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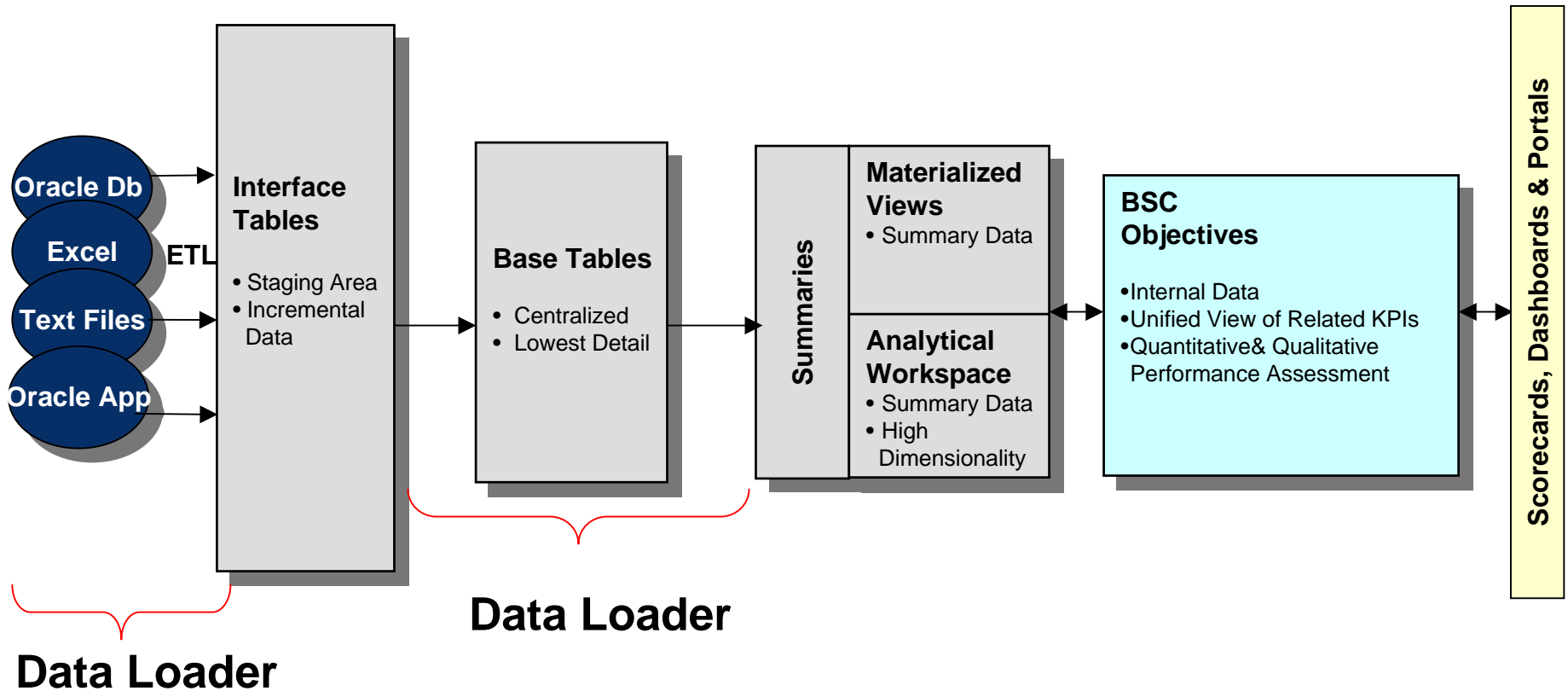


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Oracle Balanced Scorecard: BSC Expert

Vivek Ranjan

Current Data Summarization in BSC



Limitations of Data Loader

- Only Oracle, Text files and Excel sheets are the sources supported in BSC
- Cannot pull data from oracle sources hosted on an instance different from BSC
- No Provision for Transforming data before loading into the Interface Tables
- Flat Files loading mechanism is not flexible as Data Loader does not support Sampling
- PL/SQL Programs have to be hand written
- The ETL code is not standards based leading to maintenance issues

Functional Requirements

- Easy interface to map the BSC Interface Tables to the Source Tables
- Automatically generate programs to populate the Interface Tables with source data
 - Source data can be Flat Files, Oracle Tables or Non-Oracle Tables
 - Source data can be on an Instance different from BSC Instance
- Allow users to embed data transformation logic before bringing the data into the Interface Table
- Ability to Sample flat files before loading the data



The Solution was

Oracle Warehouse Builder 10G R2

What is Oracle Warehouse Builder?

- Enables the extraction, transformation, and loading of data to produce *quality information* in the Oracle database
- Protects and leverages customer investment in the Oracle technology stack through *data and metadata integration*

