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Oracle Business Intelligence 11g Masterclass

ETL Integration using OWB11gR2 and ODI 11g

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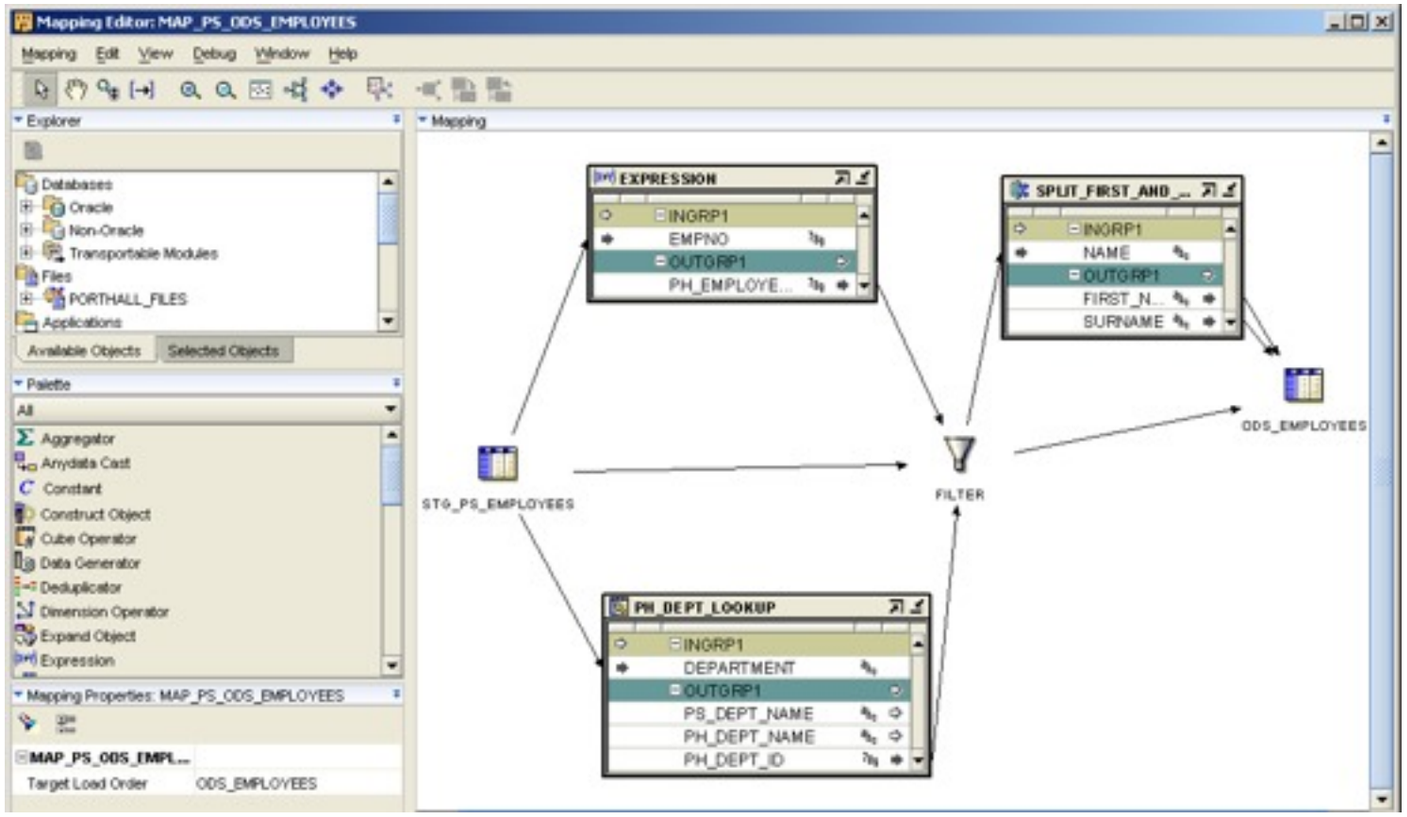
Oracle Warehouse Builder

- Oracle's full-lifecycle ETL and Data Warehouse Management tool
- Packaged as part of the Oracle Database (pre-integrated from 11gR1)
- Used for data integration and modeling in an Oracle environment
- Dimensional and OLAP modeling
- Integration with BI tools & OLAP
- Optimized for building, populating and maintaining Oracle data warehouses



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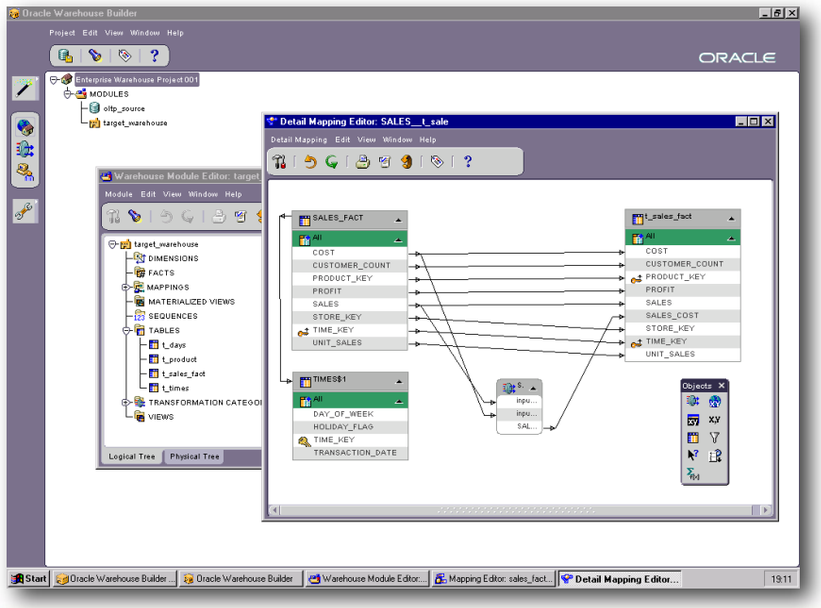
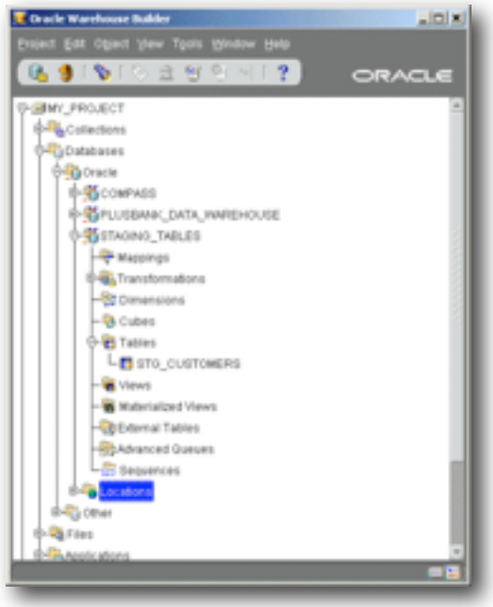
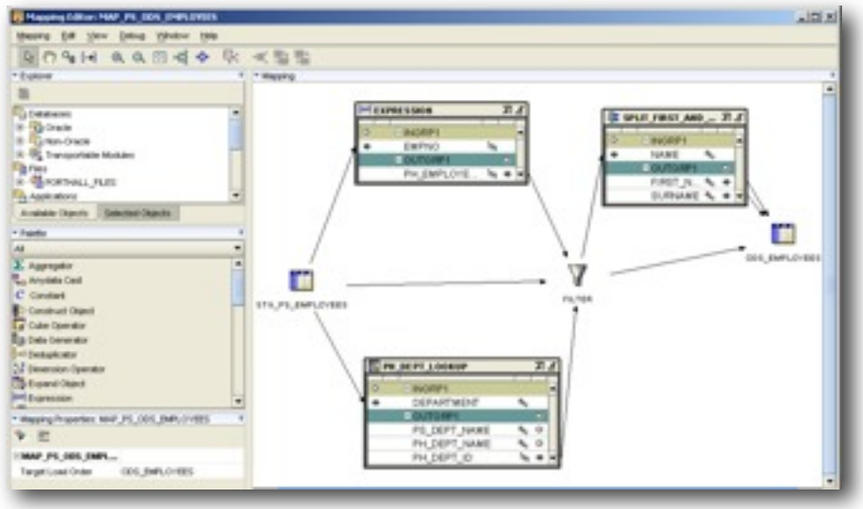
Product History

- First released as version 2.0.4 in January 2000
- First major update was version 3i in October 2001
  - Enhanced mappings, multiple targets, CWM metadata exchange with Express etc
- Next major release was 9i in 2003, packaged as part of Developer Suite
  - Process flow editing, scripting, match-merge, debugger, merge/multi-table insert etc
- 10gR2 version ("Paris" release) came in 2006







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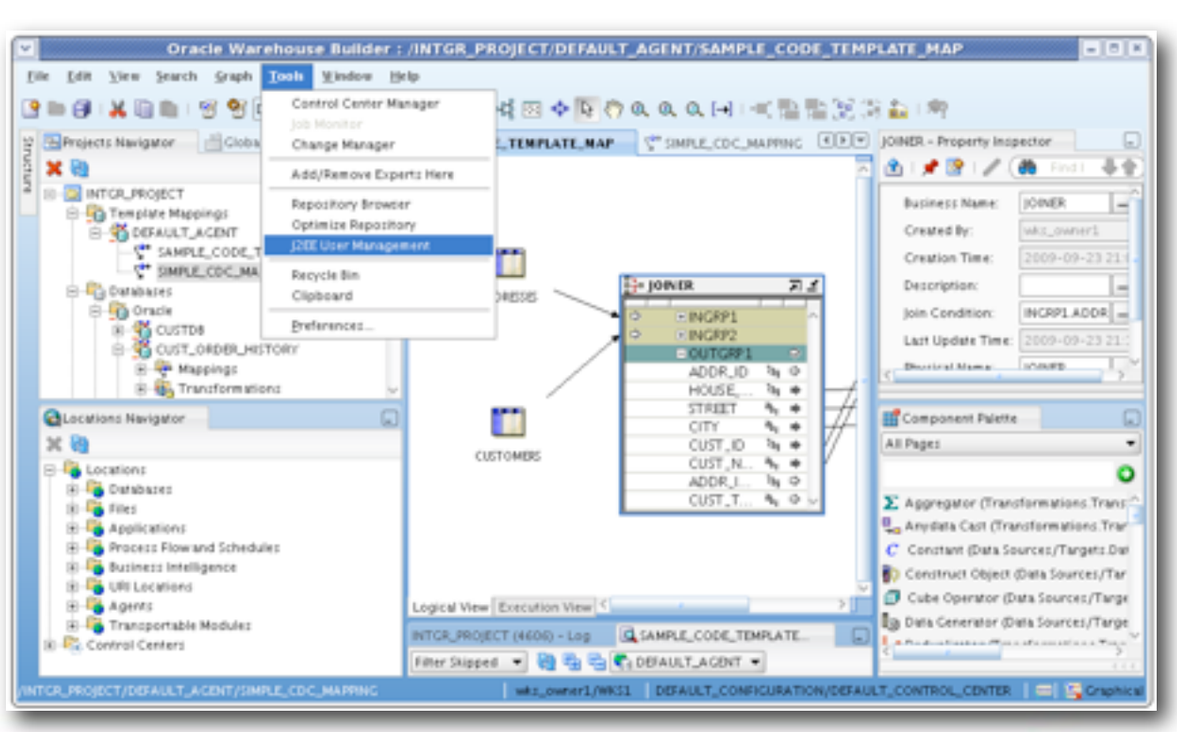
Key New Features in Warehouse Builder 11gR2

- Now at version 11.2.0.1
  - Note : Ensure Patch # 9802120 is applied, “mega-patch” rollup of known 11.2 issues
- New Fusion Interface
- Code Templates
- Heterogeneous Sources and Targets
- Change Data Capture
- Oracle BI EE Integration
- Chunking for Parallelizing Large Table Updates
- Support for EJB/Java Activity Type, and OWB Activity Type in Process Flows
- Ophan Management for Dimension data loads



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New Fusion User Interface

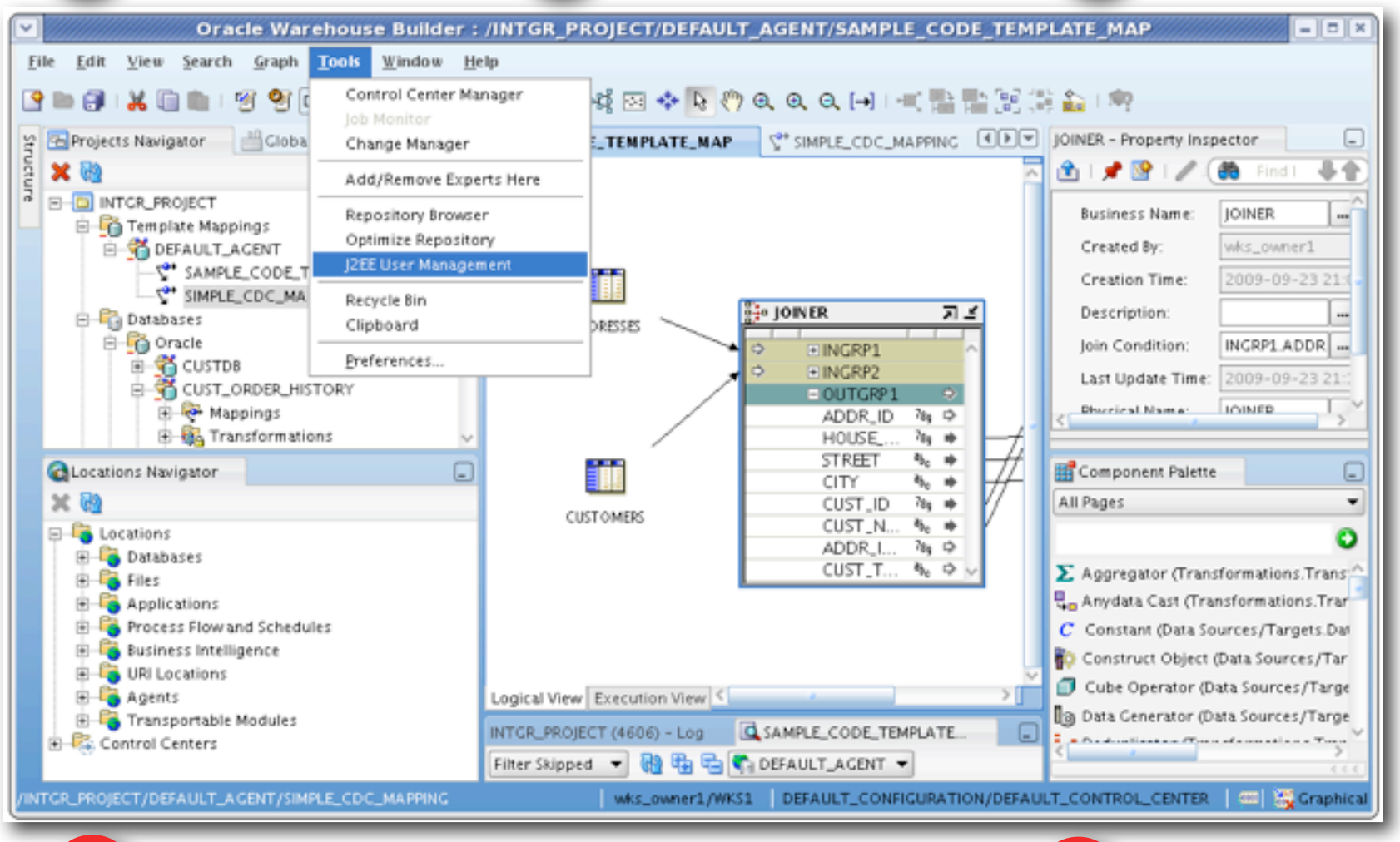
1 New Menu Items

2 Tabbed Panels

3 Properties Pane

4 New Fusion/ Jdeveloper UI

5 Project Navigator / Global Navigator



6 Location Navigator

7 Logical and Execution Views

8 Component Palette

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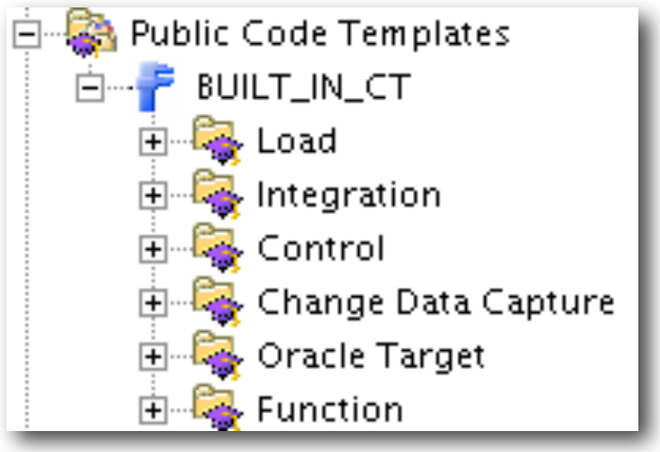
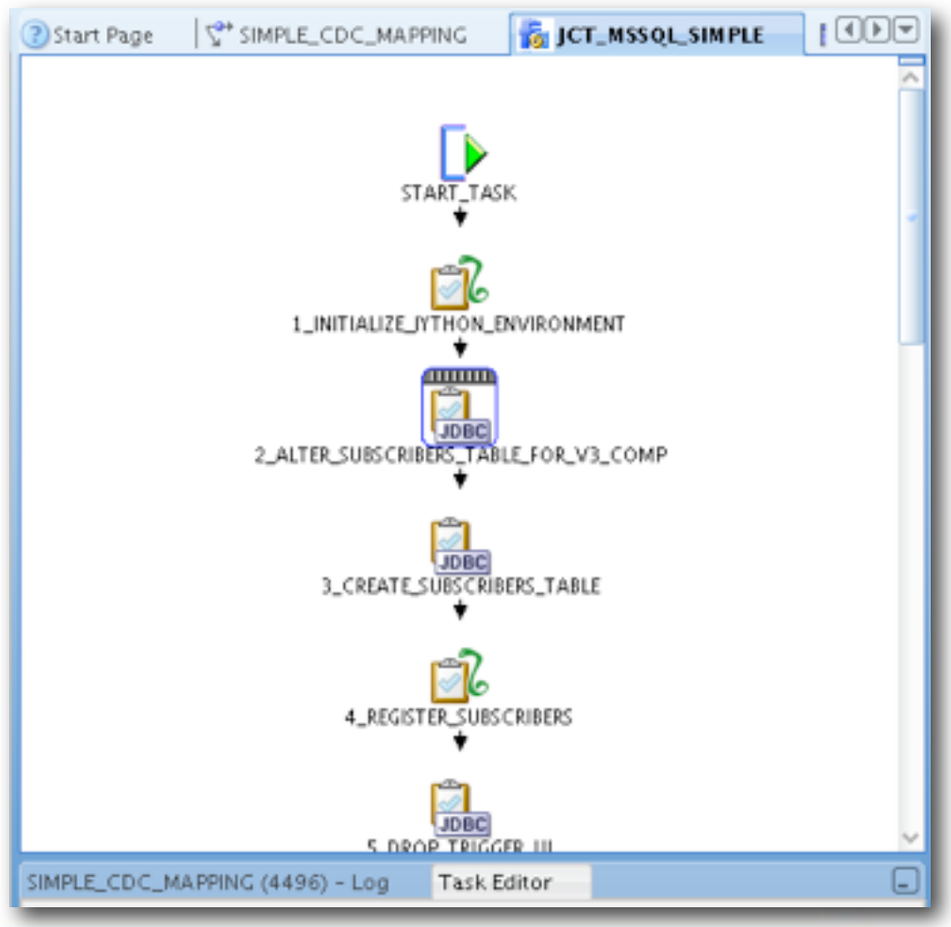
Code Templates

- Based on ODI Knowledge Module technology
- Template-based loading, integration and transformation using native technology
- Shipped templates tested and certified against OWB
- ODI knowledge modules can be imported
  - Some may not work due to missing features
- Extends OWB capabilities to other platforms
  - Teradata, SQL Server, JMS, Essbase etc





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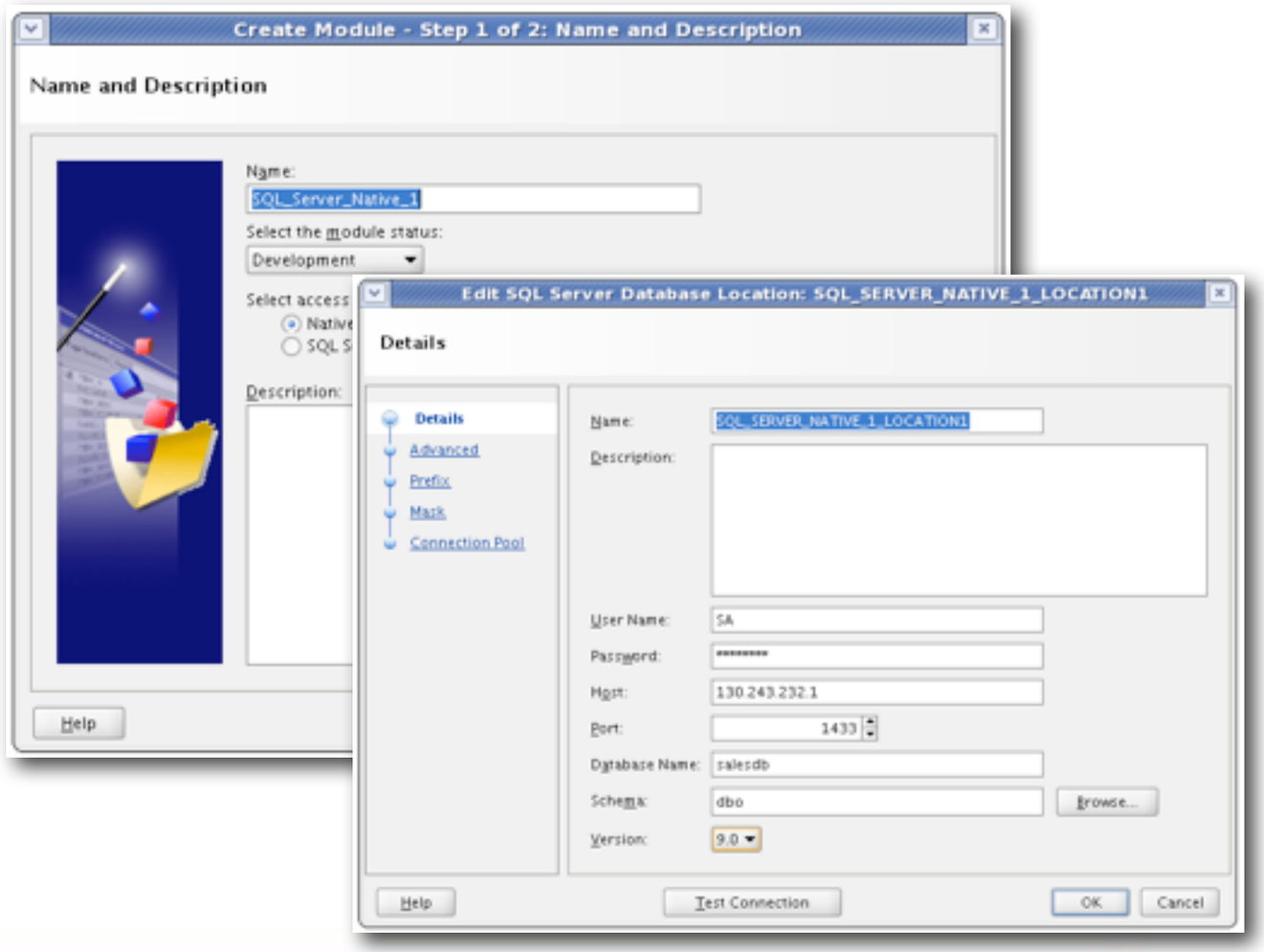
Heterogeneous Sources and Targets

- Complements existing ODBC and Gateway technologies
- Native unload and load of non-Oracle RDBMS sources
- Connects using JDBC
- Shipped support for major databases
- Platforms can be extended using OMB
  - Downloads of new platforms to be available on OTN and "Check for Updates" feature



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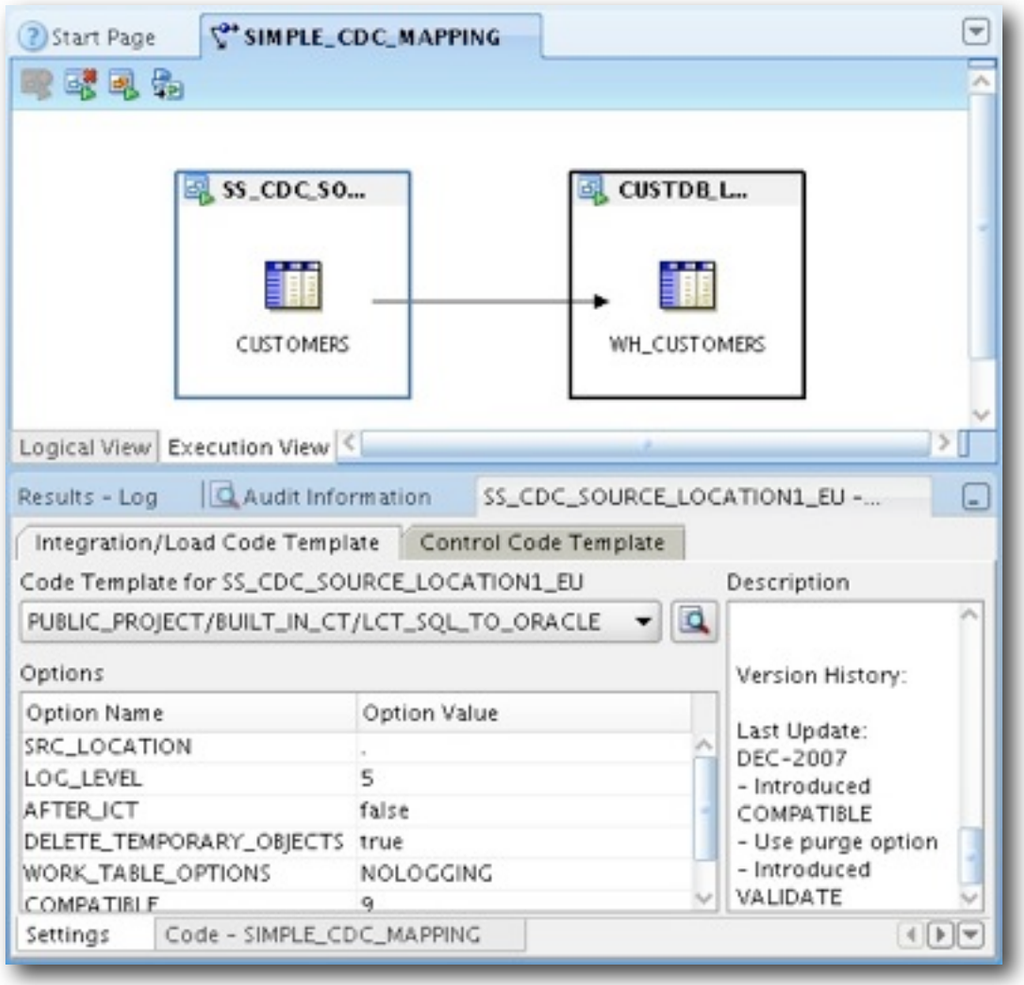
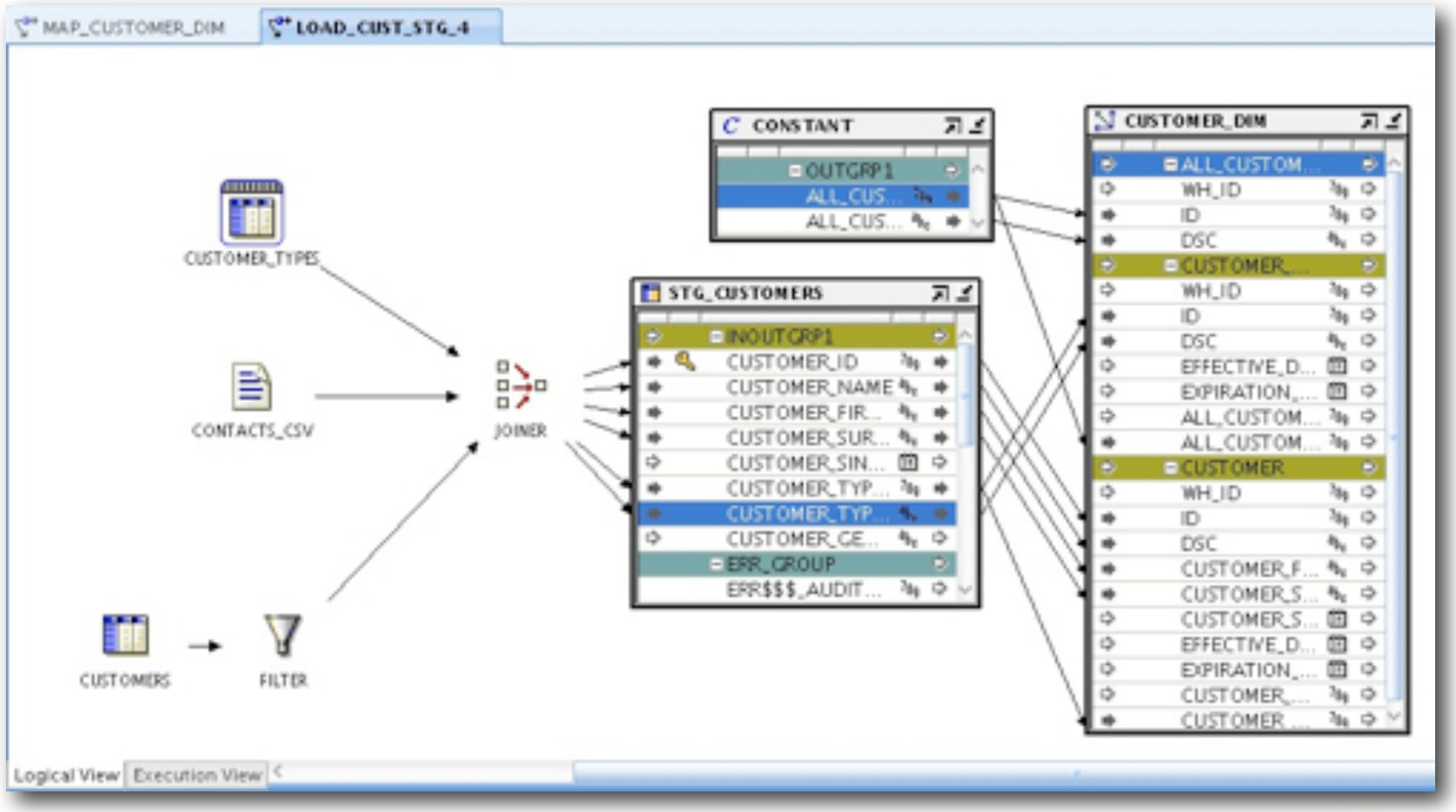
Code Template Mappings

- Alternative to classic ("database-resident" mappings)
- Makes use of code templates
- Two aspects; logical and execution view
- Logical view allows use of all OWB mapping operators
  - Certain are oracle-only
- Execution view used for selecting code templates
  - LCT (load code template)
  - ICT (integration code template)
  - CCT (control code template)



Hybrid Mappings

- Code template mappings can use a special “Oracle Module” code template
  - Encapsulates classic mapping in a wrapper
  - Allows execution of oracle-specific operators (dimension, match-merge etc)
- Potential to create hybrid mappings that use both ODI and OWB-style transformations



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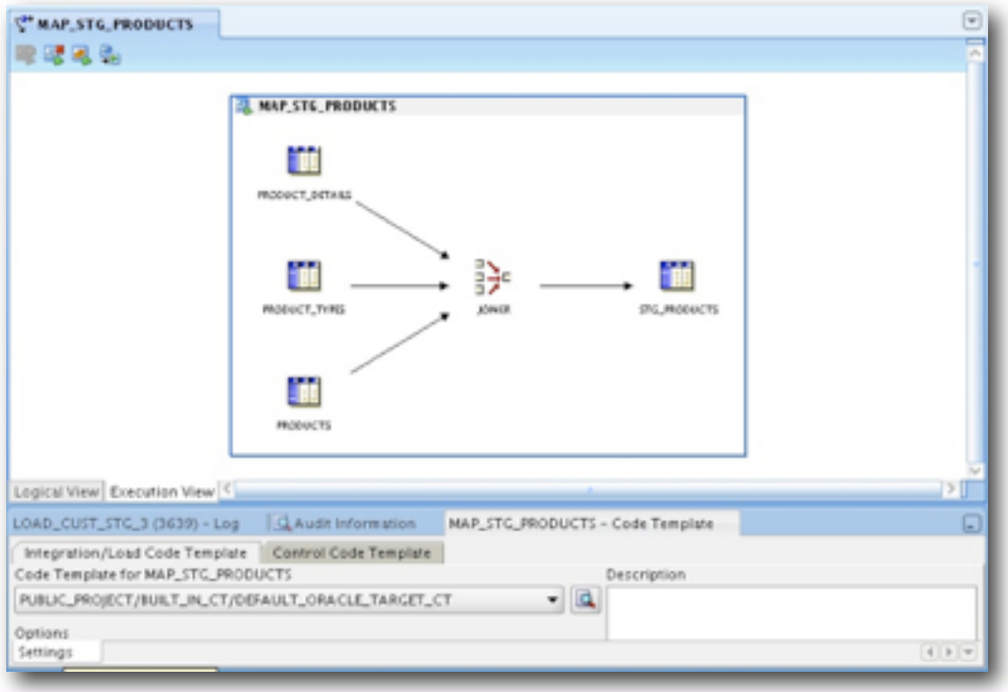
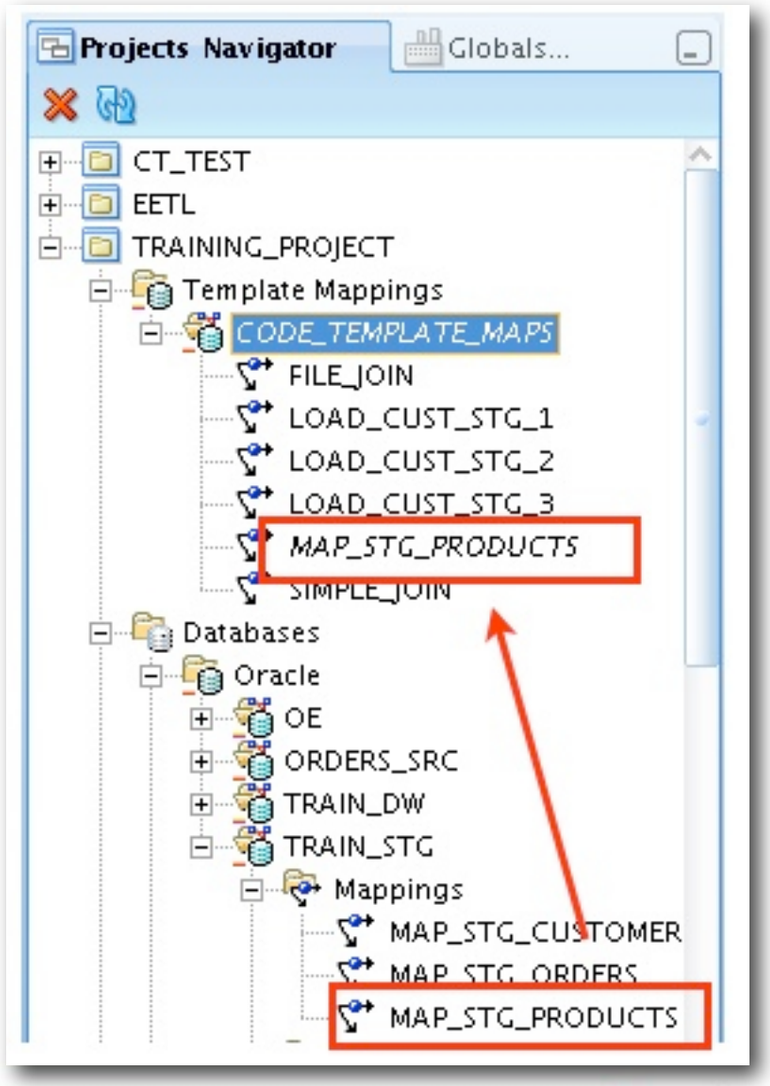
Automatic Migration of Classic to Code Template Mappings

- Classic OWB mappings can be converted to code template ones
- Copy and paste from original mapping to Code Templates area
- Mapping is recreated and assigned a default Oracle Module execution unit
- Simple way to start making use of code template features





