SAP BW

Lesson 05 : Non SAP – DB connect

Capgemini

Extraction from Non-SAP Systems

Purpose

- This course demonstrates the various data extraction methods.

- Extraction Methods covered
  - UD Connect, DB Connect and XML Extraction.

Use

- In many organizations, data is fragmented and spread across many databases and applications.

- To be useful, data must be integrated, standardized, synchronized, and enriched – typically through ETL (extraction, transformation, and loading) processes.

- SAP BI provides a broad set of ETL capabilities that support data extraction.

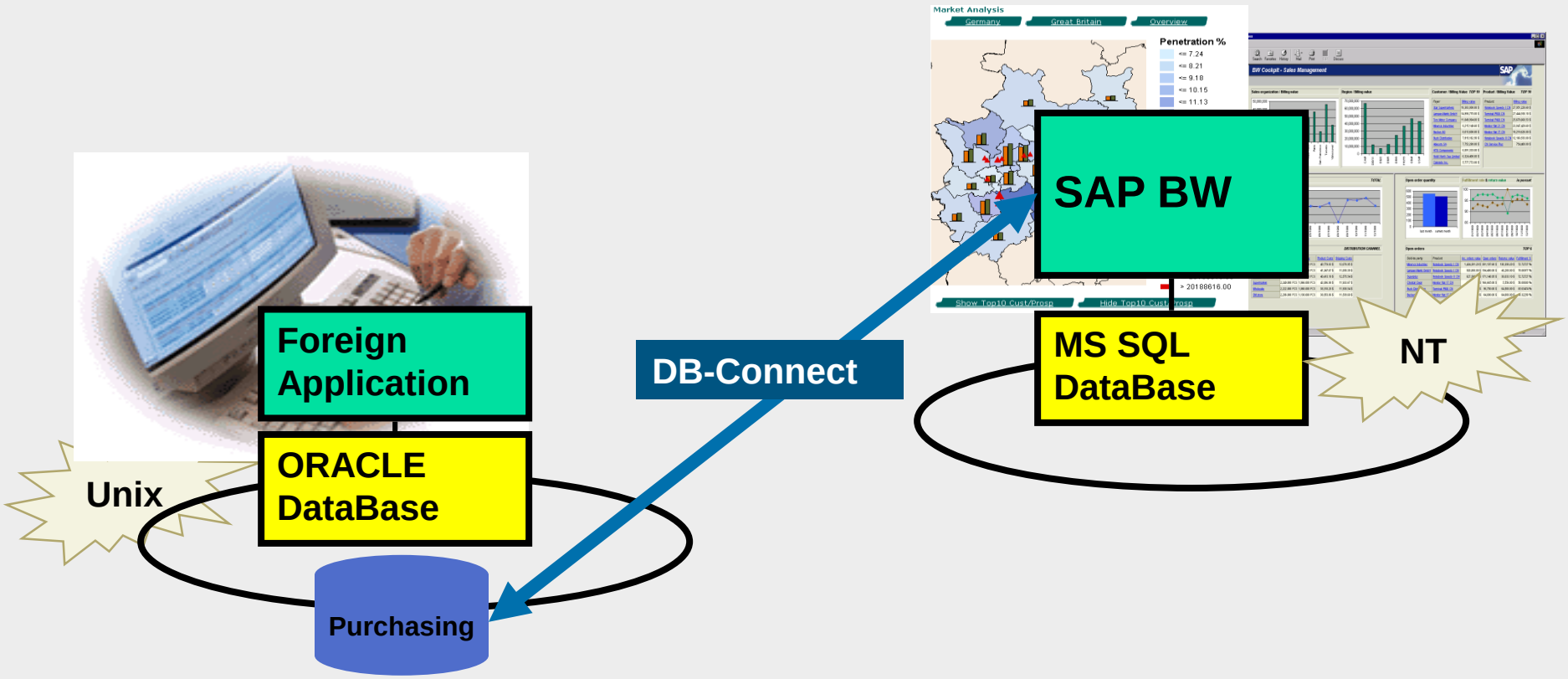
- With the open interfaces of SAP BI, data can be loaded from virtually any source and can handle the huge amounts of transactional data typical of the enterprise landscape.

- Thus extraction deals with extracting the data into the BW system for analyzing and reporting.

Challenges

- To extract large volumes of data from SAP R/3 by defining delta management
- Modifying the already available Business content and satisfying user needs
- Integrating data from non SAP systems into BW

