Source Systems

Report Type

BW Query

BEx Web Application

BW 3.x Web Application

Crystal Report

BW XCelsius

InfoSet Query

Transaction

ABAP Report

Web Dynpro

Web Address

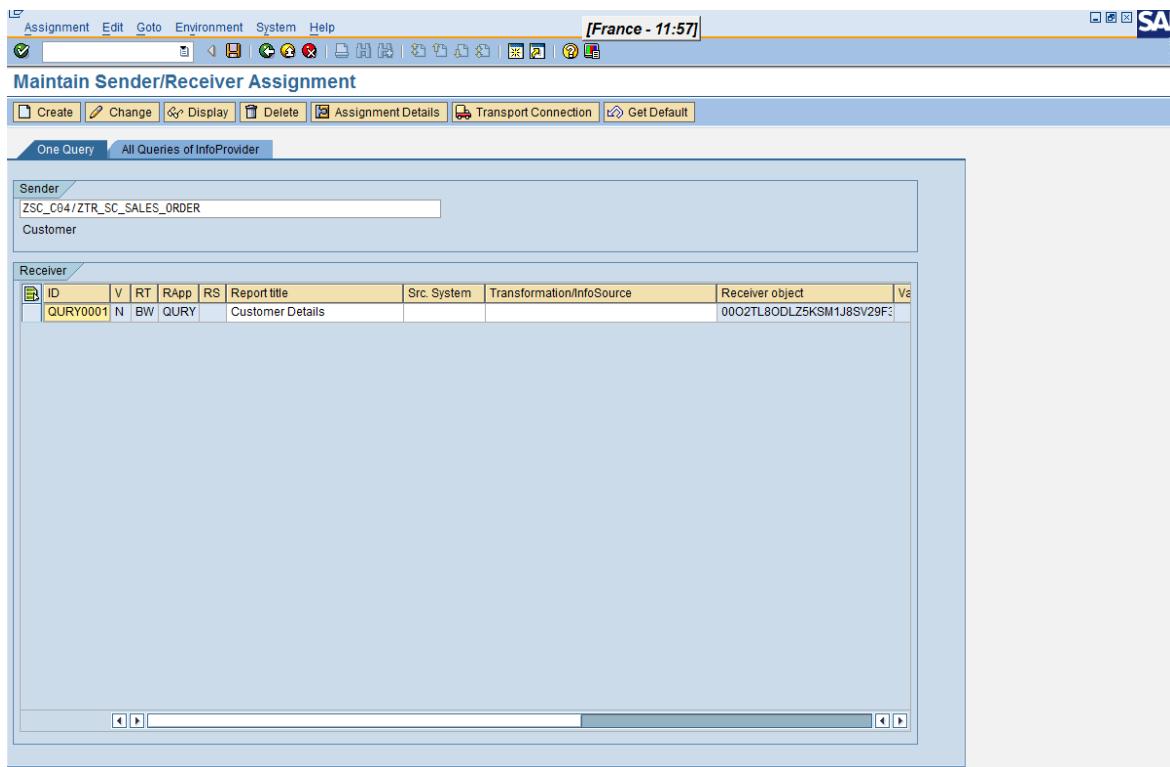
Report

Receiver Object	ZSC_C05J/ZTR_SC_SALES_ORDER_DETAIL_04 <input style="border: none; background-color: transparent; font-size: small; margin-left: 10px;" type="button" value="..."/>
Description	SALES ORDER DETAIL <input style="border: none; background-color: transparent; font-size: small; margin-left: 10px;" type="button" value="..."/>
Appl Config	<input style="border: none; background-color: transparent; font-size: small; margin-left: 10px;" type="button" value="..."/>

Enhancements

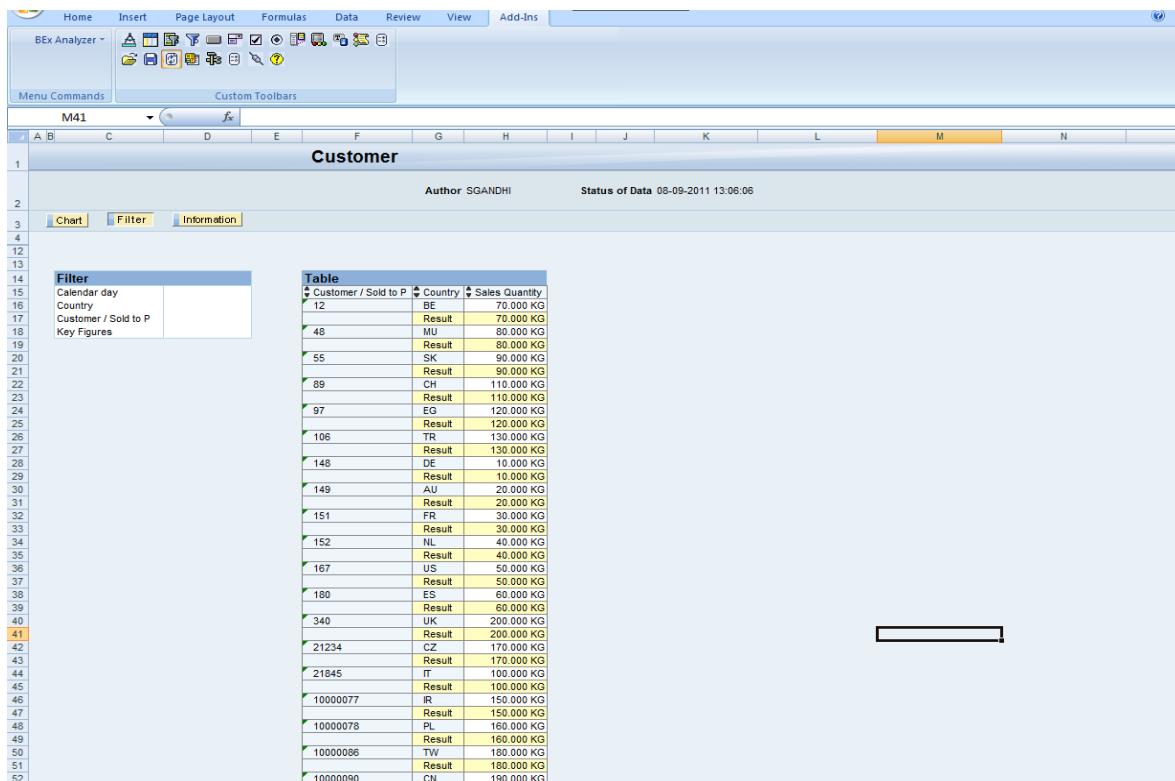
Transformation/InfoSource	<input style="border: none; background-color: transparent; font-size: small; margin-left: 10px;" type="button" value="..."/>
<input type="checkbox"/> Only for Use with Dynamic Jump Destination	