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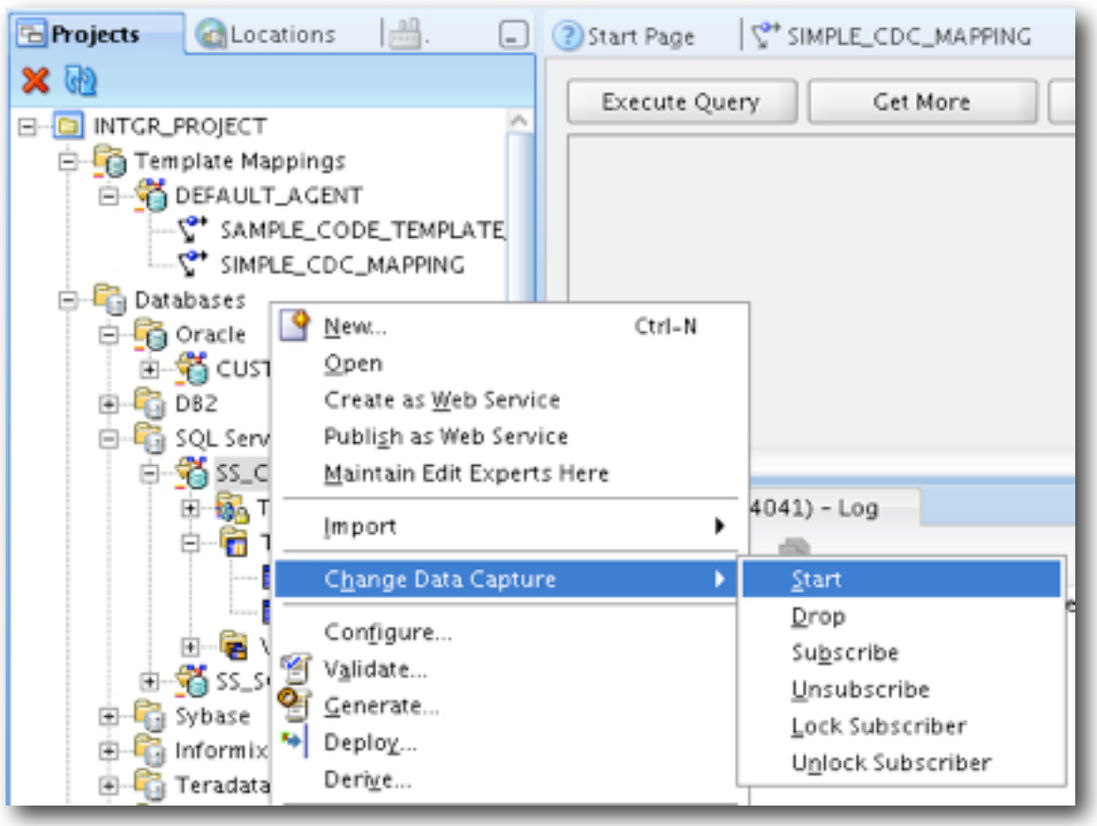
Change Data Capture

- Changed Data Capture provides a simple means to capture new and changed rows in monitored tables
- Works using triggers and capture tables
- Available for Code Template mappings only
- Supported for Oracle, IBM DB/2 and Microsoft SQL Server
- Simple or consistent options
- Defined in the database module definition
- Execution units use regular ICT and LCT code templates



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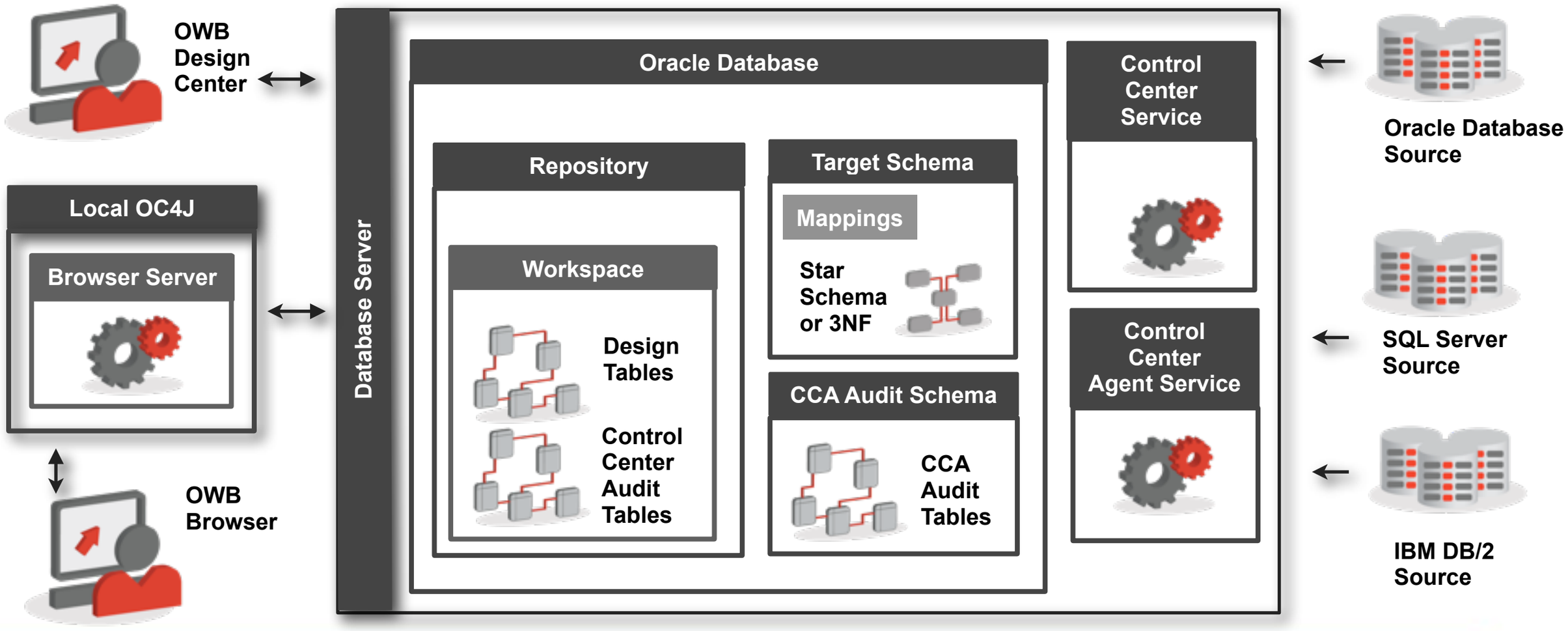
Typical 11gR2 Runtime Architecture

- **Control Center Service** still runs classic OWB mappings
- **Control Center Agent** runs code template mappings



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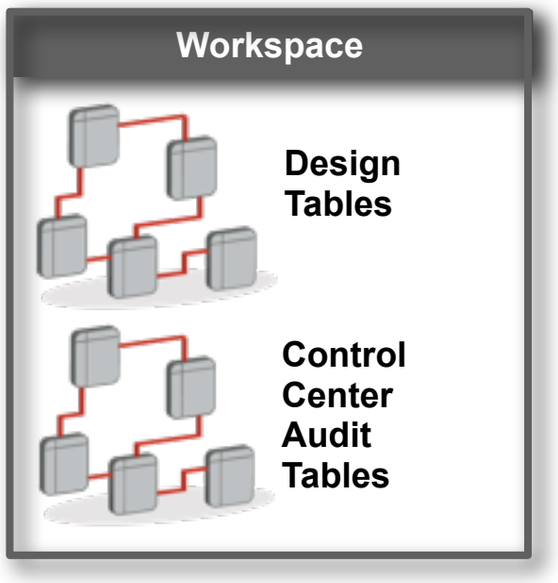
Workspaces, Repositories and Audit Tables

- The Repository is a schema (OWBSYS) that holds one or more workspaces
  - Introduced with OBIEE 11gR1 due to pre-integration with RDBMS
- Workspaces correspond to repositories in previous OWB versions
- OWBSYS is pre-installed in 11g+ Oracle databases
  - Has to be manually created in earlier versions
  - 11gR2 OWB requires different OWBSYS than shipped with 11gR1 database
- Workspaces typically set up for dev, test, prod
- Contains design metadata and Control Center audit tables
- Workspace is just a metadata entry, faster to create than 10gR2 repositories



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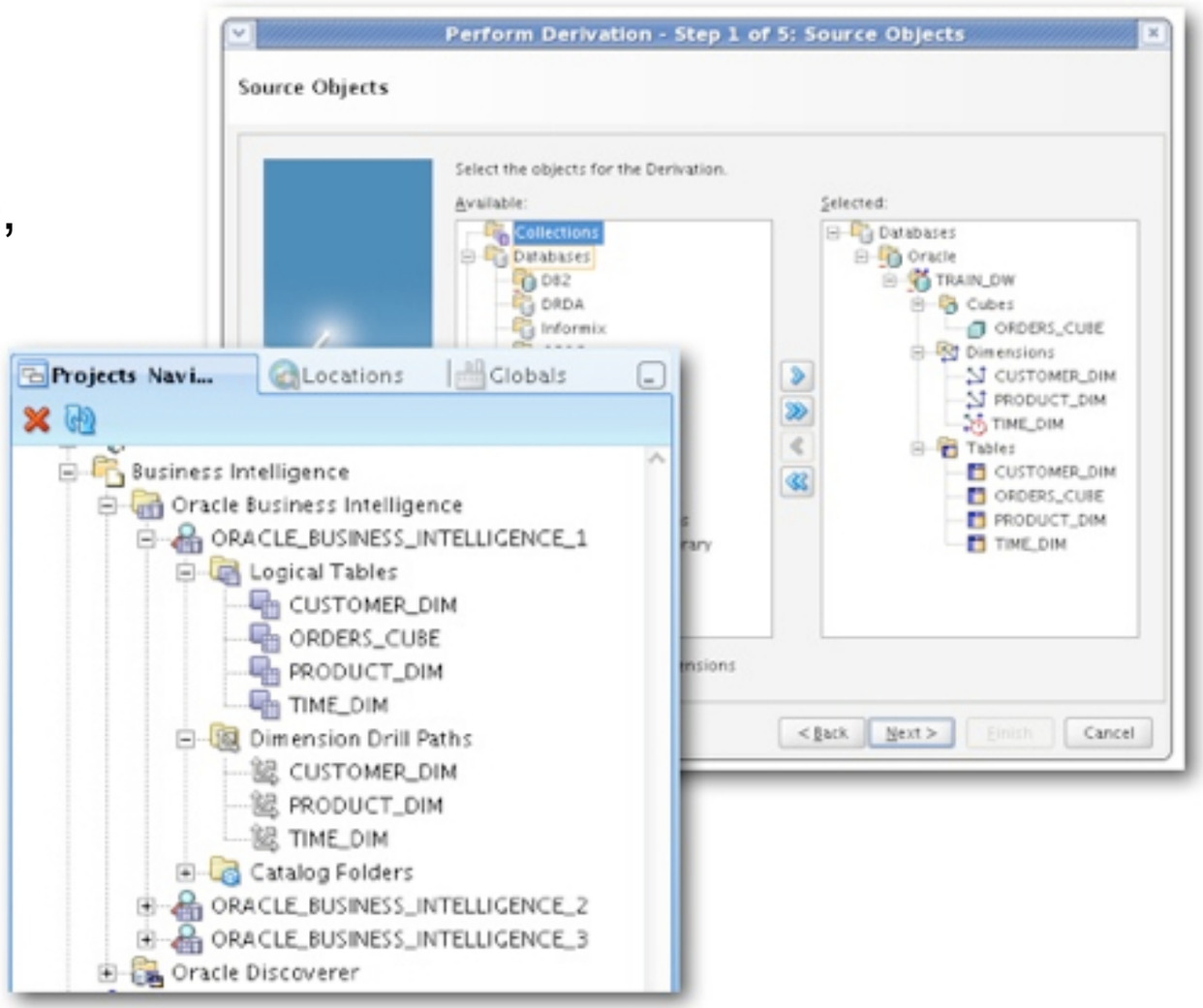
Integration with Oracle BI Enterprise Edition

- OWB table, dimension and join metadata can be exported to OBIEE
- Creates physical, logical and presentation views
- Export via a .udml file
- Similar approach to Discoverer integration
- Derive whole or part of a database module, or manually create using table selection
- Lineage and Impact analysis
- Keep OWB and OBIEE metadata in one place
- Good for creating initial OBIEE model



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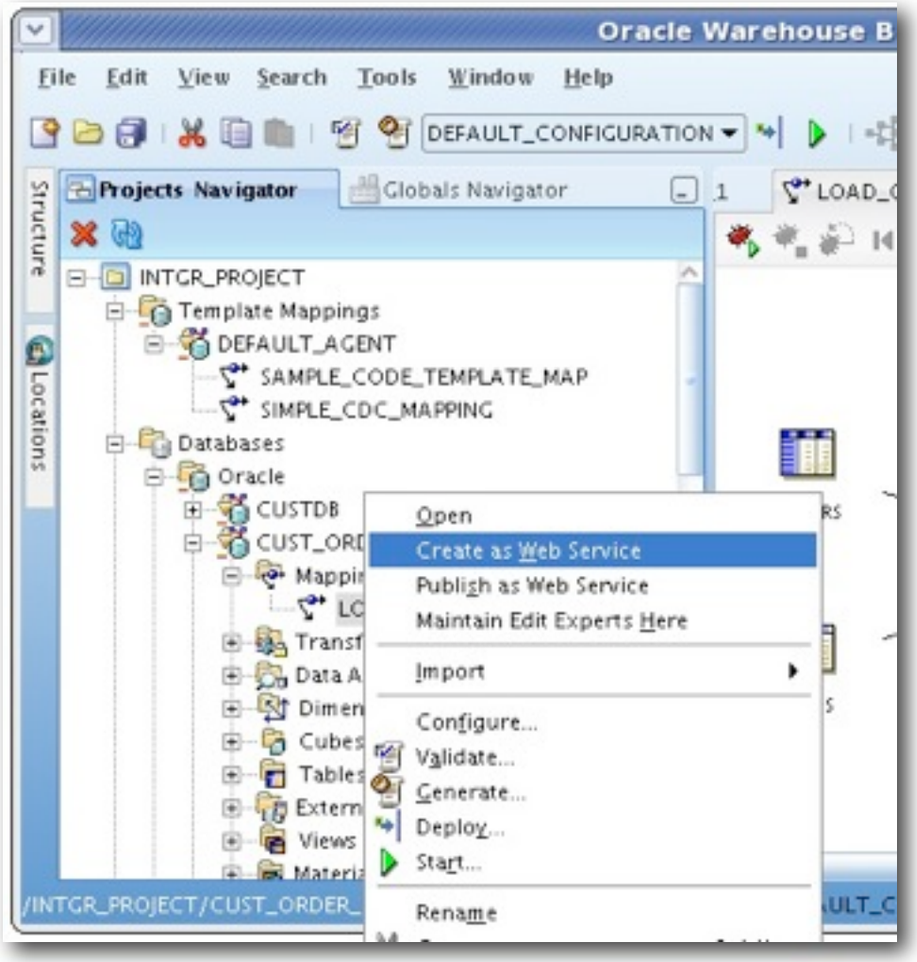
Web Services / SOA Integration

- Mappings, process flows, transformations and data auditors can be published as web services
  - Useful for invoking OWB functionality from external processes
  - Invoking OWB functionality from remote OWB installation
- Uses OC4J or Oracle Application Server
- Table methods allow CDC administration
- Process flows can consume/invoke web services



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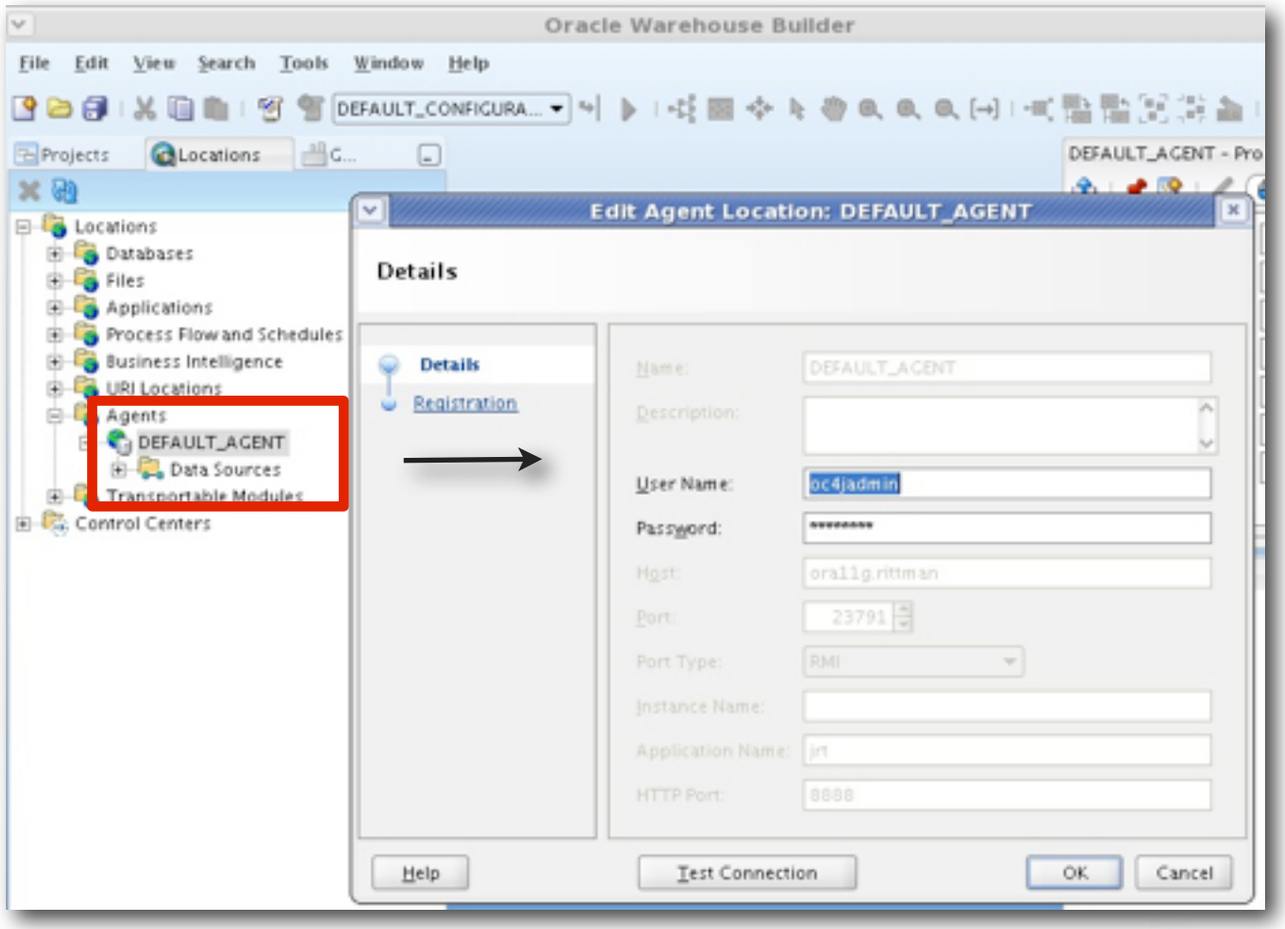
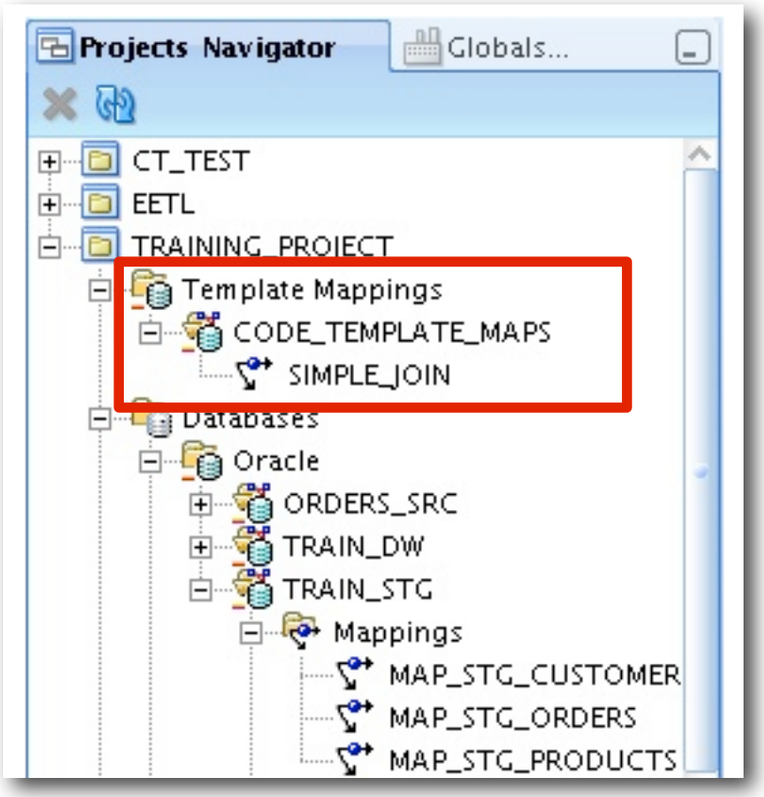
Creating a Code Template Mapping : Step 1

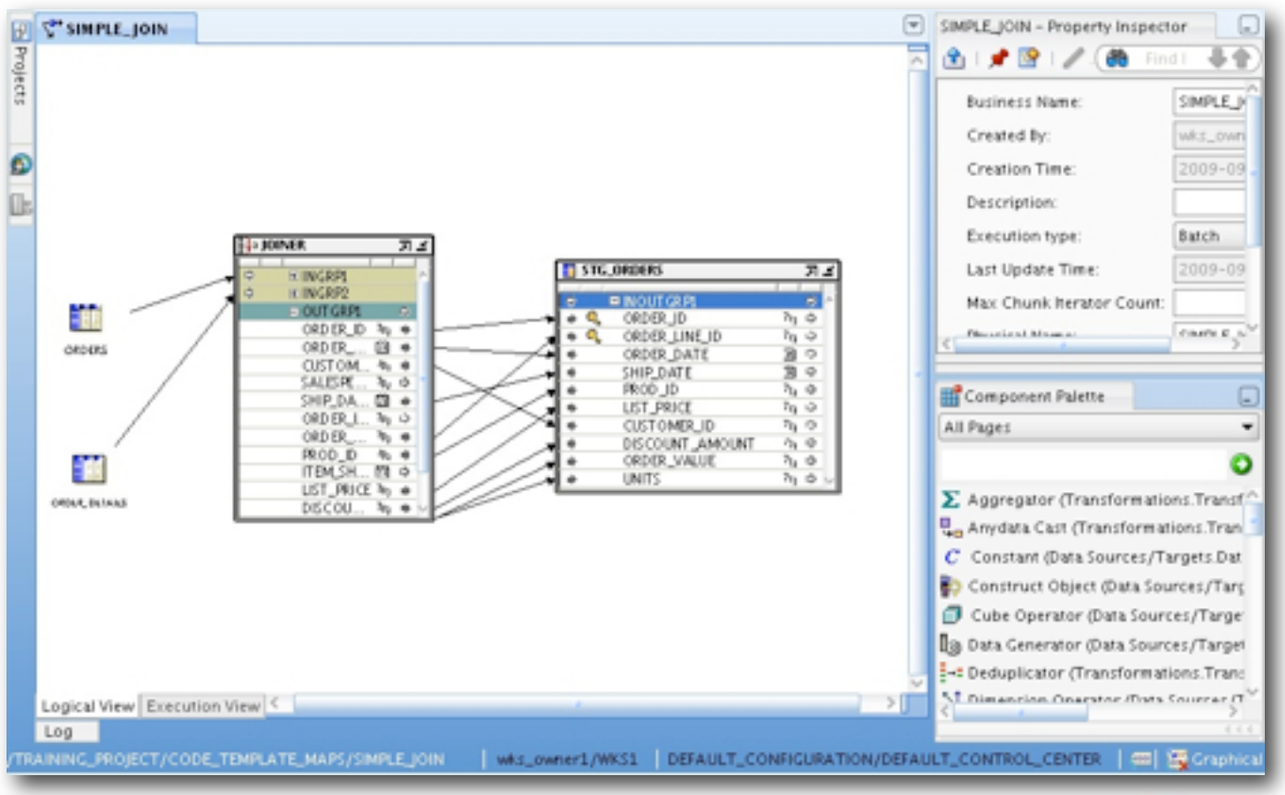
- Create a Control Center Agent entry in the Global Properties panel
- Defines connection through to Control Center Agent
  - On same server as OWB, or on separate server
  - Separate server requires full install of OWB



Creating a Code Template Mapping : Step 2

- Create new Code Template mapping
- Define the mapping logic using the Logical View
  - Note that Oracle-specific operators only can be used with Oracle data
  - For example, dimension load, match-merge, sequence etc





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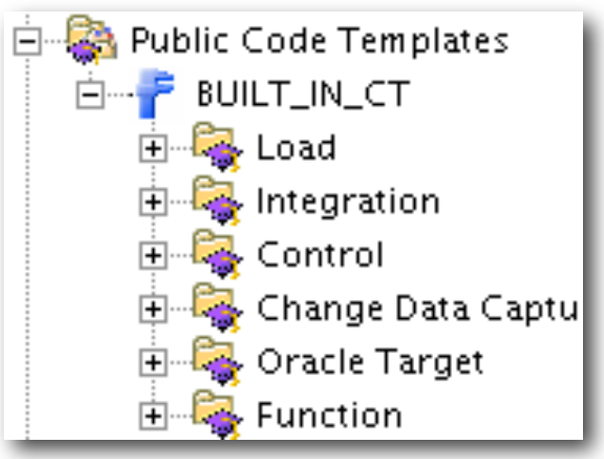
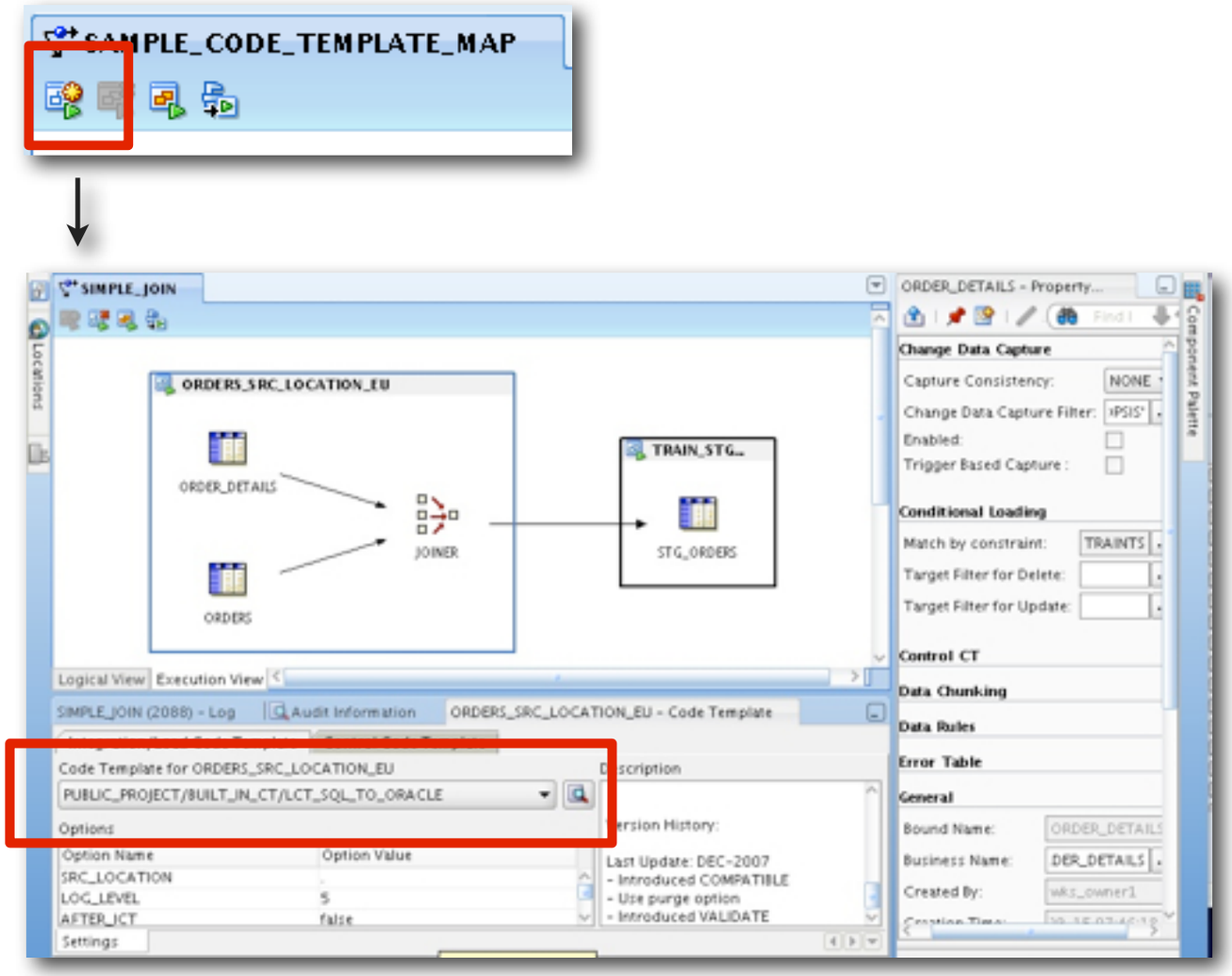
Creating a Code Template Mapping : Step 3

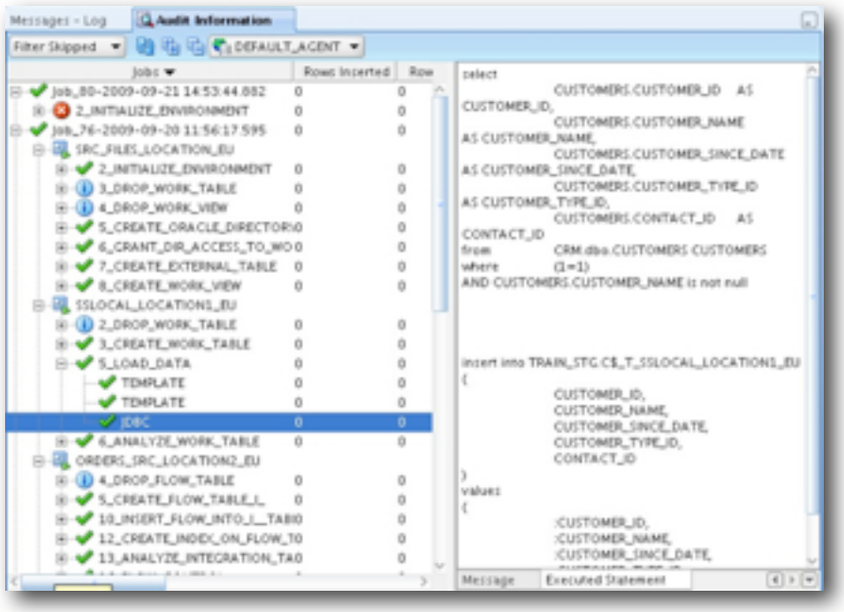
- Switch to Execution View
- Press **Create Default Execution Units** toolbar button
- Edit execution units as appropriate
- Select load (LCT) and integration (ICT) code templates
- Set template parameters

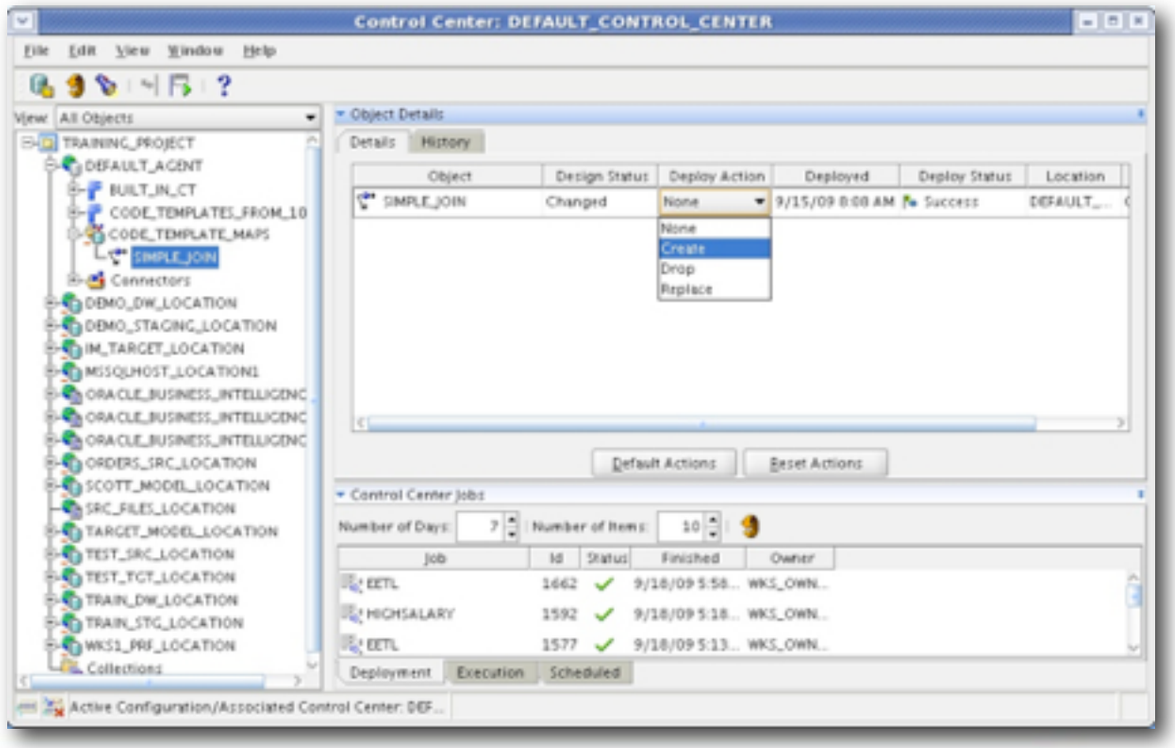




Creating a Code Template Mapping : Step 4

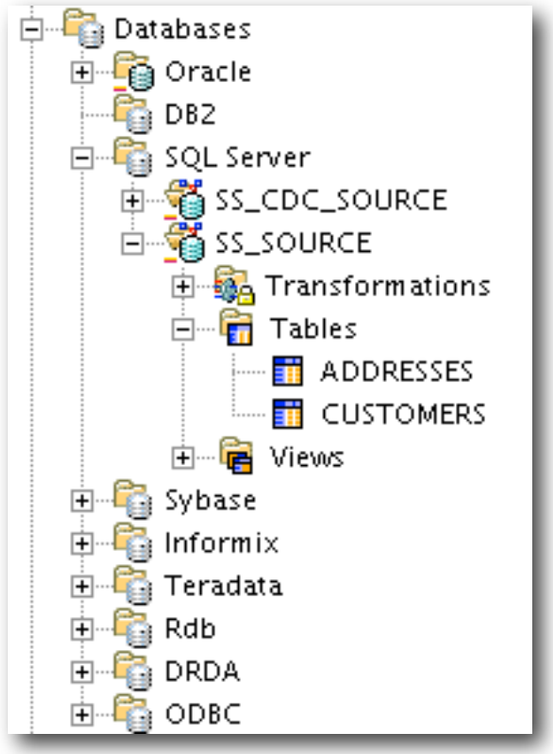
- Deploy code template mapping to Control Center Agent
  - Deploys template logic plus JDBC data sources to agent
- Execute code template mapping like any other mapping
- Include in process flows with regular mappings
- View execution results in
  Job Details view or **Audit Viewer**





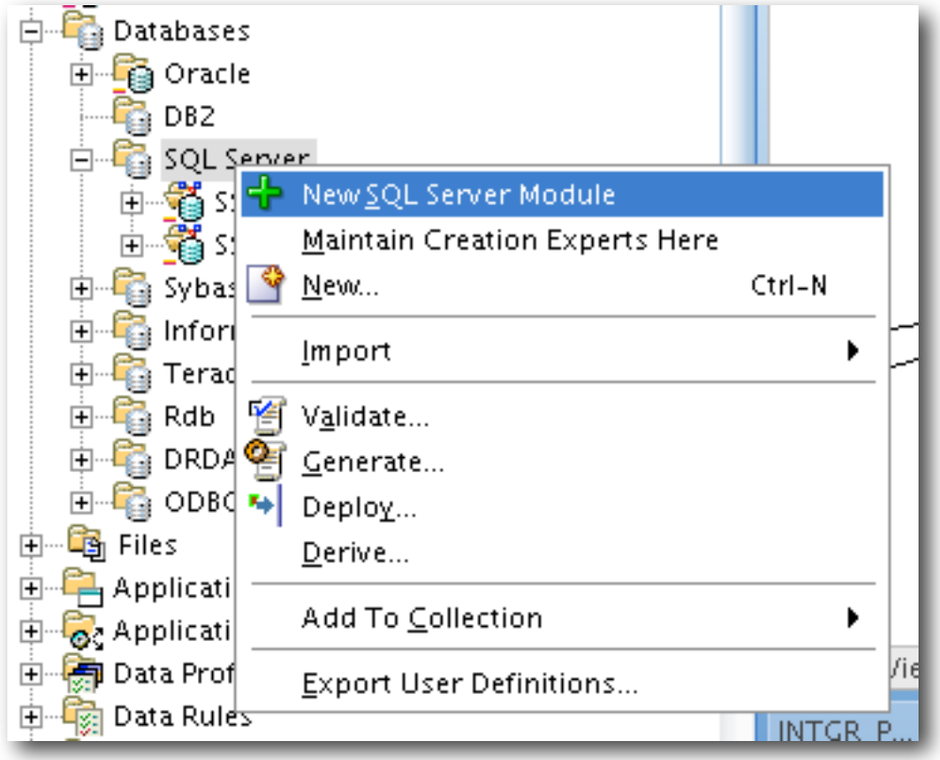
Heterogeneous (Native Connection) Sources and Targets