DB Connect Overview



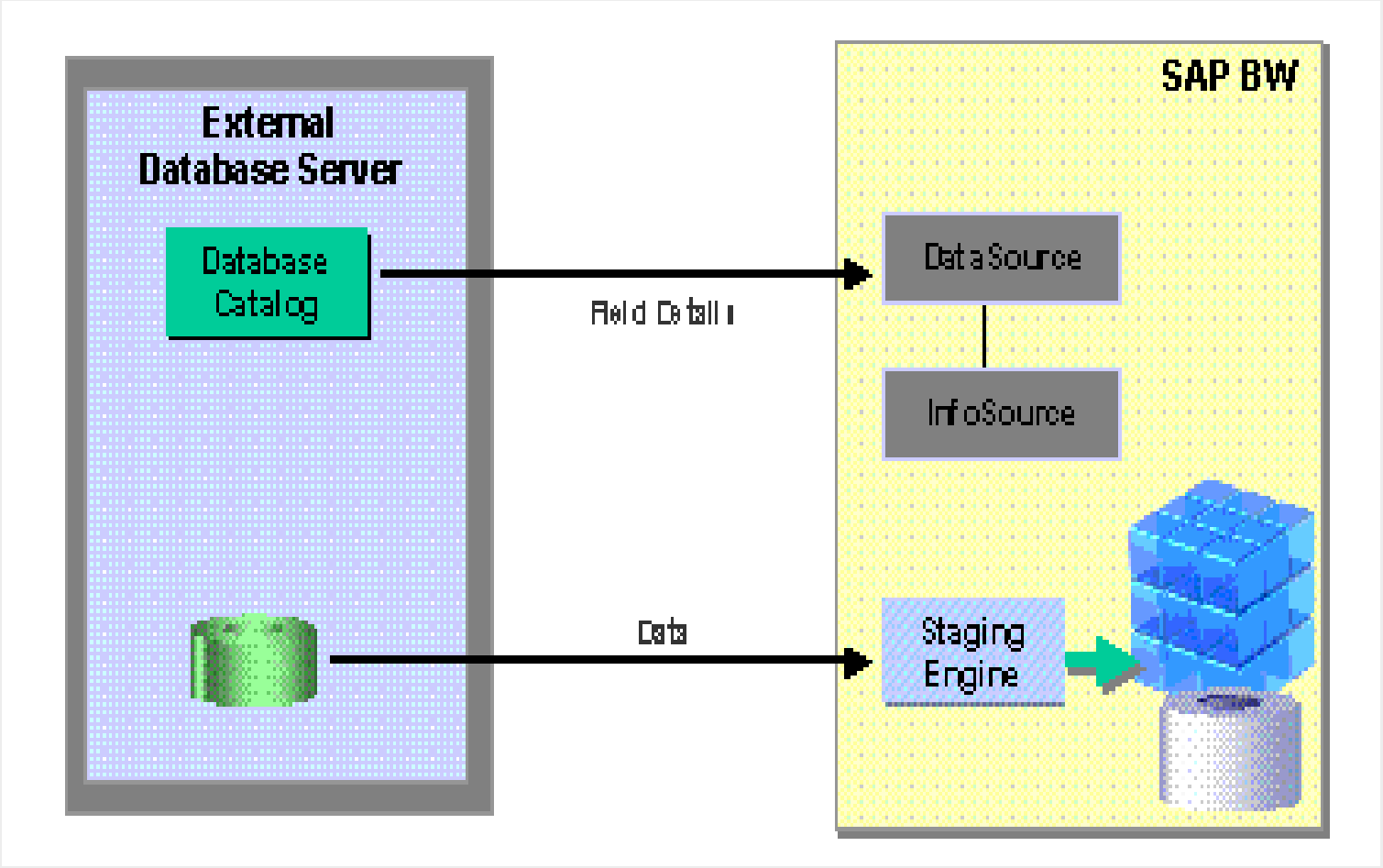
DB Connect Overview

- A purchasing application runs on a legacy system based on an ORACLE database.

- To analyze the data from the purchasing application, the data needs to be loaded into the BW System (possibly installed on a different database, e.g. MS SQL-Server).

- DB-Connect can be used to connect the DBMS of of the purchasing application and extract data from tables or views.

Data Transfer with DB Connect



Data Transfer with DB Connect

➢Using DB Connect, BI offers flexible options for extracting data directly into BI from tables and views in database management systems that are connected to BI.

➢You can use tables and views in database management systems that are supported by SAP to transfer data. You use DataSources to make the data known to BI. The data is processed in BI in the same way as data from all other sources.

Data Transfer with DB Connect

➢With DB Connect, you can load data into BI from a database system that is supported by SAP, by:

- Connecting a database to BI as a source system, thereby creating a direct point of access to external relational database management systems (RDBMS).
- Making metadata known to BI by generating a DataSource.

Data Transfer with DB Connect

- You can structure the views in such a way that you are able to control access rights to the tables and restrict or reformat data as well as carry out join operations across several tables. Using views also makes it easier to localize errors.

- You can access tables with the same technical name by creating views with different names for these tables in the BI user's schema. In this way you can generate different DataSources for tables with the same name.

If the tables contain similar semantic content, you can control the authorizations for the database user in such a way that he or she can only access the relevant tables.

DB Connect Highlights

➢Utilizes SAP know-how to provide access to supported database management systems

➢The BI Application server logs on to the database using the native DB Client supplied by the DB manufacturer

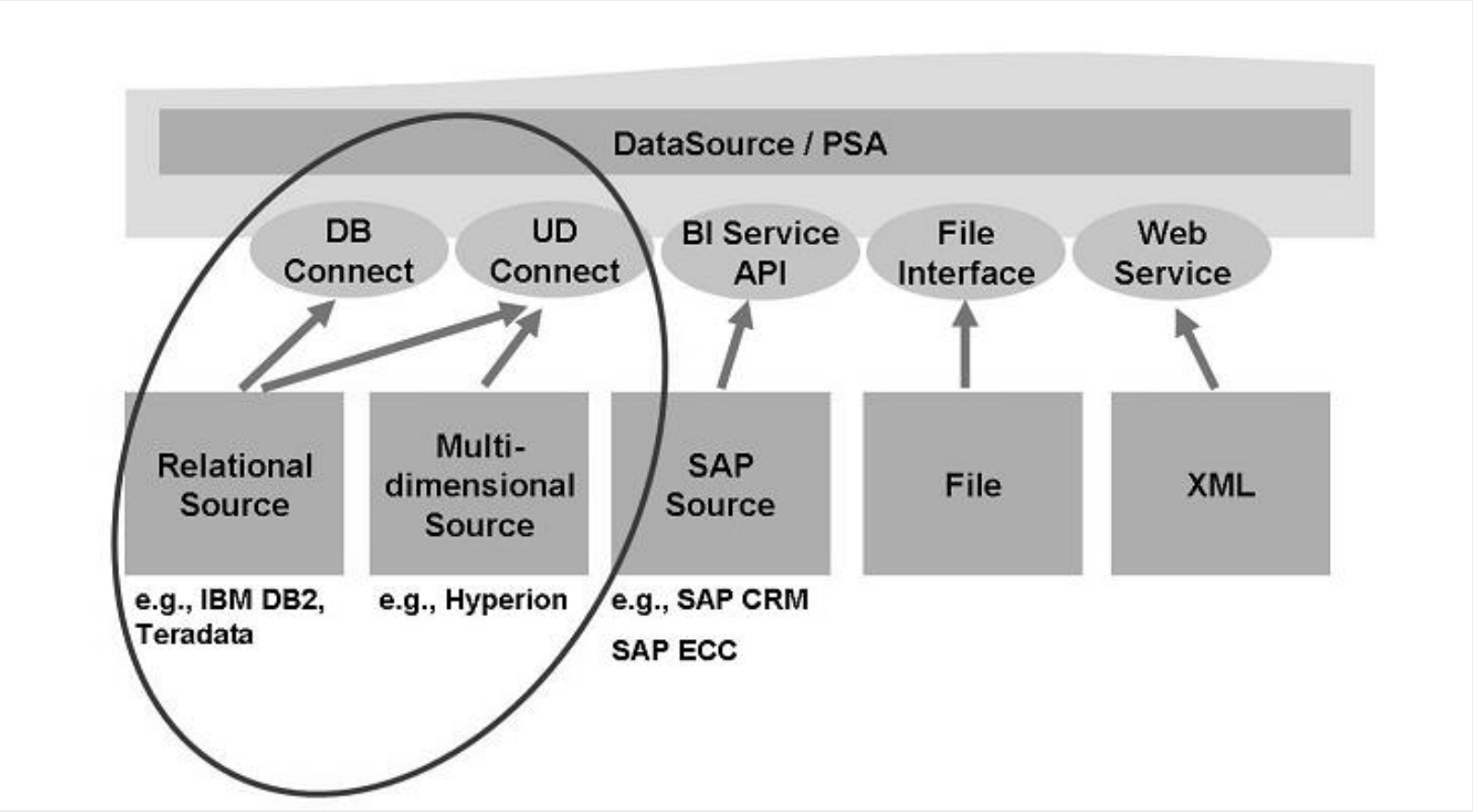
➢**Advantages**

- This is best way to get lot of data from external systems

➢**Disadvantages**

- Only available for relational database systems

Data Transfer from Non SAP SS



UD Connect Overview

- With the help of the SAP Web AS J2EE connectivity, UDConnect (Universal Data Connect) enables reporting and analysis of both SAP and non-SAP data.

- Using UD Connect, you can access just about all relational and multi-dimensional data sources.

- UD Connect transfers the data as flat data. Multi-dimensional data is converted to a flat format when UD Connect is used.