8. Click on Apply. You will see the following:



ID	V	RT	RApp	RS	Report title	Src. System	Transformation/InfoSource	Receiver object	Va
QURY0001	N	BW	QURY		Customer Details			0002TL80DLZ5KSM1J8SV29F;	

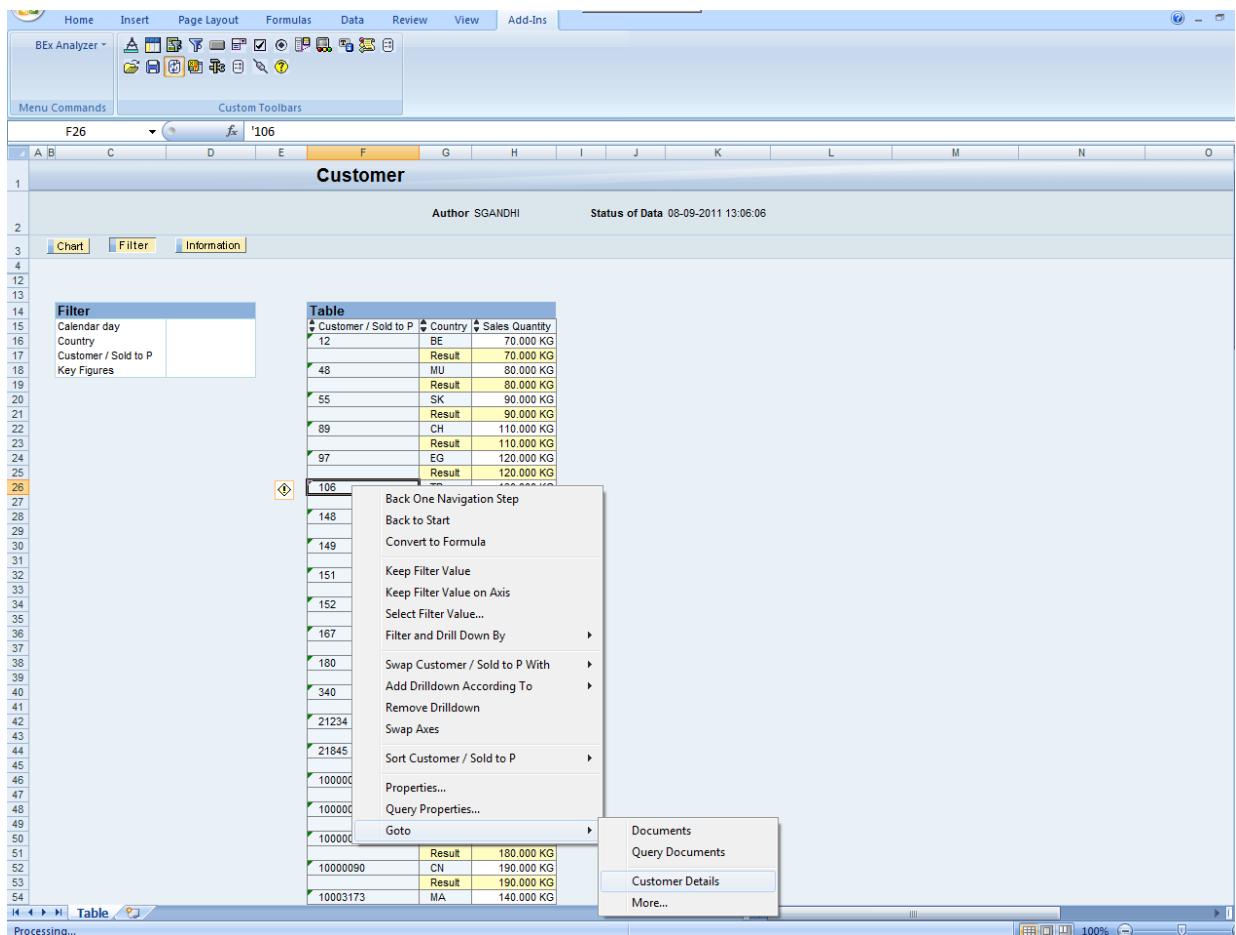
9. Now, logon to BEX analyzer and execute the query Customer ZTR_SC_SALES_ORDER. You will see the following output:



The screenshot shows a Microsoft Excel spreadsheet interface for SAP BEx Analyzer. The title bar includes 'Home', 'Insert', 'Page Layout', 'Formulas', 'Data', 'Review', 'View', and 'Add-Ins'. A ribbon bar above the menu has icons for various functions. The main area displays a table titled 'Customer' with columns for 'Customer / Sold to P', 'Country', and 'Sales Quantity'. The table contains approximately 20 rows of data, with some rows highlighted in yellow. A filter panel on the left is titled 'Filter' and includes dropdowns for 'Calendar day', 'Country', and 'Customer / Sold to P', along with a 'Key Figures' button. Row numbers from 1 to 52 are visible on the left side of the table.