- Code Template technology provides a means to select from various *platforms*
- Shipped platforms include Oracle, IBM DB/2, SQL Server, Teradata
- Other platforms can be added using OMB scripting
- Potentially any data source supported by ODI / accessed by JDBC
- Sources define in OWB as database modules
- Once defined, objects can be imported into OWB project for use in mappings etc



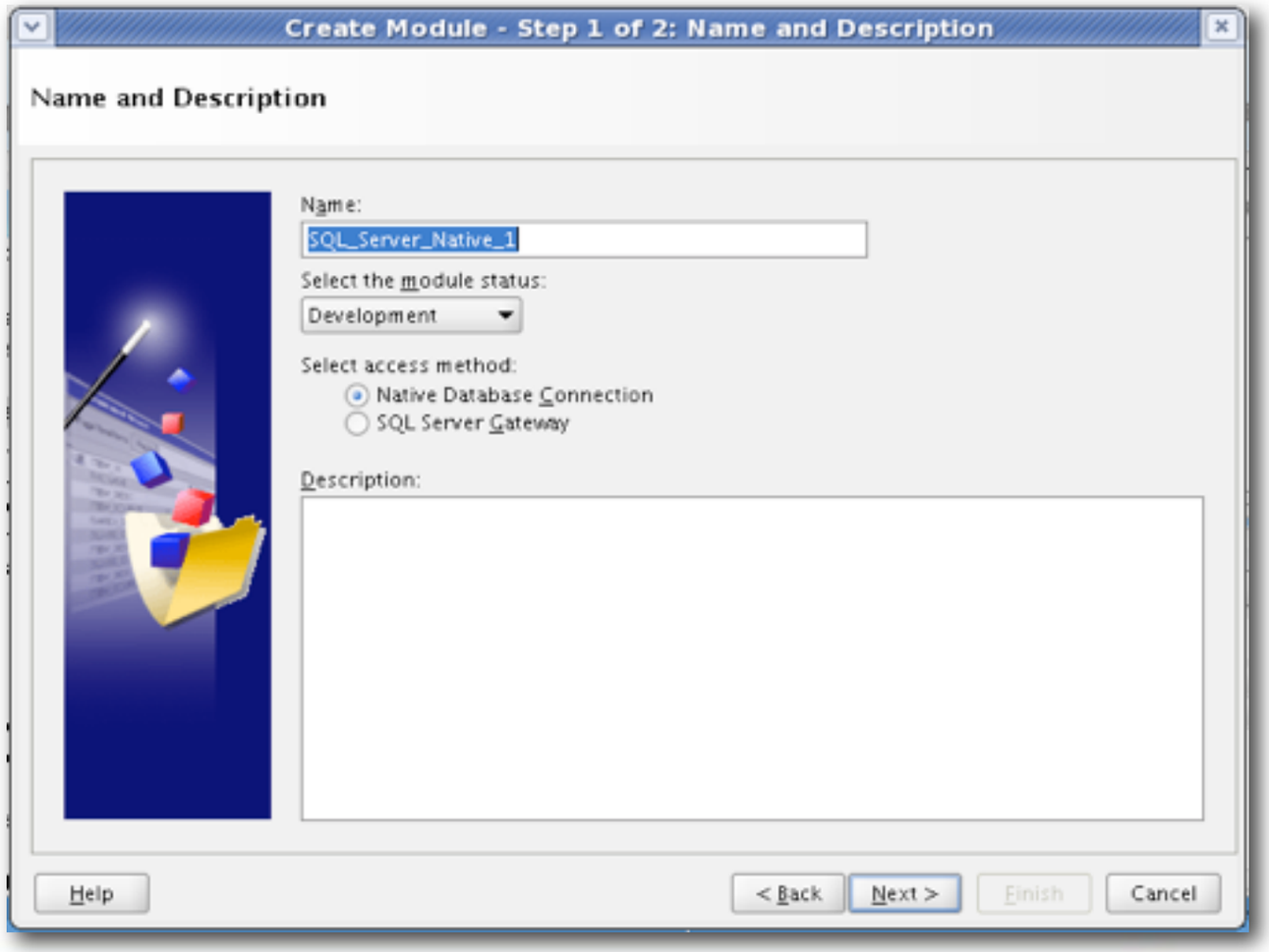
Defining a Native Connection : Part 1

- Ensure appropriate JAR files are copied to `$OWBHOME/owb/lib/ext`
- Right-click on the relevant database module type and select **New** ... **Module**



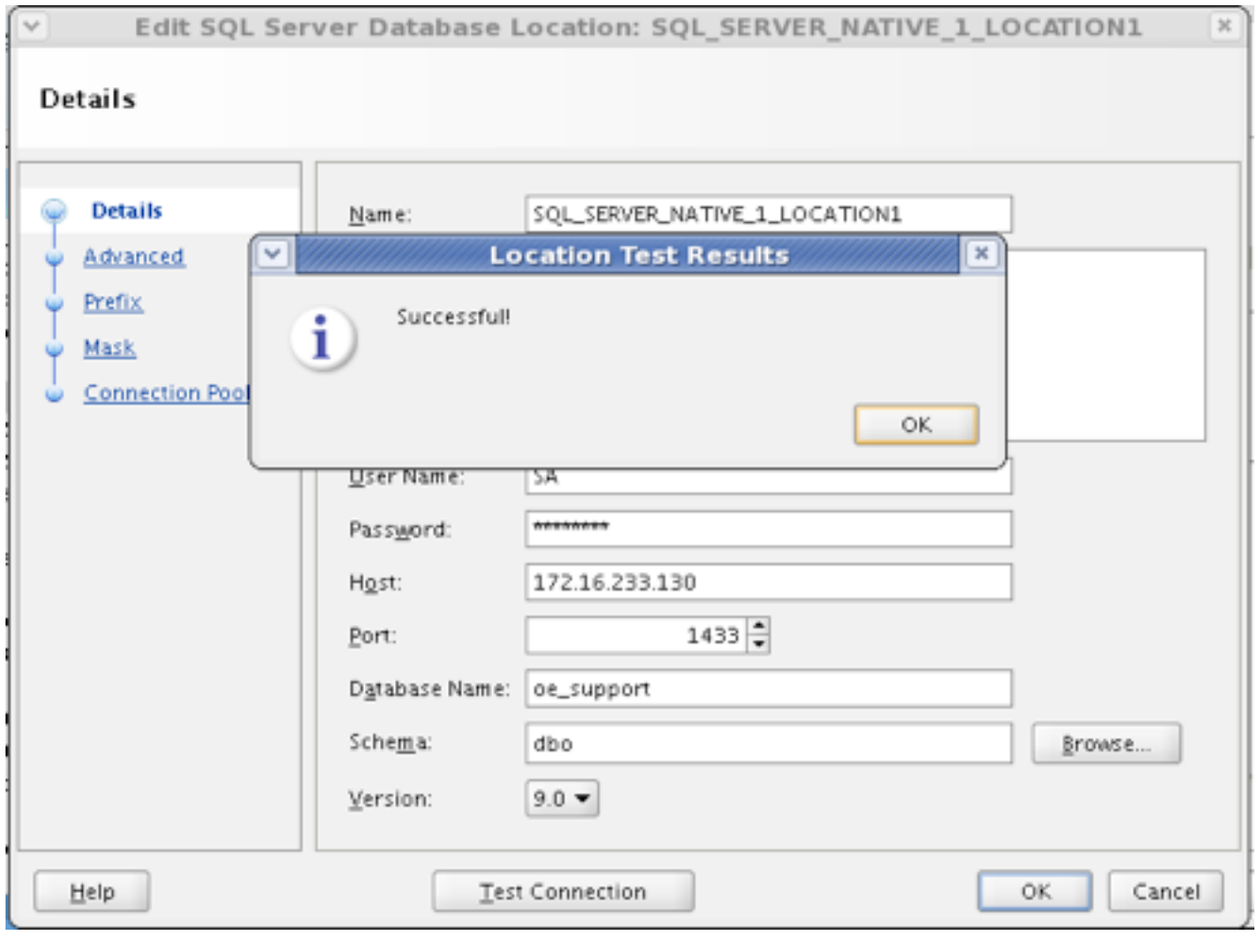
Defining a Native Connection : Part 2

- Name the module
- Select **Native Database Connection** to connect via JDBC and code template



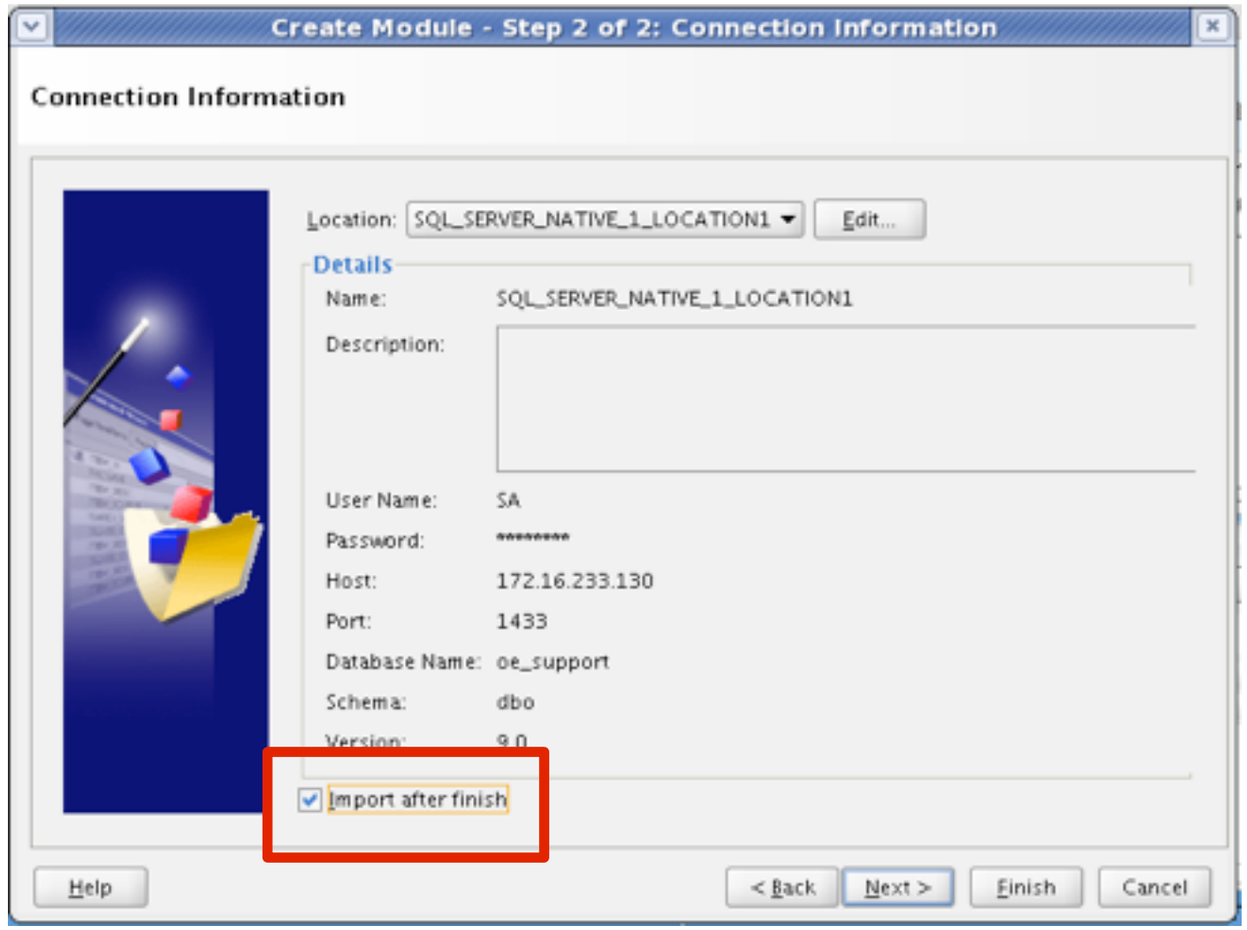
Defining a Native Connection : Part 3

- Enter connection details to databsae
- Port is JDBC driver port
- **Test Connection** at the end
- Press **OK** to proceed



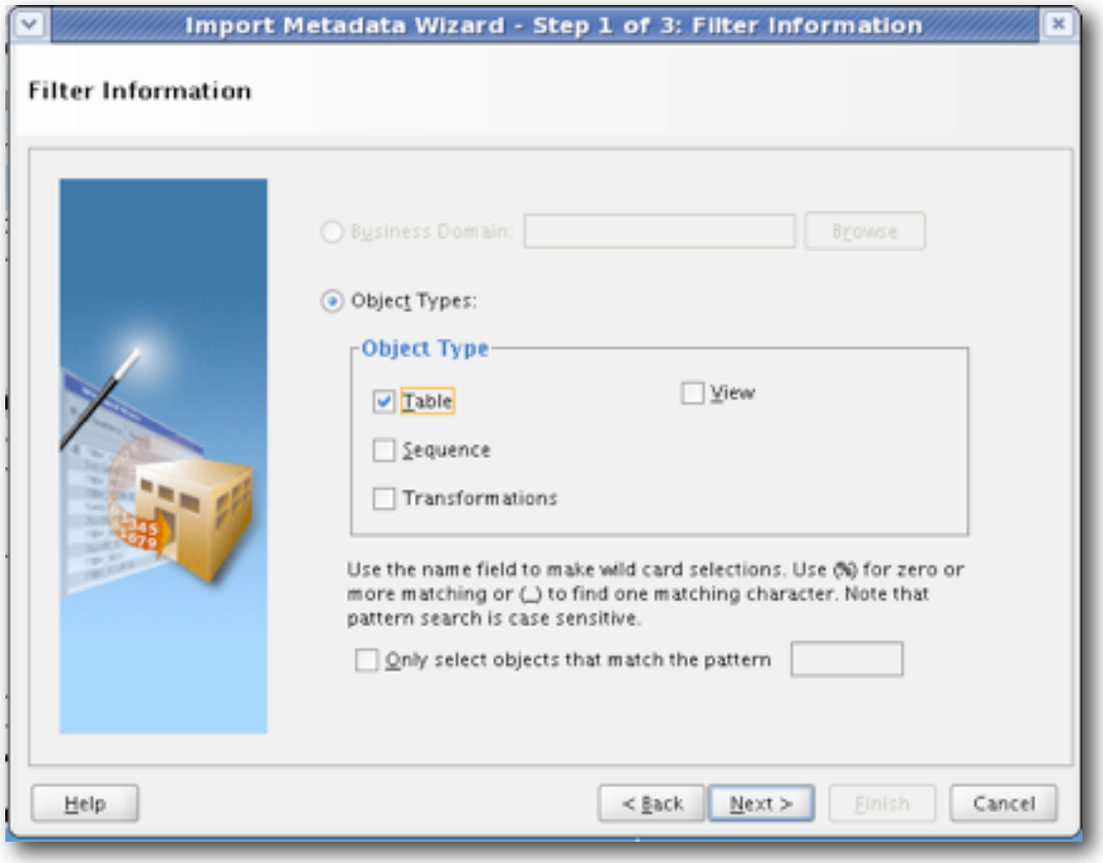
Defining a Native Connection : Step 4

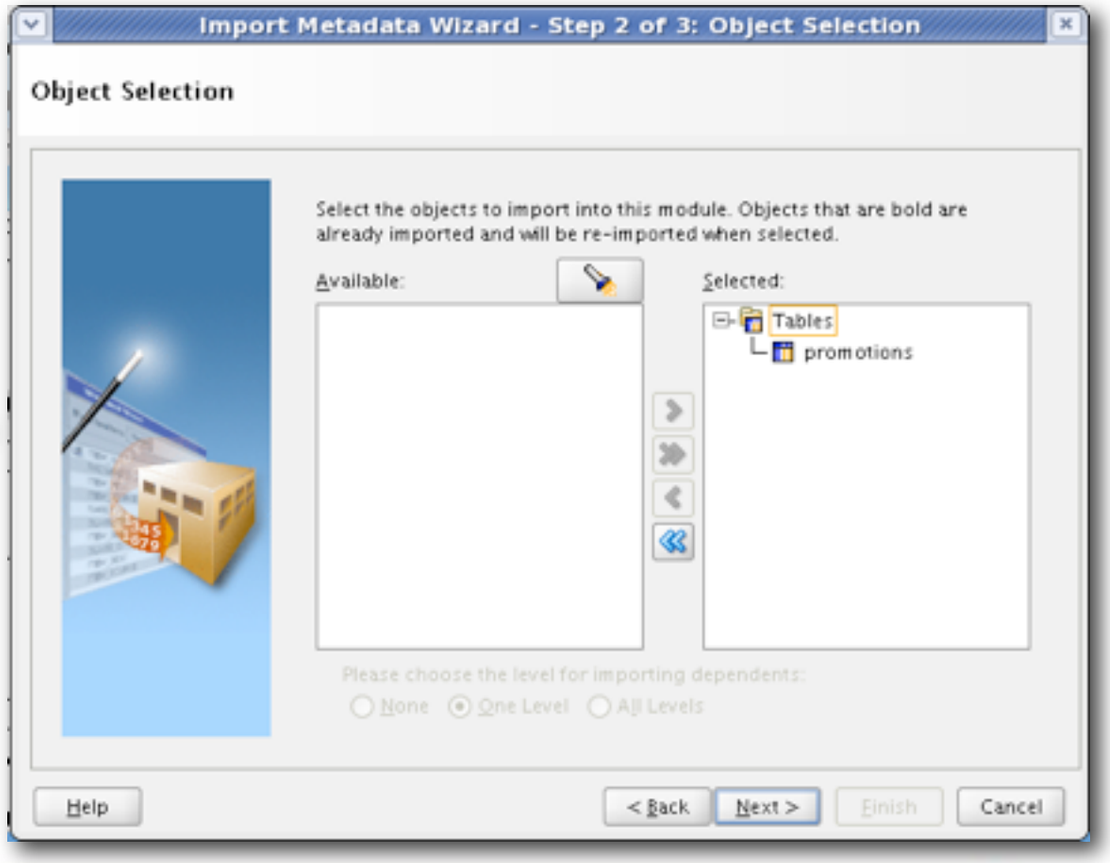
- Check that required location is selected
- Press Import after Finish if objects need to be imported into project



Defining a Native Connection : Step 5

- Select objects for import
- Import object metadata into project
- Objects can then be used in mappings etc





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Demonstration

OWB11gR2 Code Templates and Native Connectivity

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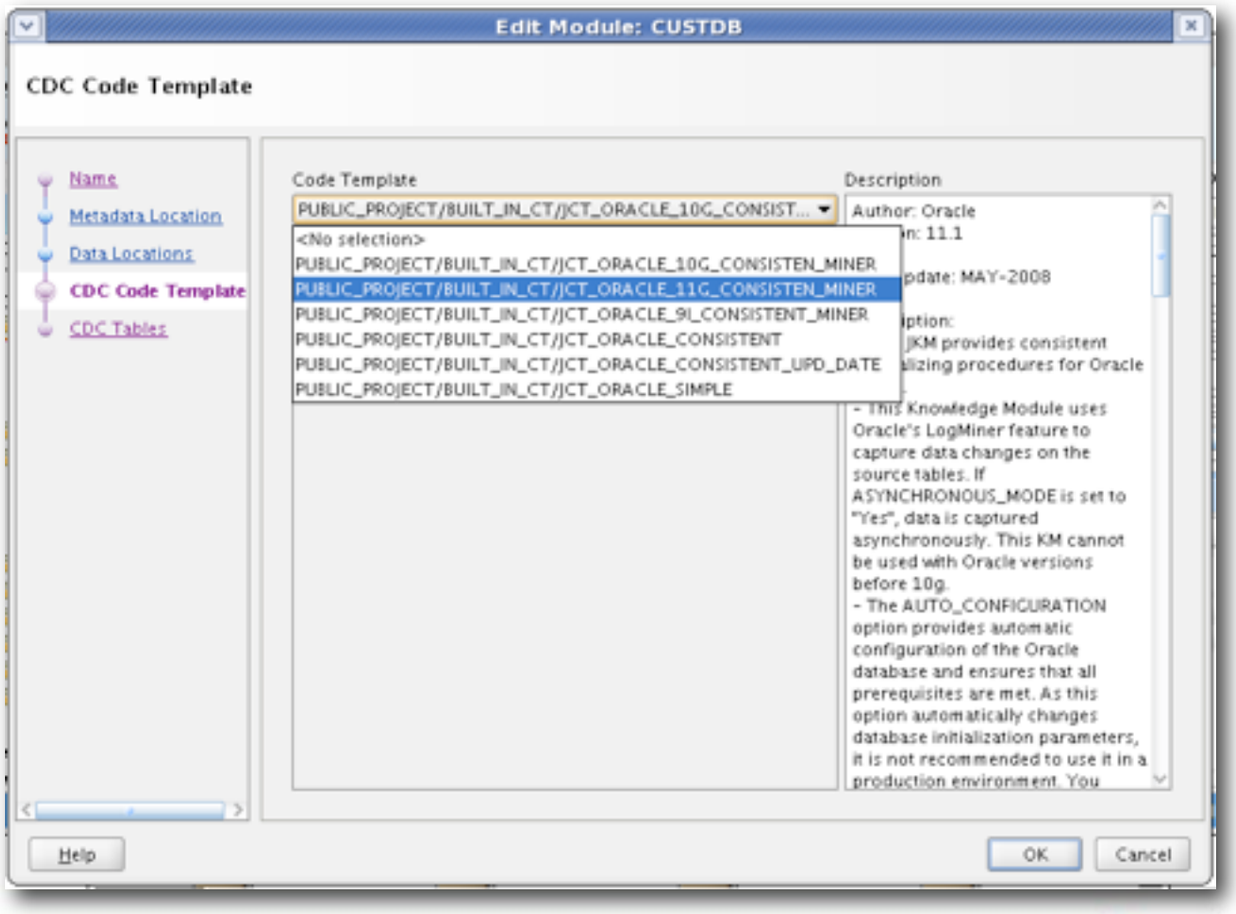
Changed Data Capture

- Database modules can be configured to use change data capture
- Uses ODI "Journalize" knowledge module technology
- Depending on the RDBMS, different techniques will be used
  - On Oracle, use logminer or triggers
  - On SQL Server, use triggers
  - etc
- Mappings can then be configured to only read changed data from the database source

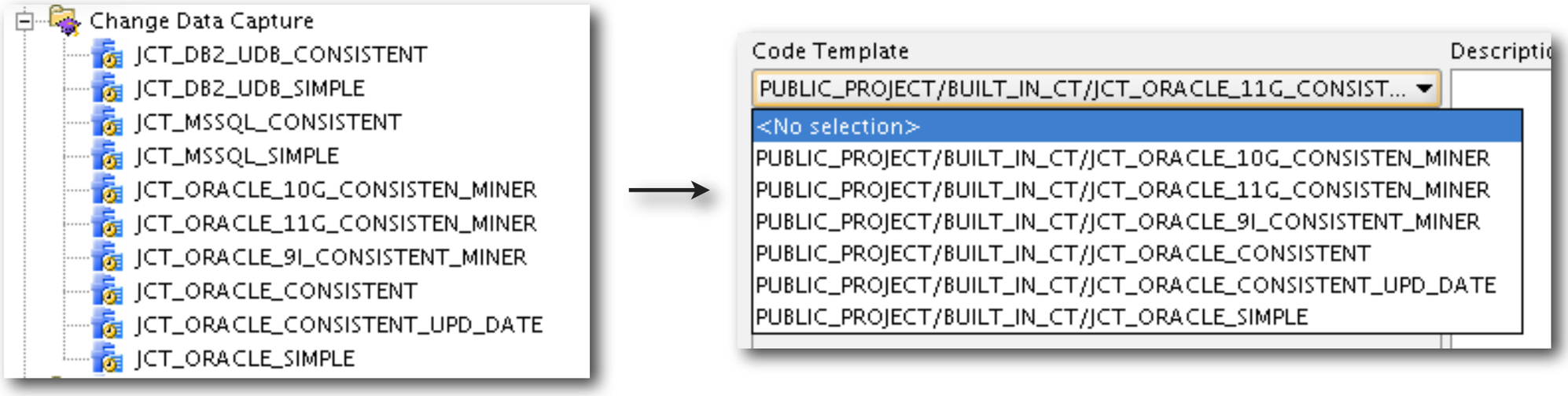
Using Changed Data Capture : Step 1

- Configure database module to use changed data capture
- Consistent (FK-joined sets) or simple
- Triggers (across most platforms) or logminer (Oracle)
- Select required code template
- Press **OK** to continue



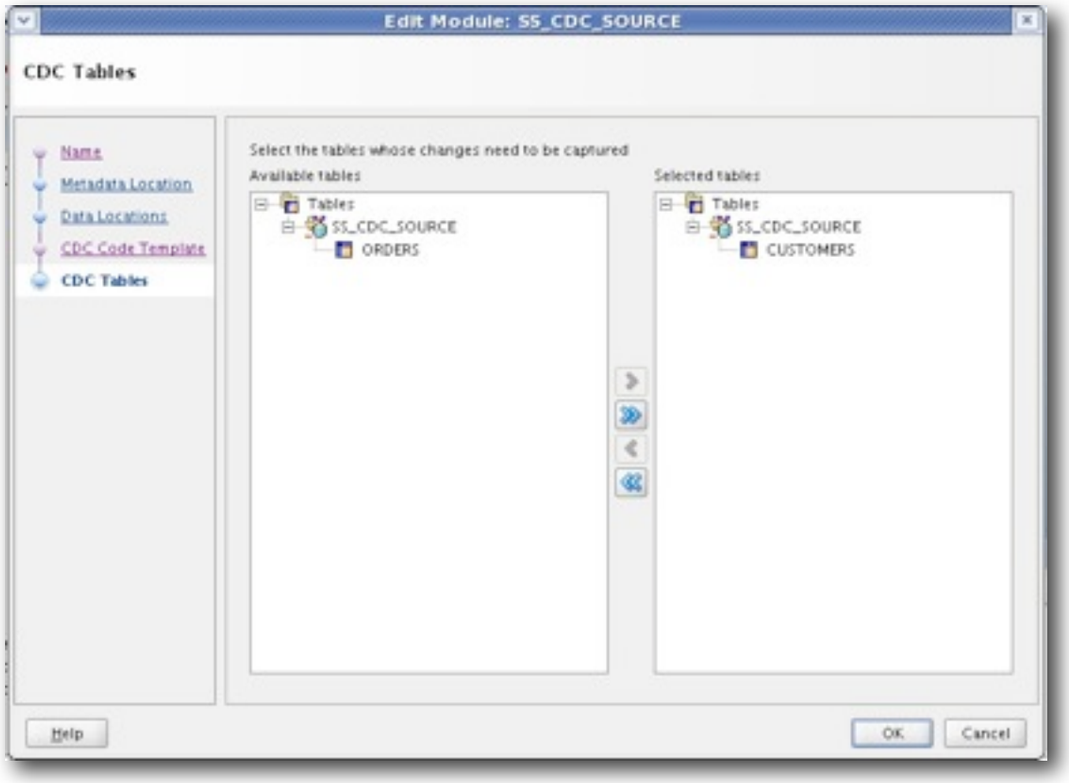
Change Data Capture Code Templates

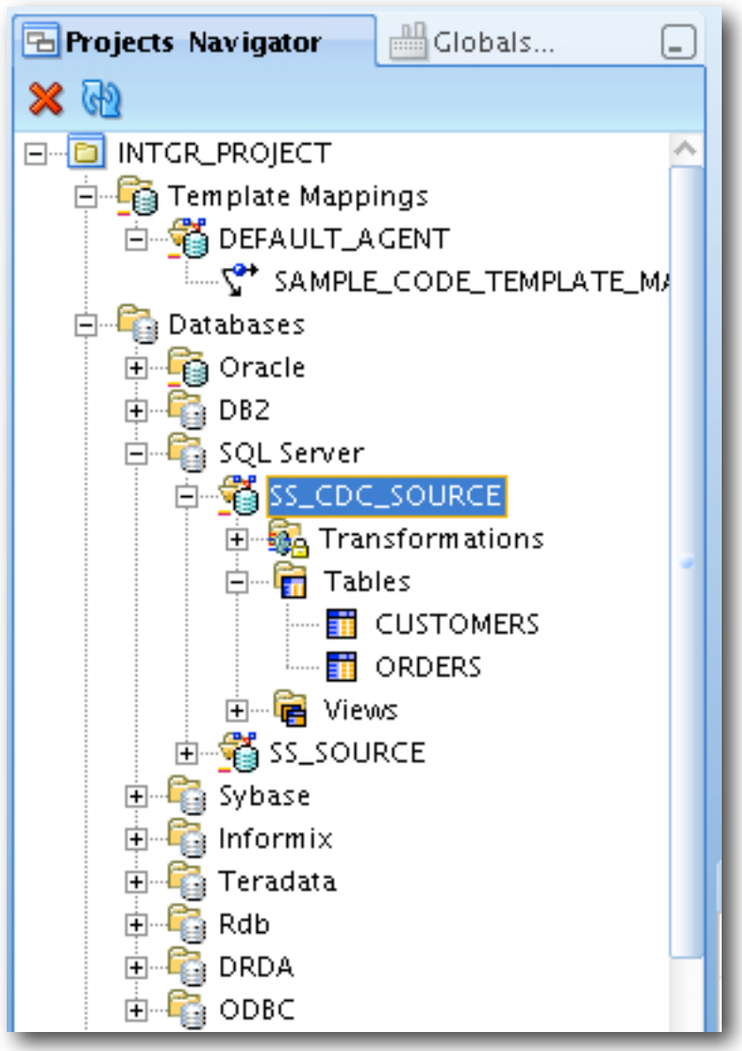
- Change Data Capture code templates ship for Oracle, SQL Server and DB2
- DB2 and SQL Server both use triggers, available in consistent and simple forms
- Oracle has support for Oracle Database Change Data Capture
  - Uses logminer and streams
  - option for auto-configuration (archivelog, global names etc)



Using Changed Data Capture : Step 2

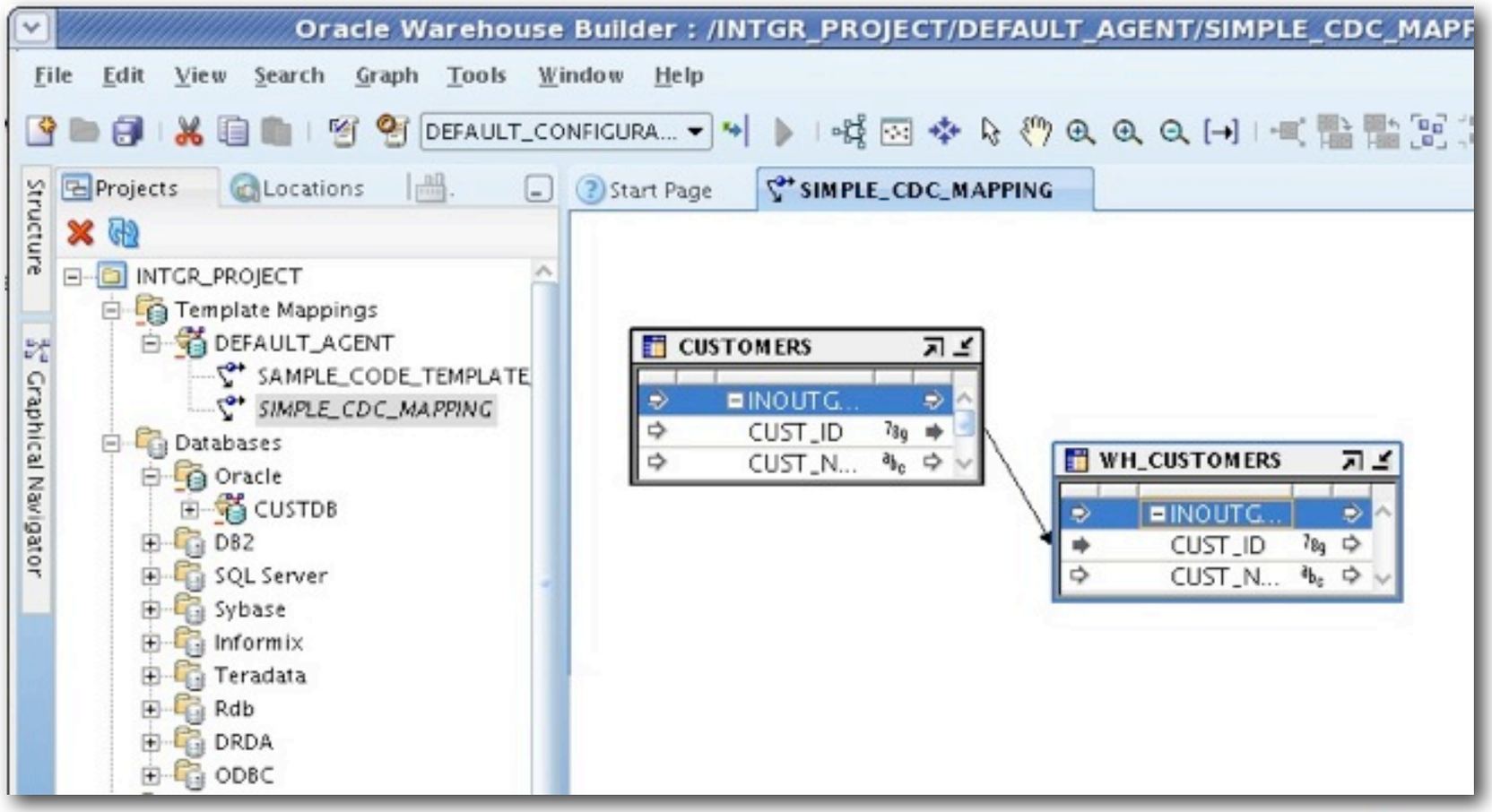
- Select tables whose changes will be captured
- Import capture tables into project