UD Connect Overview

➢For the connection to DataSources (in BW), UD Connect uses the J2EE Connector Architecture.

➢BI Java Connectors that are available for various drivers, protocols and providers as resource adapters.

- BI JDBC Connector
- BI ODBO Connector
- BI SAP Query Connector
- BI XMLA Connector

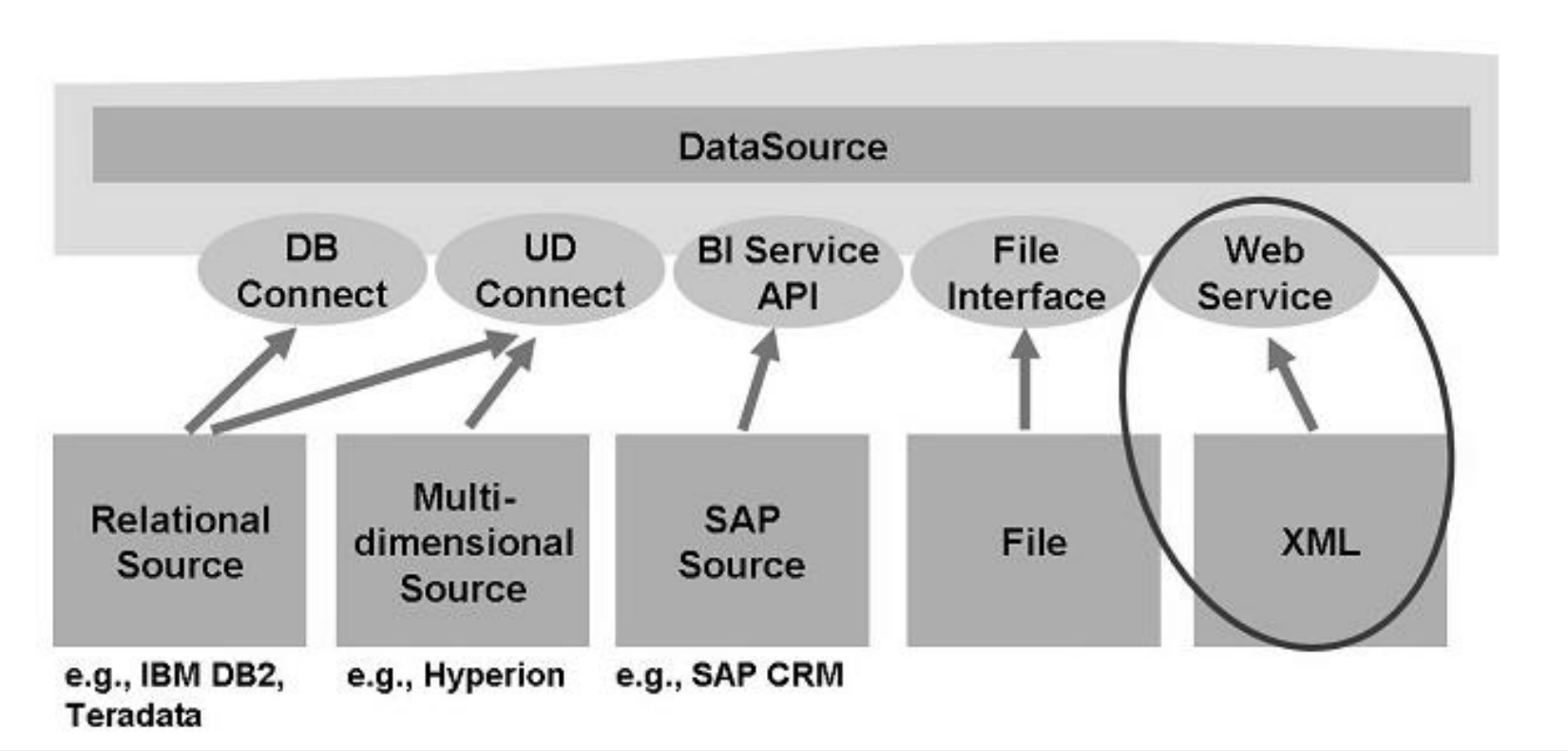
UD Connect Highlights

- Industry Standards Connection Architecture
- BI Java Connectors
- Integrations of SAP NetWeaver BI and non –SAP NetWeaver BI Data.

- **Advantages**
  - Flexible

- **Disadvantages**
  - Speed
  - Cost

Data Transfer from Non SAP SS



XML-Based Extraction

➢As a rule, data transfer in BW takes place using a data request that is sent from BW to the Source System (pull from the scheduler).

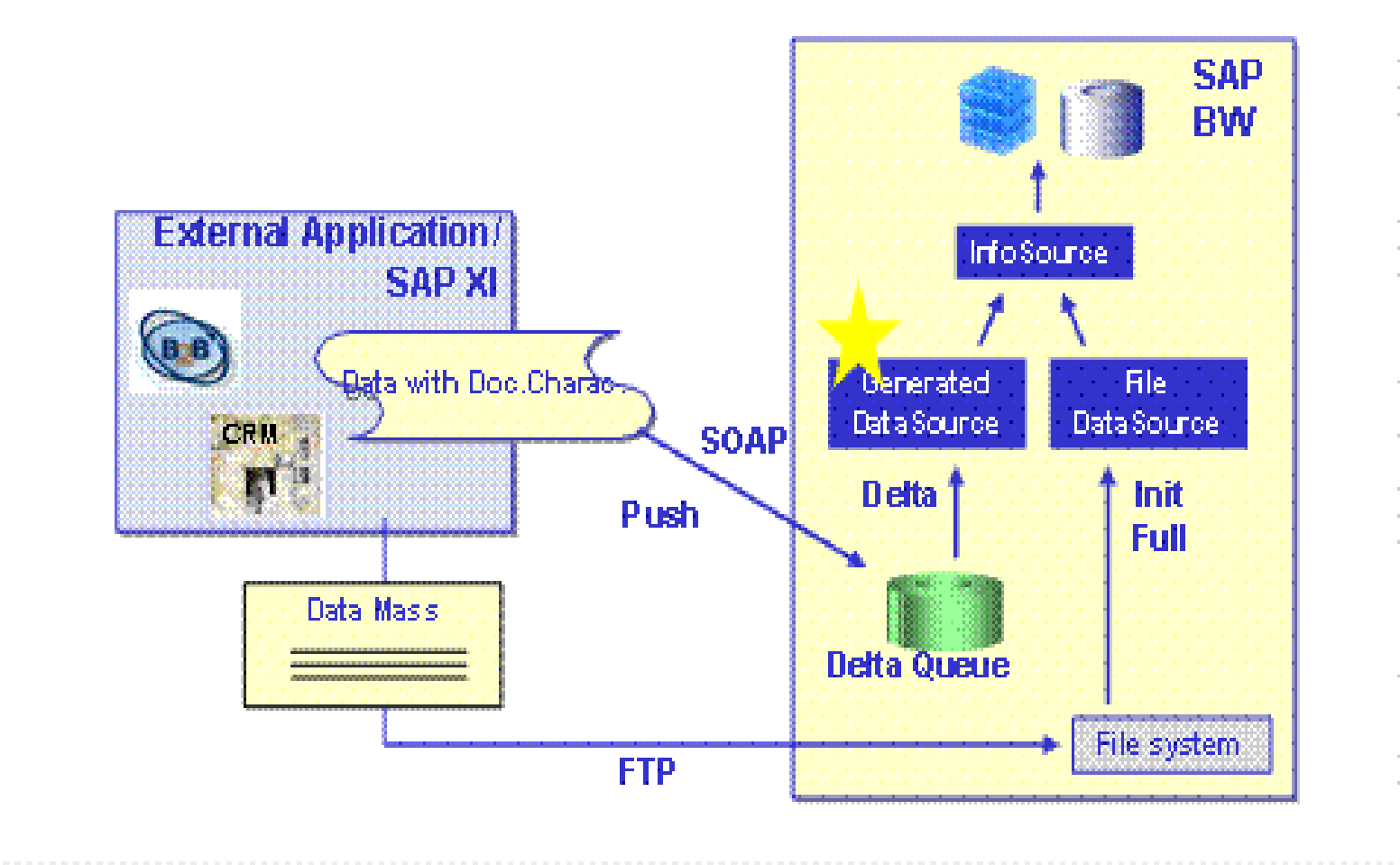
➢You can also send the data to SAP BW using external control. This is a data push in the SAP BW.