	Customer / Sold to P	Country	Sales Quantity
12	BE	70.000 KG	
48	MU	80.000 KG	
55	SL	90.000 KG	
89	CH	110.000 KG	
97	EG	120.000 KG	
106	TR	130.000 KG	
148	DE	10.000 KG	
149	AU	20.000 KG	
151	FR	30.000 KG	
152	NL	40.000 KG	
167	US	50.000 KG	
180	ES	60.000 KG	
340	UK	200.000 KG	
21234	CZ	170.000 KG	
21845	IT	100.000 KG	
10000077	IR	150.000 KG	
10000078	PL	160.000 KG	
10000086	TW	180.000 KG	
10000090	CN	190.000 KG	

10. Now, click on any Customer/Sold to and then right click and select Goto→ Customer Details.

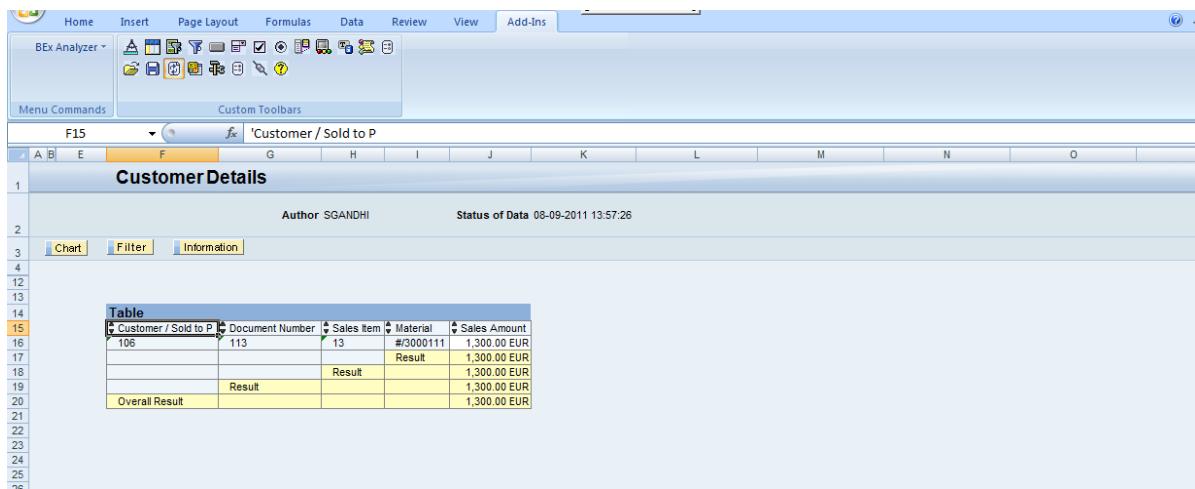


The screenshot shows the SAP BEx Analyzer interface. The main area displays a table titled "Customer" with data from row 106. The table has columns: Customer / Sold to P, Country, and Sales Quantity. The data includes rows for BE (Sales 70,000 KG), MU (Sales 80,000 KG), SK (Sales 90,000 KG), CH (Sales 110,000 KG), EG (Sales 120,000 KG), and Result (Sales 180,000 KG). Row 106 is highlighted.

A context menu is open over the table, listing options such as "Back One Navigation Step", "Back to Start", "Convert to Formula", "Keep Filter Value", "Keep Filter Value on Axis", "Select Filter Value...", "Filter and Drill Down By", "Swap Customer / Sold to P With", "Add Drilldown According To", "Remove Drilldown", "Swap Axes", "Sort Customer / Sold to P", "Properties...", "Query Properties...", "Goto", and "Documents".

A secondary dropdown menu is visible on the right side of the context menu, containing "Documents", "Query Documents", "Customer Details", and "More...".

11. You get the details of the customer from the other query as shown:



The screenshot shows the SAP BEx Analyzer interface. The title bar says 'BEx Analyzer'. The ribbon has tabs: Home, Insert, Page Layout, Formulas, Data, Review, View, and Add-Ins. A toolbar below the ribbon contains various icons. The main area shows a table titled 'Customer Details' with the following data:

	Customer / Sold to P	Document Number	Sales Item	Material	Sales Amount
106	113	13	#3000111	Result	1,300.00 EUR
				Result	1,300.00 EUR
				Result	1,300.00 EUR
				Overall Result	1,300.00 EUR

Conclusion:

RRI is created for Customer and Customer details report.

Web Analyzer

Use –

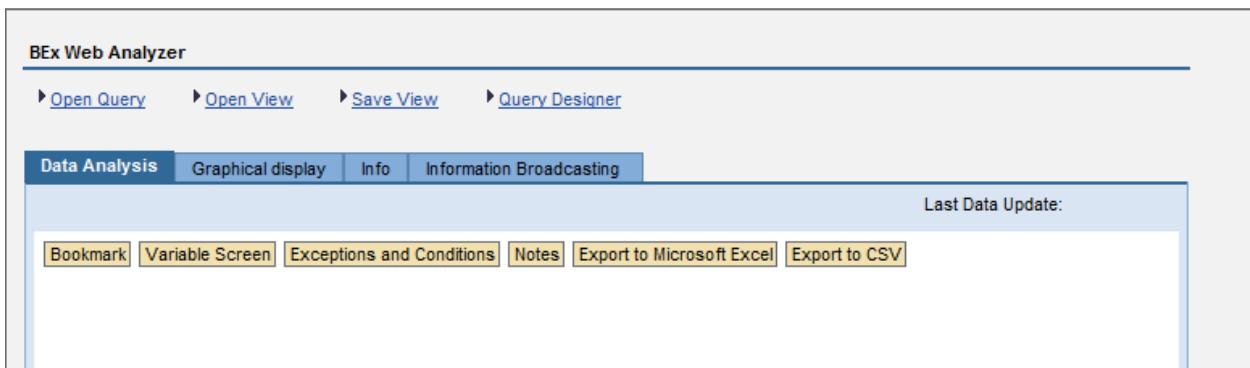
The BEx Web Analyzer provides you with a standalone, comfortable Web application for data analysis that you can call using an URL or as an iView in the Enterprise Portal

Steps to open Web analyzer:

- 1) Open a internet explorer and paste below URL. Please note that in this exercise, we are using SAP standard OANALYZER web template (It is 3.x version of template as 7.0 is not working as expected in our system).

http://in-air-sap8.corp.capgemini.com:50100/sap/bw/BEx?sap-language=EN&language=EN&CMD=LDOC&TEMPLATE_ID=OANALYZER

- 2) Please login using your SAP BW credentials.
- 3) You will see below screen,



Now let's see various component of analyser.