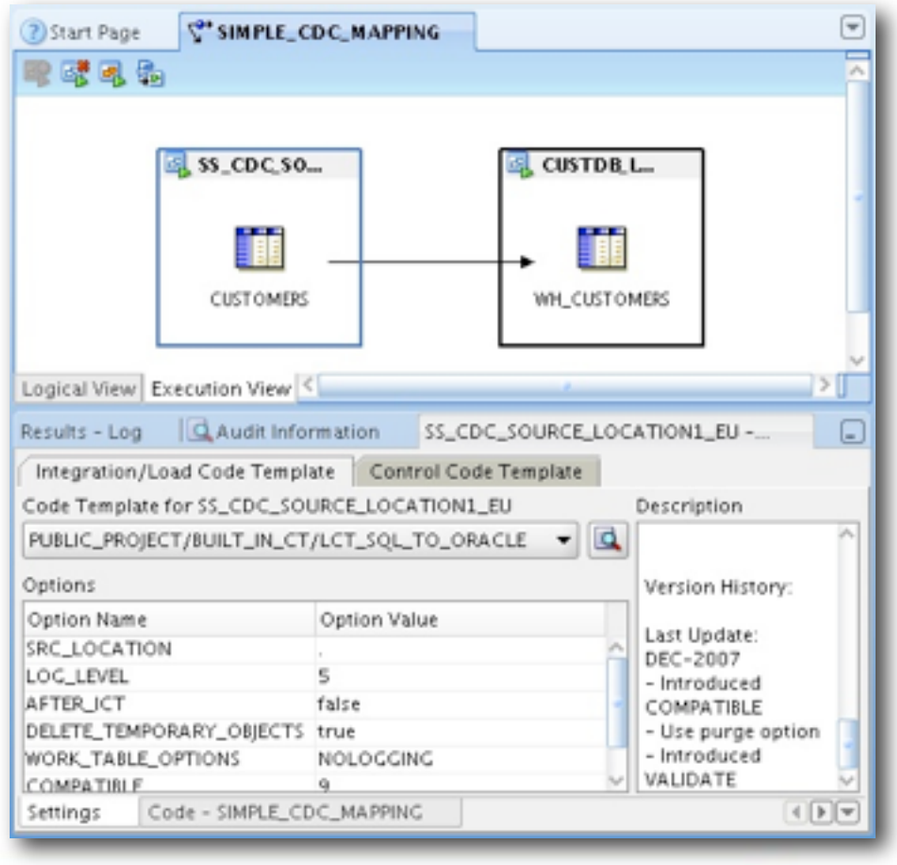
Using Changed Data Capture : Step 3

- Import capture tables into project



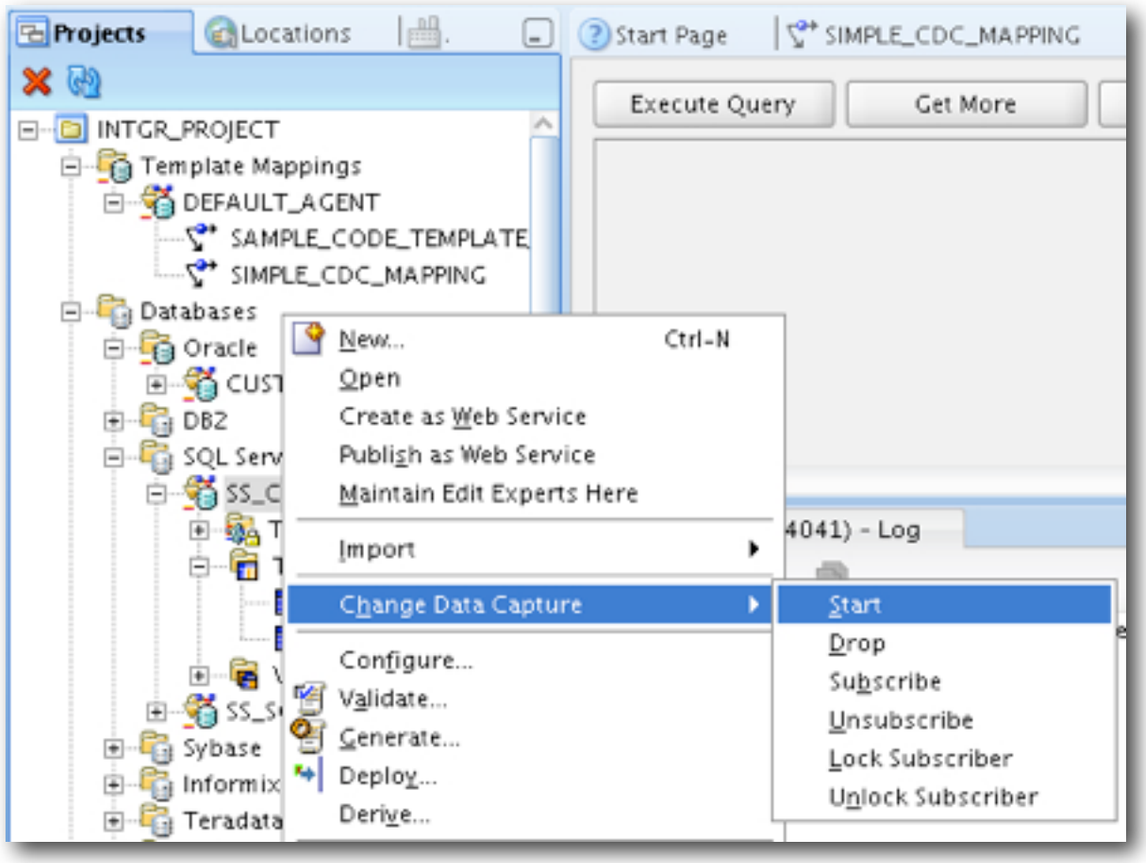
Using Changed Data Capture : Step 4

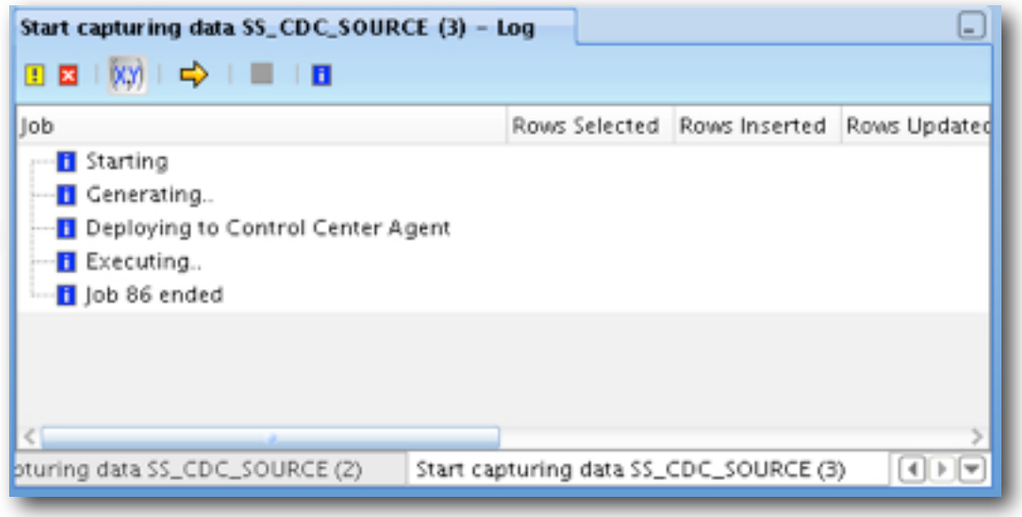
- Switch to execution view, select LCT and ICT code templates
- Nothing specific for change data capture configuration here
  - CDC code template is defined in the database module properties



Using Changed Data Capture : Step 5

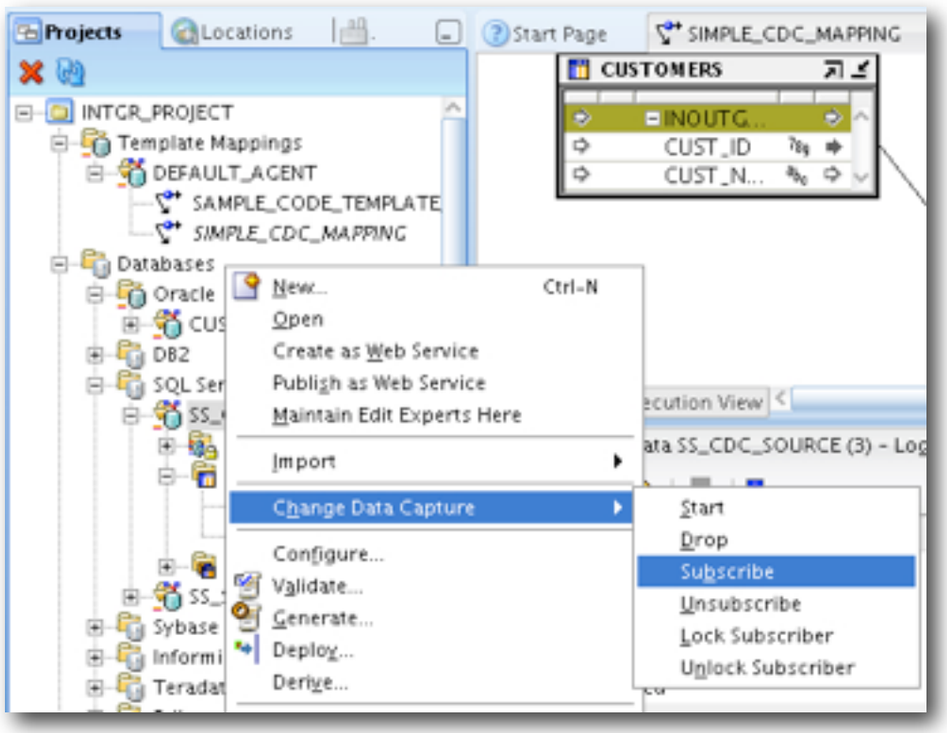
- In the Project Explorer, select **Change Data Capture** > **Start**
- Deploys the supporting tables, packages, triggers to enabled CDC

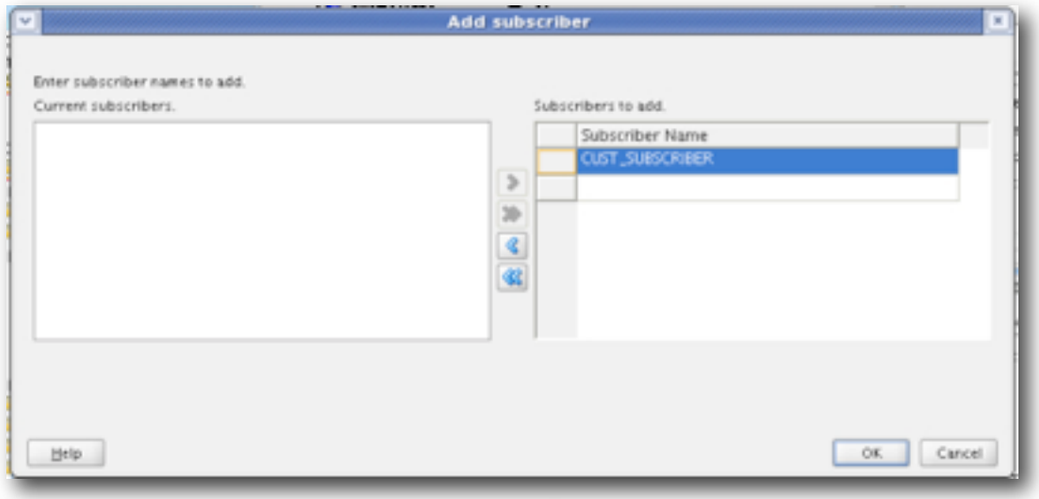


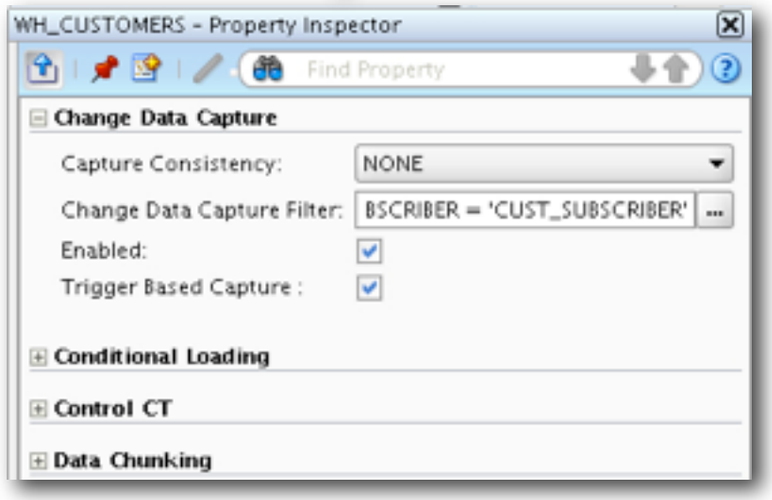


Using Changed Data Capture : Step 6

- From Project Explorer, select **Change Data Capture** > **Subscribe**
- Create subscriber group
- Configure mapping to use subscriber group

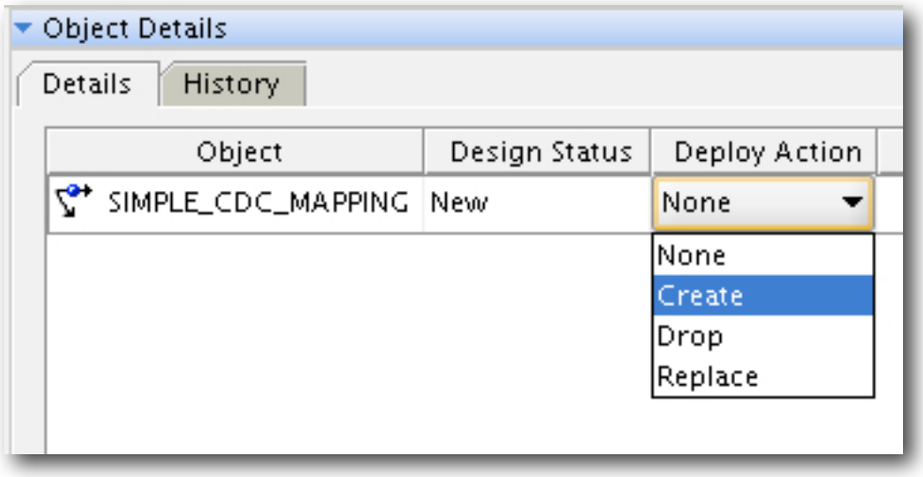


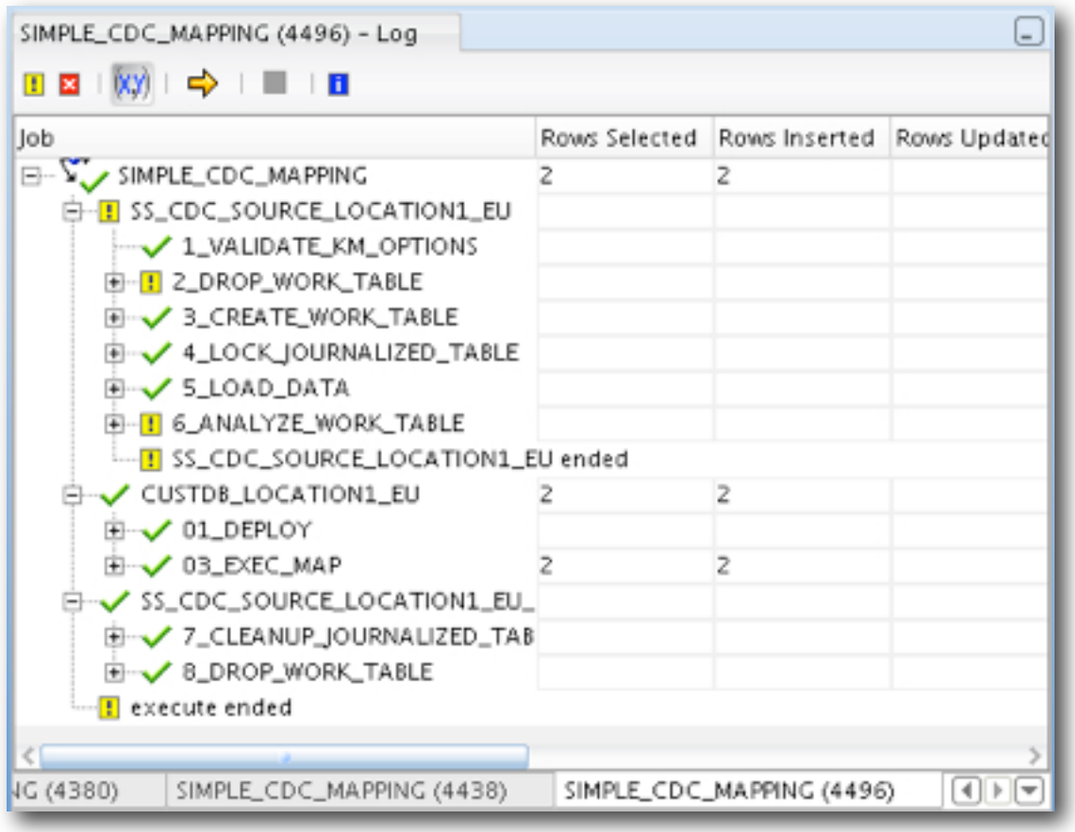




Using Changed Data Capture : Step 7

- Deploy Mapping using Control Center Manager
- Add new records to source, run mapping
- New and changed data should appear in target





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Demonstration

OWB11gR2 Change Data Capture

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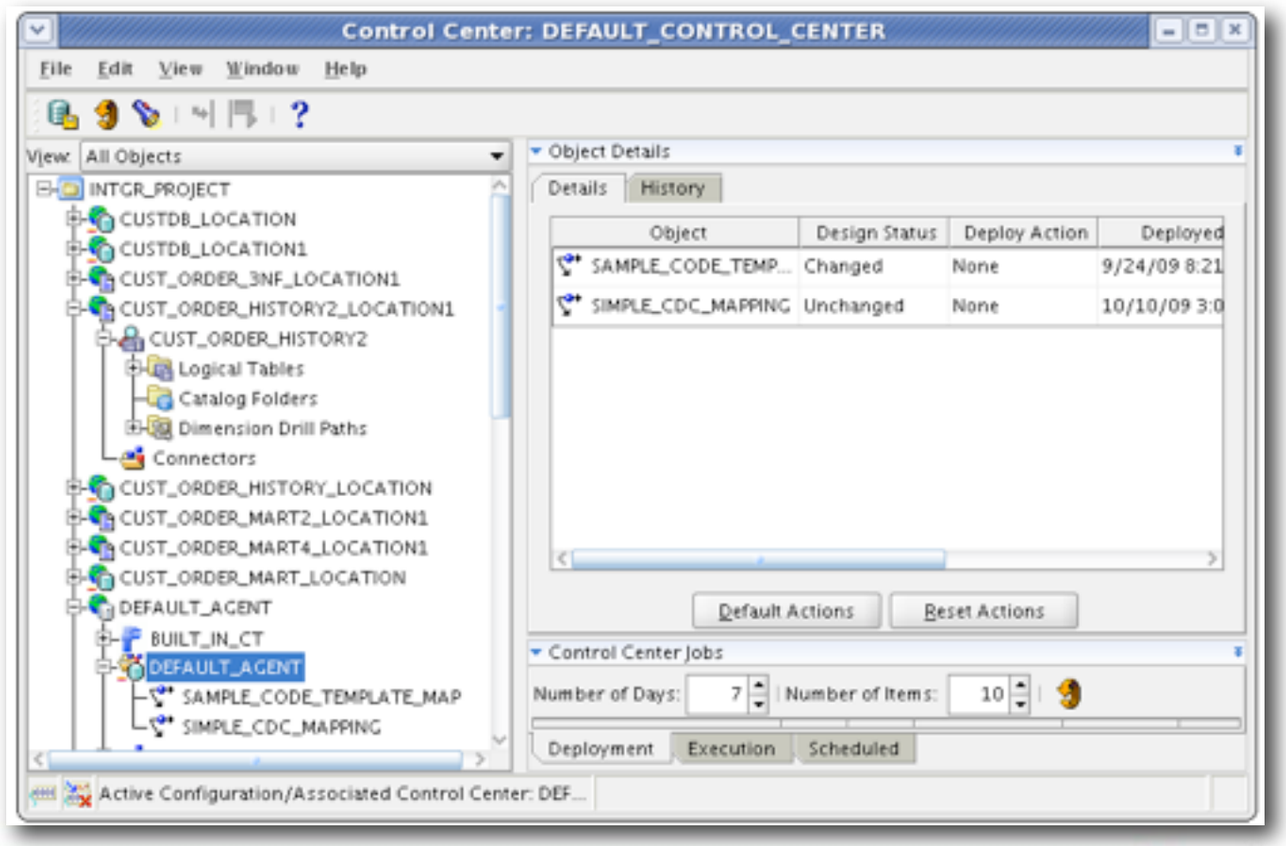
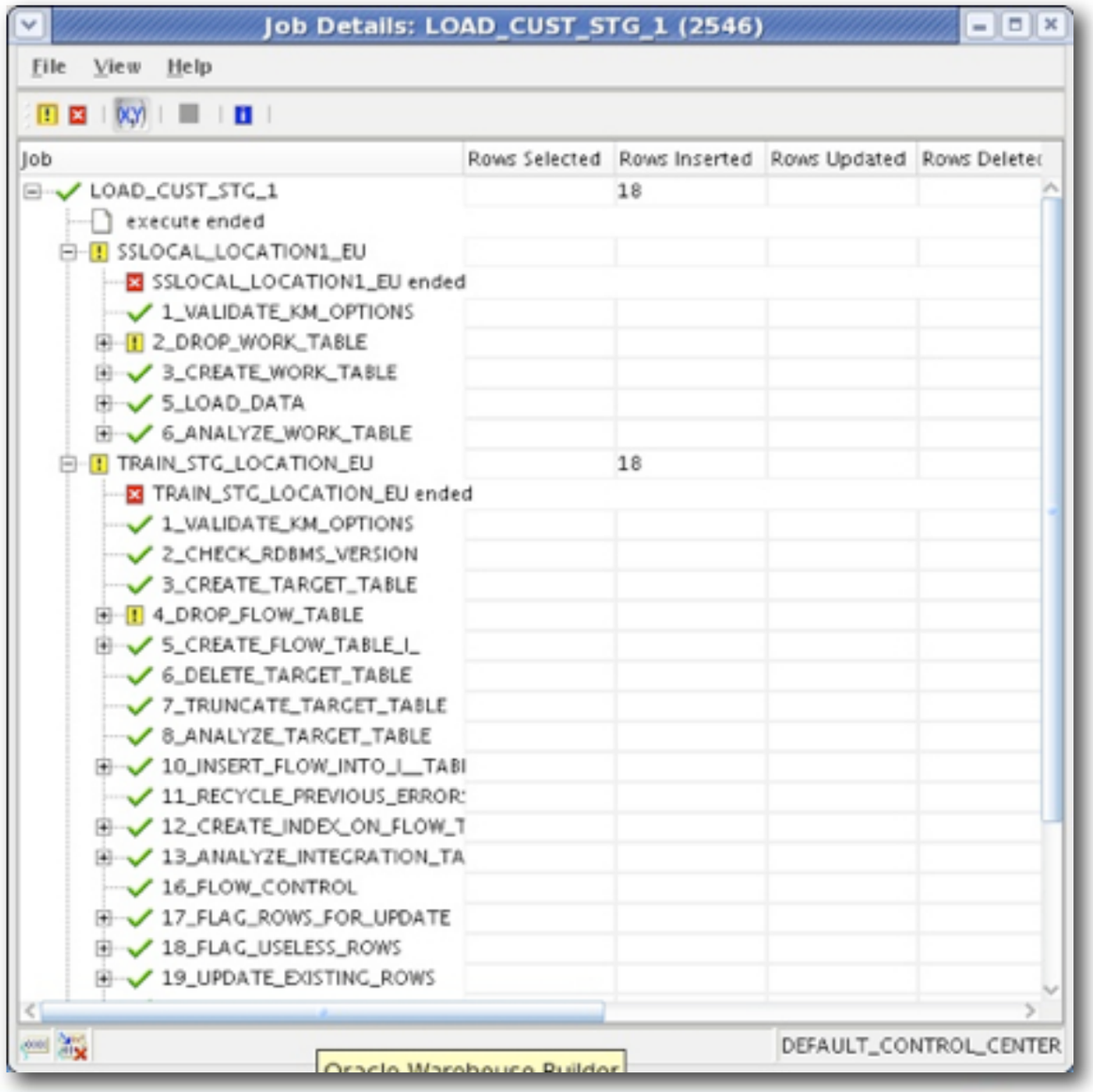
Control Center Manager

- Used for deploying and running both classic and code template mappings
- Shows deployment and execution history
- Deploy OBIEE and Discoverer metadata
- Single UI for managing mappings and process flows
  - Deployments, Executions can also be started from the Project explorer, if preferred (less feedback though)



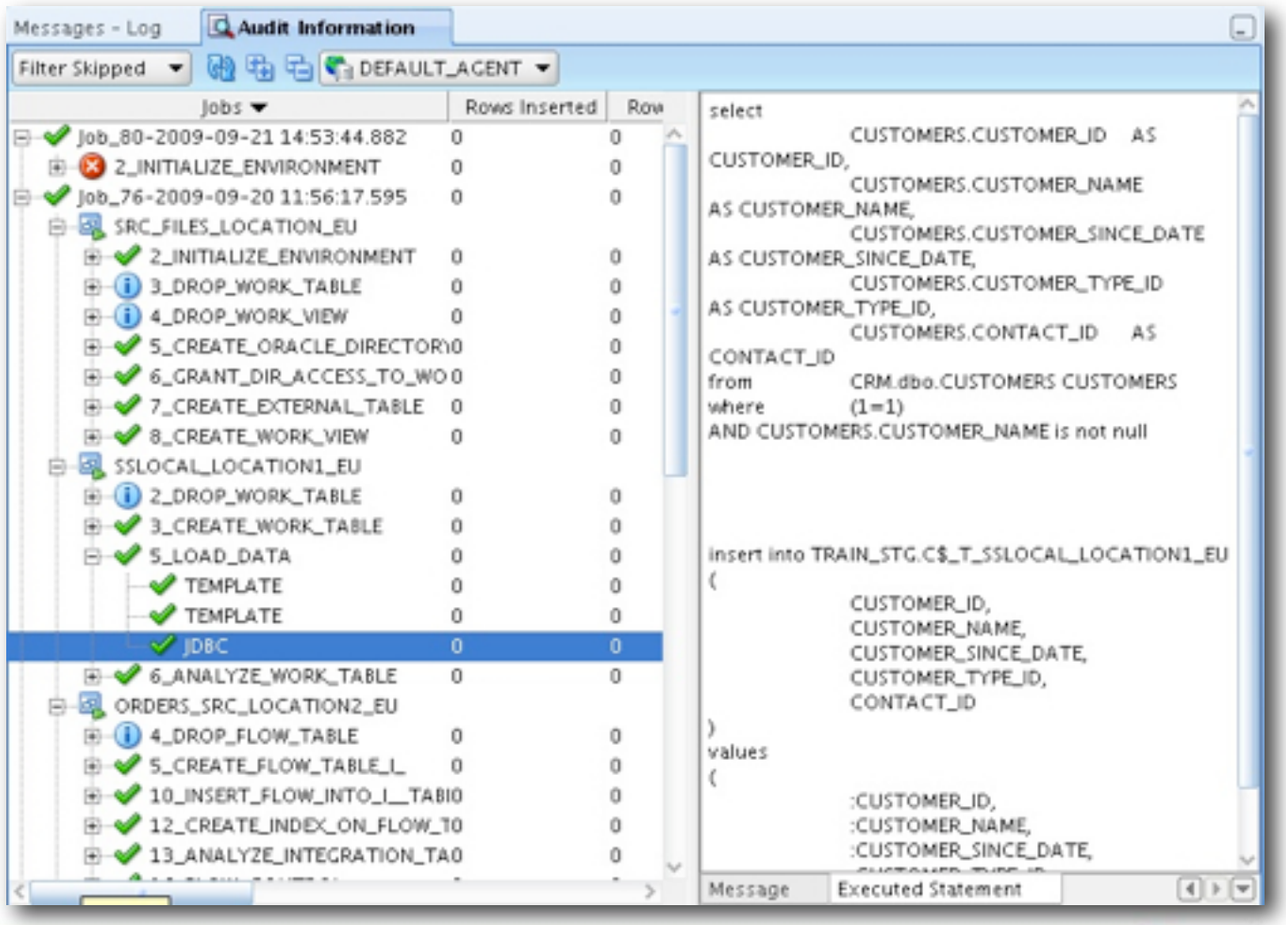
Job Details Screen

- Displayed when jobs complete (or fail) when executed from the Control Center Manager
- Shows overview of the steps, failure points and rows inserted/updated
- Limited information into the actual code executed for CT mappings



Audit Information

- Used for code template (CT) mappings
- Provides more information on steps, code executed for CT mappings
- Equivalent to the Operator application in ODI



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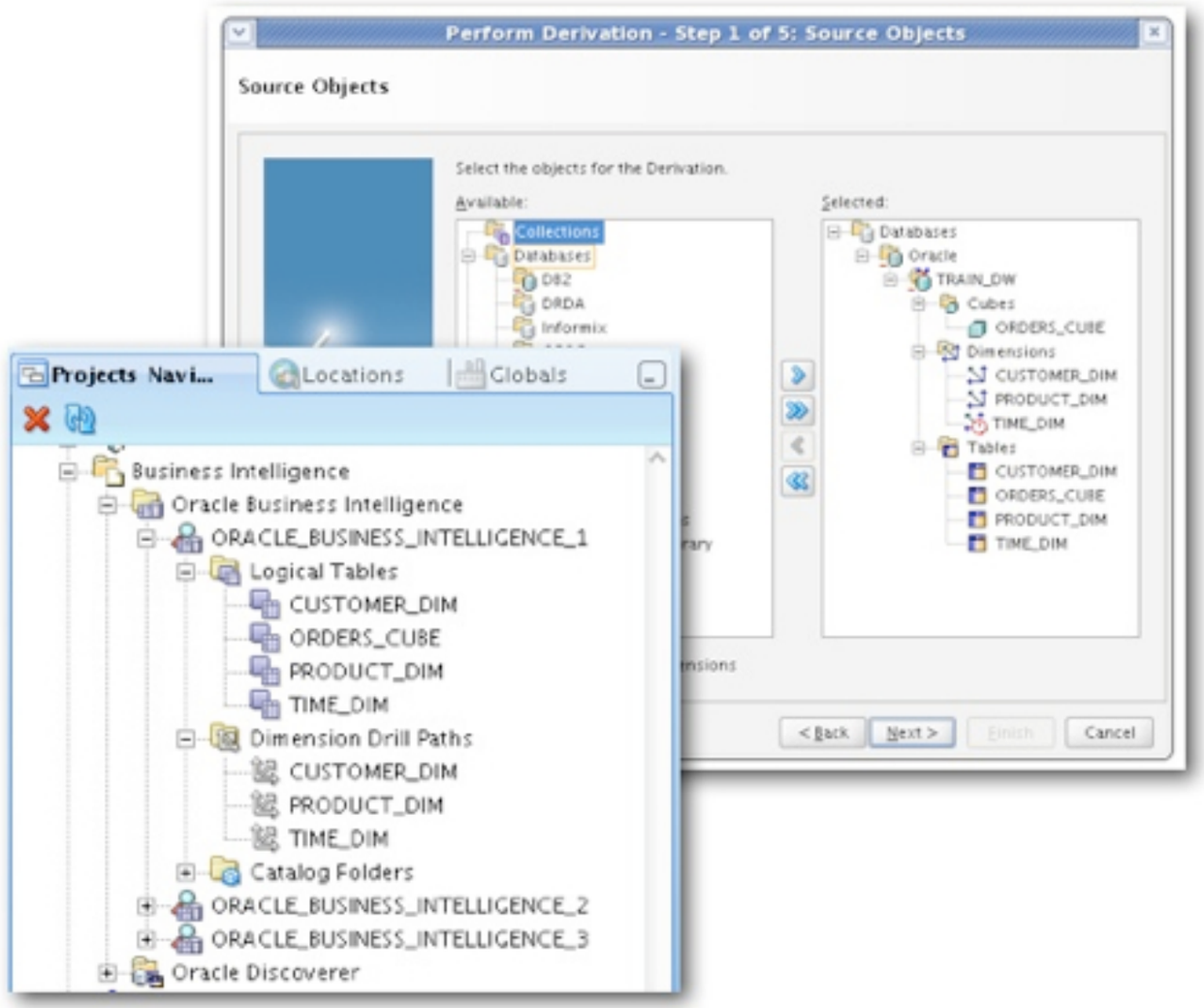
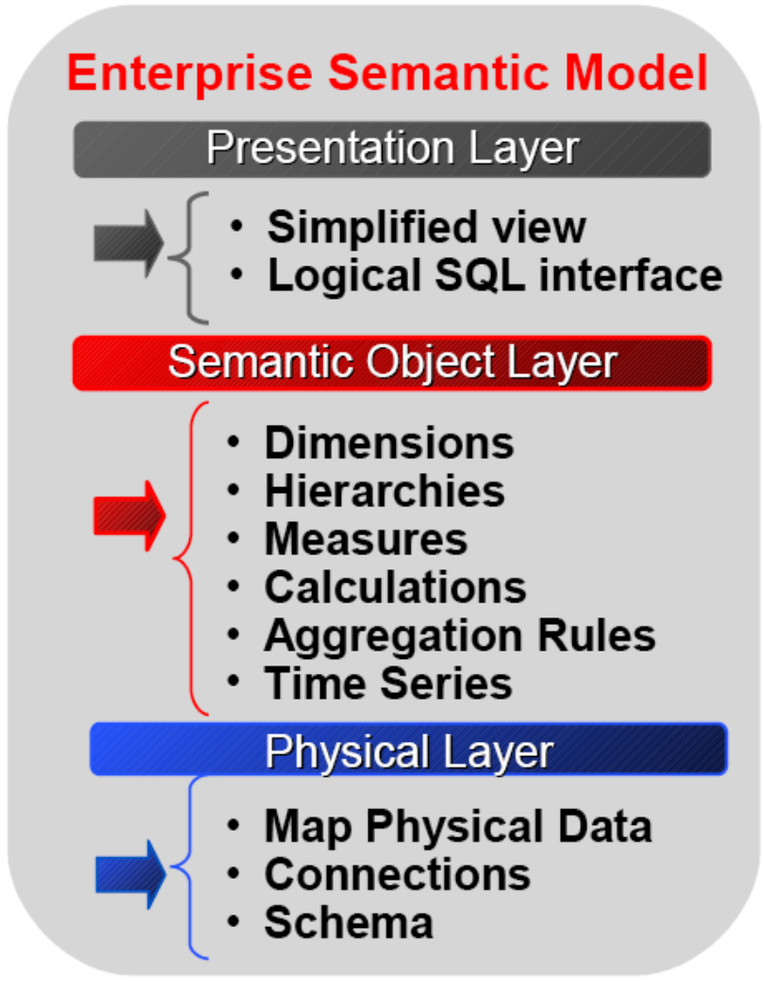
Integration with Oracle BI EE

- OWB metadata can be exported to Oracle BI EE
- Create physical, logical and presentation BI EE folders
- Works with OWB dimensions/cubes or tables
  - dimensional model is easier
  - Possible to model 3NF tables into virtual star schema



Oracle BI EE Metadata Model

- Physical Layer contains connections, physical tables
  - Connections start as ODBC, switch to native (OCI etc)
  - Primary keys and foreign keys
- Logical layer is where the data is integrated
  - Logical fact tables, logical dimension tables
  - Dimensions
  - Calculations
  - Complex joins to define relationships
- Presentation layer is where data is presented
  - Can be a simple copy of the logical layer
  - Or can be made more personalized
  - Report centric



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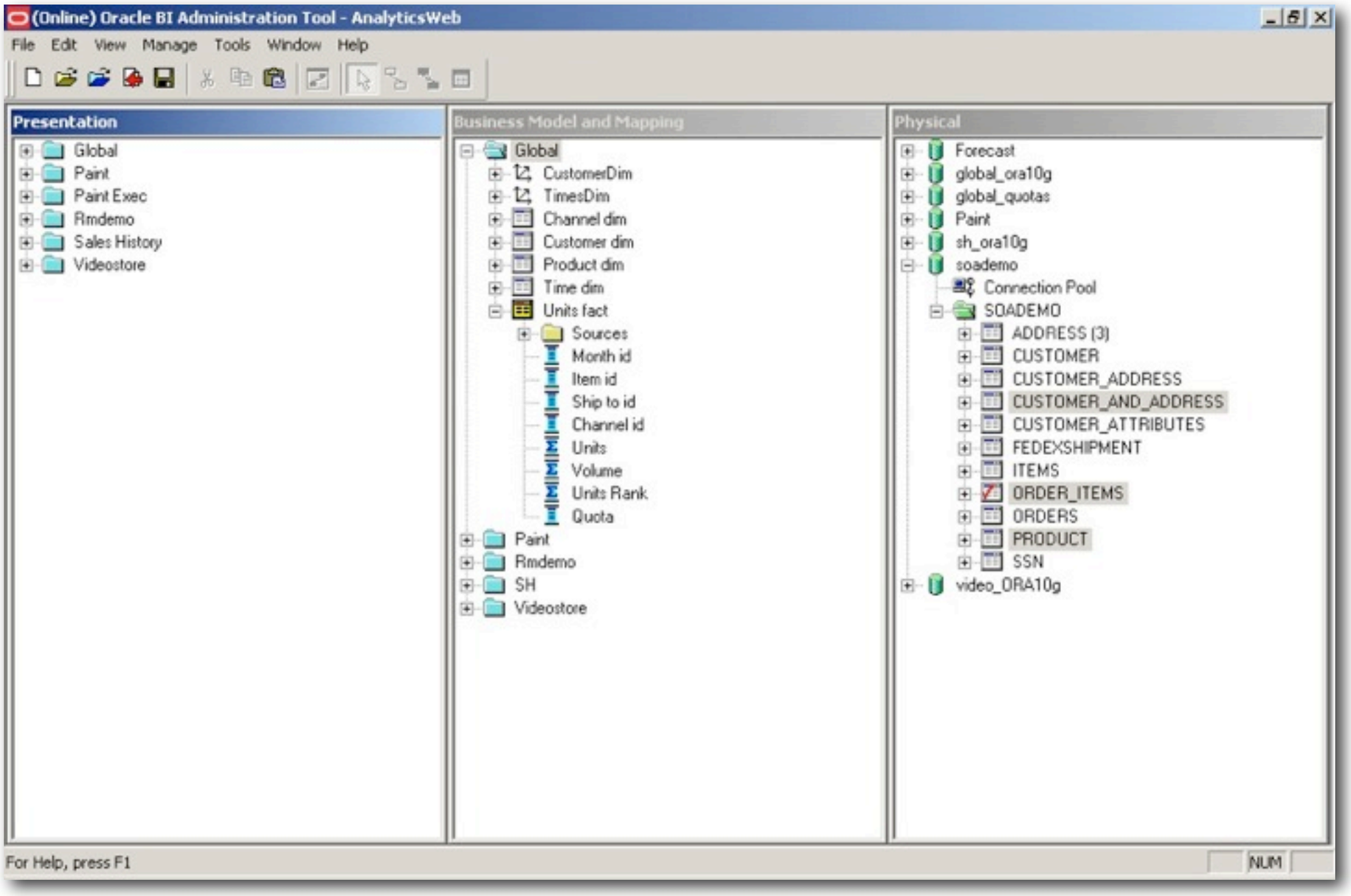
BI EE Metadata Administered through BI Administration Tool