➢ Data push is possible for multiple scenarios:

- Transferring Data Using the SOAP Service SAP Web AS
- Transferring Data Using Web Service
- Transferring Data Using SAP XI

➢In all three scenarios, data transfer takes place via transfer mechanisms that are sufficient for Simple Object Access Protocol (SOAP) and are XML based.

SOAP-Based Transfer of Data



XML Highlights

- Adapter Type : Web service(push) into PSA
- Infopackage mandatory (push package)
- One-step generation of ABAP function module and SOAP compliant Web service
- Integration with SAP XI is also possible

- **Advantages**
  - Good support for internet application

- **Disadvantages**
  - Speed

DB Connect, UD Connect and SOAP Based

Datasource Enhancement

BI Content Extractors

LO Cockpit

DB Connect, UD Connect and SOAP based

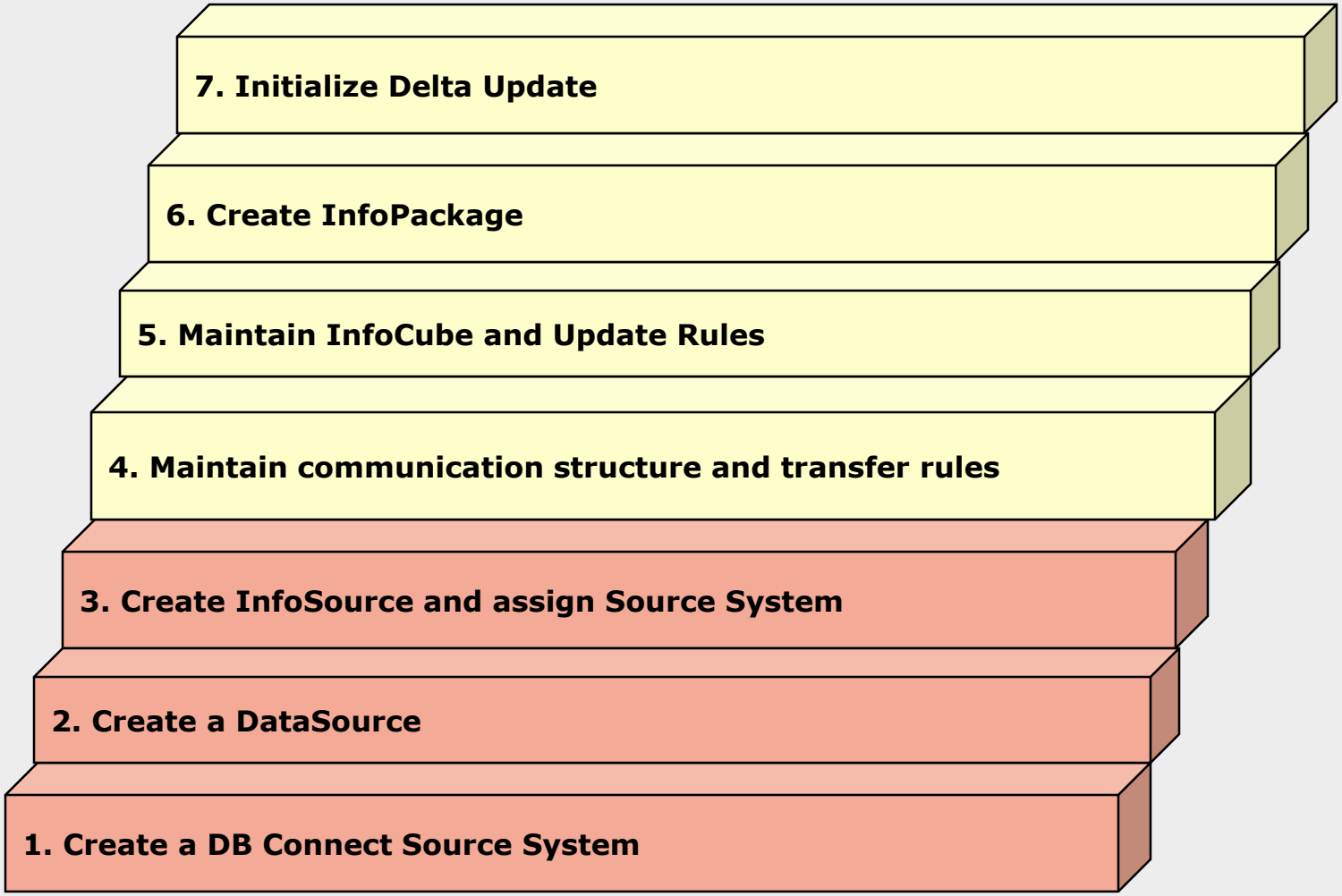
FI-SL Extractors

Flat File Extraction

CO-PA Extractors

Generic Extractors