Sources & Targets supported by OWB

Sources

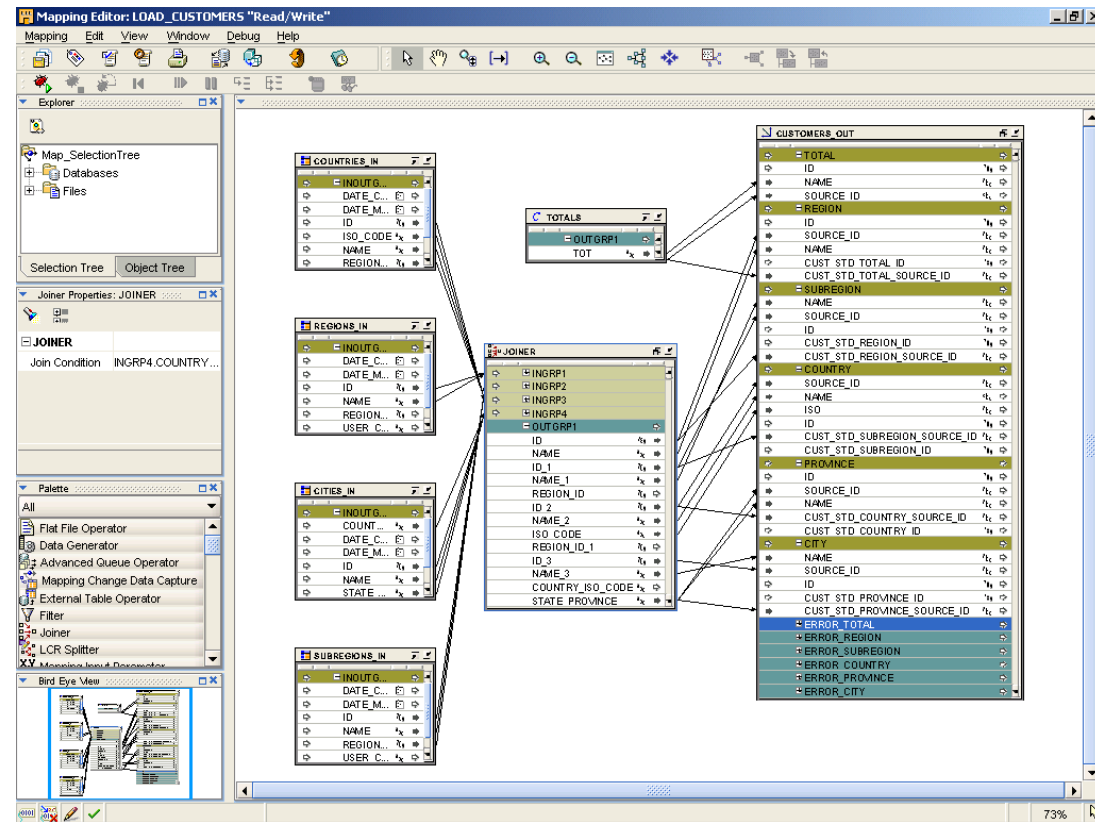
- **Oracle**
 - **Tables, Views, MViews, Queues, External Tables, Table Functions, Streams, PL/SQL API's, Sqlloader...**
- **DB2, Sybase, SQL Server, Informix, Mainframes, ... (Oracle Transparent Gateways)**
- **ODBC**
- **Flat Files**
- **Applications**
 - **Oracle Apps**
 - **Peoplesoft**
 - **SAP**
 - **Custom SQL App**

Targets

- **Oracle**
 - **Tables, Queues, Table Functions, Streams, PL/SQL API's, ...**
- **DB2, Sybase, SQLServer, Informix, Mainframes, ... (Oracle Transparent Gateways)**
- **ODBC**
- **Flat Files**
- **Applications**
 - **Oracle Apps**
 - **Peoplesoft**
 - **Custom SQL App**

ETL: Mappings

- Graphical, declarative modeling of Data Flows
- Map from Source to Target
- Integrated Data Quality
 - N&A standardization
 - Match/Merge
 - Profiling
- Generates SQL & PL/SQL
 - Merge, transportable tablespaces, sqlloader, table functions, streams, xml data types, BLOBS/CLOBS, ...
- Leverage custom data transformations
- Pluggable maps for reusability of logic



Experts

- Re-use OWB Components to build your OWN application!
 - Define best practices & directed guidance
 - Automate Repetitive tasks
- Run Standalone or within OWB Design-time
- Declarative Definition & Guided step-by step execution
- E.g. “Data-Mover” Expert
 - Offers users the ability to easily copy data from:
 - Table-to-Table
 - File-to-Table
- Leverage OWB Scripting Technology

BSC & OWB Integration Methodology

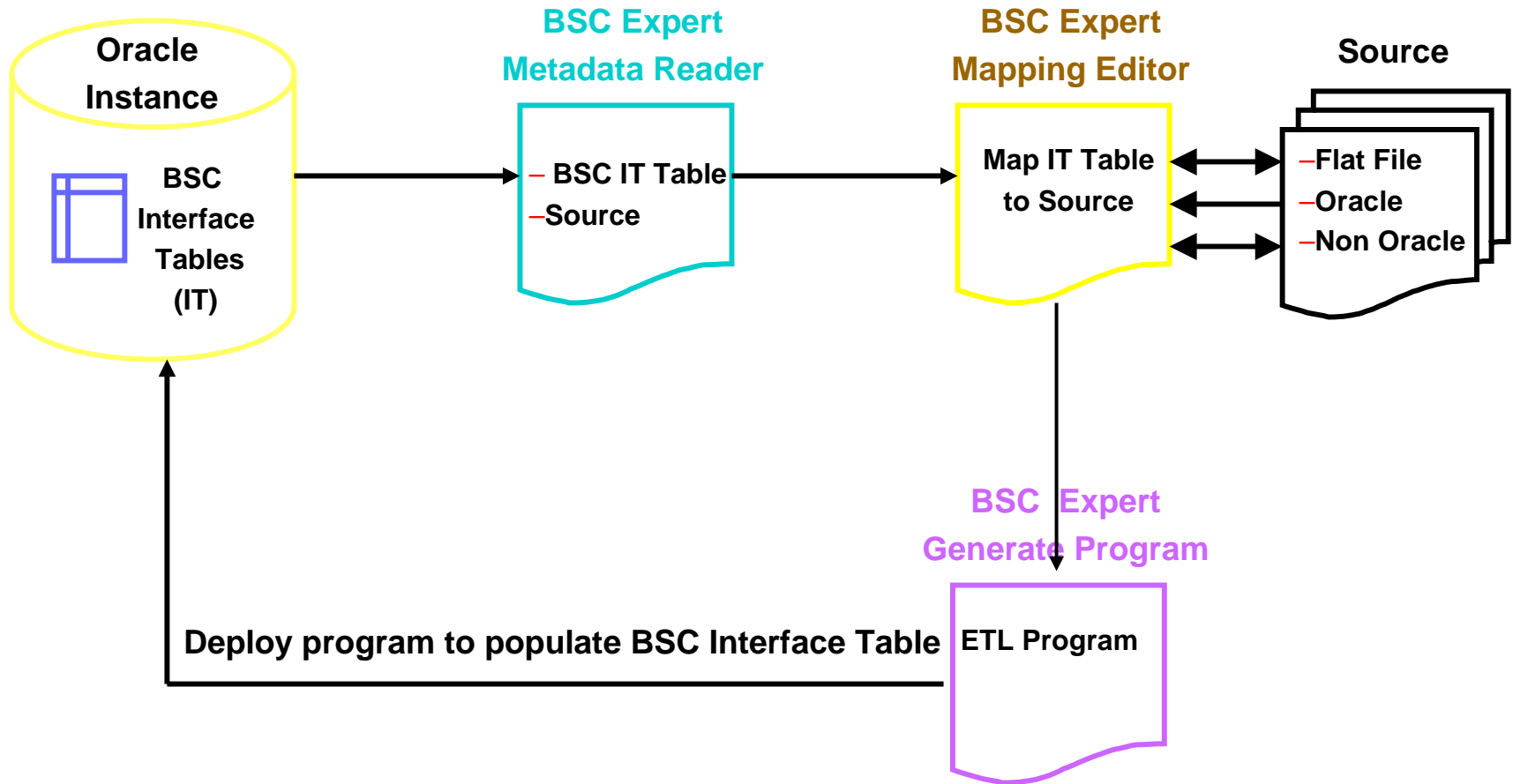
- Deliver a BSC Expert using these capabilities of OWB 10G R2 (Paris) Release
- The following tasks will be possible when the BSC Expert is invoked from OWB:
 - BSC Interface Tables definition available in OWB
 - OWB to prompt user to identify the source for the BSC Interface tables
 - OWB to provide a mapping editor between BSC Interface tables and source(s)
 - OWB to generate loading program based on mapping to load data from source to the BSC Interface table