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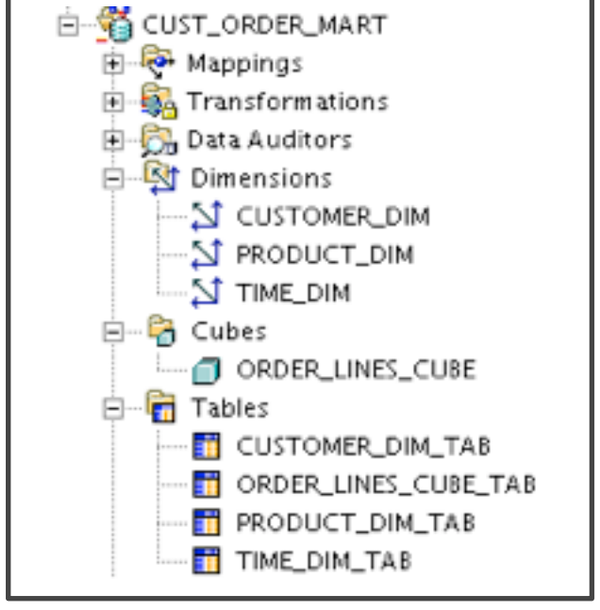
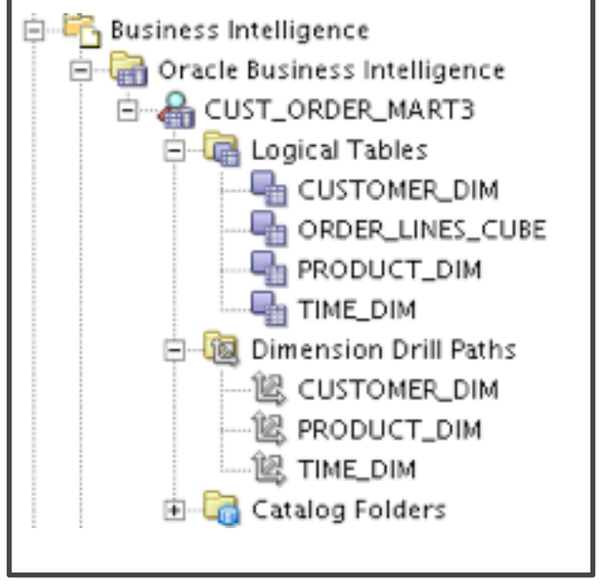
Metadata Export Process

Source (Oracle) Project



1 Start with OWB (Dimensional) Model

Oracle BI Module



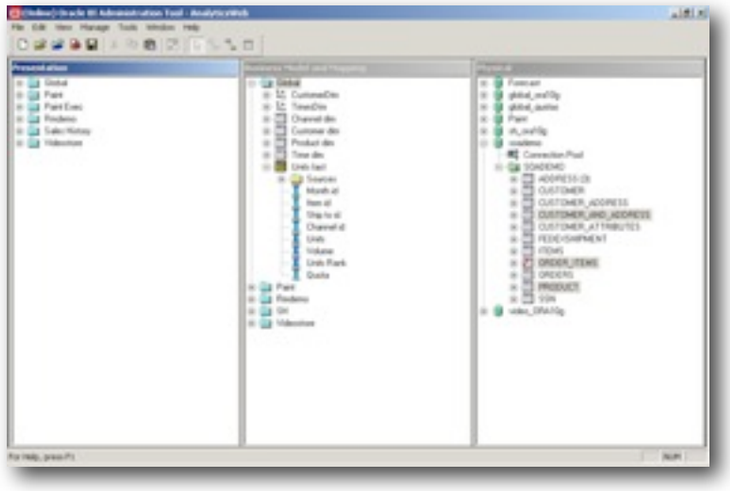
2 Derive Oracle BI Model, add calculations, dimensions, catalog folders

```
C:\>nqudmlexec -U Administrator -P password
-I c:/cust_order_mart.udml -O
c:\OracleBI\server\Repository\cust_order_mart.rpd

---------------c:/cust_order_mart.udml---------------

Complete success!!!
```

3 Run NQudmlexec



4 Open Metadata in BI Administrator

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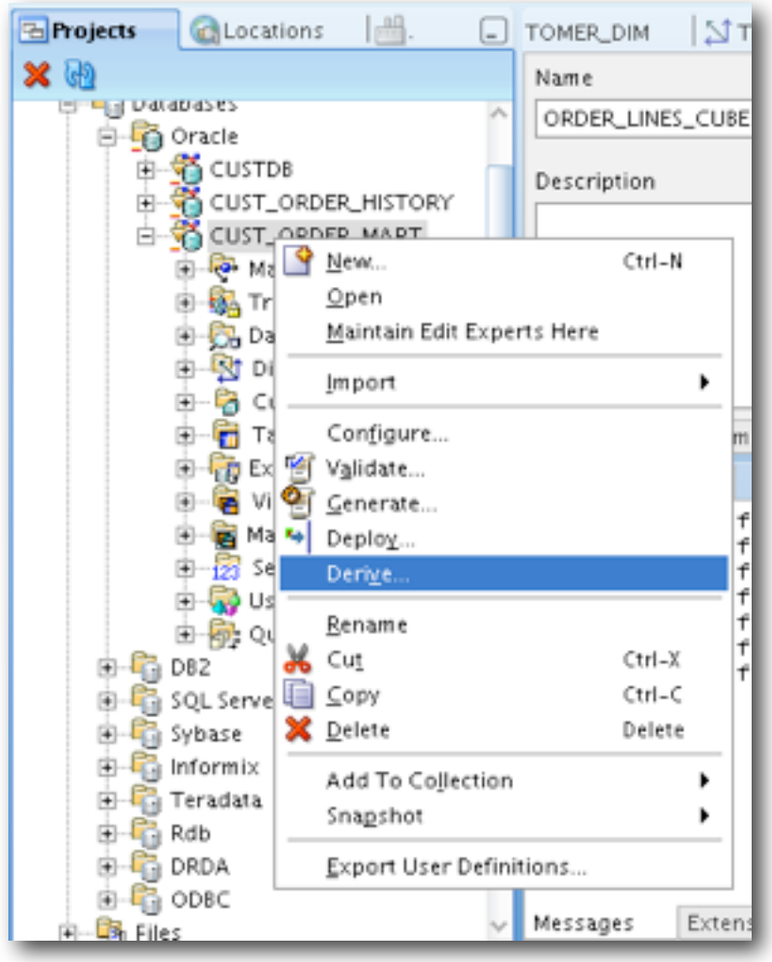
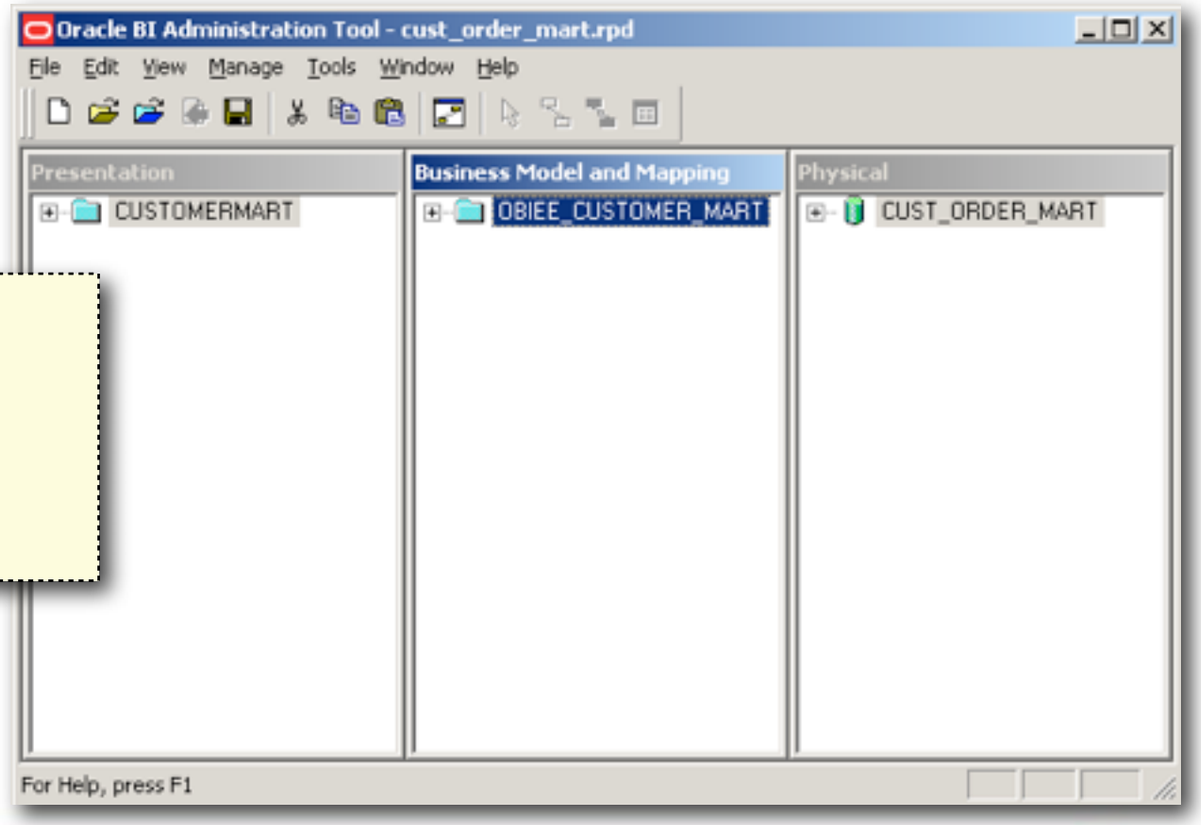
Derivation and Direct Definition of Oracle BI EE Objects

- As with Discoverer support in OWB10gR2/11gR1, BI metadata can be derived or manually created
- Derivation is easiest, picks up existing OWB metadata
- Tables, views, dimensions, hierarchies can be derived
- Dimensional models are easiest to work with
  - Dimensions export to BI EE hierarchies
  - Tables export to tables
  - PK / FK constraints export to keys, joins



Metadata Import via nqudmlexec.exe

- Metadata produced by OWB11gR2 is a UDML file
  - Contains DDL-like definitions of BI EE objects
- Needs to be transferred to BI EE server
- Then imported using `nqudmlexec.exe` utility




```
C:\>nqudmlexec -U Administrator -P password
-I c:/cust_order_mart.udml -O
c:\OracleBI\server\Repository\cust_order_mart.rpd

---------------c:/cust_order_mart.udml---------------

Complete success!!!
```

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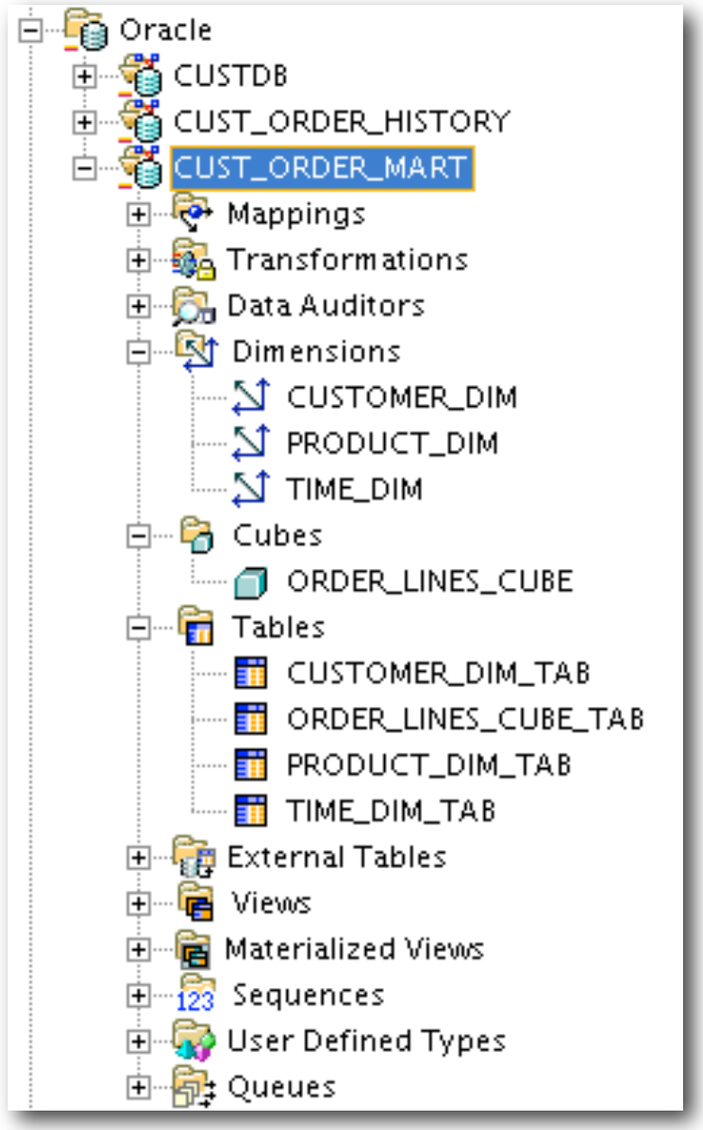
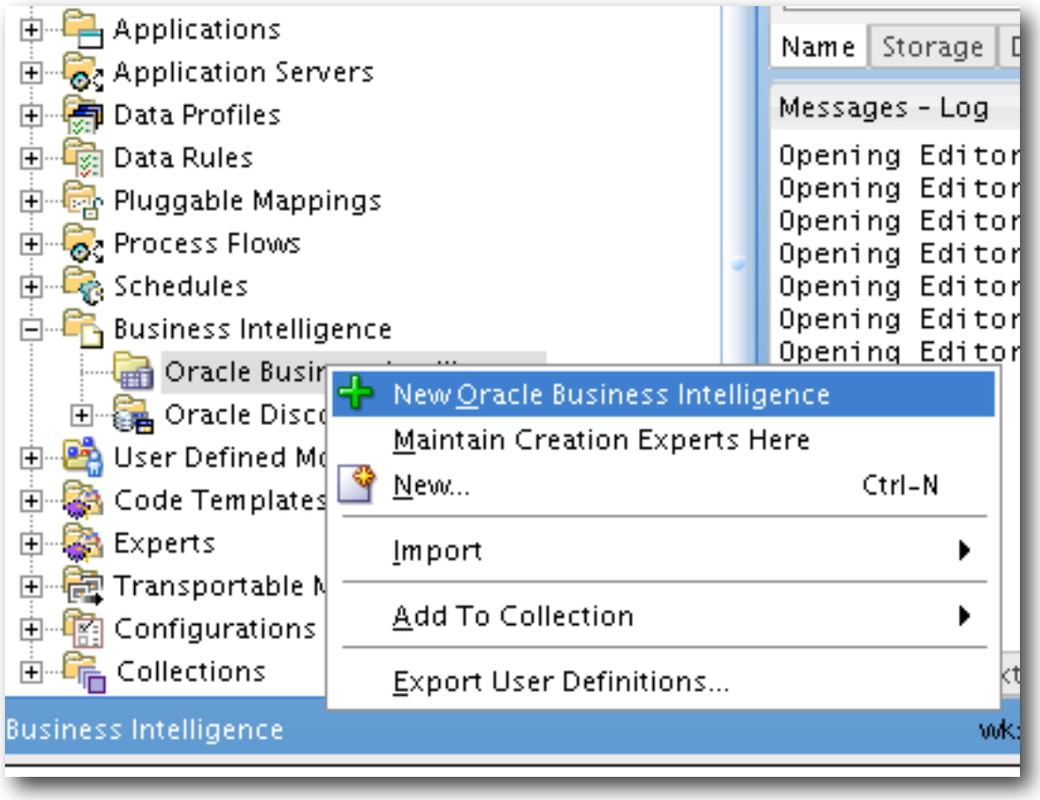
Deriving BI EE Metadata for Dimensional Model : Step 1

- Define dimensional model within OWB11gR2
- Dimensions, facts, hierarchies, cubes etc
- Has to be either ROLAP or ROLAP with MVs
  - Support for MOLAP may come later
- Support limited to Oracle targets
  - More of an OWB limitation



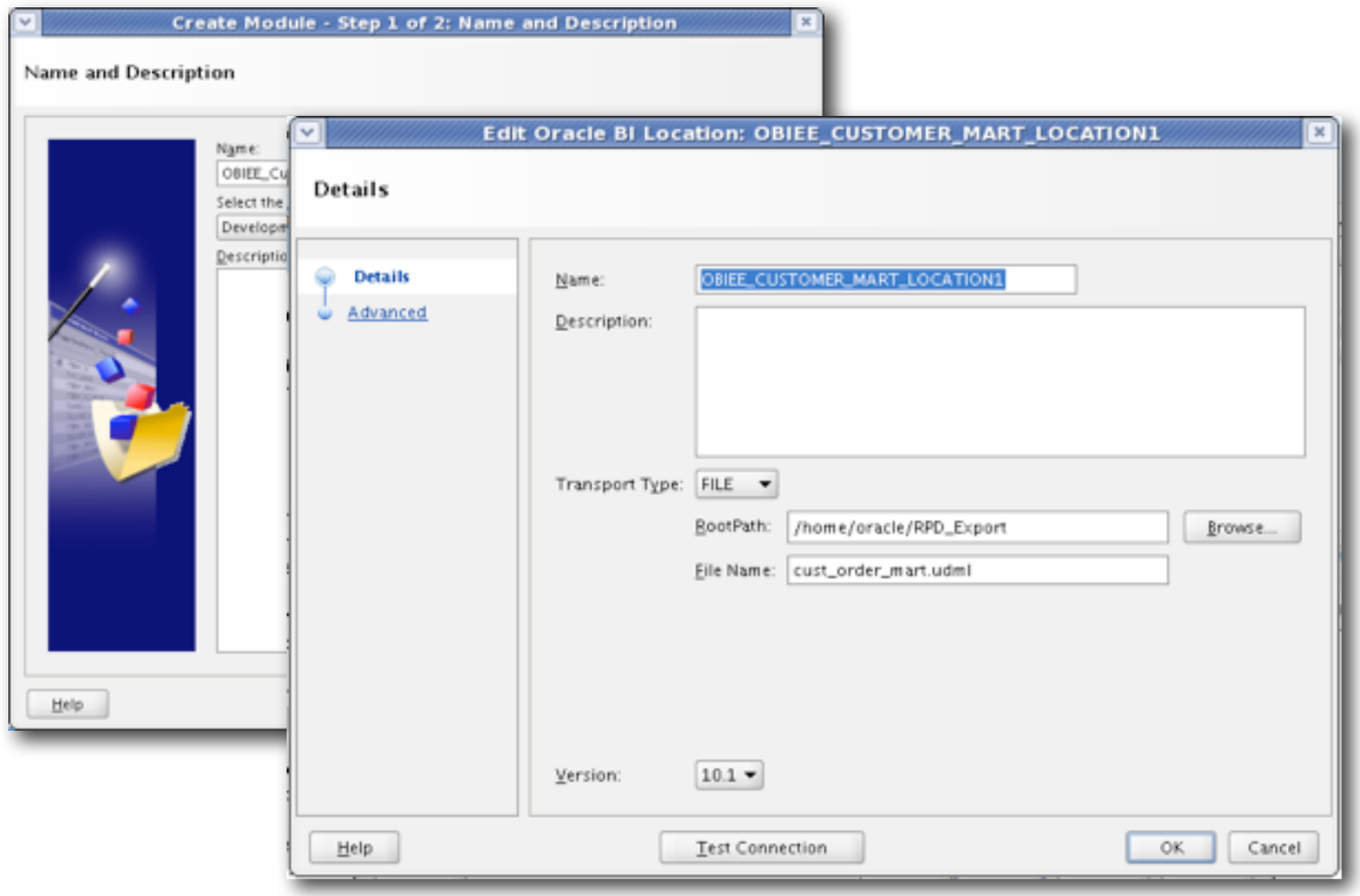
Deriving BI EE Metadata for Dimensional Model : Step 2

- Create Oracle BI EE module
- Located in the **Business Intelligence** folder
- Create **New Oracle Business Intelligence** module



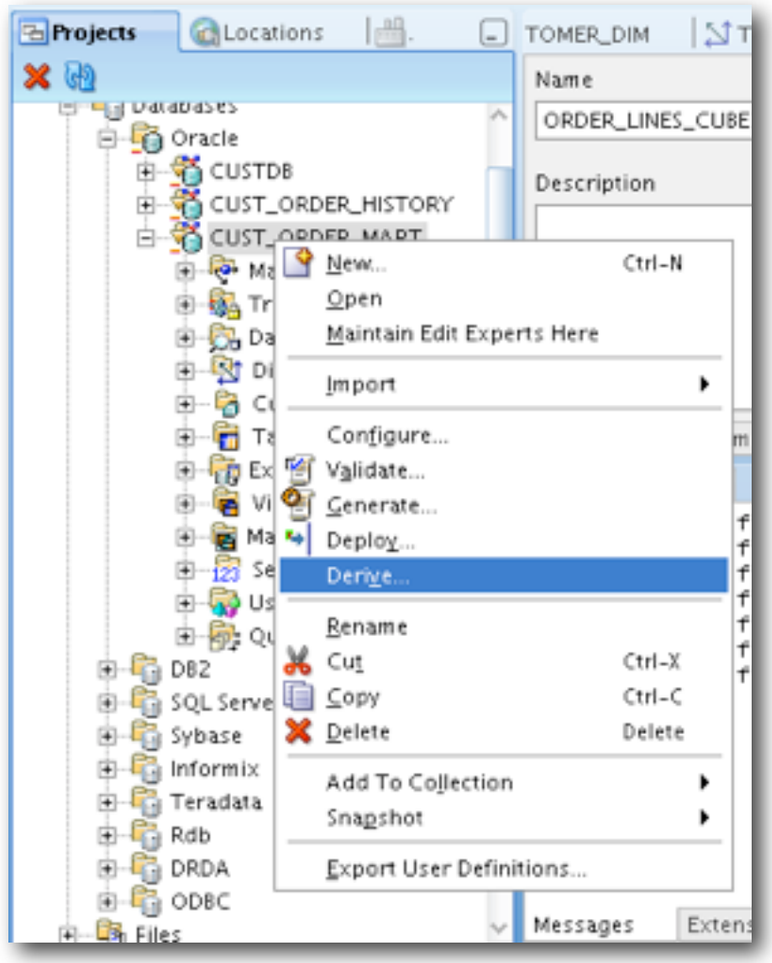
Deriving BI EE Metadata for Dimensional Model : Step 3

- Define location for Oracle Business Intelligence module
- Specify Name
  - Module relates to a single UDML export file
- Specify location
  - Filesystem / FTP / HTTP
  - Filename (.udml)
- Version
  - 10.1 BI EE only (for now)



Deriving BI EE Metadata for Dimensional Model : Step 4

- Select objects for derivation
- Typically select all of a module
- Will then begin derivation process



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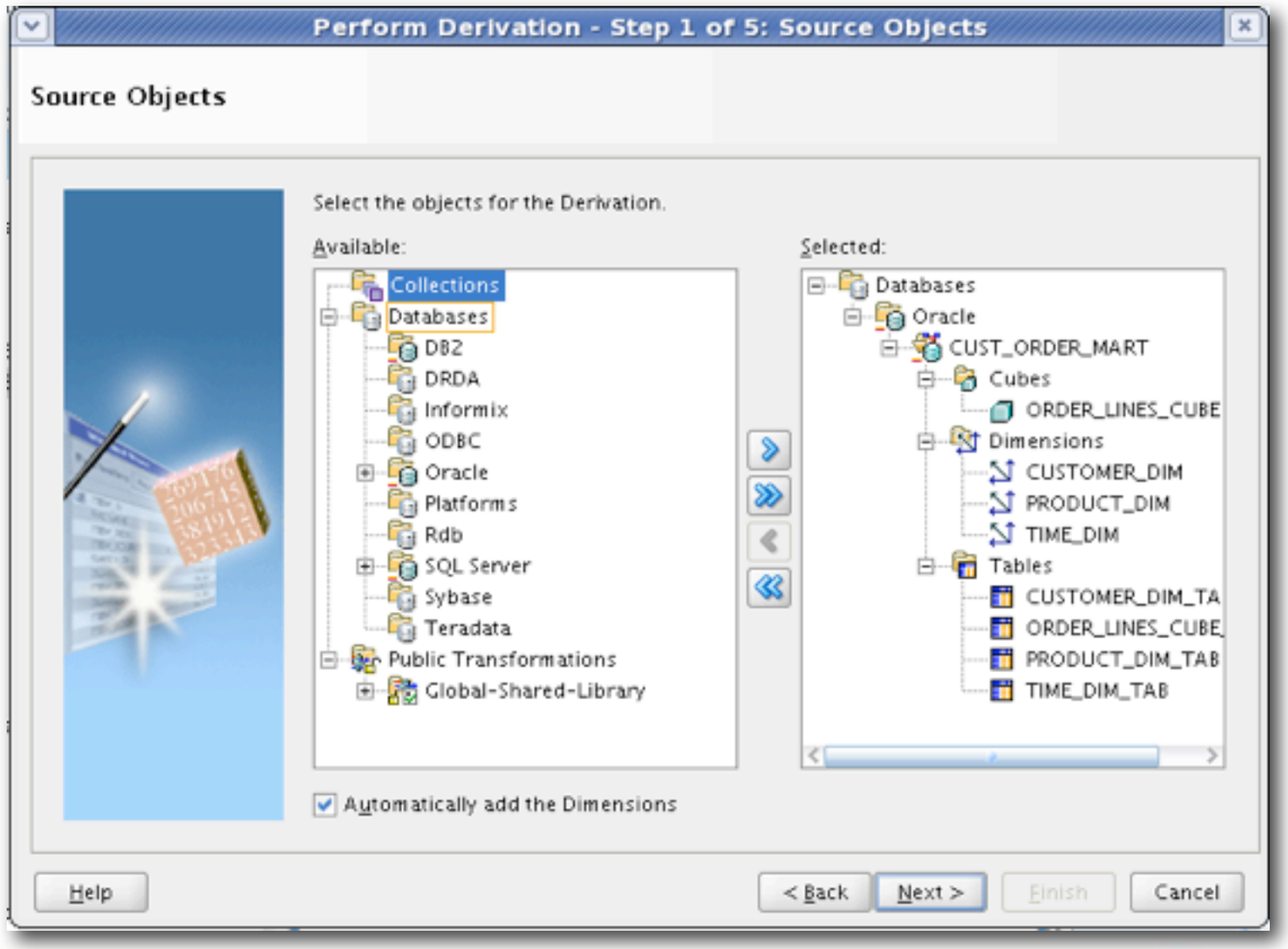
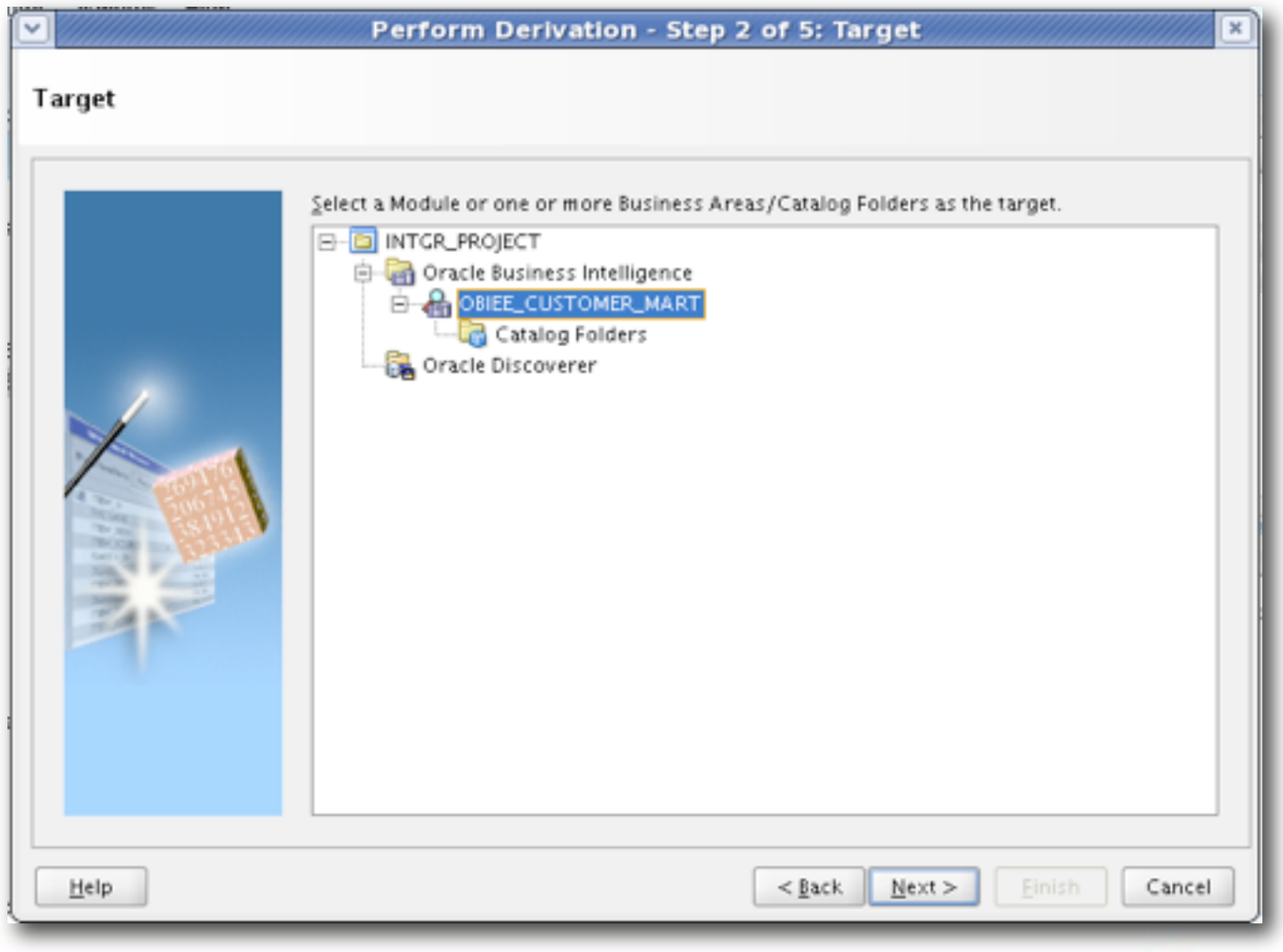
Deriving BI EE Metadata for Dimensional Model : Step 5

- Confirm objects for derivation
- Dimensions become hierarchies
- Tables become tables
- Cubes become fact tables



Deriving BI EE Metadata for Dimensional Model : Step 6

- Select target for derivation
- Corresponds to the name of the Business Intelligence module you defined previously



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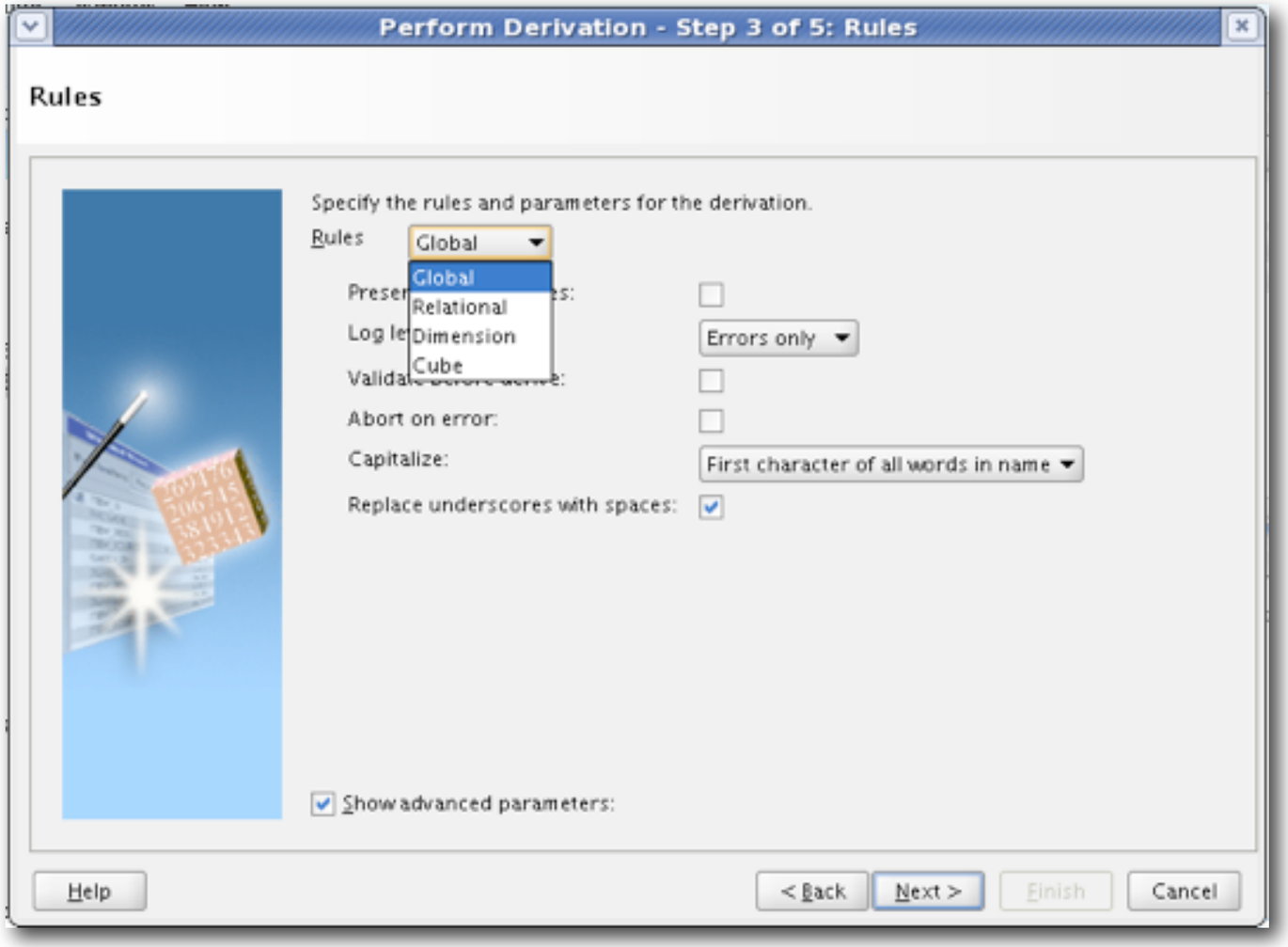
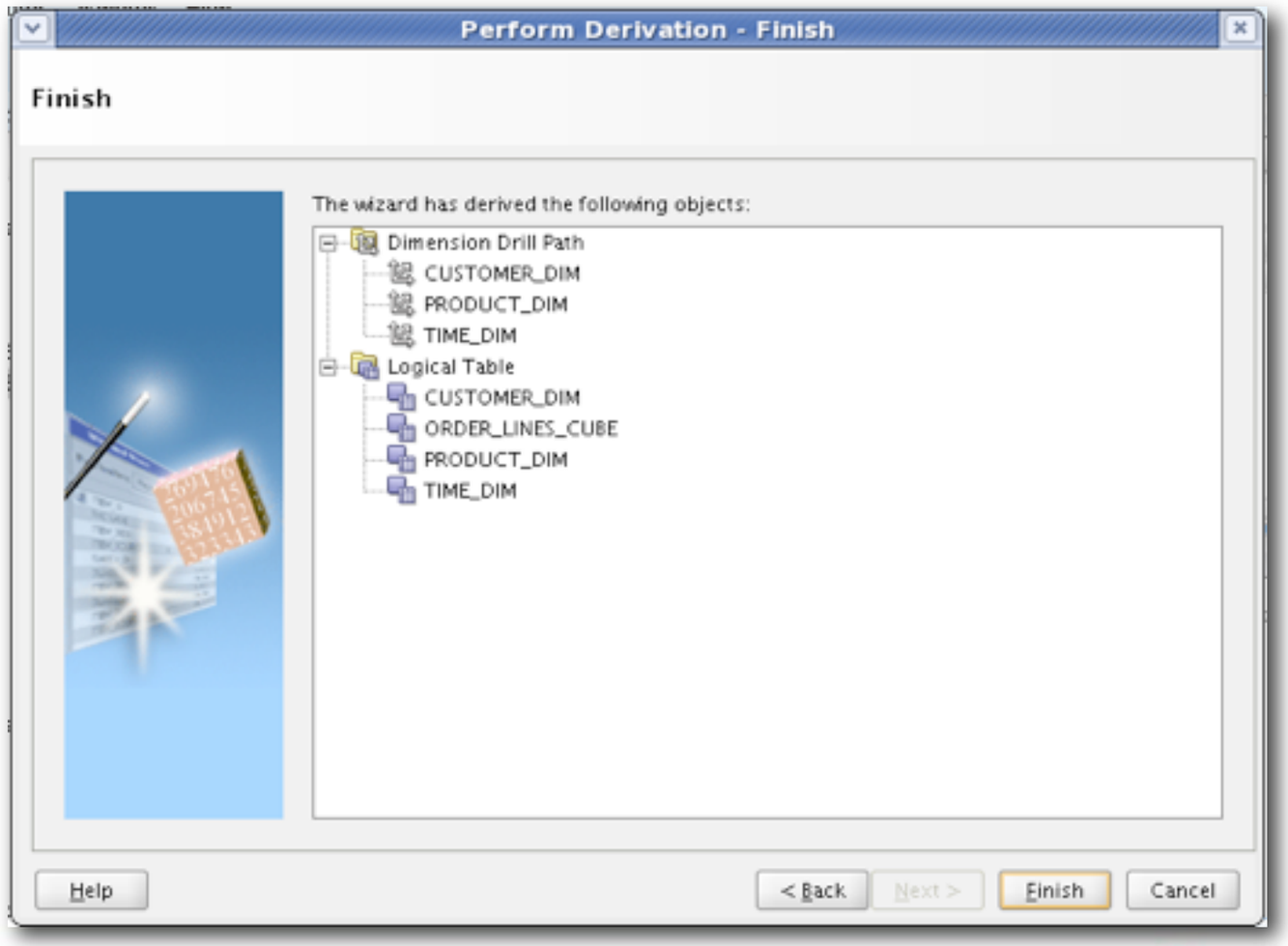
Deriving BI EE Metadata for Dimensional Model : Step 7