Steps involved for DB Connect

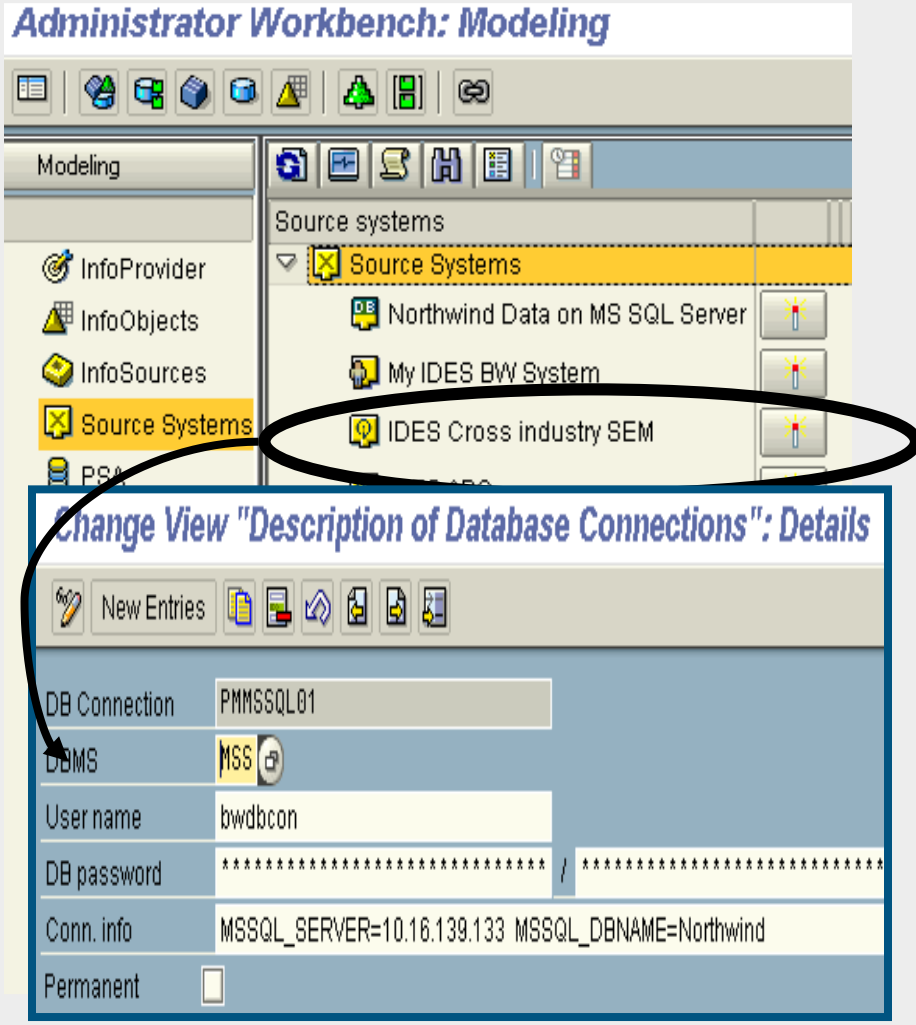


Steps involved for DB Connect

- Create a DB Connect Source System
- Create a DataSource
- Create InfoSource and assign the Source System created to it.
- Create InfoPackage and load the data.

Step 1 - Create a DB Connect source system

- DB Connection : Give the name of the connection.
- DBMS : Enter the database type to which you want to connect in this field. (i.e. Oracle, DB2 etc)
- Enter the username and password.
- Conn. Info : This field contains the technical information that is analyzed in native SQL in the CONNECT statement in order to open the database connection. e.g. In Oracle enter the name of the database you want to connect

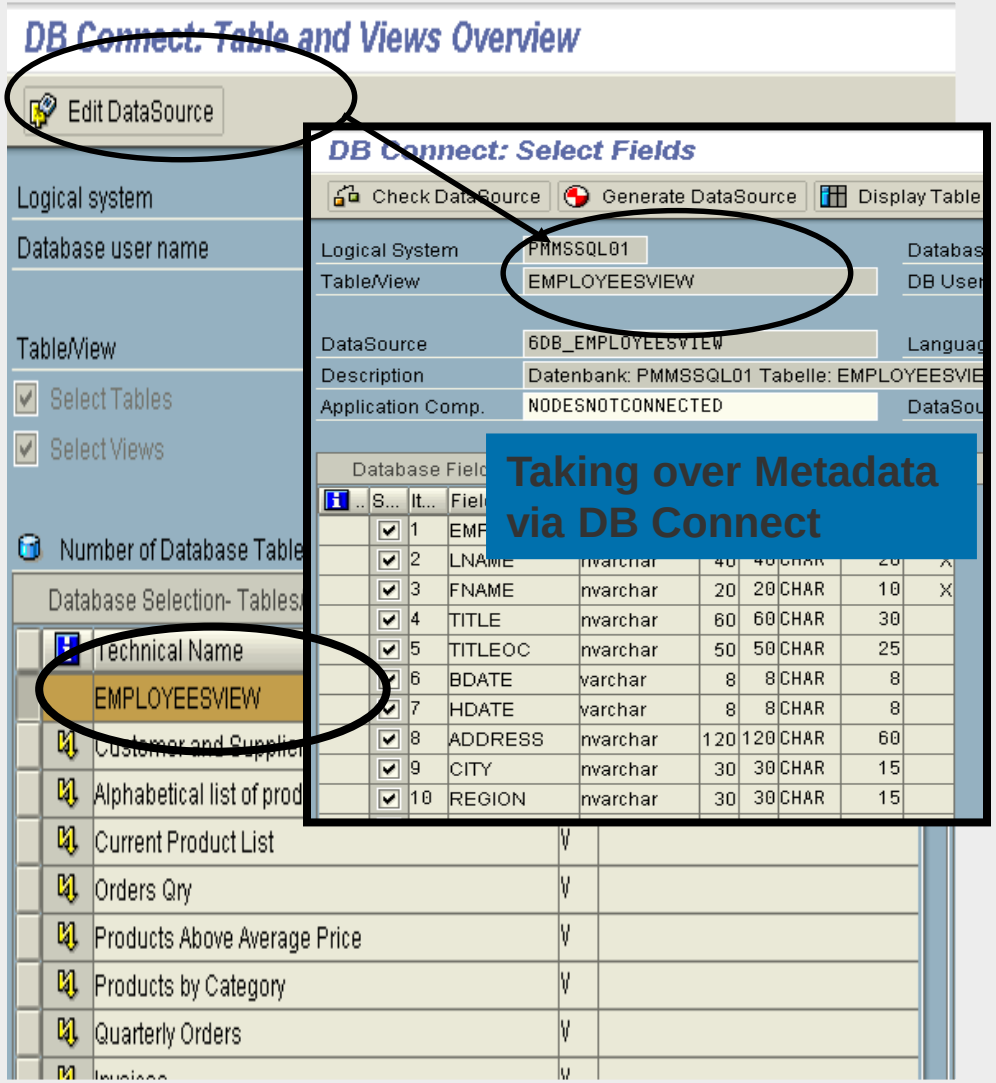


Step 2 - Generate DataSource

➢You use the context menu for a database Source System ☐ Select Database Tables to generate a DataSource for database source systems.