Benefits of BSC Expert

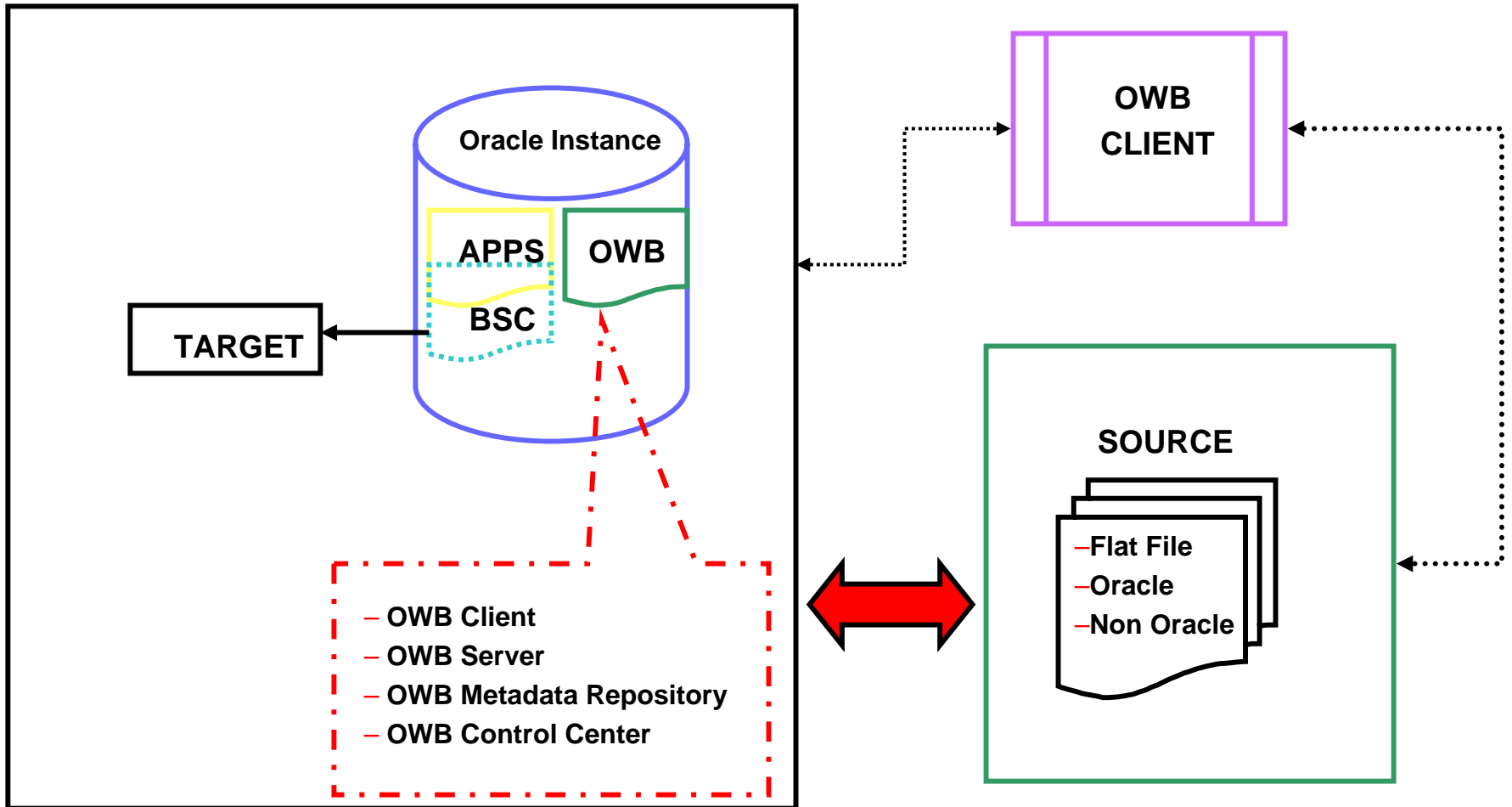
Performance Management Administrators will now be able to