- Specify metadata conversion rules
- Globally or just for specific OWB objects
- Capitalize first characters etc
- Replace underscores etc



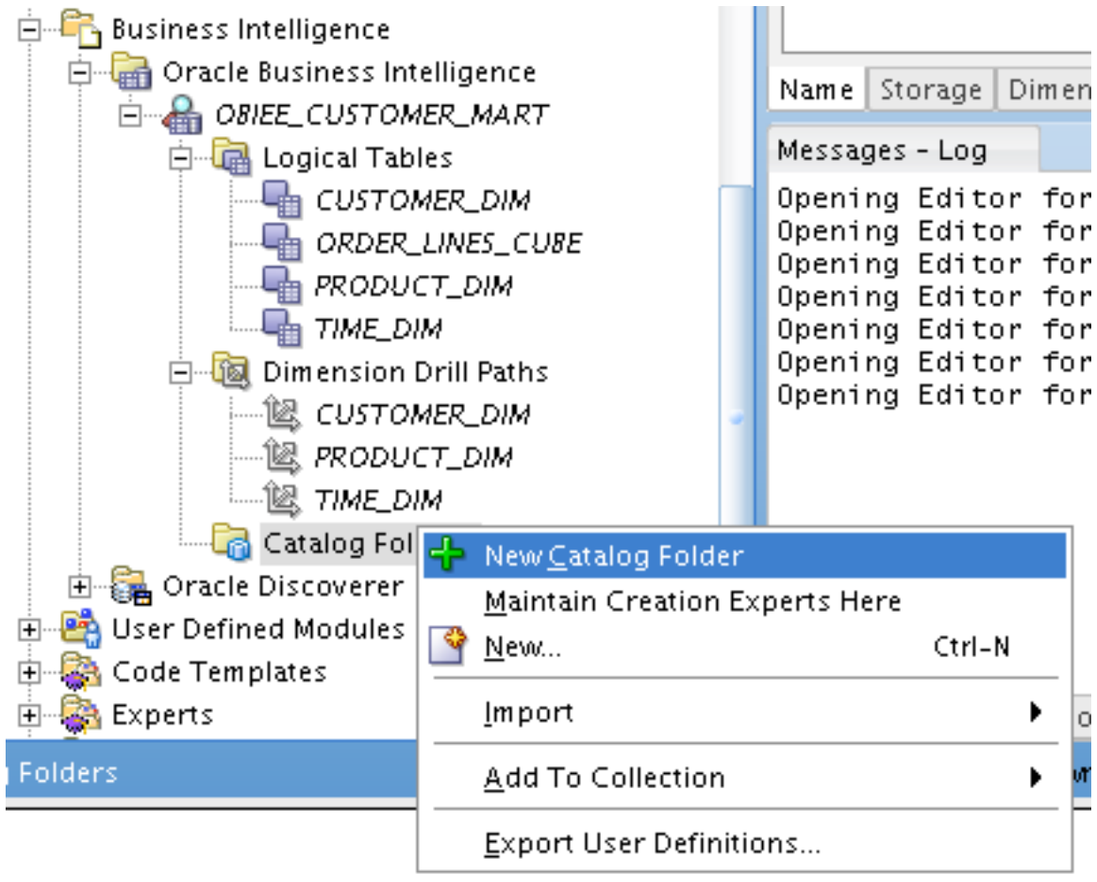
Deriving BI EE Metadata for Dimensional Model : Step 8

- Derivation is complete
- Check logical tables and dimensions that have been created



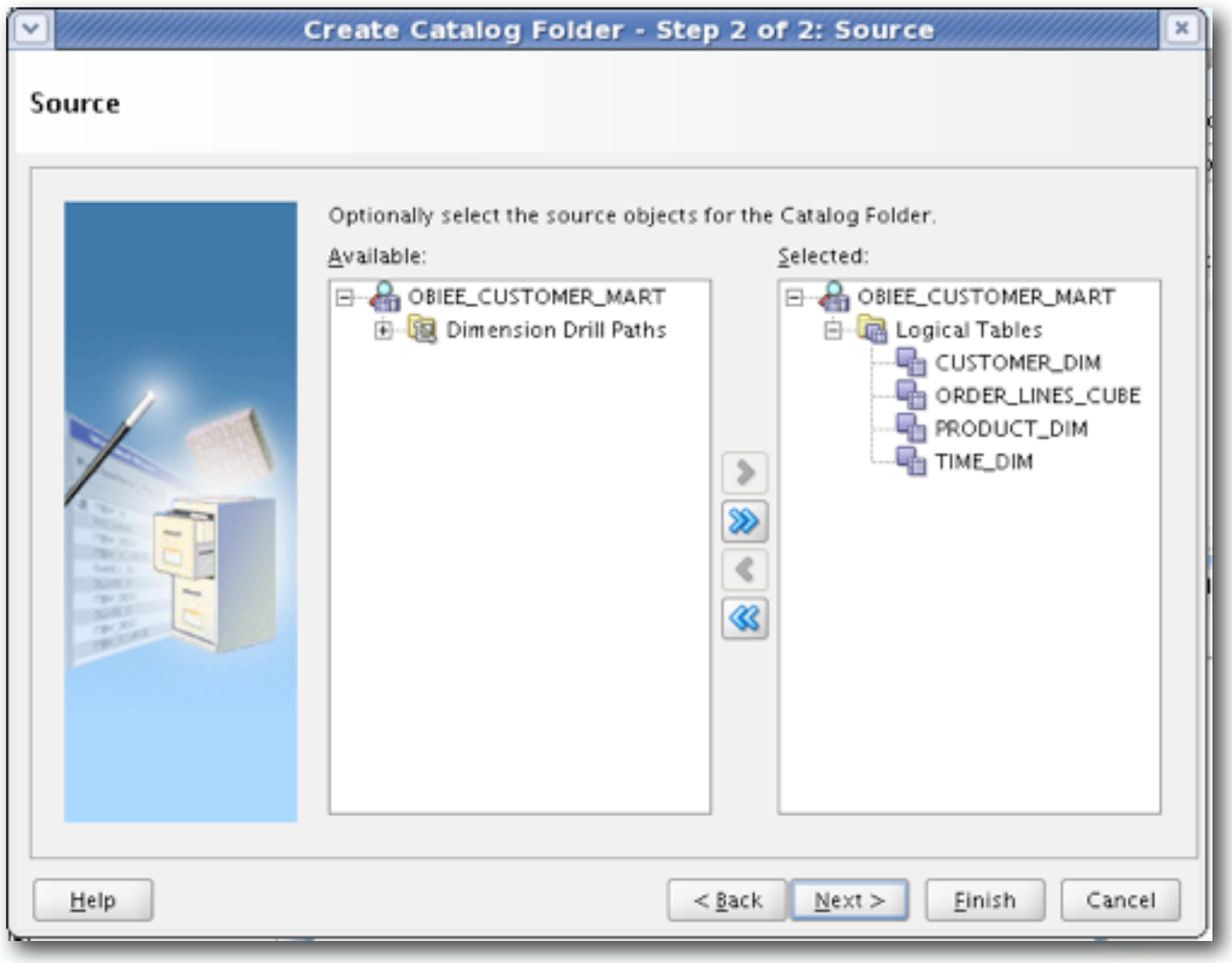
Deriving BI EE Metadata for Dimensional Model : Step 9

- Create Catalog folder to hold presentation model details
- Multiple catalog folders for different user types
  - Sales
  - Marketing
  - HR



Deriving BI EE Metadata for Dimensional Model : Step 10

- Select objects for Catalog folder inclusion
- Translates to presentation folder in BI EE metadata



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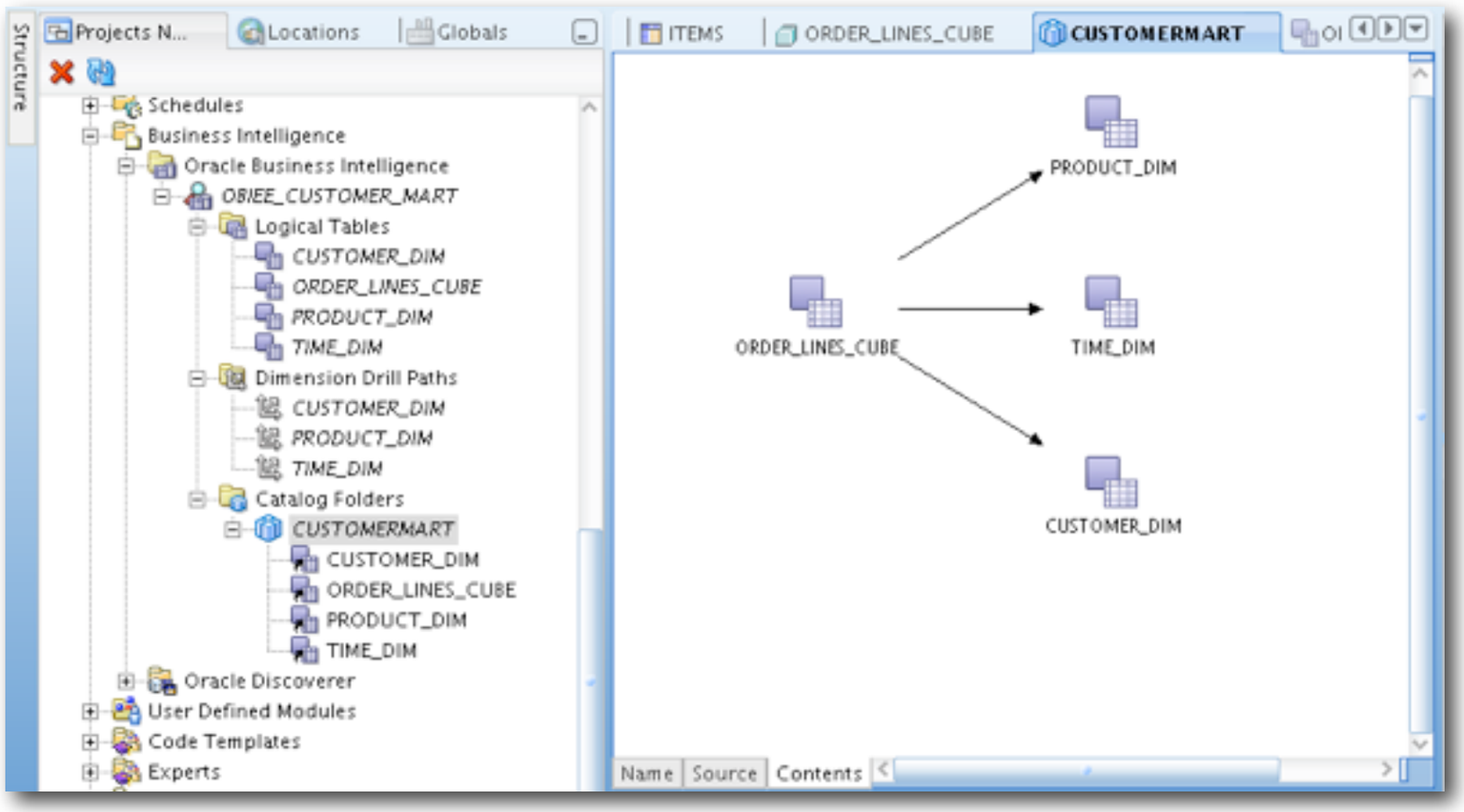
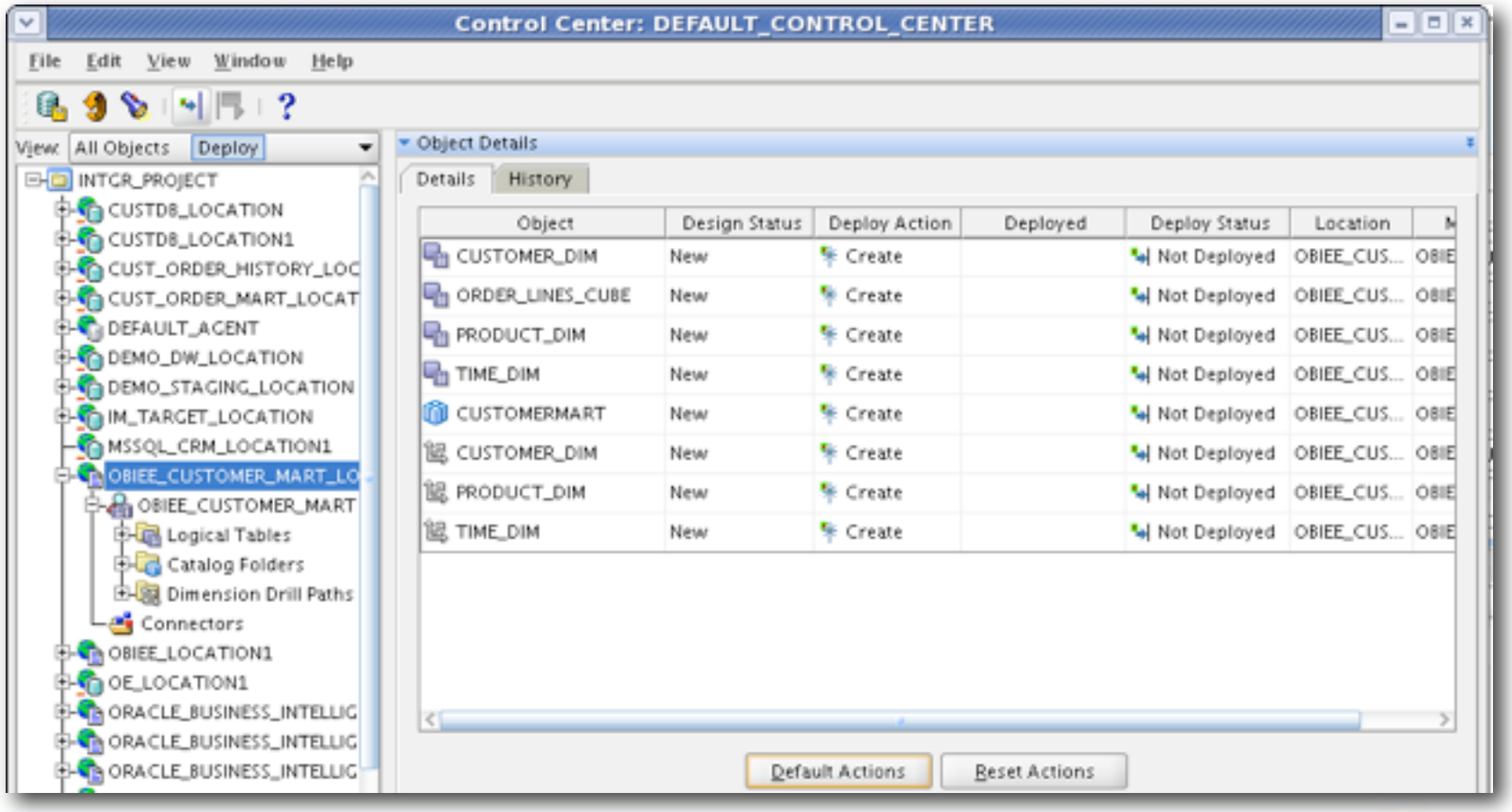
Deriving BI EE Metadata for Dimensional Model : Step 11

- Review completed BI EE metadata



Deriving BI EE Metadata for Dimensional Model : Step 12

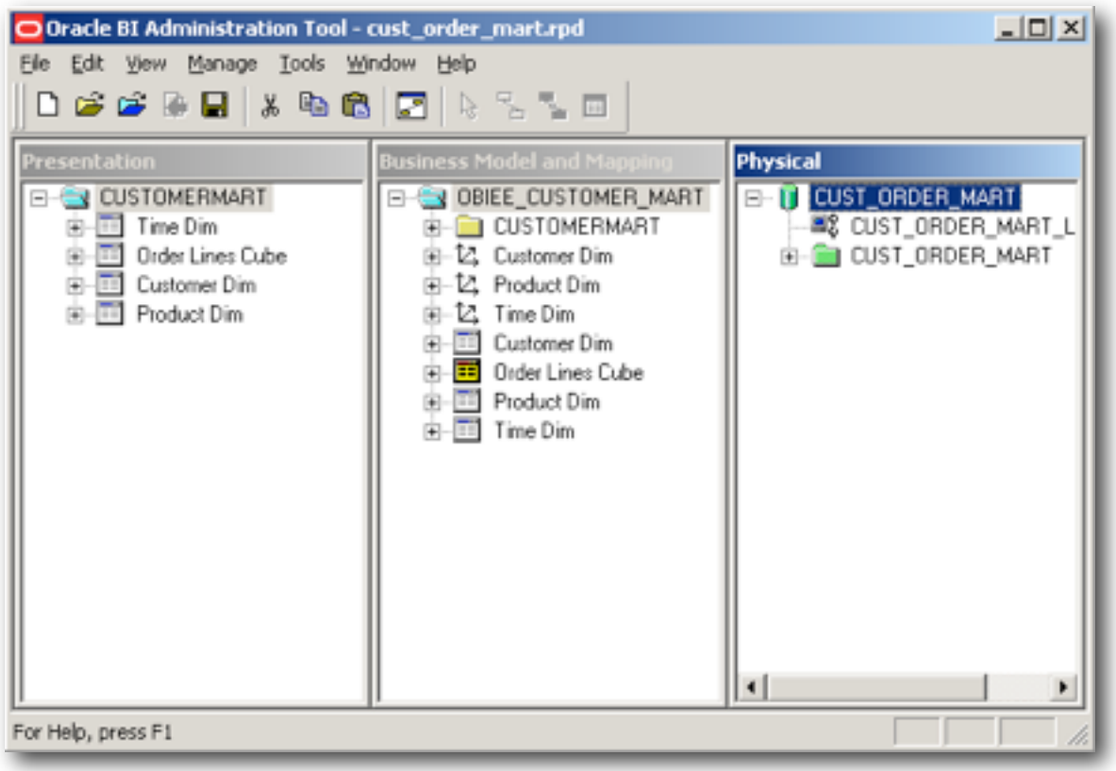
- Deploy UDML file using Control Center Manager
- Creates UDML file in specified location
- Transport it manually if needed to BI EE location



Deriving BI EE Metadata for Dimensional Model : Step 13

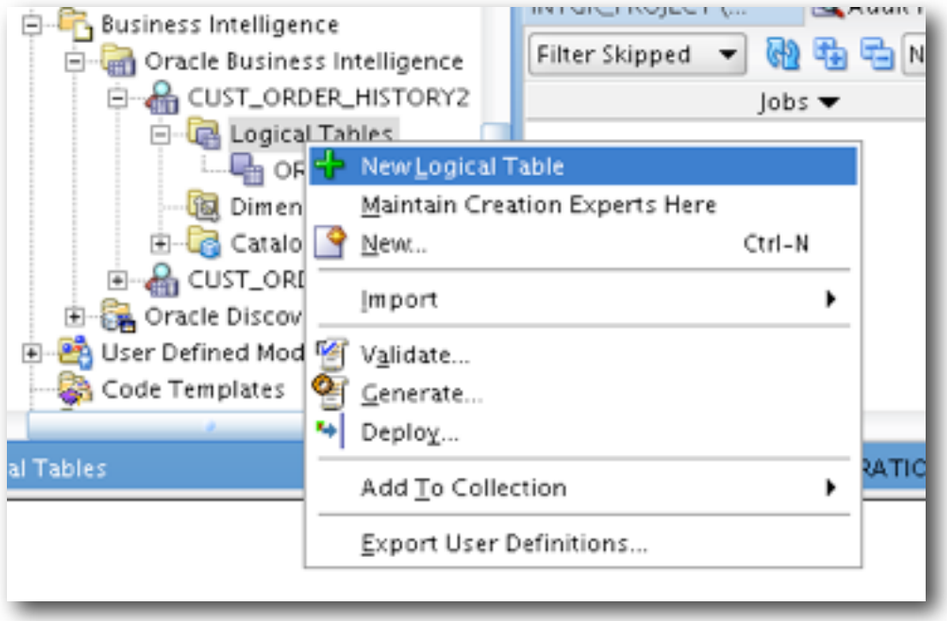
- Apply UDML file to RPD using nqudmlexec.exe
- Review final RPD file in BI Administrator tool
- Merge into existing RPD if required
  - Three-way merge
  - Import Repository (deprecated)

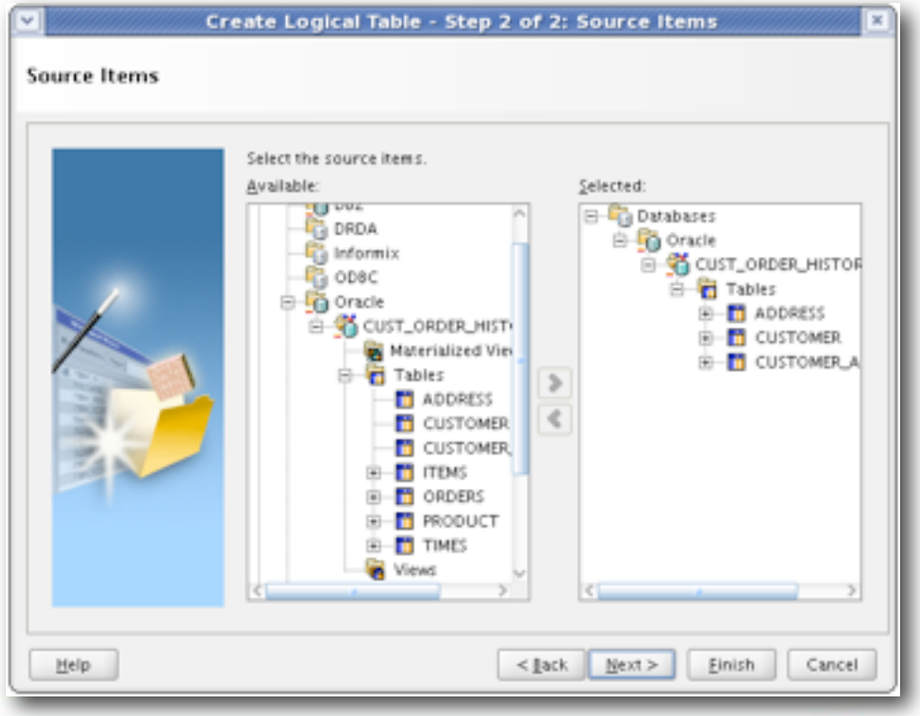
```
C:\>nqudmlexec -U Administrator -P password
-I c:/cust_order_mart.udml -O
c:\OracleBI\server\Repository\cust_order_mart.rpd

---------------c:/cust_order_mart.udml-----------

Complete success!!!
```



Working with Non-Dimensional OWB Objects

- In some cases, tables in OWB may be in 3NF or snowflaked form
  - Typically ODS or non-dimensional data warehouse
- OBIEE metadata will therefore need to be manually created, to map to these tables
  - Define logical table name
  - Select logical tables (start with facts first, dimensions must join to fact)





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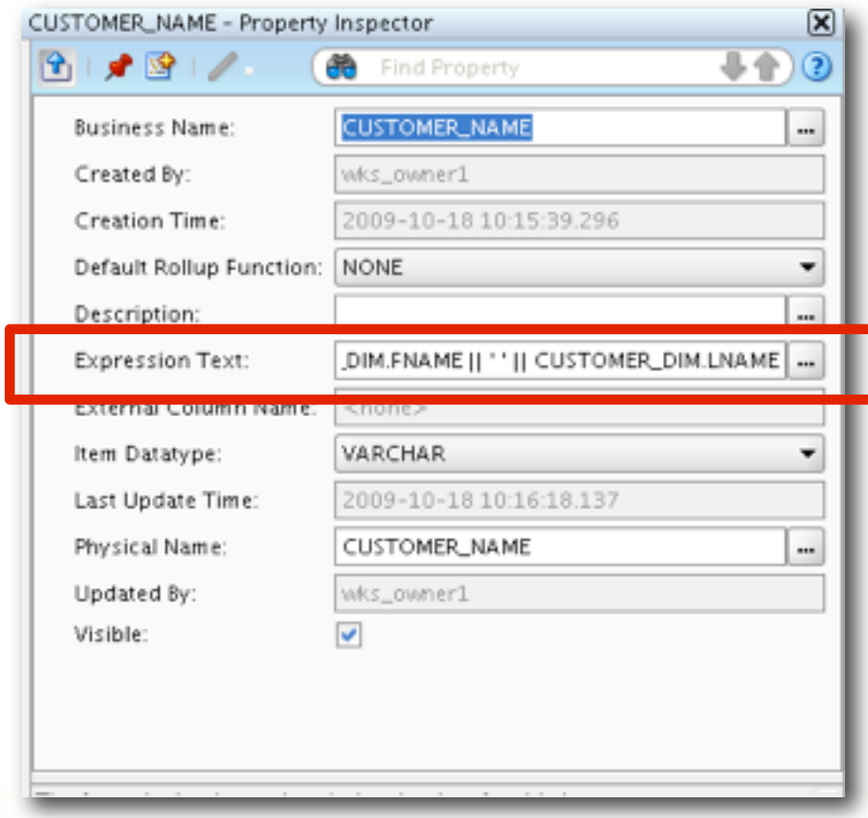
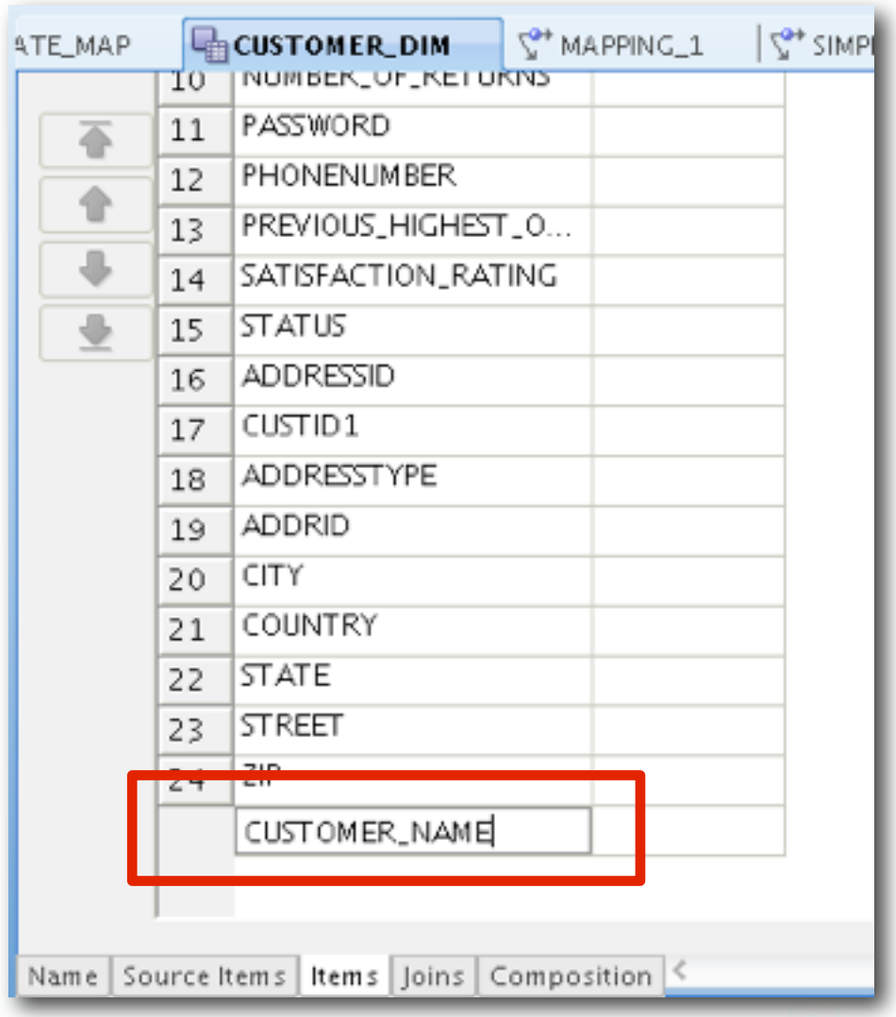
Adding Calculated Columns to BI EE Logical Table

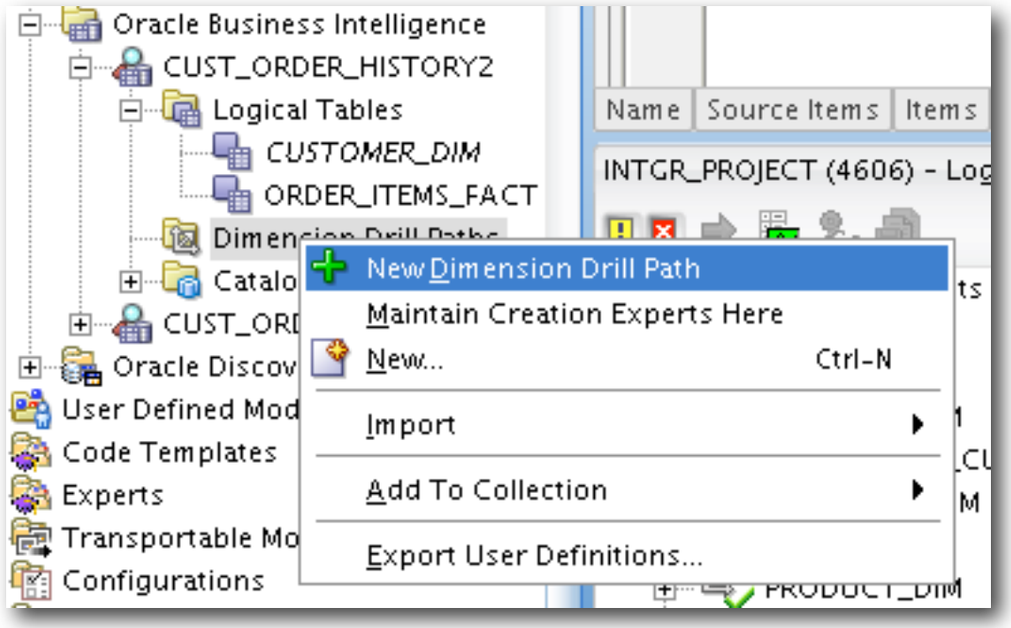
- Derived (calculated) columns can be added to BI EE logical tables
- Add new column to the logical table
- Edit the column properties, add calculation
  - Use BI EE SQL syntax, don't validate

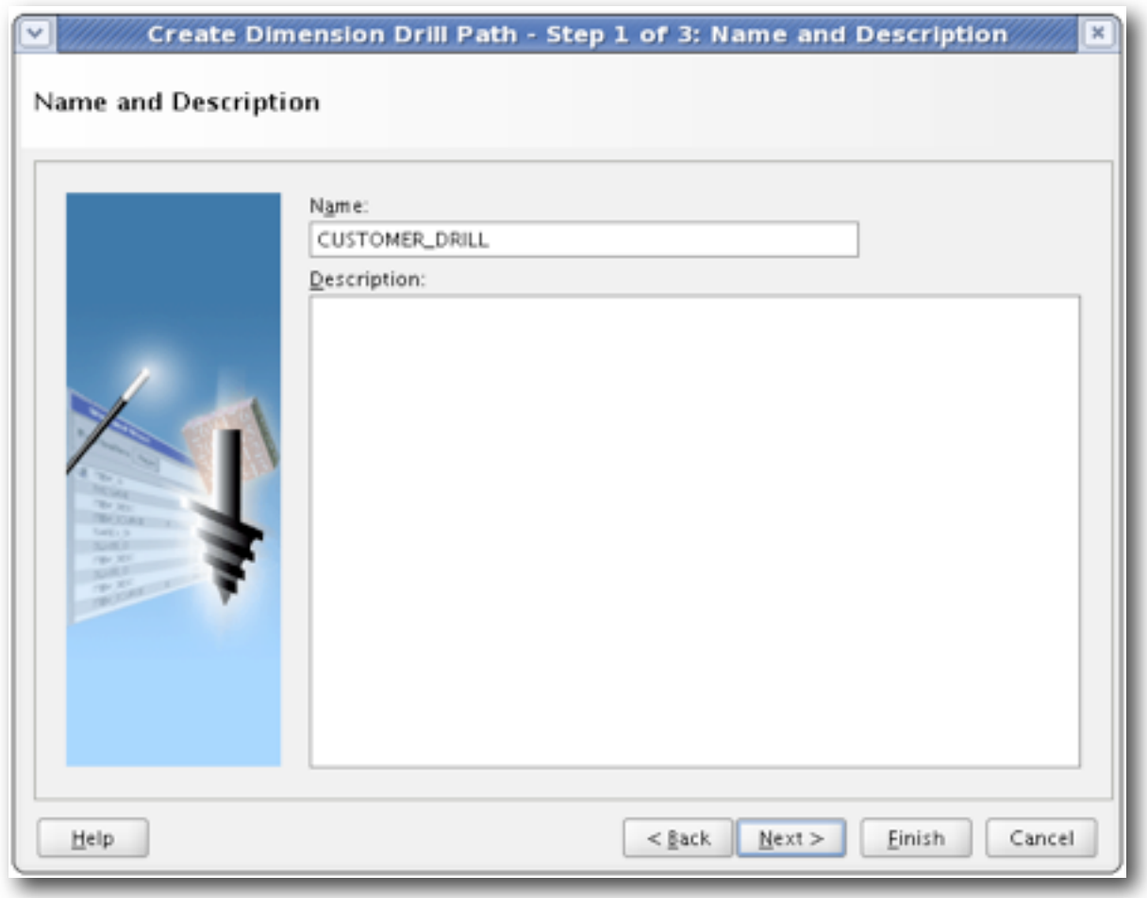




Manually Creating Dimension Drill Paths : Part 1

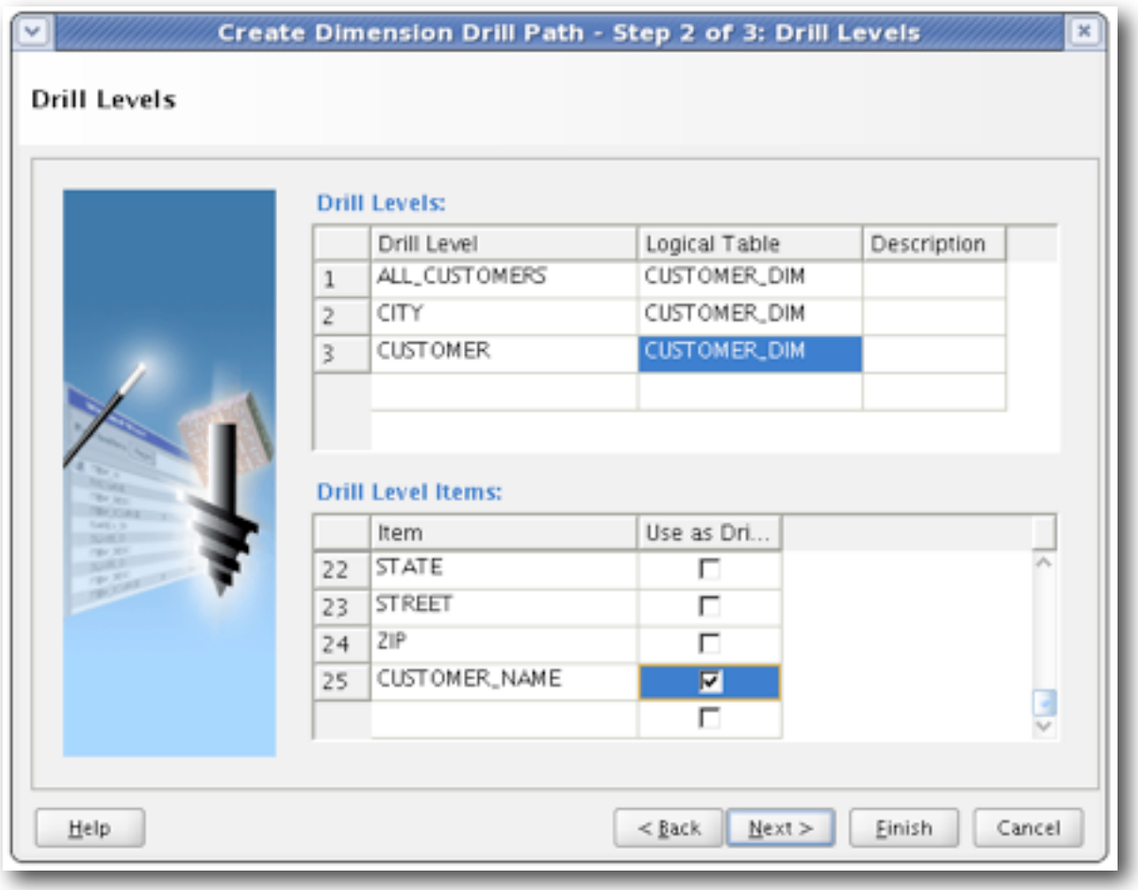
- Manually created logical tables will need their dimension drill paths defined
- Also applies to dimensional models without dimension metadata