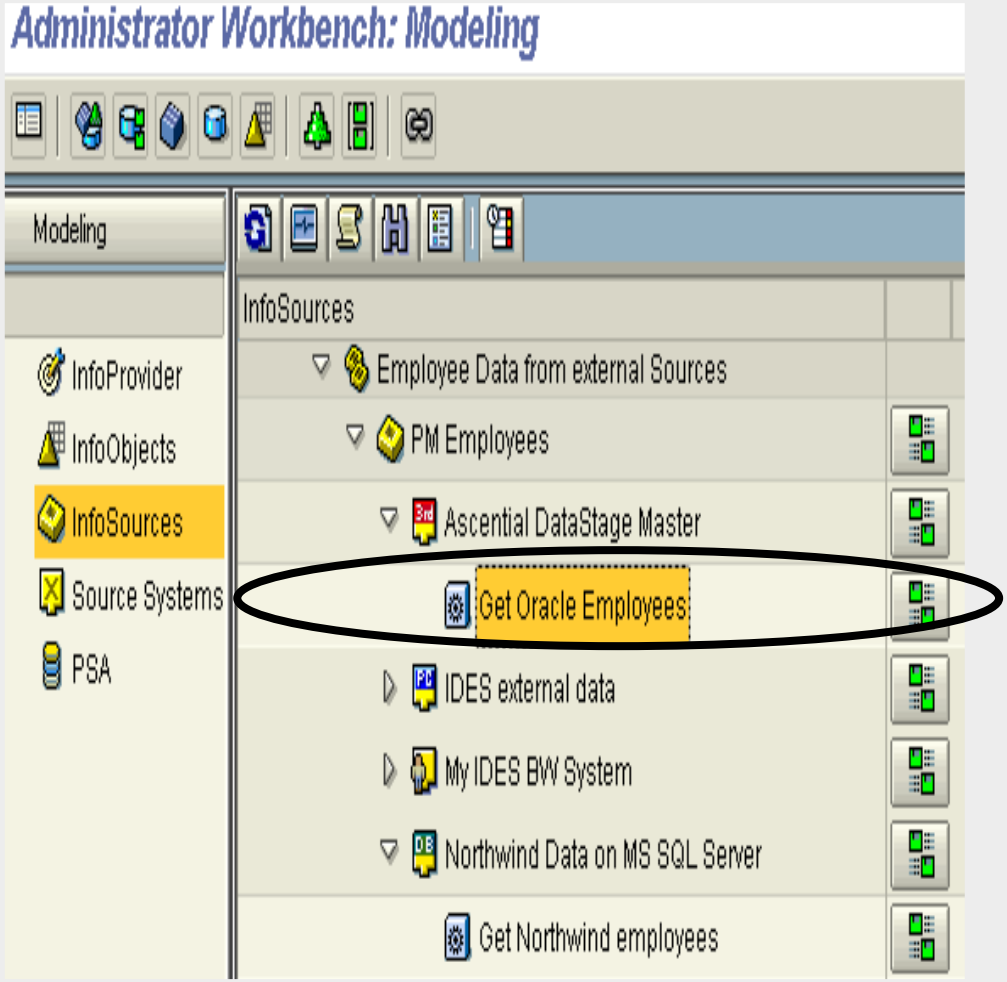
➢First, you choose a selection of tables for a database source system and create a connection to the database source system.

➢Next, you select the table fields for a specific table of the database Source System, and specify whether you want these table fields to be available for selection in the BW system.



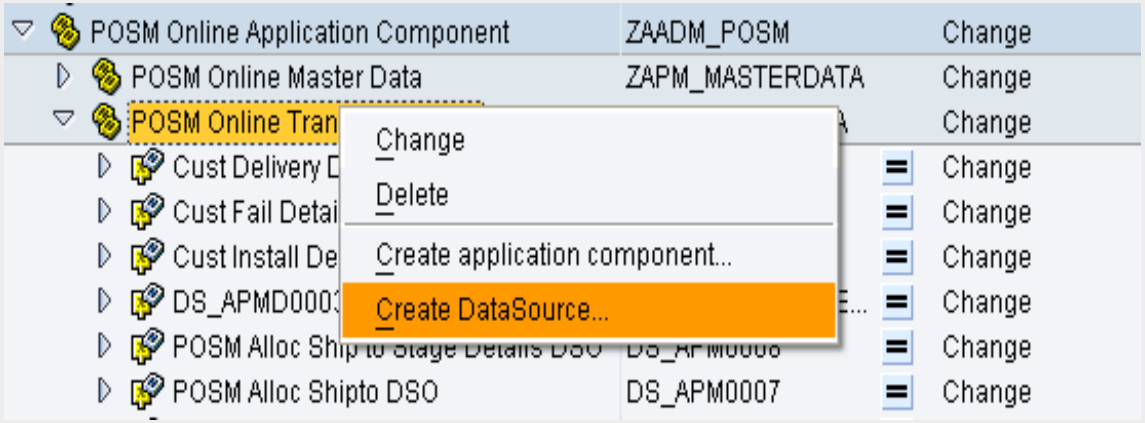
Step 3 - Assign the DataSource to the InfoSource

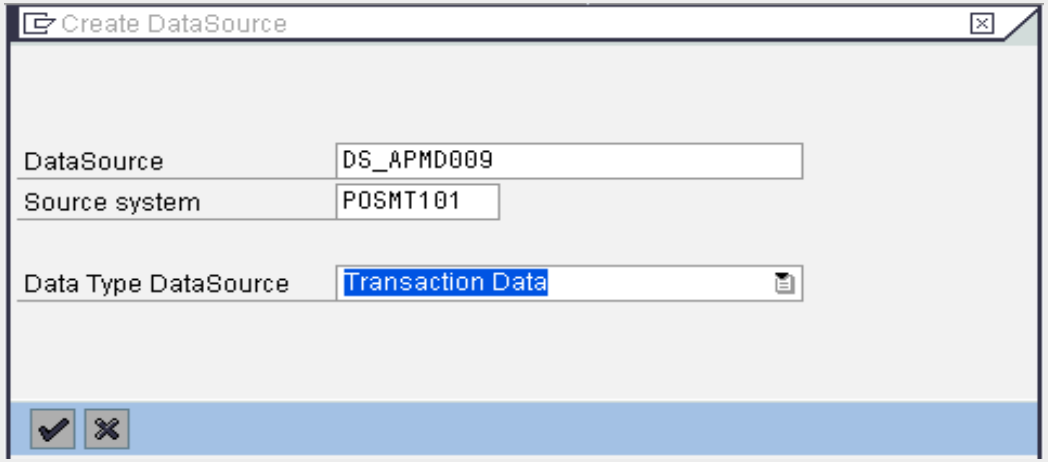
- Based on the generated DataSources for external DB views/tables
- InfoSources in BW can be established as usual.
- Dataflow is now possible!