- Define source locations and mappings in a unified way and store them in OWB metadata repository
- Import metadata for BSC and Source schema into respective modules
- Generate and deploy ETL code with ease
- Create ETL code that will allow loading of data from any source into the Interface Tables.
- Extract data from sources in different instance.
- Manage creation, editing and deletion of a MAPPING in a systematic way

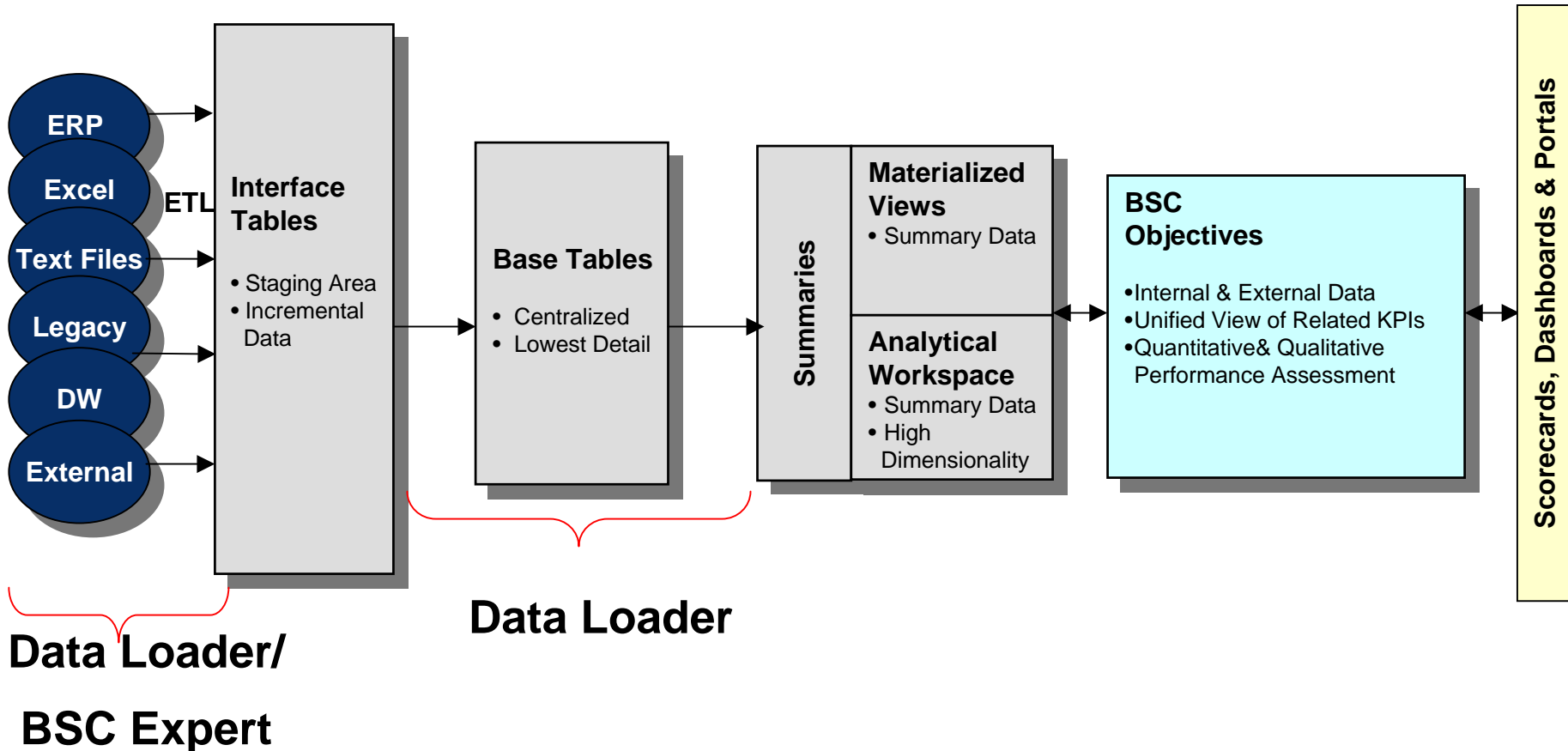
BSC Expert: Process Flow Diagram



BSC Expert: Installation and Configuration



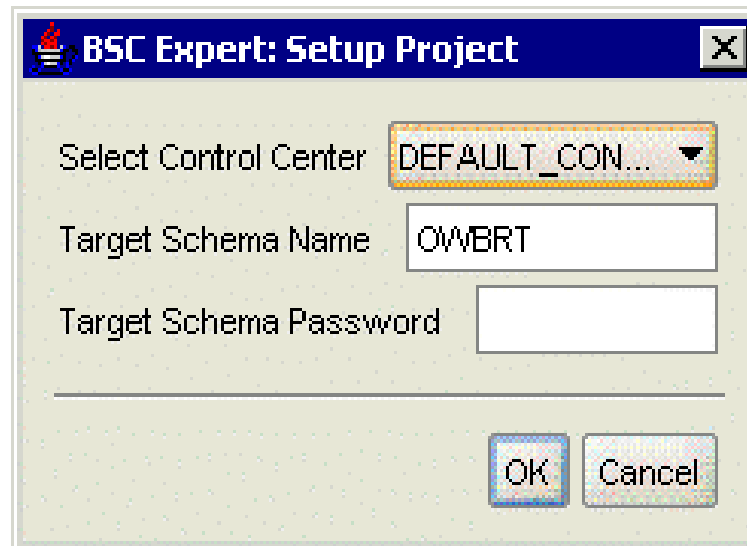
Data Summarization: Post BSC Expert



BSC Expert Demo



BSC Expert: Project Setup



The image shows a dialog box titled "BSC Expert: Setup Project". It contains three input fields: "Select Control Center" with a dropdown menu showing "DEFAULT_CON...", "Target Schema Name" with a text box containing "OWBRT", and "Target Schema Password" with an empty text box. At the bottom right, there are "OK" and "Cancel" buttons.