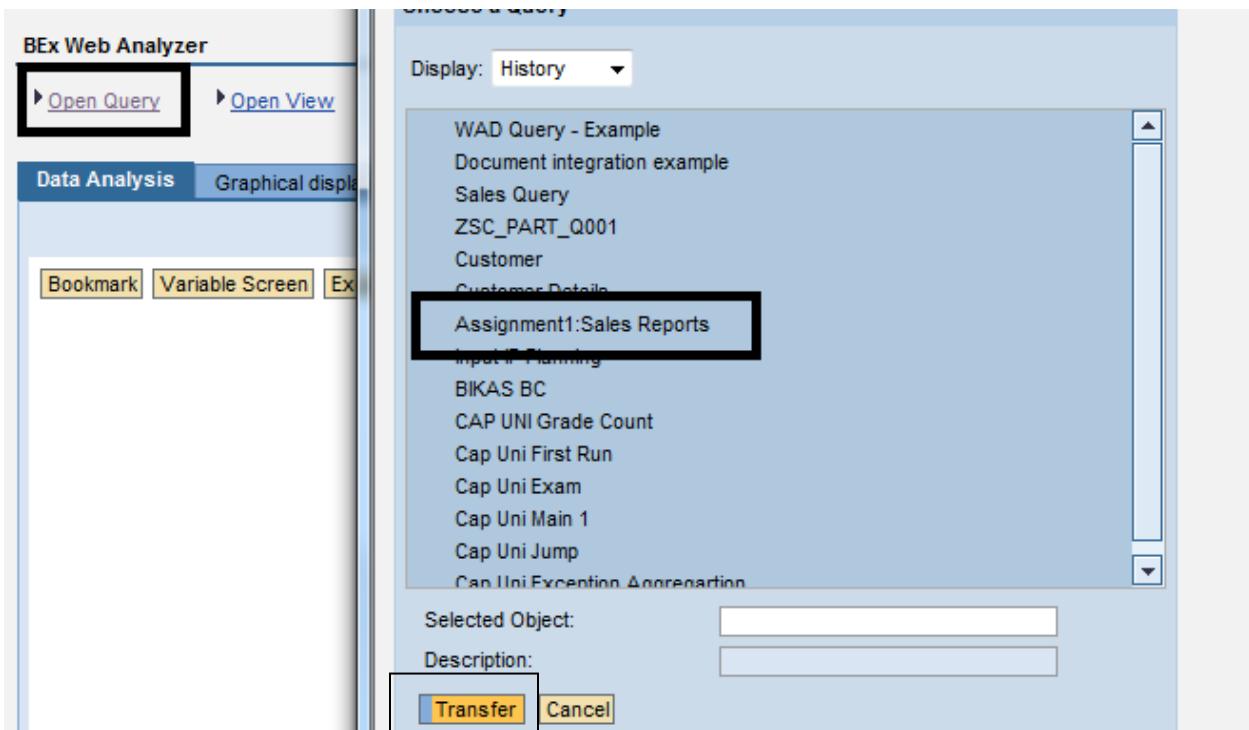
Open Query:

Use:

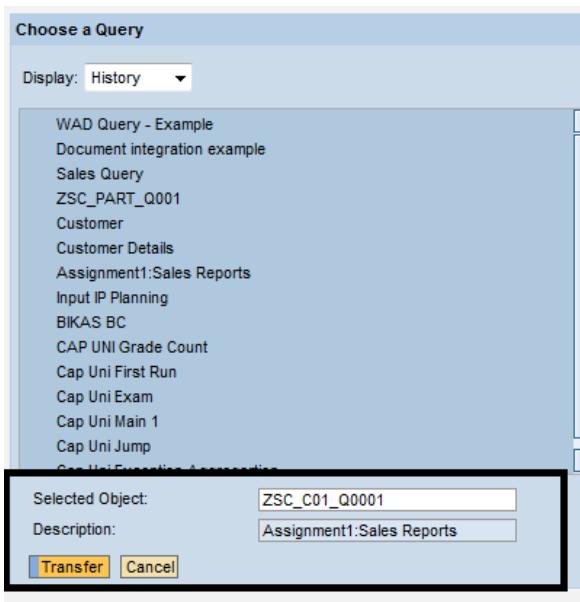
By using this Tab we can open a query which is created in query designer.