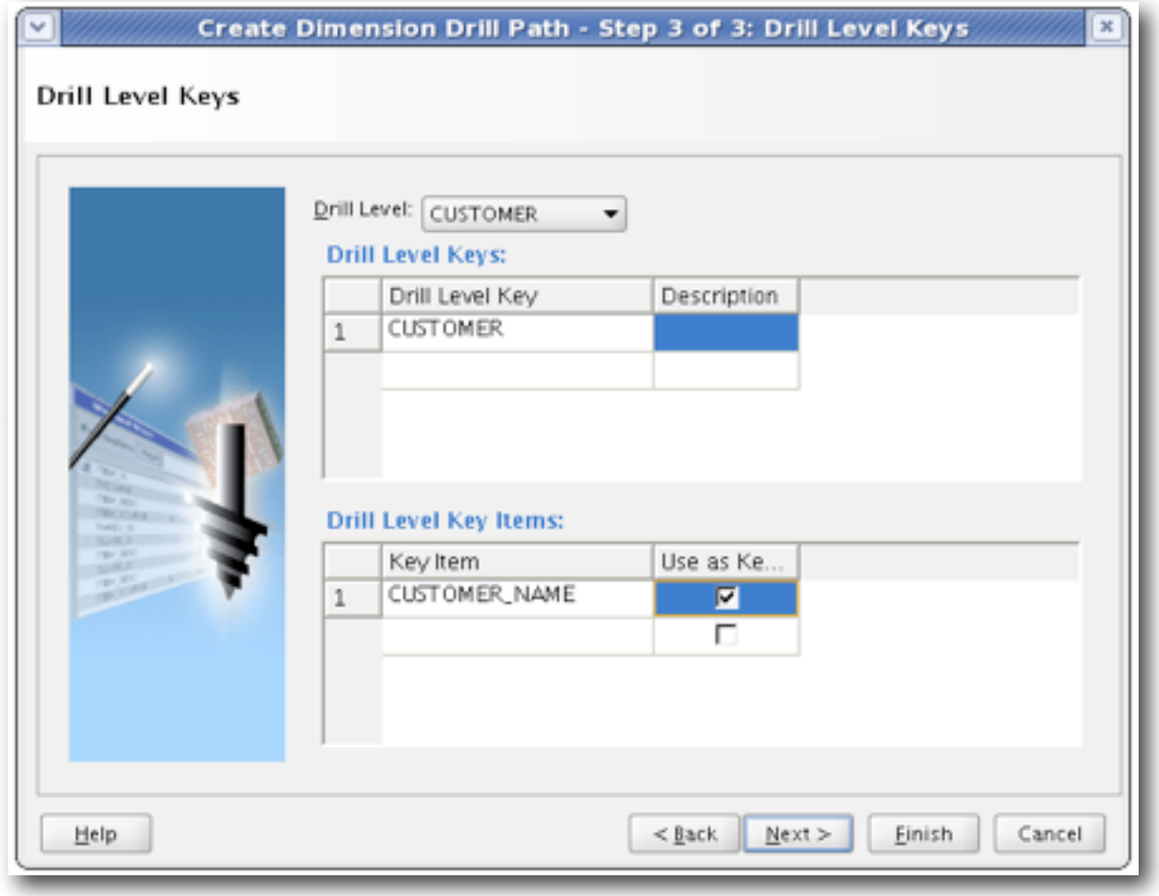




Manually Creating Dimension Drill Paths : Part 2

- Define drill levels and select drill level items
- Select drill key for each level





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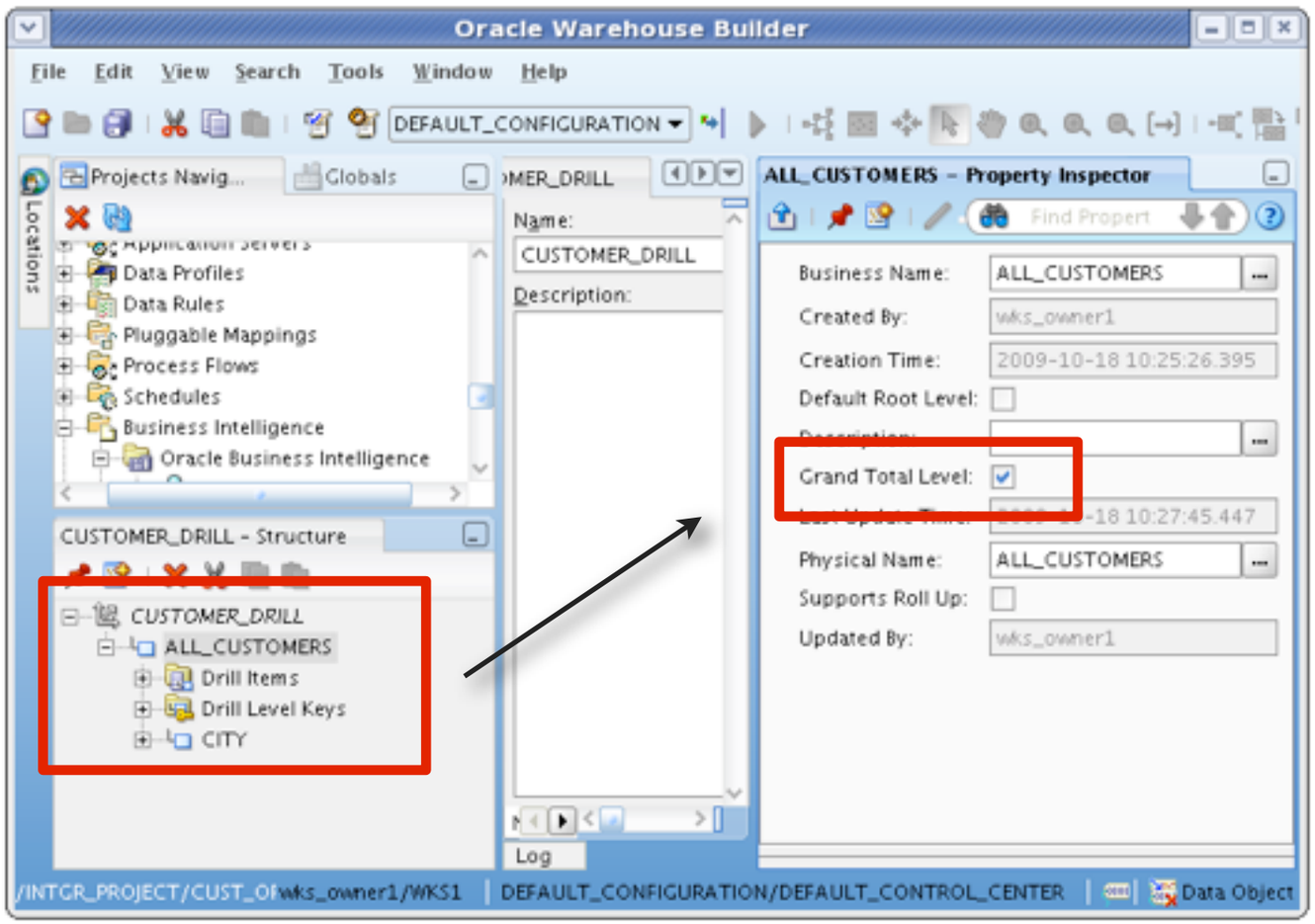
Manually Creating Dimension Drill Paths : Part 3

- For Grand Total Level (top level), Grand Total property is defined using the Structure view
- View structure, select top level
- Edit properties, set **Grand Total Level** property to **true**



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BI EE Integration Limitations

- One-way process only, once edited in BI Administrator can't be re-imported to OWB
- Cannot set connection pool passwords
- No ability to define variables, init blocks
- No ability to define security
- Logical tables limited to a single logical table source
- No aggregate definitions
- Useful for "first cut" definitions

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Demonstration

Deriving BI EE Metadata from OWB Project

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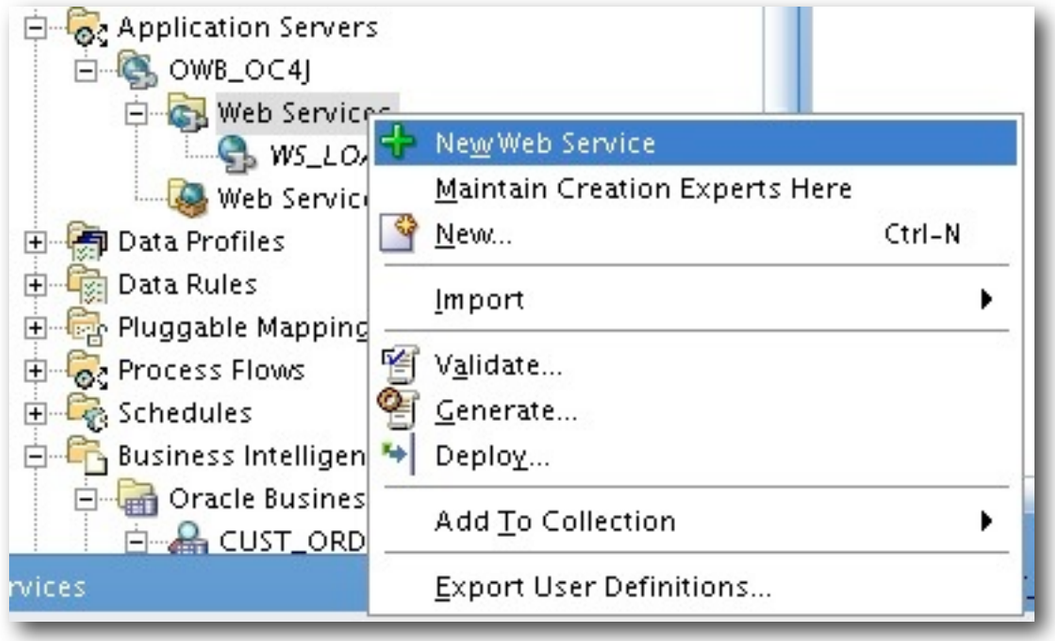
Web Service Integration

- OWB11gR2 can expose mappings and other objects as web services
  - Mappings, transformations, process flows, data auditors
  - Tables for CDC administration
- Web Services can be consumed/invoked from process flows
  - Call external ETL processes
  - Administer CDC processes
- Uses OC4J or Oracle Application Server



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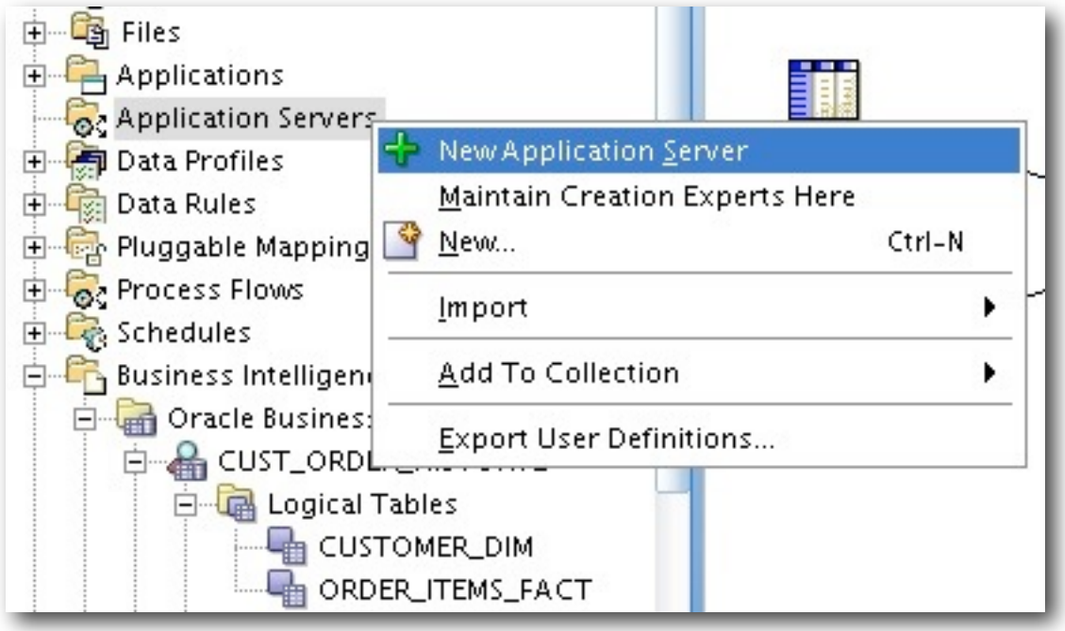
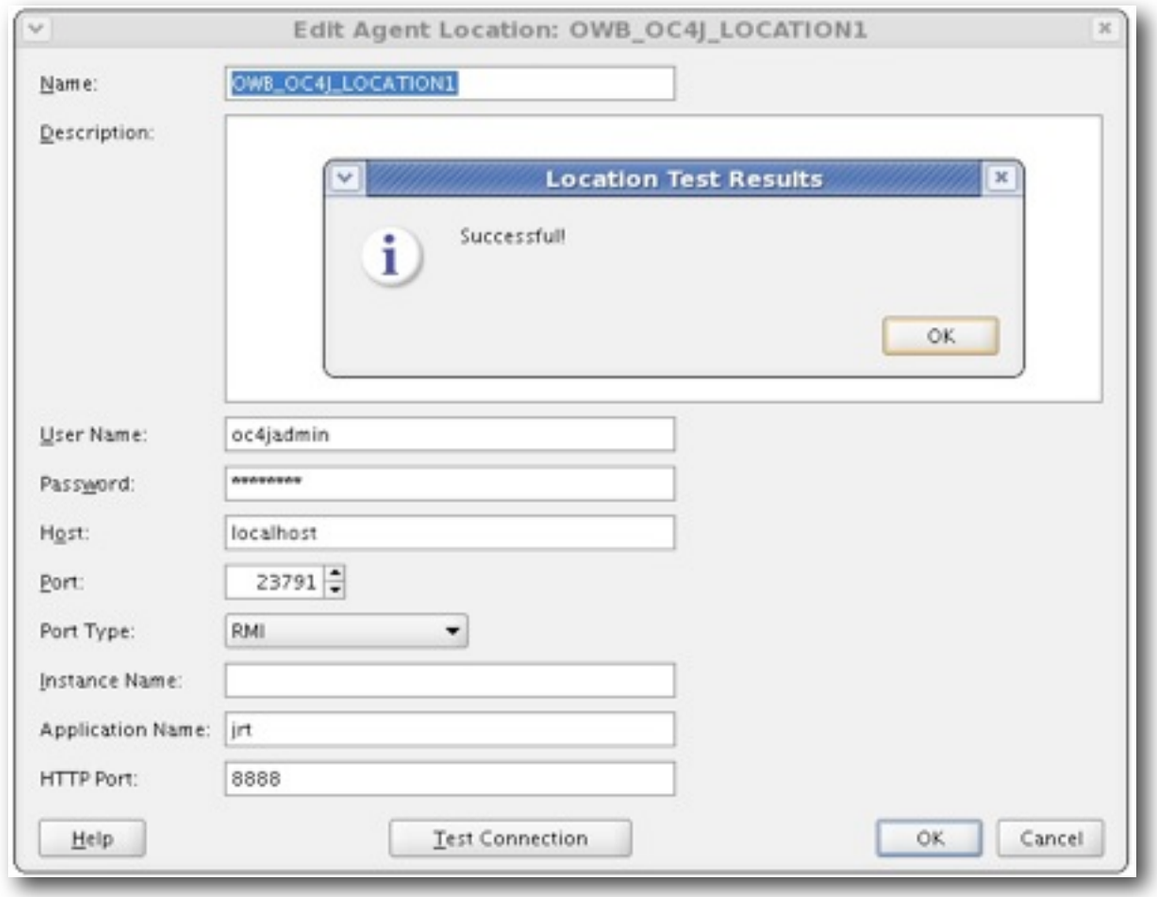
Publishing a Mapping as a Web Service : Part 1

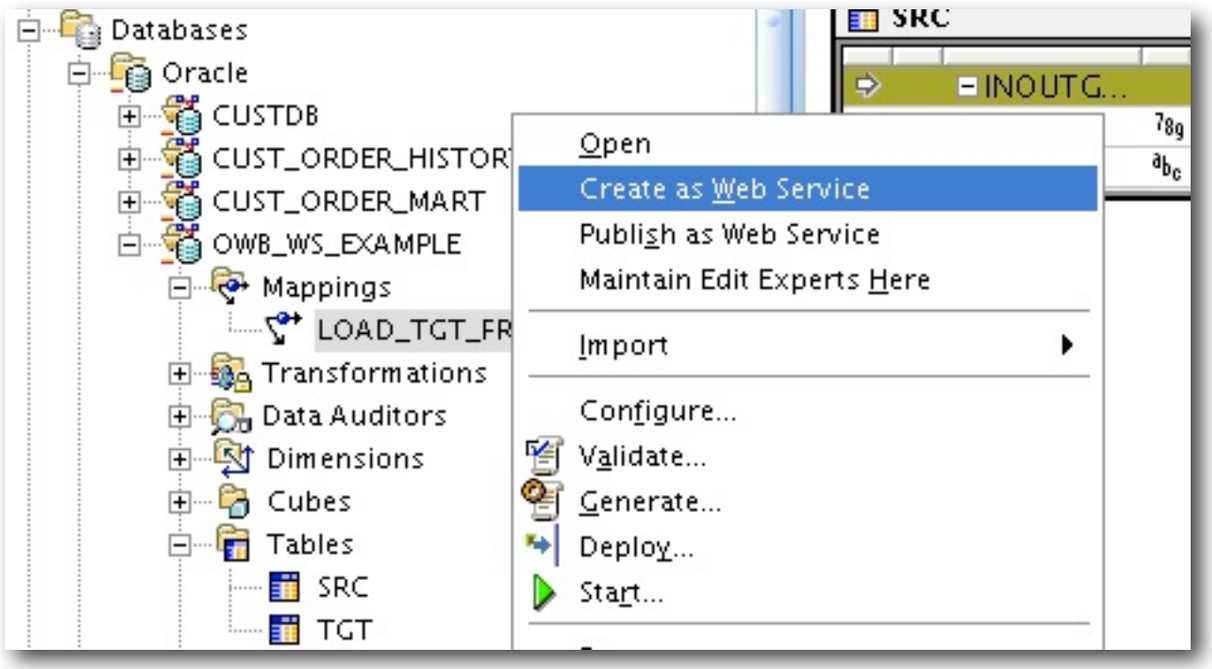
- Register OC4J Standalone or Oracle Application Server with OWB
- Create as a new Application Server module
- Name, and edit location details

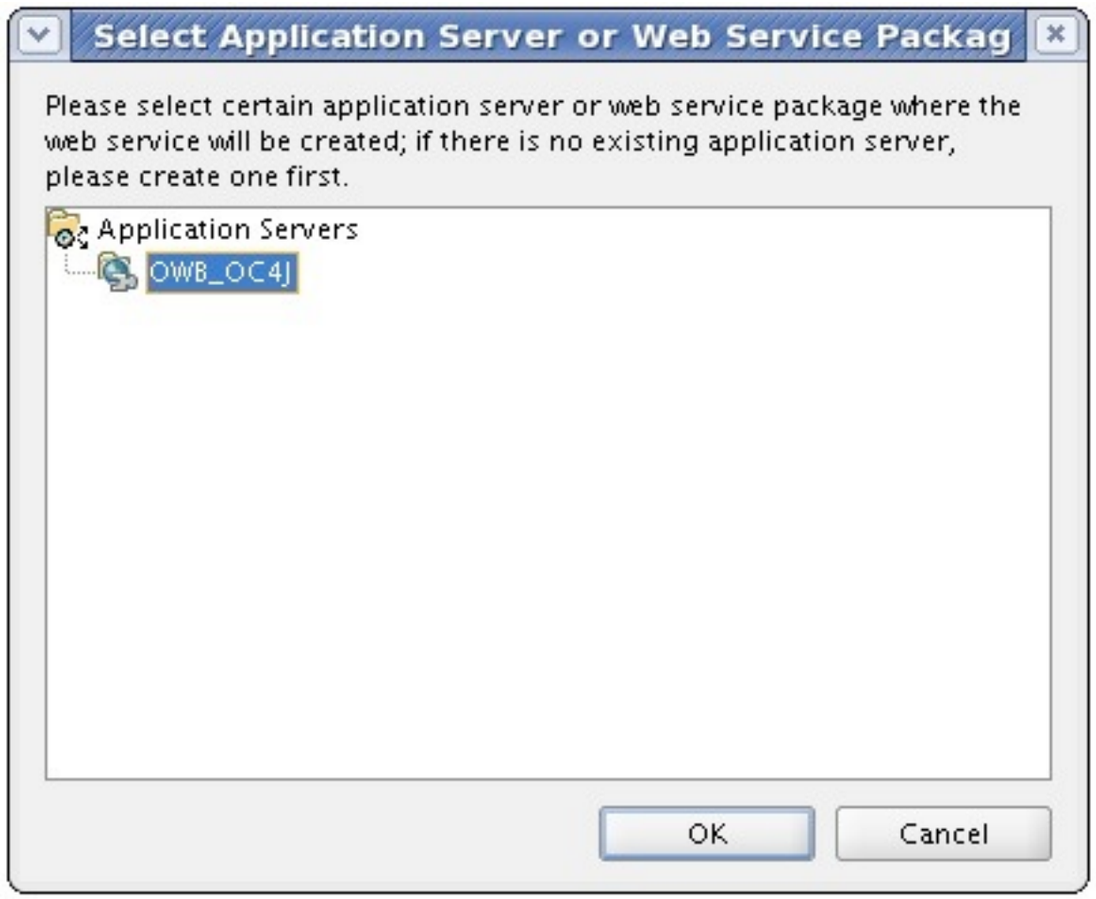




Publishing a Mapping as a Web Service : Part 2

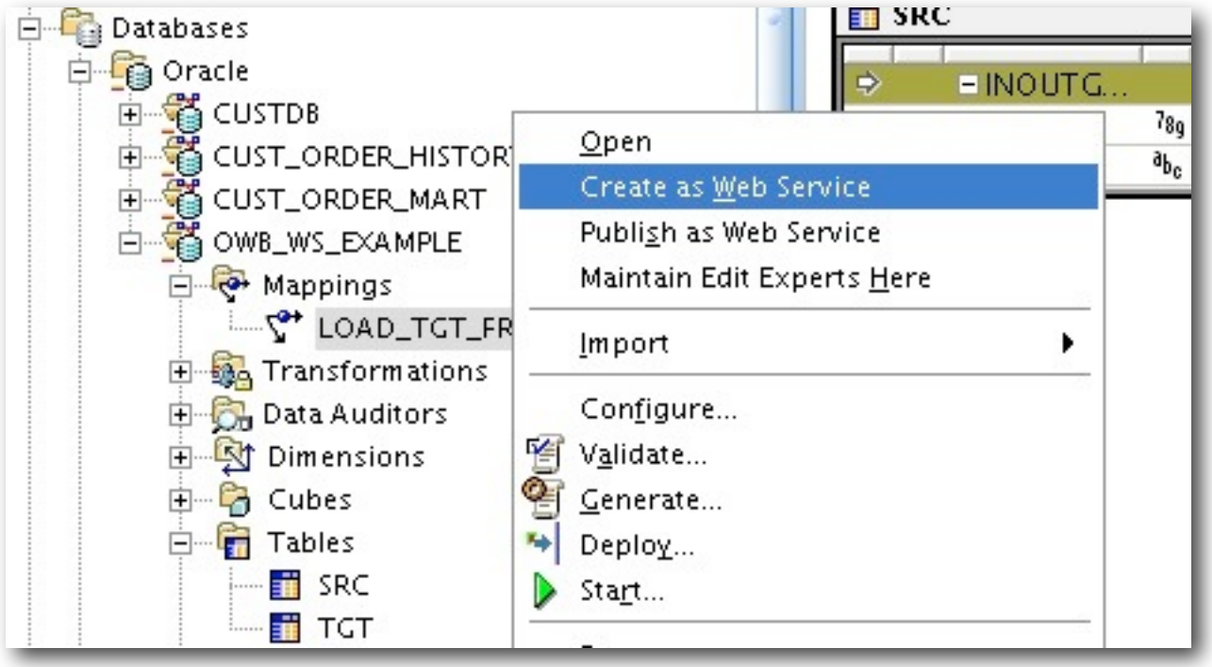
- Select mapping, process flow, transformation or data auditor to **Create as Web Service**
- Ensure mapping already validated and deployed
- Select application server for deployment

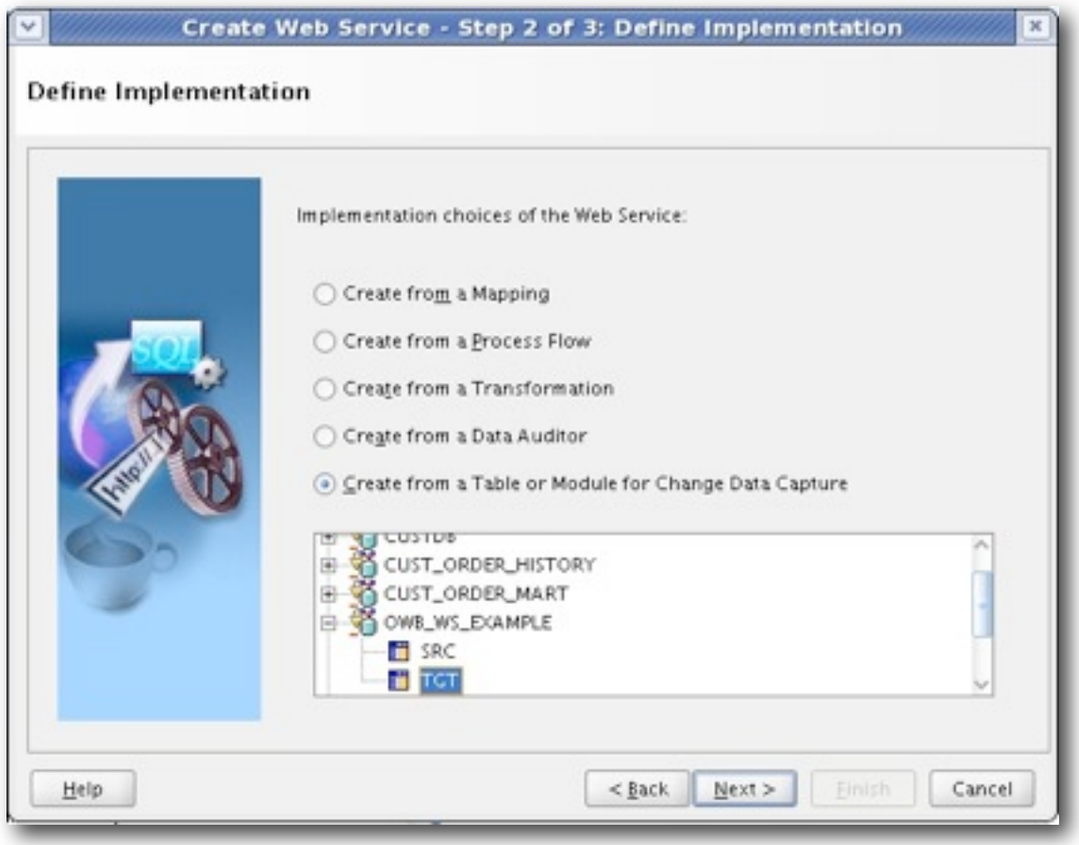




Publishing a Mapping as a Web Service : Part 3

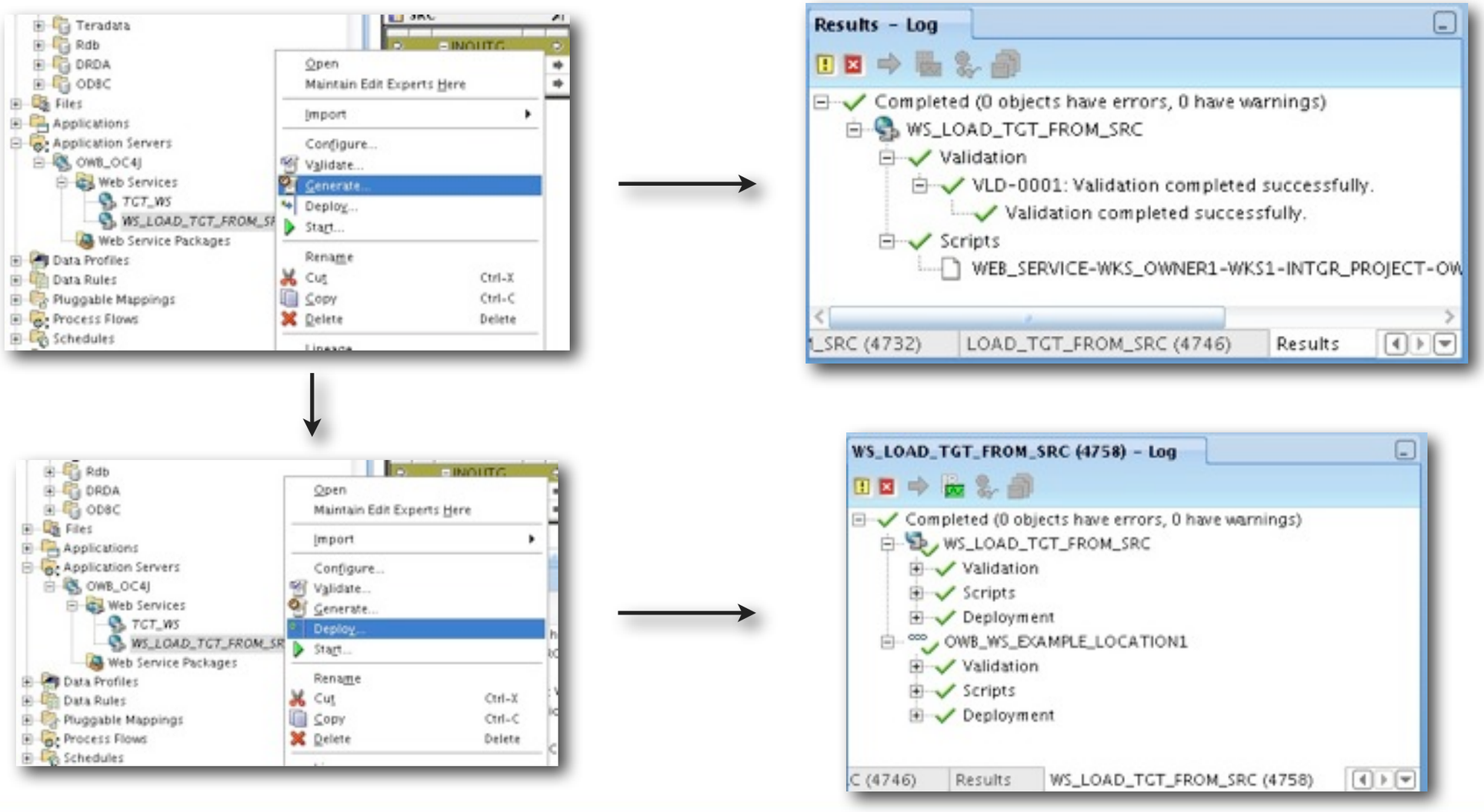
- To manually deploy a CDC table web service, select **Create New Web Service**
- Allows you to select the particular web service you require, and target object





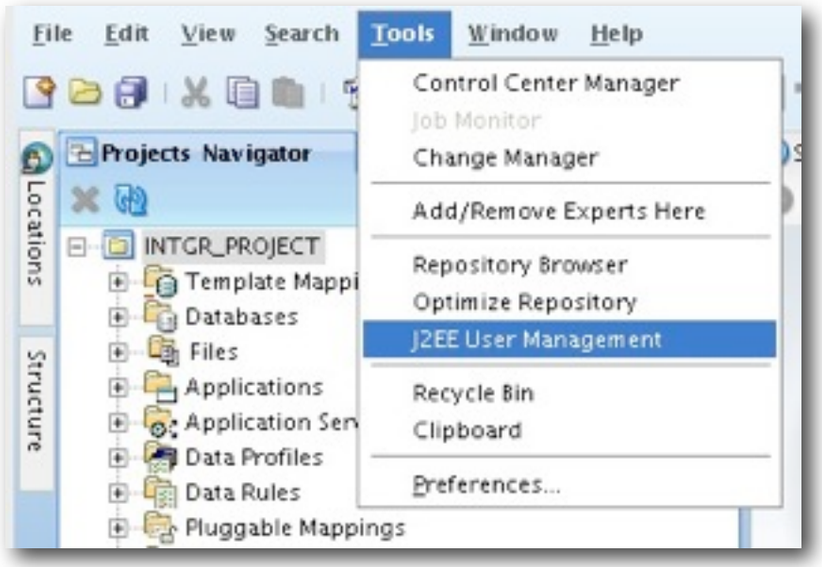
Publishing a Mapping as a Web Service : Part 4

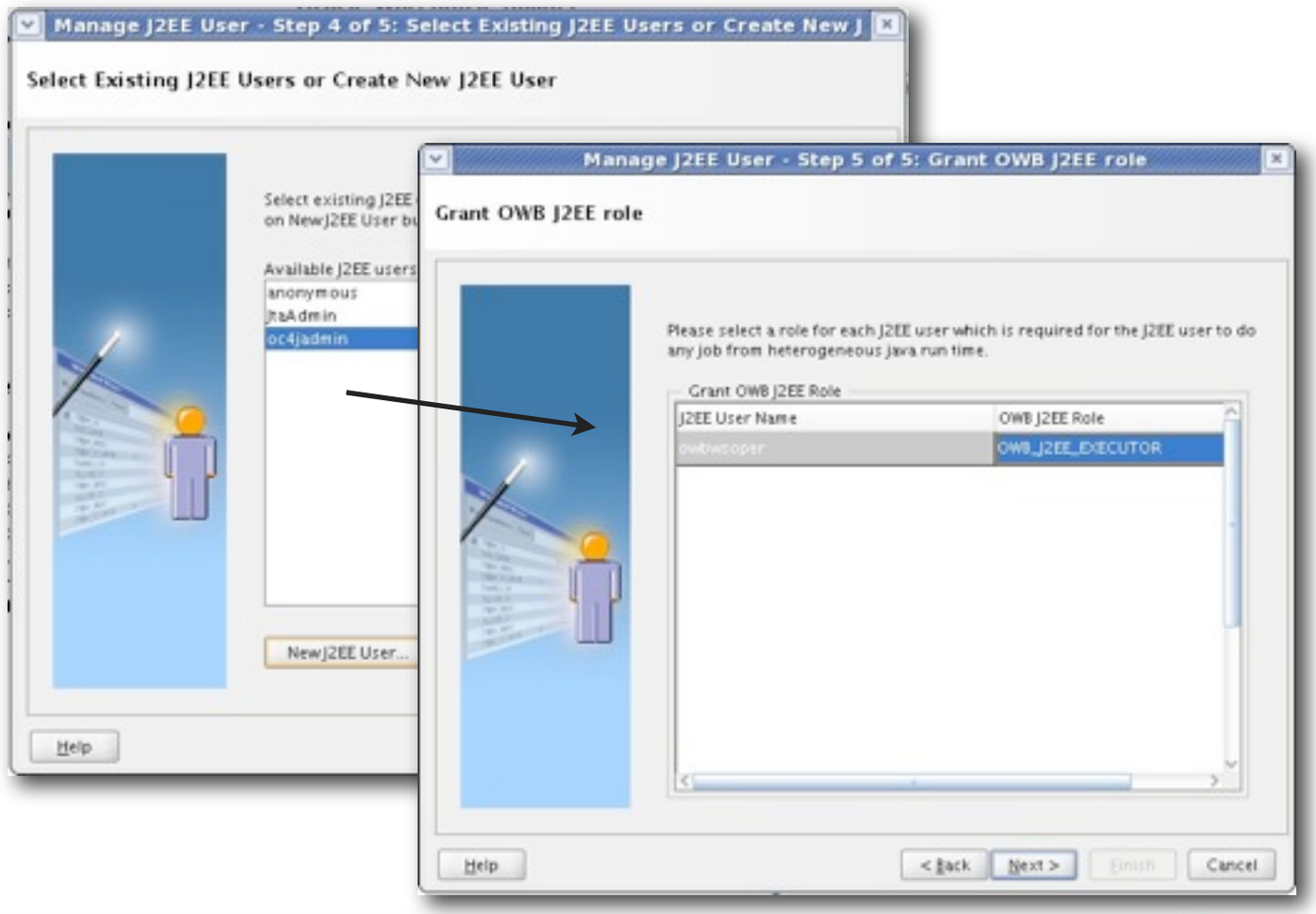
- **Generate** and then **Deploy** web service