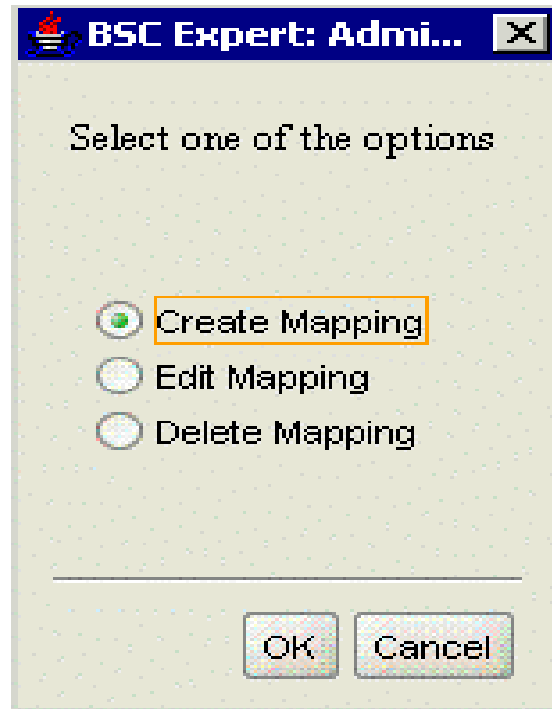
Select Control Center: DEFAULT_CON... ▼

Target Schema Name: OWBRT

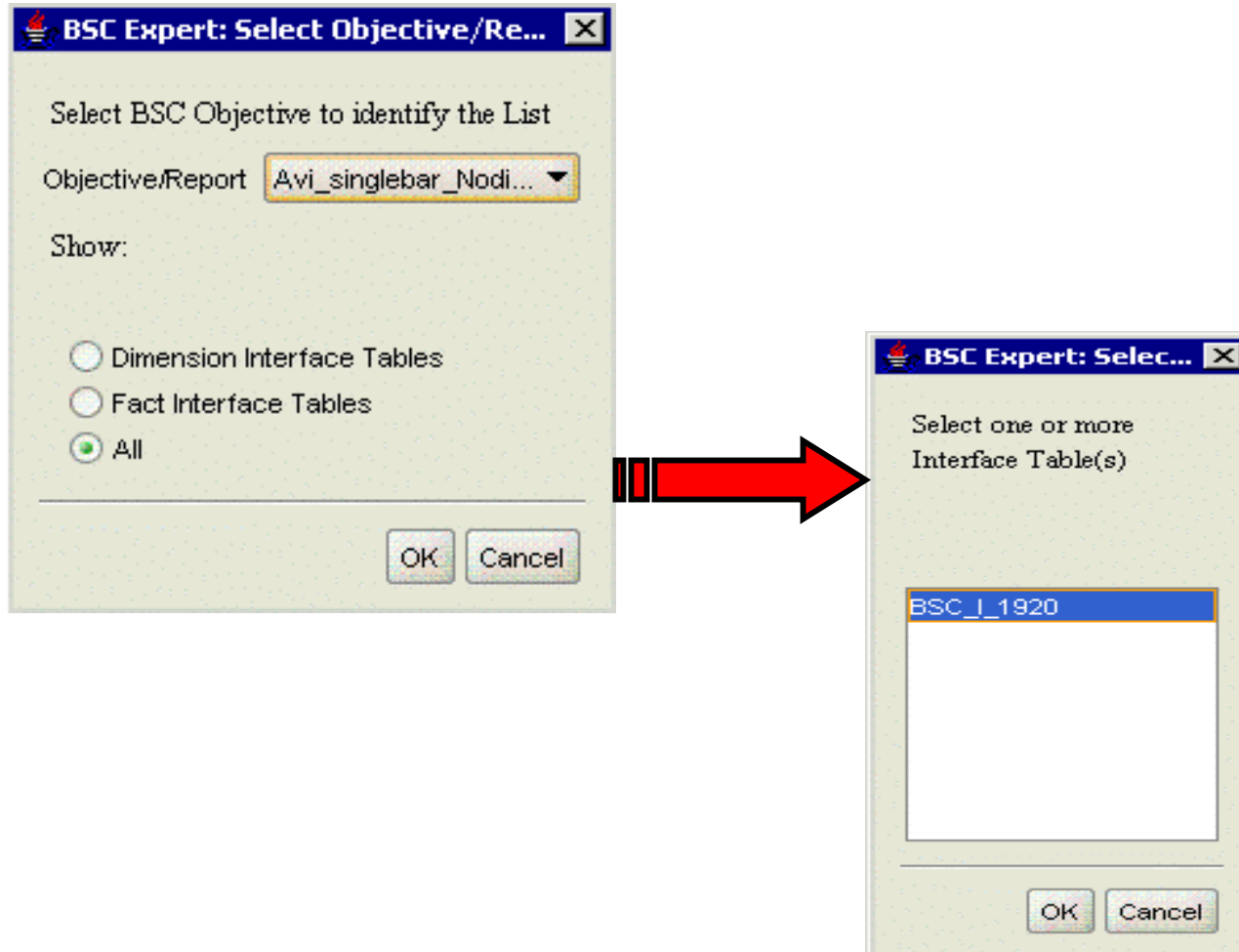
Target Schema Password: [Empty]