Steps:

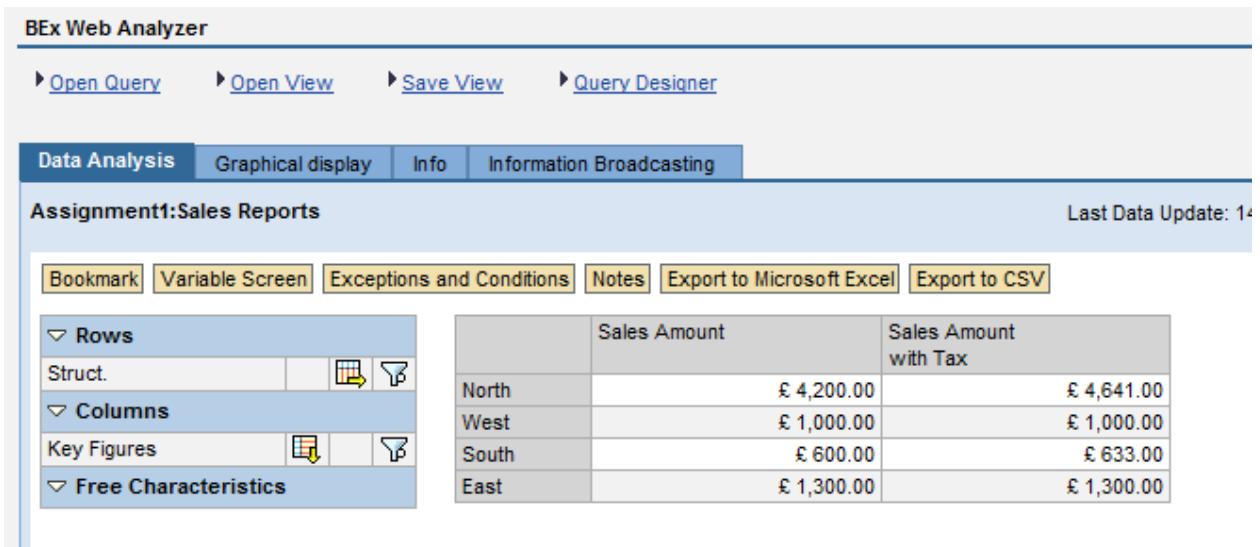
- 1) Click on Open query after that you will see new pop screen where we can select query.



- 2) Now click on Assignment 1: sales report (in your case select the one you created in 'Query Basics' exercise) for this exercise.



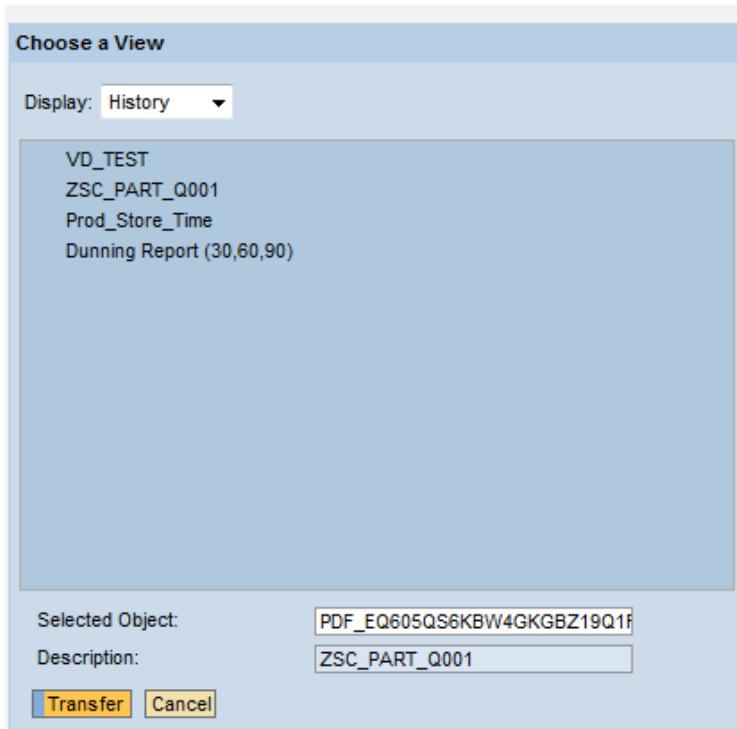
- 3) After transferring you will see output of the report.



	Sales Amount	Sales Amount with Tax
North	£ 4,200.00	£ 4,641.00
West	£ 1,000.00	£ 1,000.00
South	£ 600.00	£ 633.00
East	£ 1,300.00	£ 1,300.00

Open View:

Here we can select saved views (This is already covered in view creation session).



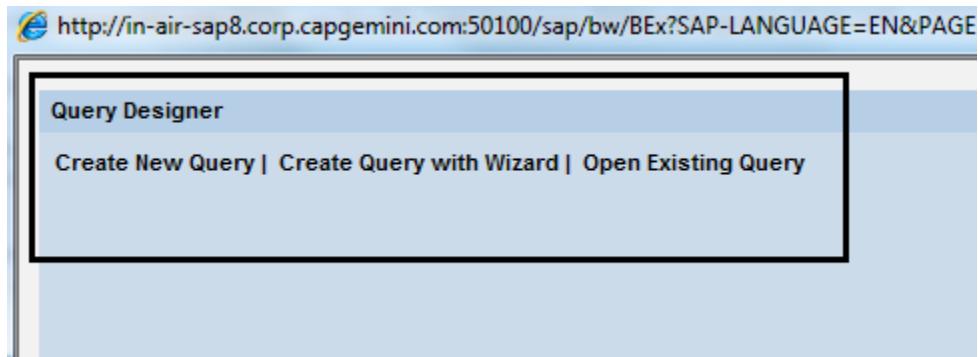
Save View:

You can save current view of the report as a Query View using this option.

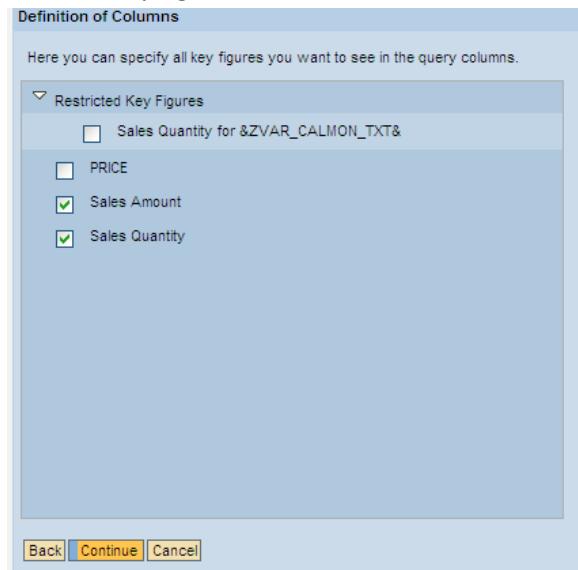
You can make necessary changes in the report like drag-drop characteristics, filter values etc. and save it as View. This view can be accessed from BEx analyser.