Datasource using DB connect

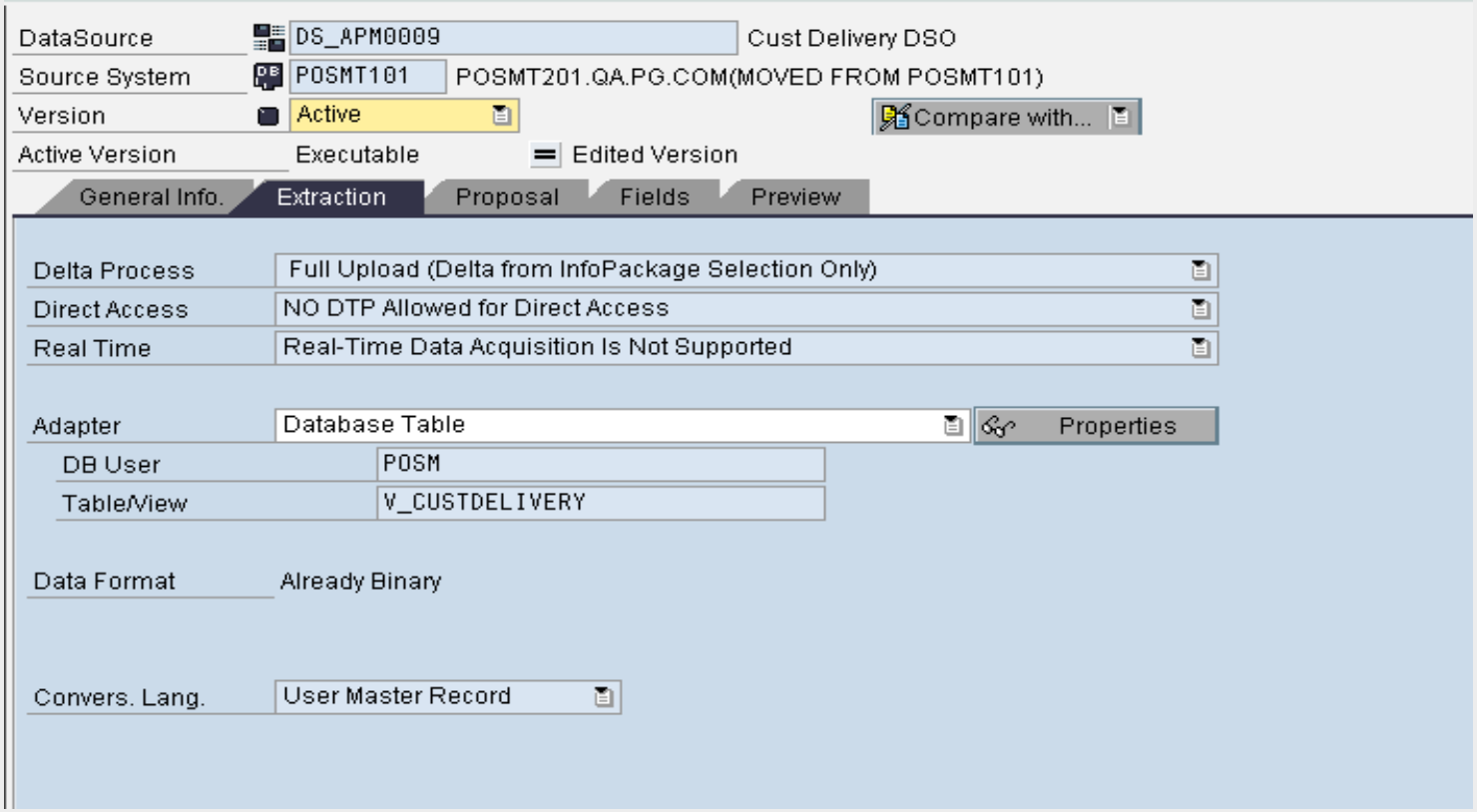
➢We create the Datasource under the desired Application Component and for the Source system as the DB Connect as shown below.





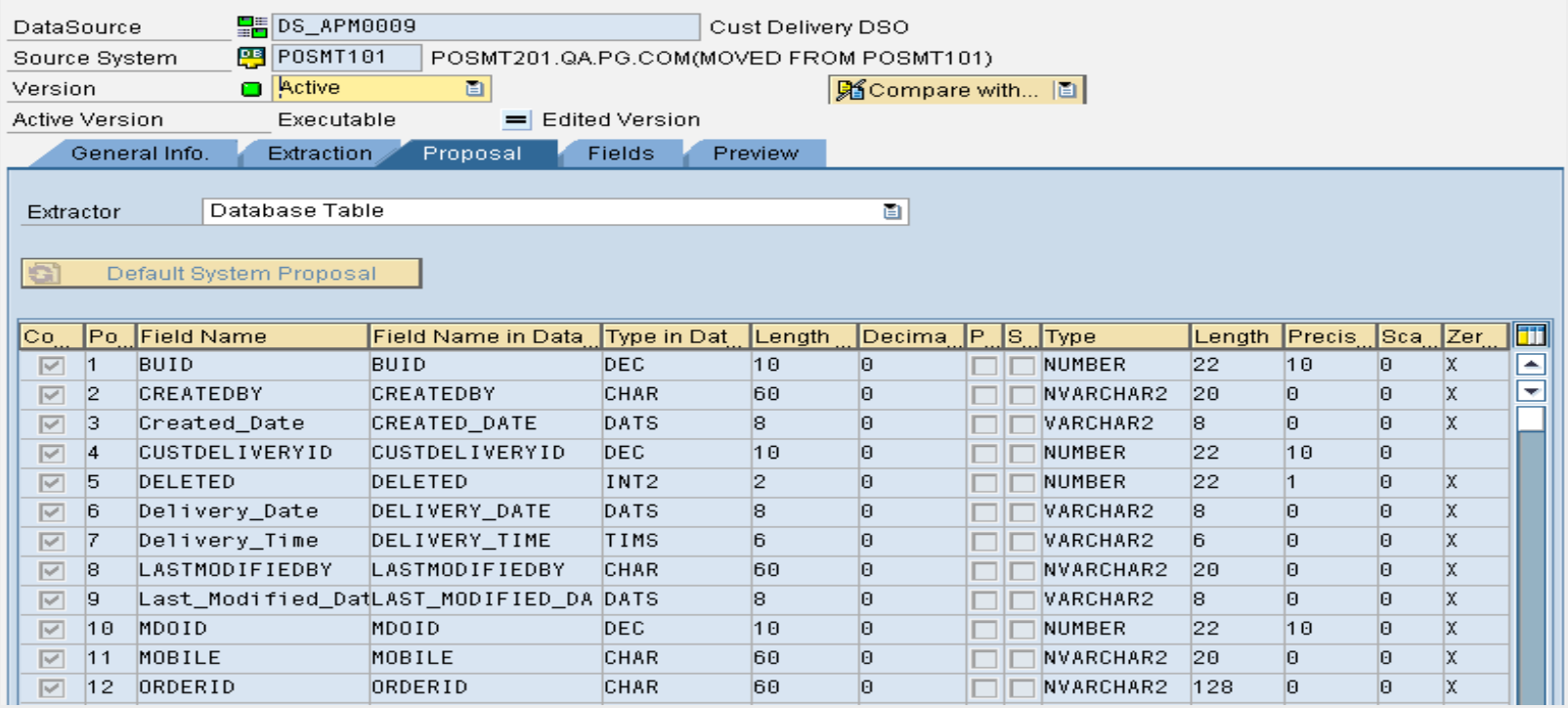
Cont…

➢In the Extraction tab of the Datasource, we specify the DB User and the name of the Table/View used for extraction of data.



Cont..

- On Proposal Tab we get the list of the fields available in the Database table.
- Here we can select the fields which are required to be loaded in the Data Target.