OK Cancel

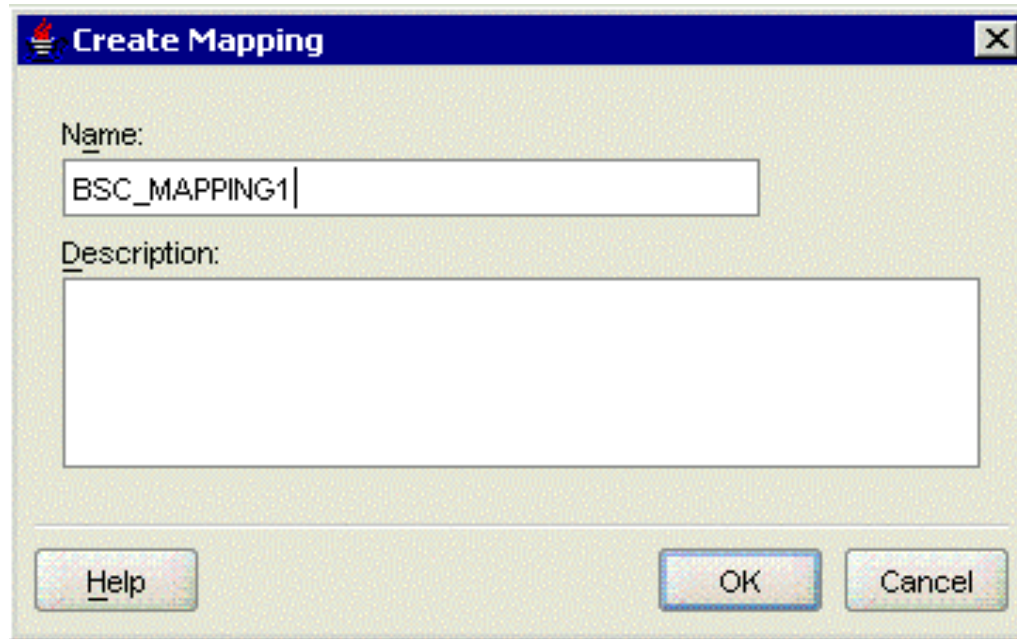
BSC Expert: Administer Mapping



BSC Expert: Identify Interface Tables



BSC Expert: Define Mapping



Create Mapping

Name:
BSC_MAPPING1

Description:

Help OK Cancel

BSC Expert: Select Source

The screenshot shows a 'Select Source' dialog box with the following configuration:

- Source: Oracle
- Location: BISPROD_LOCATION (with an Edit button)
- Details section:
 - Name: BISPROD_LOCATION
 - Description: (empty text area)
 - Type: HOST:PORT:SERVICE
 - Username: BSC
 - Password: *****
 - Host: ap6133rt
 - Port: 1523
 - Service: bisprod
 - Schema: BSC
 - Version: 10.1

Buttons at the bottom: Help, OK, Cancel.

BSC Expert: Define Source Module

Edit Module: DWBEXP_ORACLE_SRC

Name Metadata Location Data Locations

Name:
DWBEXP_ORACLE_SRC

Select the module status:
Development

Identify the module type:
 Data Source
 Warehouse Target

Description:

Help OK Cancel

BSC Expert: Import Source Objects

Import Metadata Wizard - Step 1 of 3: Filter Information

Use this page to filter the objects you want to import.
Select the types of objects you want to import:

Object Type

<input checked="" type="checkbox"/> <u>T</u> able	<input checked="" type="checkbox"/> <u>Q</u> ueues
<input checked="" type="checkbox"/> <u>D</u> imension	<input checked="" type="checkbox"/> <u>C</u> ube
<input checked="" type="checkbox"/> <u>E</u> xternalTable	<input checked="" type="checkbox"/> <u>V</u> iew
<input checked="" type="checkbox"/> <u>S</u> equence	<input checked="" type="checkbox"/> <u>P</u> L/SQL Transformation
<input checked="" type="checkbox"/> <u>U</u> se a synonym to look up objects	<input checked="" type="checkbox"/> <u>U</u> ser Defined Type

Use the name field to make wild card selections. Use (%) for zero or more matching or () to find one matching character. Note that pattern search is case sensitive.

Only select objects that match the pattern

BSC Expert: Map Source & Target Objects

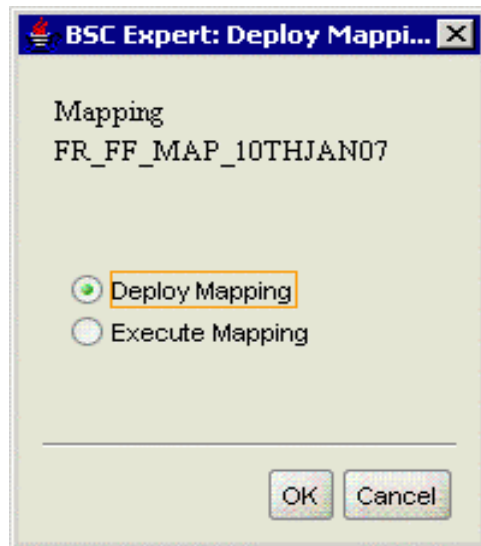
The screenshot displays the Oracle BSC Expert Mapping Editor interface. The main workspace shows two database objects being mapped:

- PRODUCT_INFO** (Source):
 - INOUTG...
 - PRODU... 4b
 - ITEM 3k
 - FIL_CUR... 4b
 - TIME_FK
 - TYPE 7b
 - COGS 7b
 - FULFILL... 7b
 - RETURN... 7b
- BSC_I_35** (Target):
 - INOUTG...
 - PRODU... 4b
 - ITEM
 - FIL_CUR... 4b
 - TIME_FK
 - TYPE 7b
 - COGS 7b

Arrows indicate the mapping from the source object to the target object. The Generation Results section shows the following SQL script:

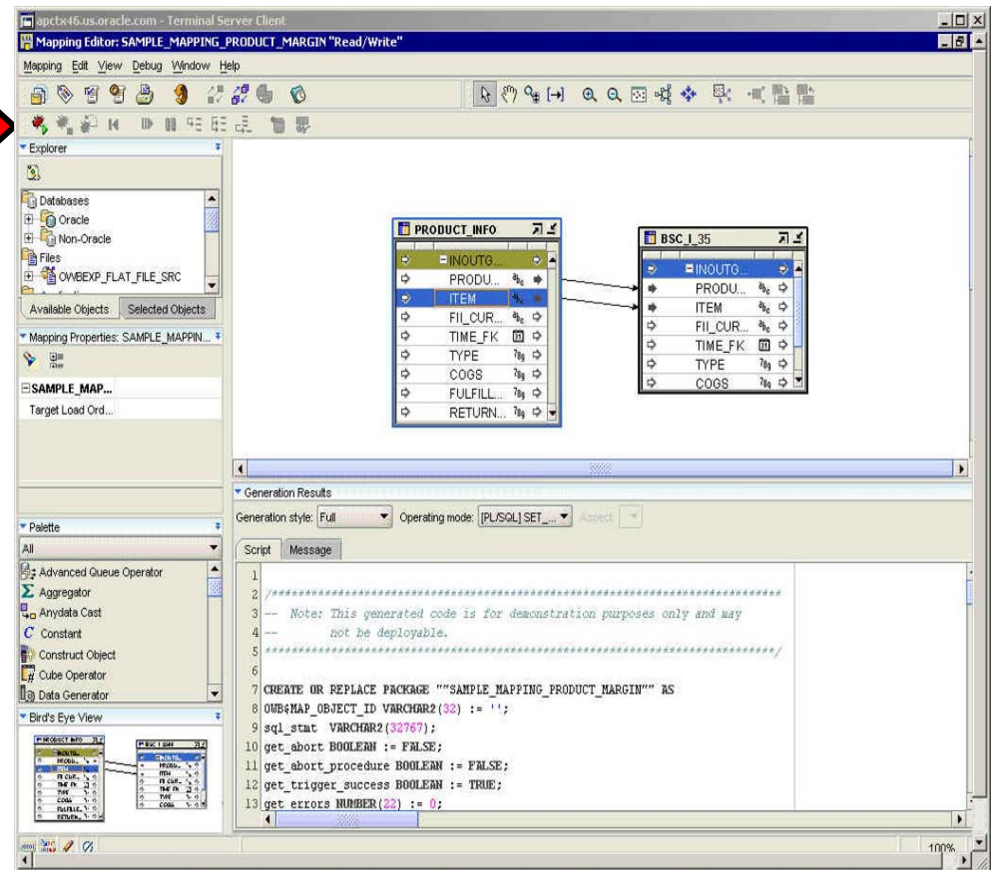
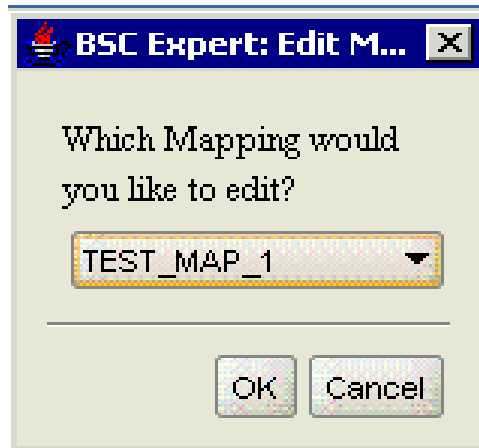
```
1
2
3 --- Note: This generated code is for demonstration purposes only and may
4 --- not be deployable.
5
6
7 CREATE OR REPLACE PACKAGE ""SAMPLE_MAPPING_PRODUCT_MARGIN"" AS
8 OUB$MAP_OBJECT_ID VARCHAR2(32) := '';
9 sql_stat VARCHAR2(32767);
10 get_abort BOOLEAN := FALSE;
11 get_abort_procedure BOOLEAN := FALSE;
12 get_trigger_success BOOLEAN := TRUE;
13 get_errors NUMBER(22) := 0;
```

BSC Expert: Deploy and Execute Mapping

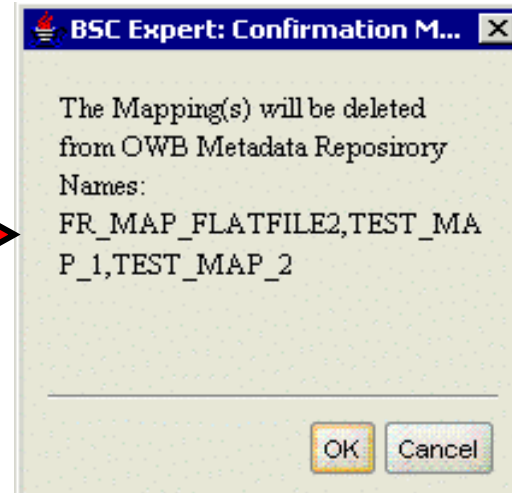
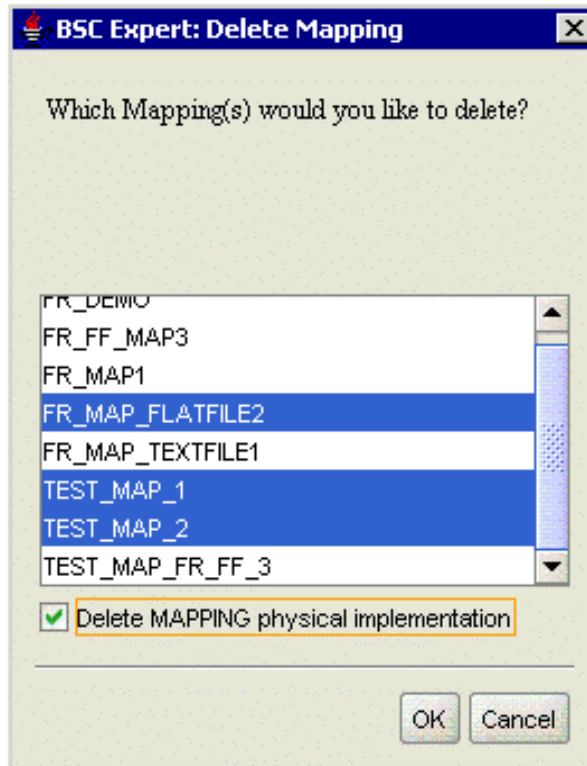