Query Designer:

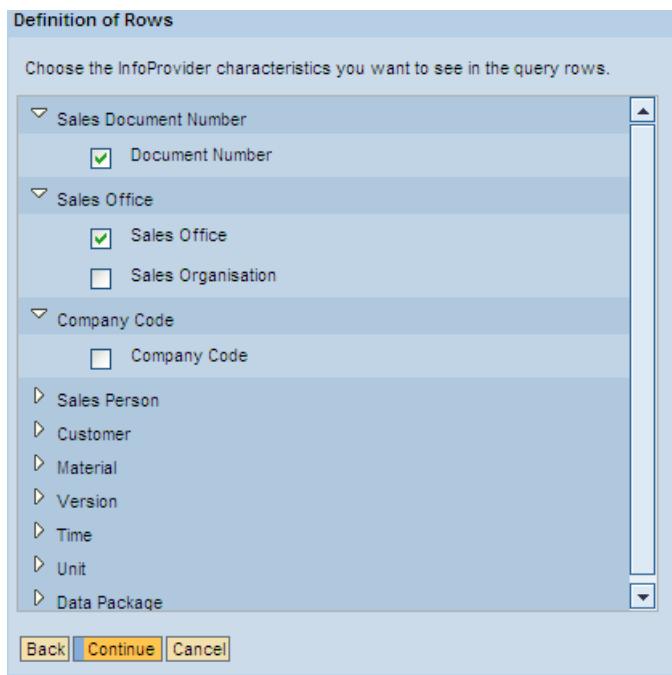
Here you can create new query (adhoc query) with or without wizard. You can also open existing query using query designer function.



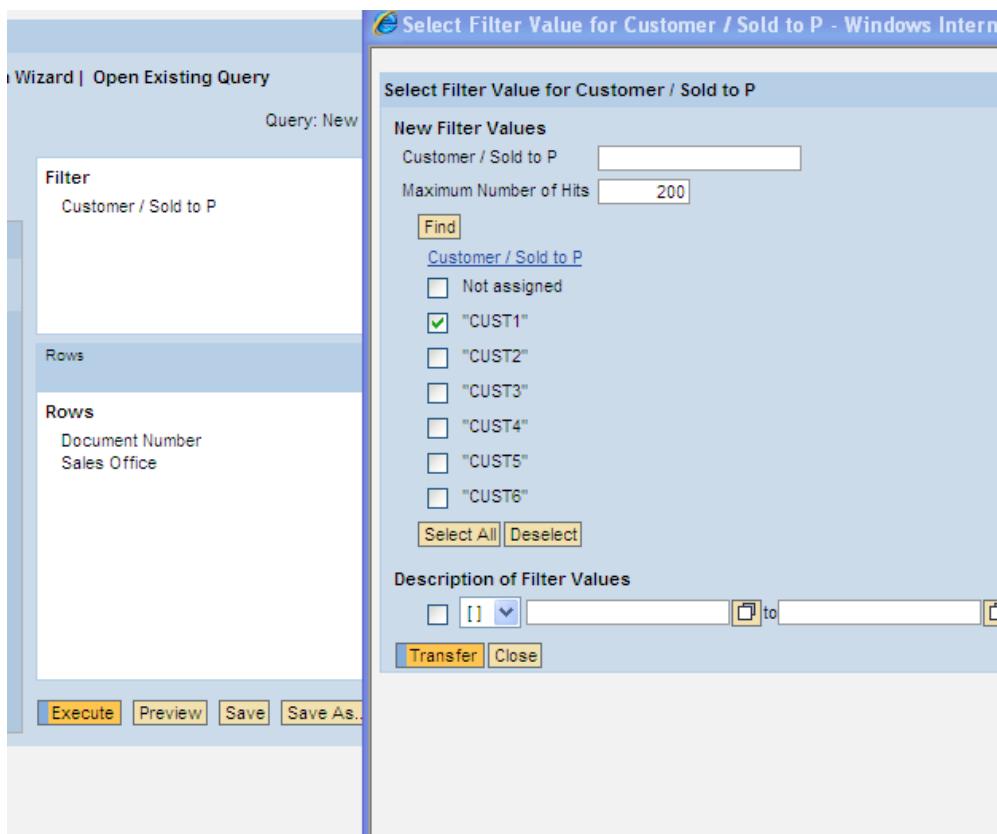
- a. Create new query with wizard –
-> Click on create new query with wizard
-> Select Sales cube you created earlier (in this case ZSC_C01). Click Continue
-> Select key figures for column. Continue



- > Select characteristic for rows. Continue.



- > Select free characteristics. Continue
- > Define Filters. Continue -> Transfer -> Continue.
- > In filter right click on characteristic and select value to be filtered.



-> Execute it and see the output.