DataSource: DS_APM0009 — Cust Delivery DSO
Source System: POSMT101 — POSMT201.QA.PG.COM(MOVED FROM POSMT101)
Version: Active — Compare with...
Active Version: Executable — Edited Version

General Info. | Extraction | Proposal | Fields | Preview

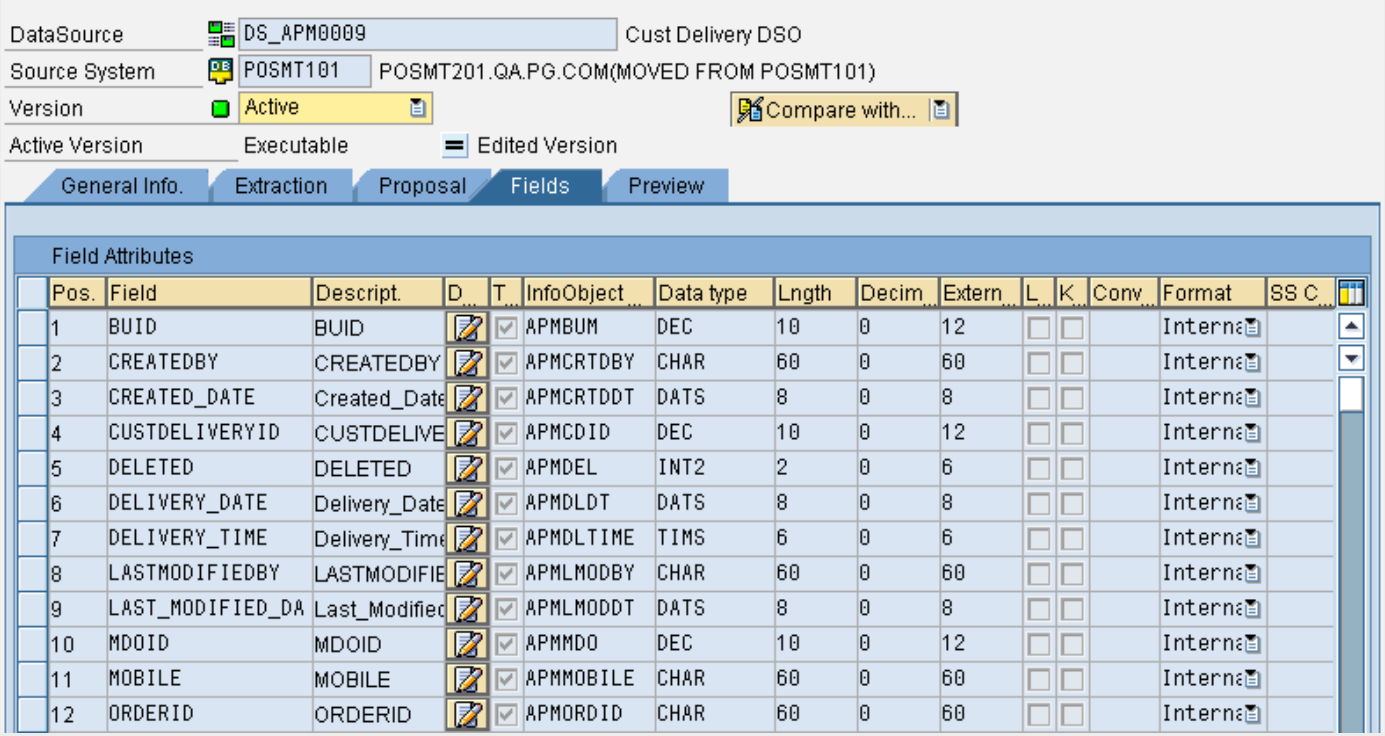
Extractor: Database Table

Default System Proposal

Co	Po	Field Name	Field Name in Data	Type in Dat	Length	Decima	P	S	Type	Length	Precis	Sca	Zer
☑	1	BUID	BUID	DEC	10	0	☐	☐	NUMBER	22	10	0	X
☑	2	CREATEDBY	CREATEDBY	CHAR	60	0	☐	☐	NVARCHAR2	20	0	0	X
☑	3	Created_Date	CREATED_DATE	DATS	8	0	☐	☐	VARCHAR2	8	0	0	X
☑	4	CUSTDELIVERYID	CUSTDELIVERYID	DEC	10	0	☐	☐	NUMBER	22	10	0	
☑	5	DELETED	DELETED	INT2	2	0	☐	☐	NUMBER	22	1	0	X
☑	6	Delivery_Date	DELIVERY_DATE	DATS	8	0	☐	☐	VARCHAR2	8	0	0	X
☑	7	Delivery_Time	DELIVERY_TIME	TIMS	6	0	☐	☐	VARCHAR2	6	0	0	X
☑	8	LASTMODIFIEDBY	LASTMODIFIEDBY	CHAR	60	0	☐	☐	NVARCHAR2	20	0	0	X
☑	9	Last_Modified_Dat	LAST_MODIFIED_DA	DATS	8	0	☐	☐	VARCHAR2	8	0	0	X
☑	10	MDOID	MDOID	DEC	10	0	☐	☐	NUMBER	22	10	0	X
☑	11	MOBILE	MOBILE	CHAR	60	0	☐	☐	NVARCHAR2	20	0	0	X
☑	12	ORDERID	ORDERID	CHAR	60	0	☐	☐	NVARCHAR2	128	0	0	X

Cont..

- Under the Field tab we map the Database fields to the Infoobjects present in the BW system.
- Only the Database fields which are checked in the Proposal Tab are available for mapping under this TAB.



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Field Attributes

Pos.	Field	Descript.	D...	T...	InfoObject	Data type	Lngth	Decim...	Extern...	L...	K...	Conv...	Format	SS C...
1	BUID	BUID			APMBUM	DEC	10	0	12				Interna	
2	CREATEDBY	CREATEDBY			APMCRTDBY	CHAR	60	0	60				Interna	
3	CREATED_DATE	Created_Date			APMCRTDDT	DATS	8	0	8				Interna	
4	CUSTDELIVERYID	CUSTDELIVE			APMCDID	DEC	10	0	12				Interna	
5	DELETED	DELETED			APMDEL	INT2	2	0	6				Interna	
6	DELIVERY_DATE	Delivery_Date			APMDLDT	DATS	8	0	8				Interna	
7	DELIVERY_TIME	Delivery_Time			APMDLTIME	TIMS	6	0	6				Interna	
8	LASTMODIFIEDBY	LASTMODIFIE			APMLMODBY	CHAR	60	0	60				Interna	
9	LAST_MODIFIED_DA	Last_Modifiec			APMLMODDT	DATS	8	0	8				Interna	
10	MDOID	MDOID			APMMDO	DEC	10	0	12				Interna	
11	MOBILE	MOBILE			APMMOBILE	CHAR	60	0	60				Interna	
12	ORDERID	ORDERID			APMORDID	CHAR	60	0	60				Interna	

Tips & Tricks

➢Before starting an SAP BW project, analyze the reporting requirements against the standard DataSources available.

➢Zero-in on the standard DataSources satisfying the requirement.

➢If data that cannot be supplied by the standard sources, we can:

- Create a generic DataSources.
- Enhance the standard DataSource.

Some Useful sites

- www.sdn.sap.com
- www.help.sap.com
- www.service.sap.com