Control Center Jobs : Configuration DEFAULT_CONTROL...
Number of Days: 7 Number of Items: 10
Job Id Status Finished Owner
BSC_DPL_TEST_MAP_1 1786 2/15/06 10:40 AM OWBRT
BSC_DPL_FR_DEMO 1761 2/15/06 3:04 AM OWBRT
FR_DEMO 1686 2/15/06 2:56 AM OWBMD
BSC_DPL_TEST_MAP_1 1674 2/10/06 6:05 AM OWBRT
BSC_DPL_TEST_MAP_1 1662 2/10/06 5:43 AM OWBRT
BSC_DPL_TEST_MAP_2 1628 2/10/06 2:23 AM OWBRT
BSC_DPL_TEST_MAP_2 1605 2/10/06 1:56 AM OWBRT
BSC_DPL_TEST_MAP_2 1582 2/10/06 1:43 AM OWBRT
BSC_DPL_TEST_MAP_1 1563 2/9/06 10:39 PM OWBRT
BSC_DPL_TEST_MAP_1 1551 2/9/06 10:34 PM OWBRT
Deployment Execution Scheduled

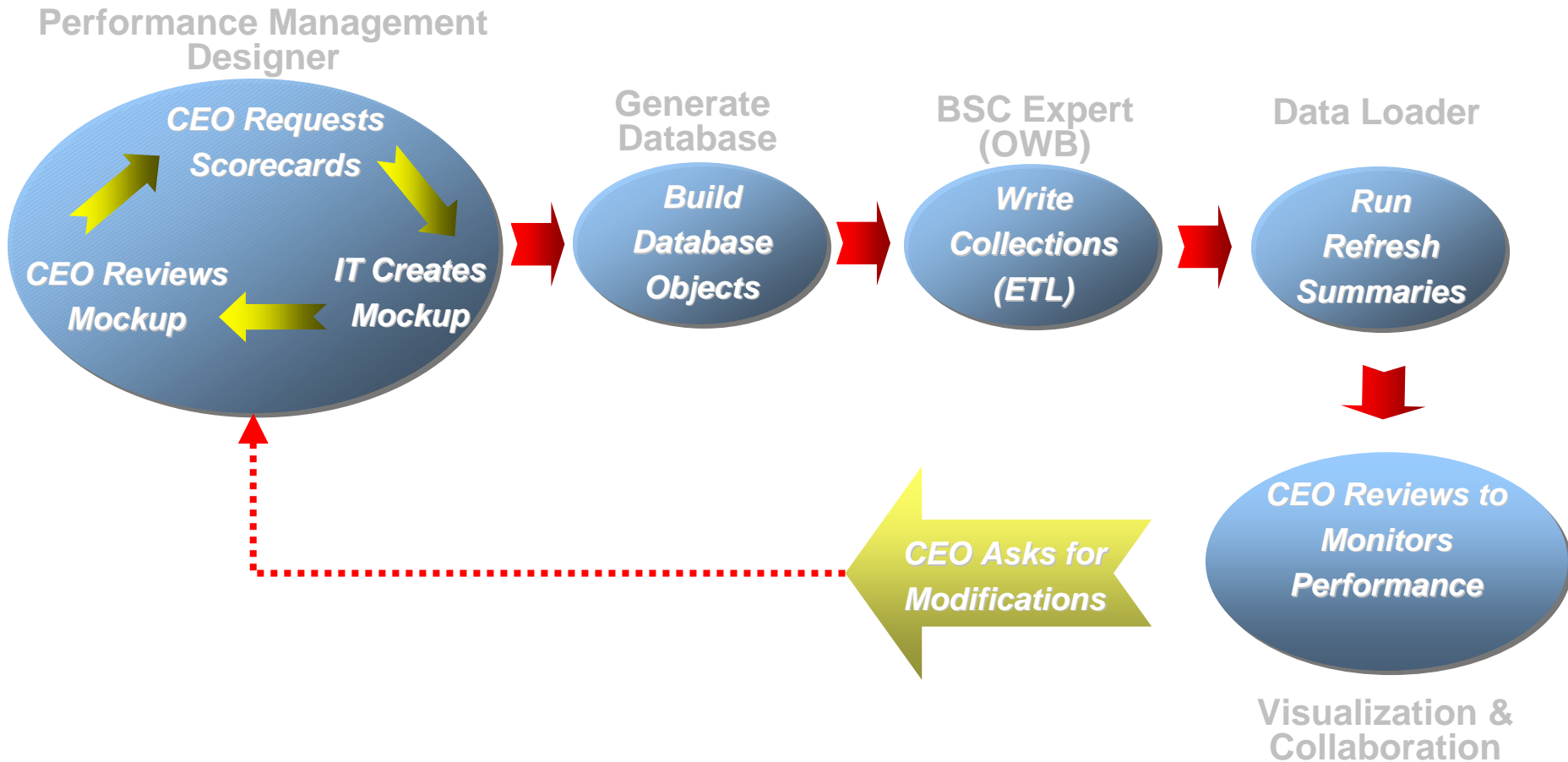
BSC Expert: Edit Mapping



BSC Expert: Delete Mapping



BSC: End to End Solution





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