Data Analysis [Graphical display](#) [Info](#) [Information Broadcasting](#)

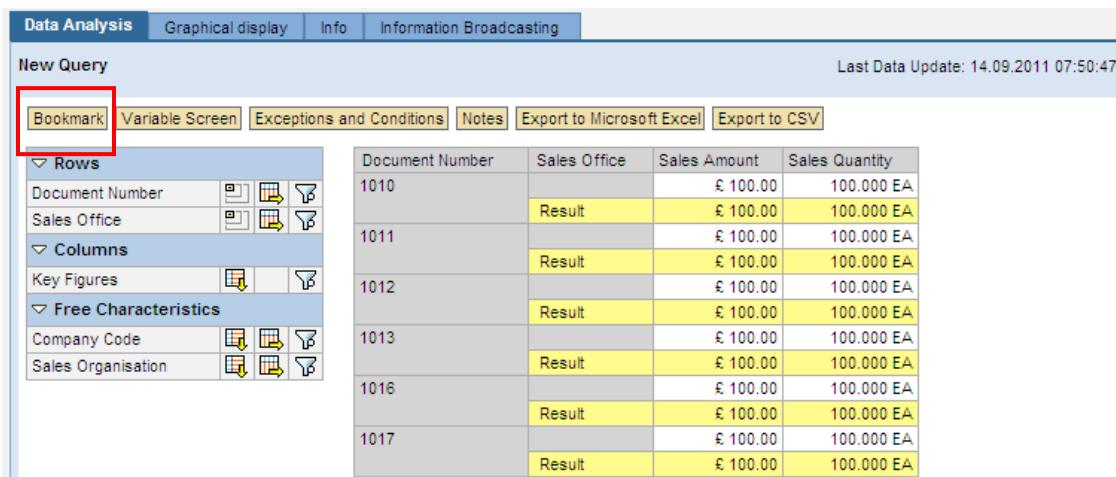
New Query Last Data Update: 14.09.2011 07:

[Bookmark](#) [Variable Screen](#) [Exceptions and Conditions](#) [Notes](#) [Export to Microsoft Excel](#) [Export to CSV](#)

Document Number	Sales Office	Sales Amount	Sales Quantity
1010		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1011		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1012		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1013		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1016		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1017		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1018		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1019		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1022		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1023		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1024		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA
1025		£ 100.00	100.000 EA
	Result	£ 100.00	100.000 EA

Bookmark:

We can also bookmark this report and save it in your IE favorites.



The screenshot shows the SAP Web Analyzer interface for creating a new query. The 'Rows' section is expanded, displaying filters for Document Number, Sales Office, Key Figures, and Free Characteristics. The 'Columns' section lists Sales Office, Sales Amount, and Sales Quantity. The 'Bookmarks' button in the toolbar is highlighted with a red box.

Document Number	Sales Office	Sales Amount	Sales Quantity
1010		€ 100.00	100.000 EA
	Result	€ 100.00	100.000 EA
1011		€ 100.00	100.000 EA
	Result	€ 100.00	100.000 EA
1012		€ 100.00	100.000 EA
	Result	€ 100.00	100.000 EA
1013		€ 100.00	100.000 EA
	Result	€ 100.00	100.000 EA
1016		€ 100.00	100.000 EA
	Result	€ 100.00	100.000 EA
1017		€ 100.00	100.000 EA
	Result	€ 100.00	100.000 EA

Exceptions and Conditions-

We can create exception and condition in the web analyzer report or change status of the ones' created in query designer.

Exception:

Steps to create exception.

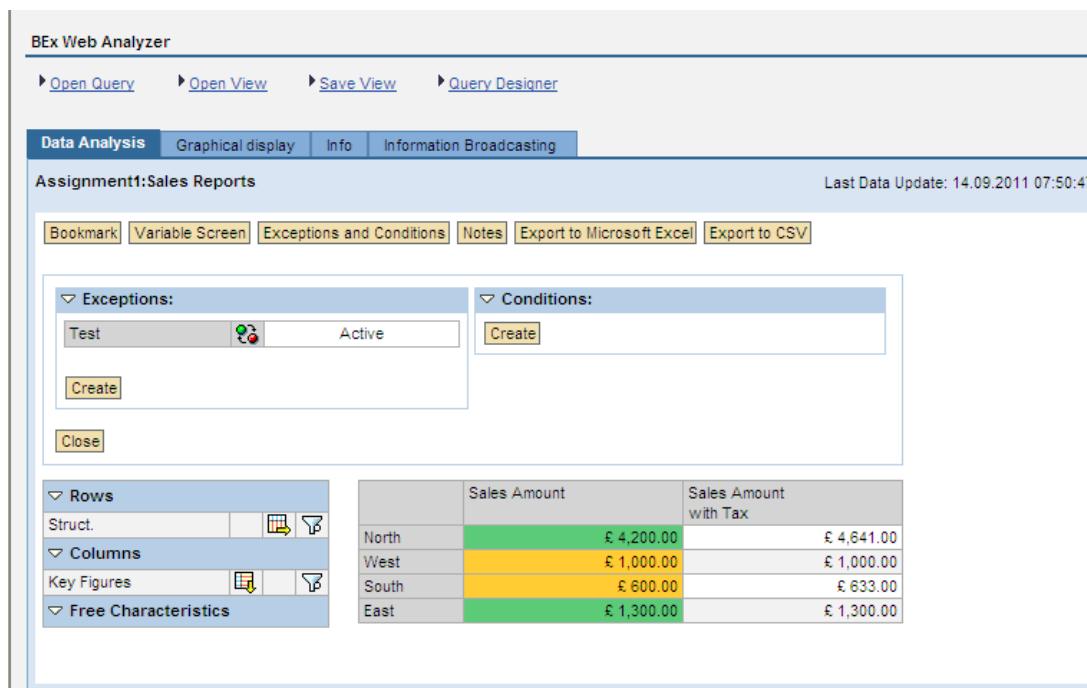
- 1) Open same query that was opened in 1st step of 'Open Query' option above.
- 2) Click on Exception tab and click on create button.

3) Enter Exception name as Test and select key figure and exception values.

Define Exception

Description	<input type="text" value="Test"/>	<input checked="" type="checkbox"/> Active				
Evaluation for Key Figures	<input type="text" value="Sales Amount"/>	<input type="button" value="▼"/>				
Evaluation for Struct.	<input type="text" value="(Everything)"/>	<input type="button" value="▼"/>				
Exception Values						
<input checked="" type="checkbox"/>	<input type="text" value="Between"/>	<input type="button" value="▼"/>	<input type="text" value="500.00000"/>	<input type="text" value="1,000.00000"/>	<input type="text" value="Critical 1"/>	<input type="button" value="▼"/>
<input checked="" type="checkbox"/>	<input type="text" value="Greater Than"/>	<input type="button" value="▼"/>	<input type="text" value="1,000.00000"/>	<input type="text" value="0.00000"/>	<input type="text" value="Good 1"/>	<input type="button" value="▼"/>
Validity Area of Exception						
Validity Area for All Characteristics Not Listed		<input type="text" value="Results Only"/>				

4) Click on transfer button to see effect on the result output.

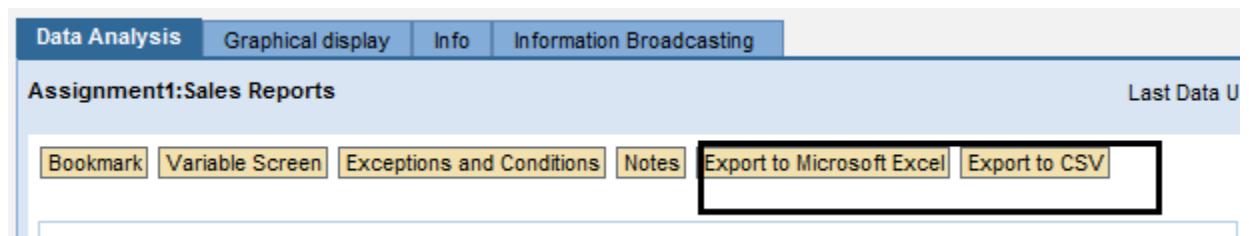


	Sales Amount	Sales Amount with Tax
North	£ 4,200.00	£ 4,641.00
West	£ 1,000.00	£ 1,000.00
South	£ 600.00	£ 633.00
East	£ 1,300.00	£ 1,300.00

Condition:

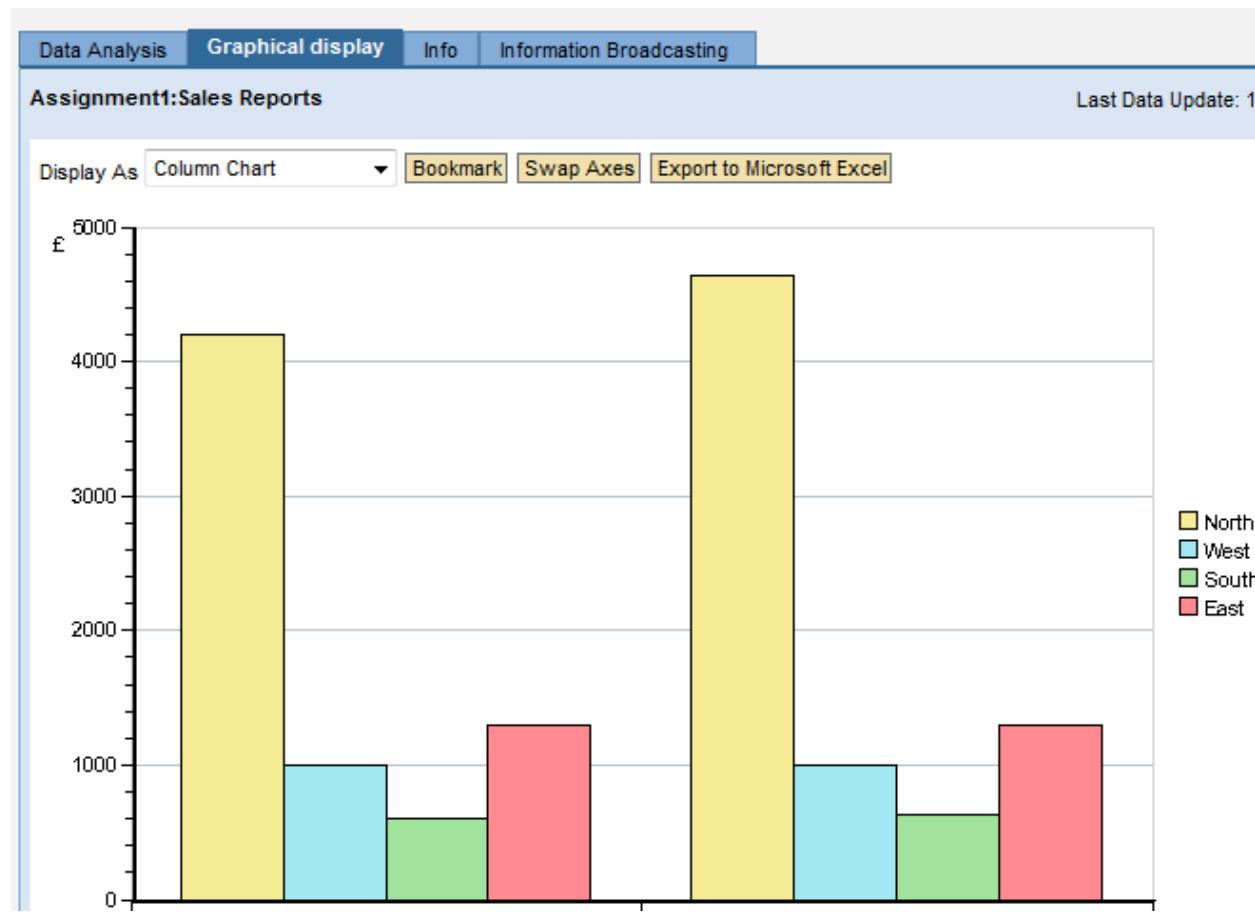
Steps to create Conditions are as same as that followed in BEx Analyser.

We can export the report output into Excel and CSV format.



Graphical Display Tab:

Here you can see graphical display of the report.

**Info Tab:**

Here you can find information about the report query.

Conclusion:

After completing this exercise, we will get to know about various features of web analyzer and its functionalities.