Publishing a Mapping as a Web Service : Part 5

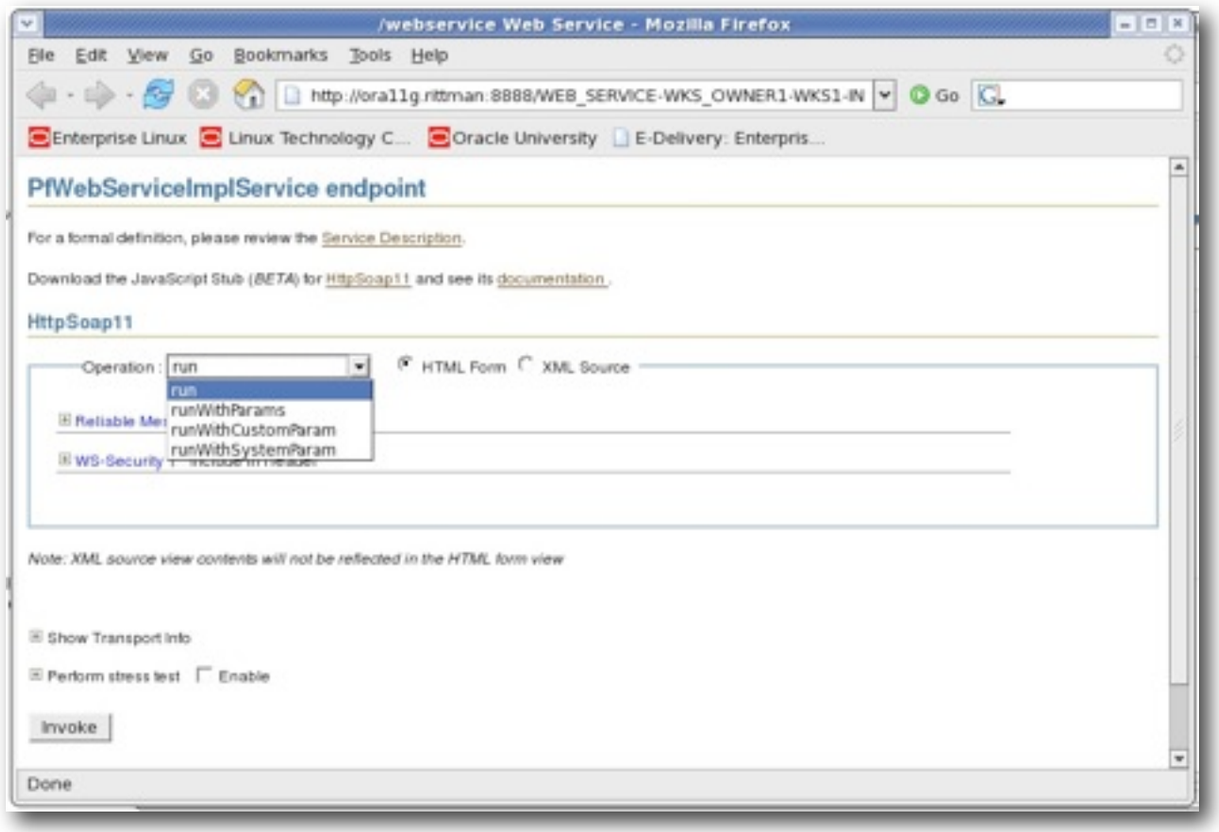
- Create a J2EE user with permissions to execute the web service
- Requires `OWB_J2EE_EXECUTOR` role, pre-created with bundled OC4J server

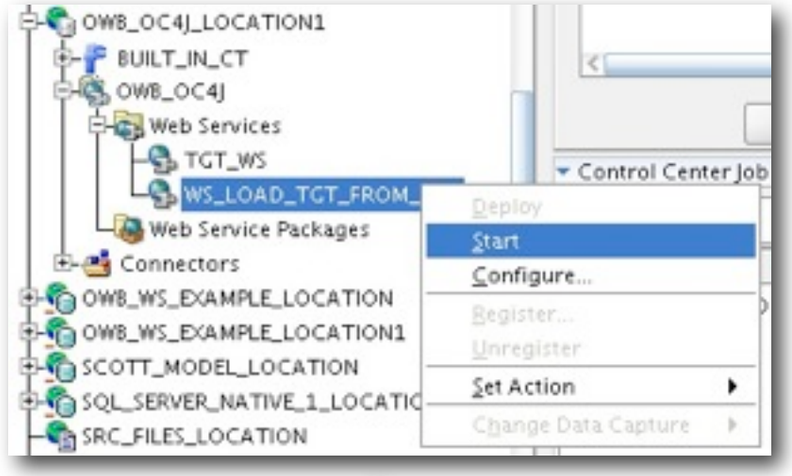


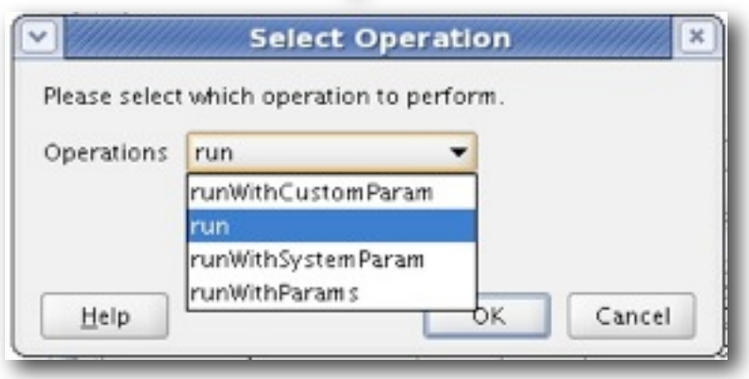


Publishing a Mapping as a Web Service : Part 6

- Test in either OC4J Console, or from Control Center Manager

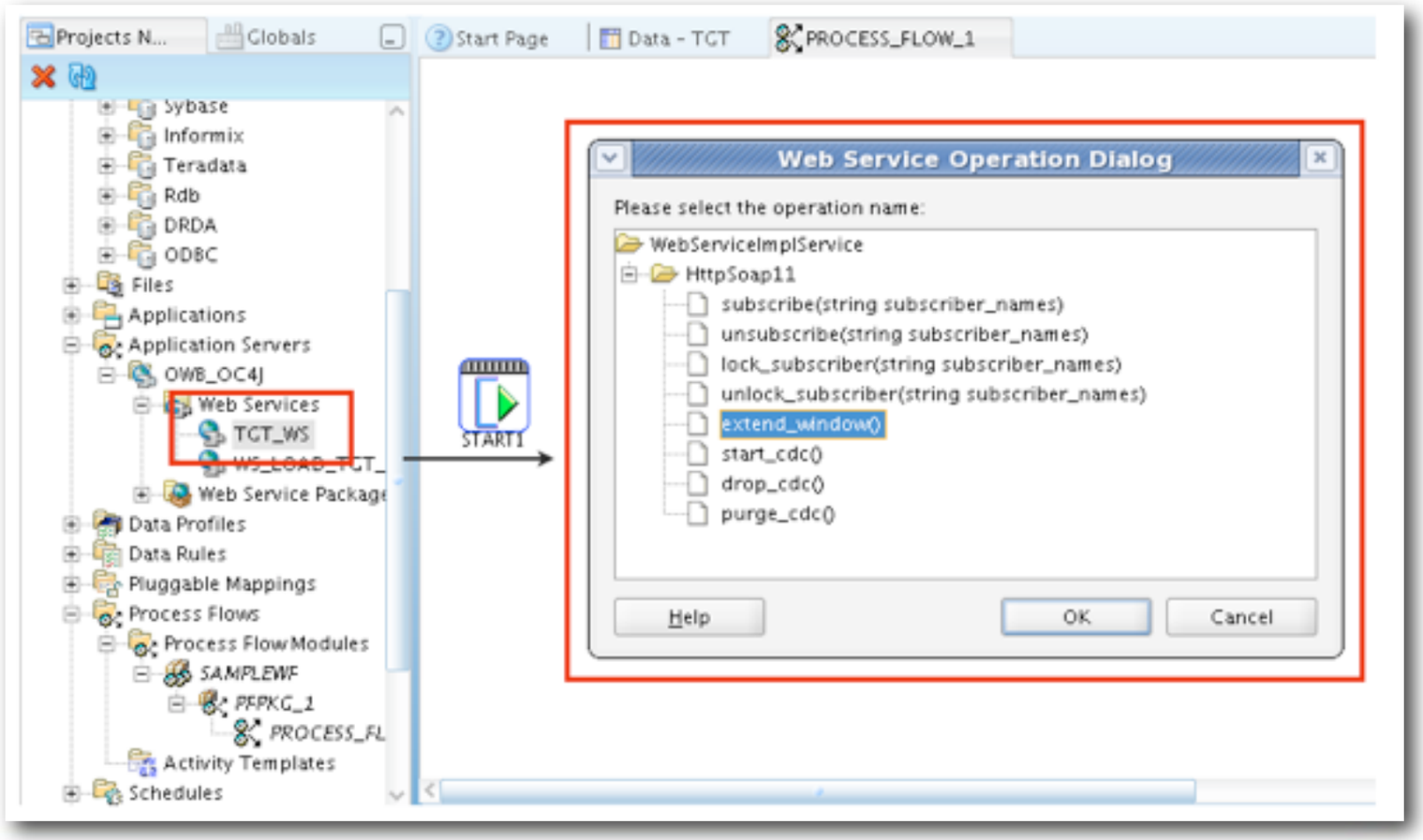






Consuming Web Services

- Web Services can be consumed or invoked from within a process flow
- Useful for triggering an external data load process
- Also used for administering CDC start/stop, extend/purge, register/deregister subscriber



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OWB11gR2 and Web Services

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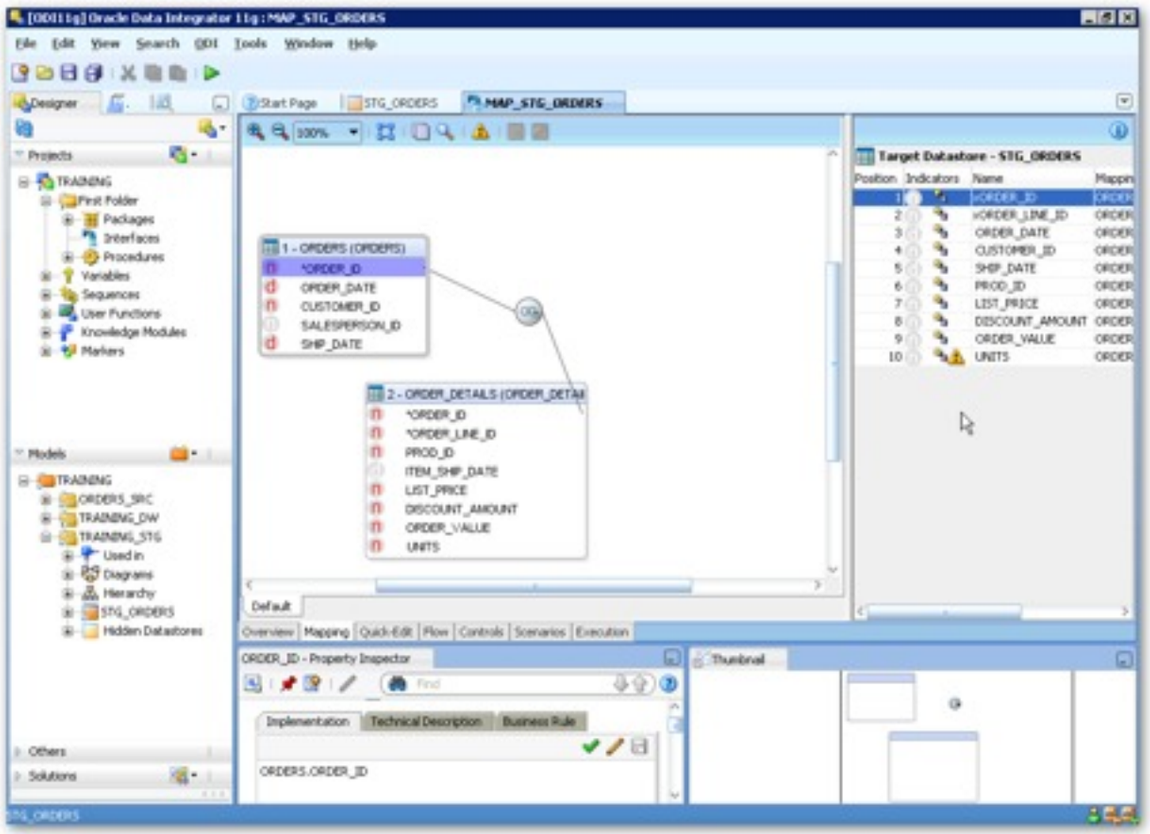
Oracle Data Integrator 11g

- Data Integration tool within Oracle Fusion Middleware 11g
- 11g release out in Summer 2010
- Used for database, web service, file, XML etc integration
- Declarative design, separation of business and technical integration
- Uses ELT approach to leverage target platform capabilities
- Licensed together with OWB as Oracle Data Integrator EE



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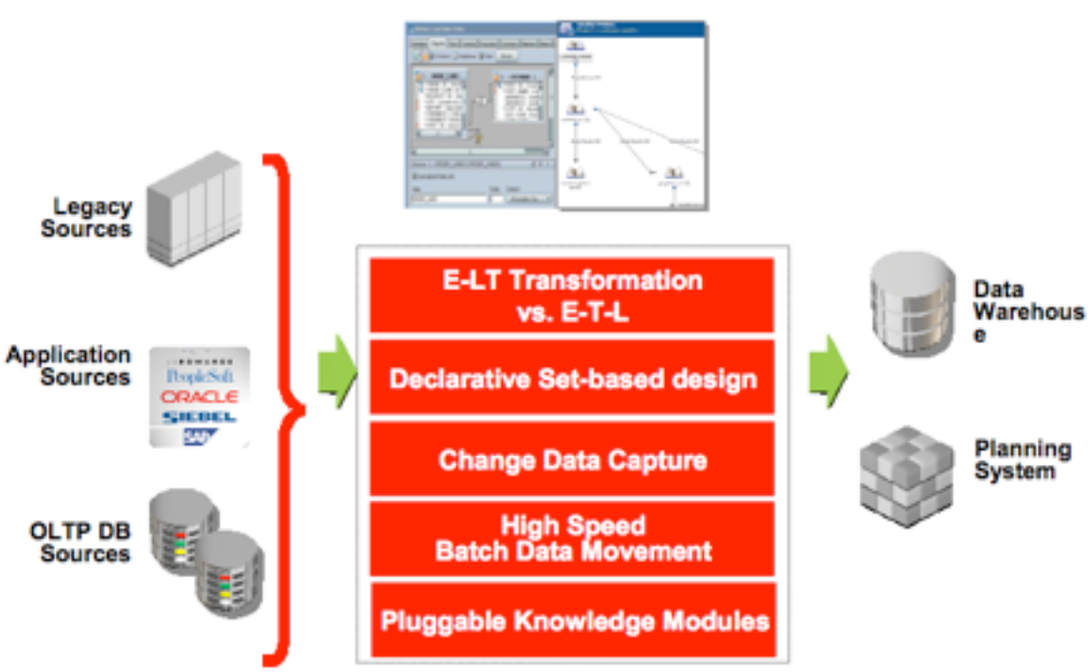
Oracle Data Integrator Key Features

- Same philosophy as OWB – Use the Database as the ETL engine
  - ODI supports heterogeneous databases, not just Oracle
- Built for SOA environments
  - Support for Web Services, EII etc
- Supports batch, event-based and real-time integration
- Data Integrity Controls create a data "firewall"
  - Reduces data prep time by not processing erroneous data
- Extensible through "Knowledge Modules"
  - Change Data Capture
  - Slowly Changing Dimensions
  - Bulk load
- Java client application with server elements



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Oracle Data Integrator 11g New Features

- New Fusion IDE (Same as JDeveloper, SQL Developer)
- J2EE Deployment Option (using WebLogic Server)
- Enterprise Scheduler (ESS) Integration
- Enterprise Manager Integration
- New ODI Console thin-client (replaces Metadata Navigator)
- Java SDK APIs for embedding in applications
- New SAP knowledge modules
- New Golden Gate knowledge modules
- New OBIEE knowledge module

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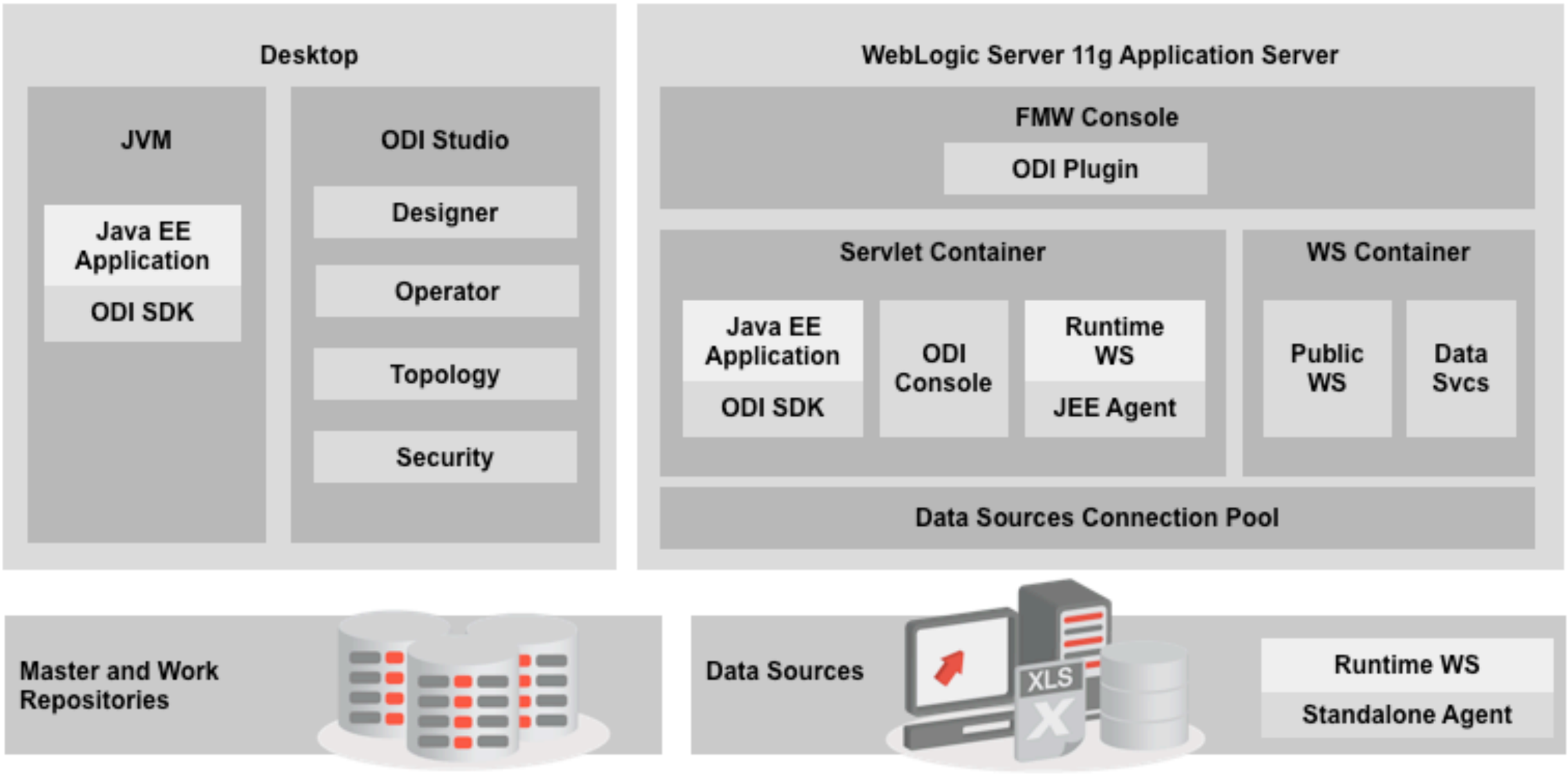
ODI 11g Architecture



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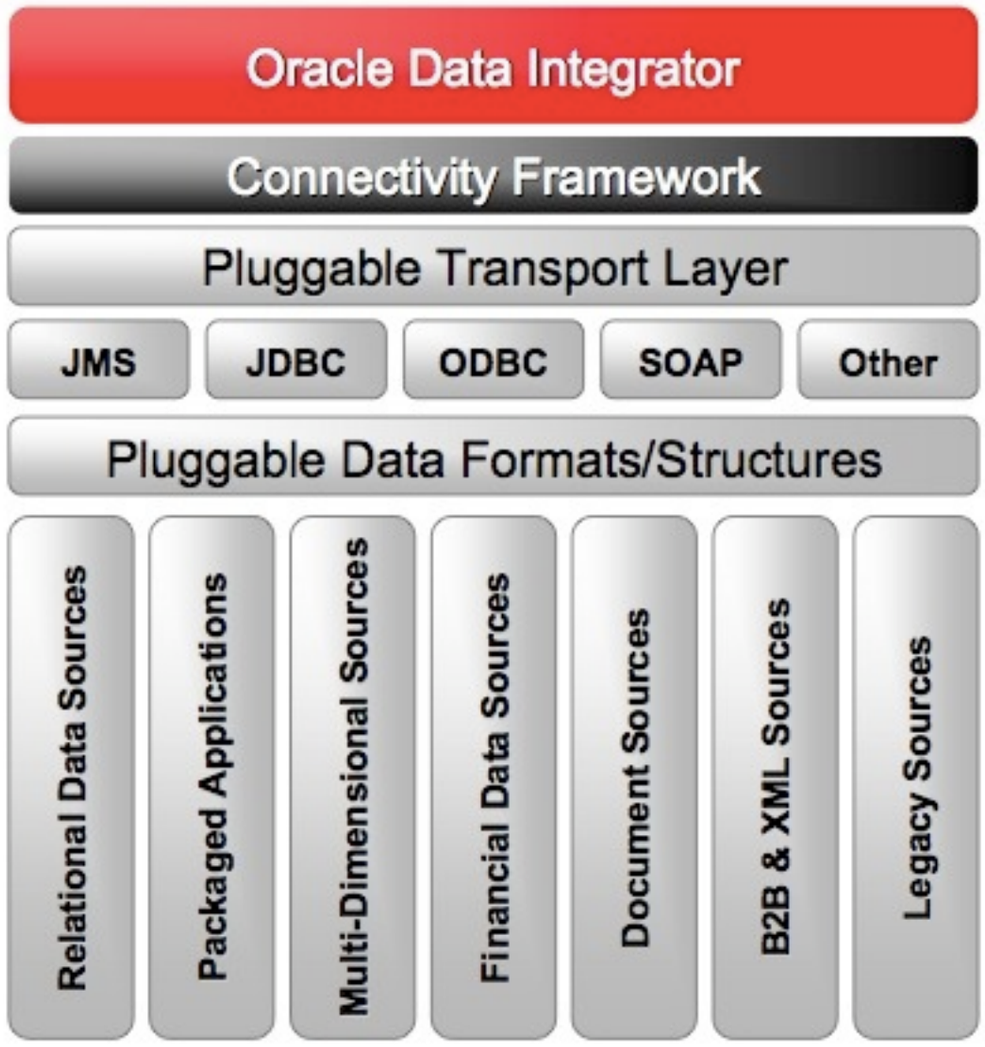
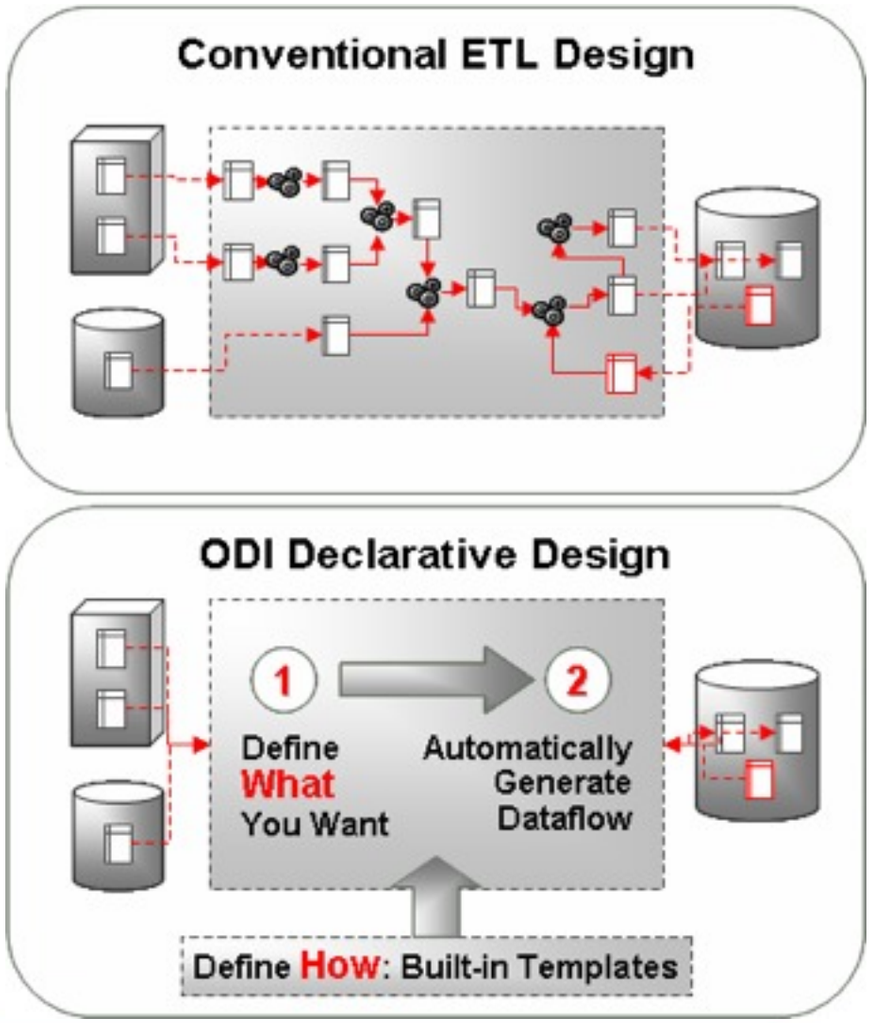
ODI Heterogenous Connectivity

- Extract and load to many data sources
- Structured Data
  - Oracle, SQL Server, IBM DB/2 etc
- Multi-dimensional Data
  - Essbase, Oracle OLAP, MS AS
- Packaged Applications
- Legacy
  - CICS, ISM, VSAM etc
- B2B
  - EDIFACT, X12, RosettaNet
- Financial Management
  - Hyperion, XBRL
- Broad range of protocols
  - JCA, JDBC, ODBC, FTP, HTTP etc



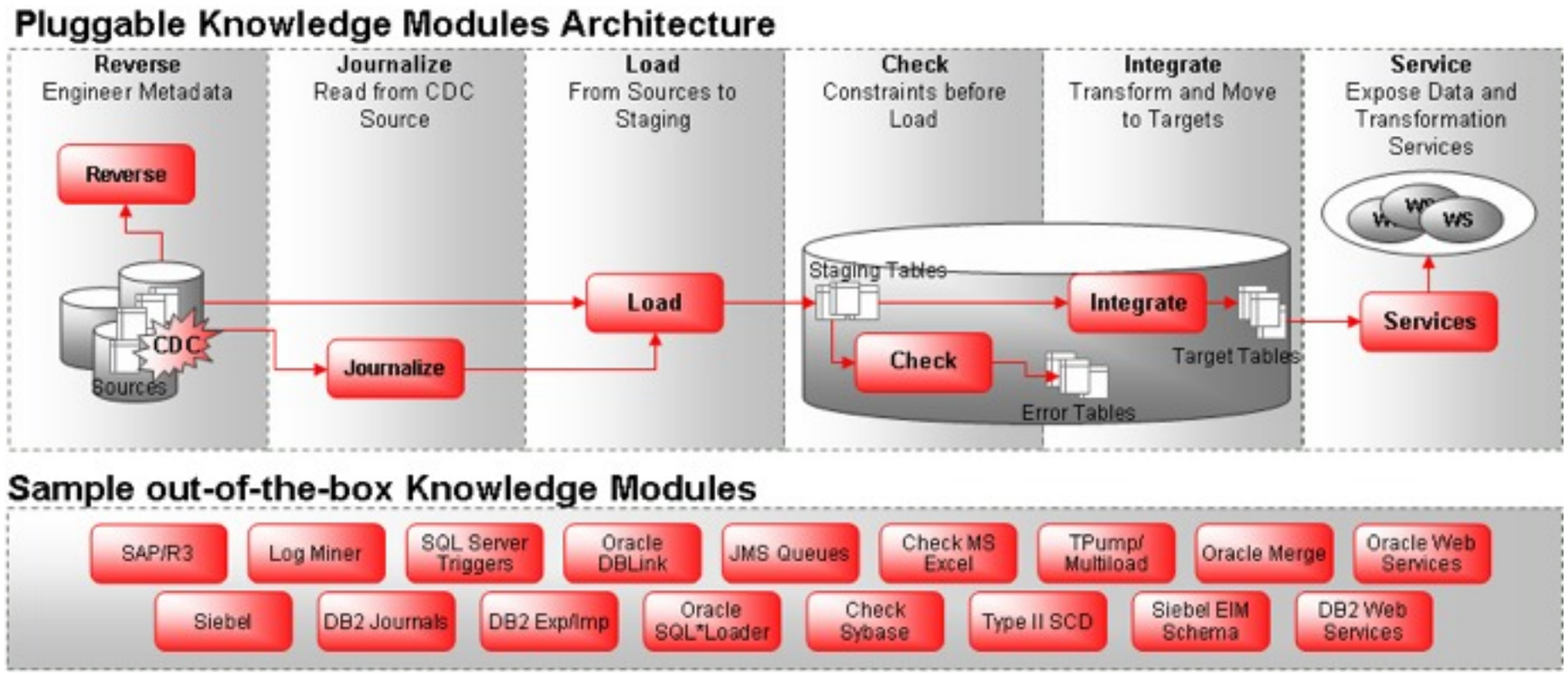
Business Rules and Technical Details

- ODI splits data mappings in to business rules, and technical implementation
- Business rules define what goes where, and using which transformation rules
- Technical implementation defines how data is moved
  - Changed Data Capture
  - SQL to SQL
  - File to SQL
  - Slowly Changing Dimension
- Allows you to split mapping role into business analyst and technical specialist



Extensible Knowledge Modules

- Provided “out of the box”, and are user extensible
- Written for specific source and target platforms
- User created example : Oracle 10g Data Pump



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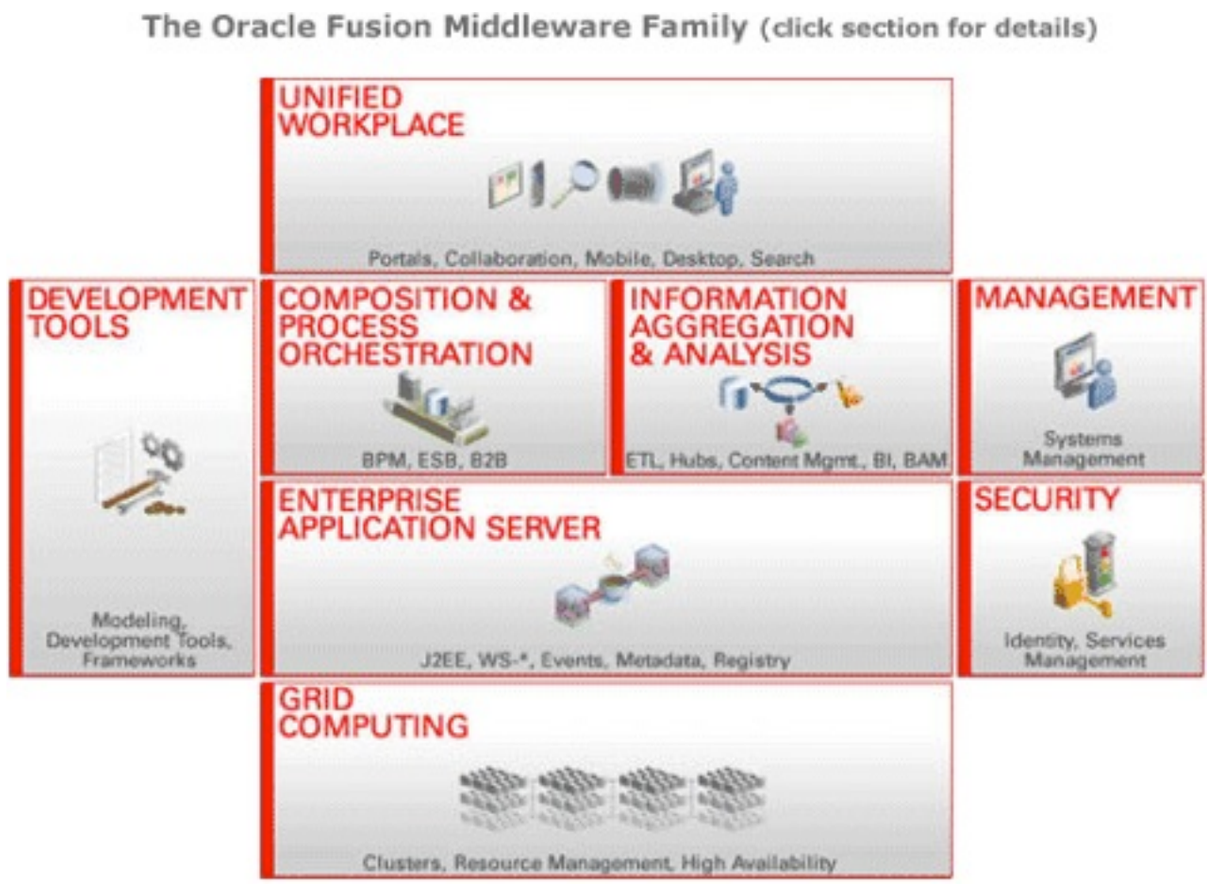
Knowledge Module Categories

- RKM: Reverse-Engineering Knowledge Modules
- JKM: Journalizing (CDC) Knowledge Modules
- LKM: Load (Extract) Knowledge Modules
- CKM: Check (Constraint) Knowledge Modules
- IKM: Integrate (Load) Knowledge Modules
- SKM: Service (Web Service) Knowledge Modules

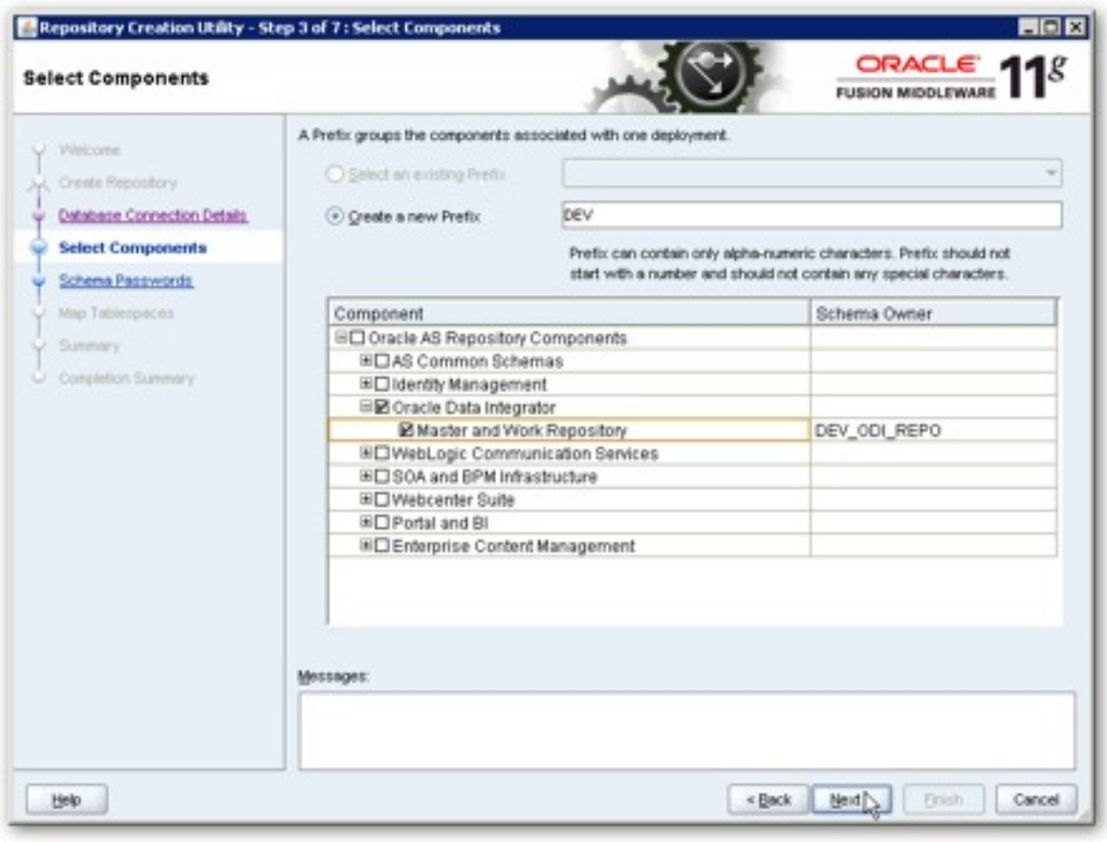
ODI Within Oracle Fusion Middleware 11g

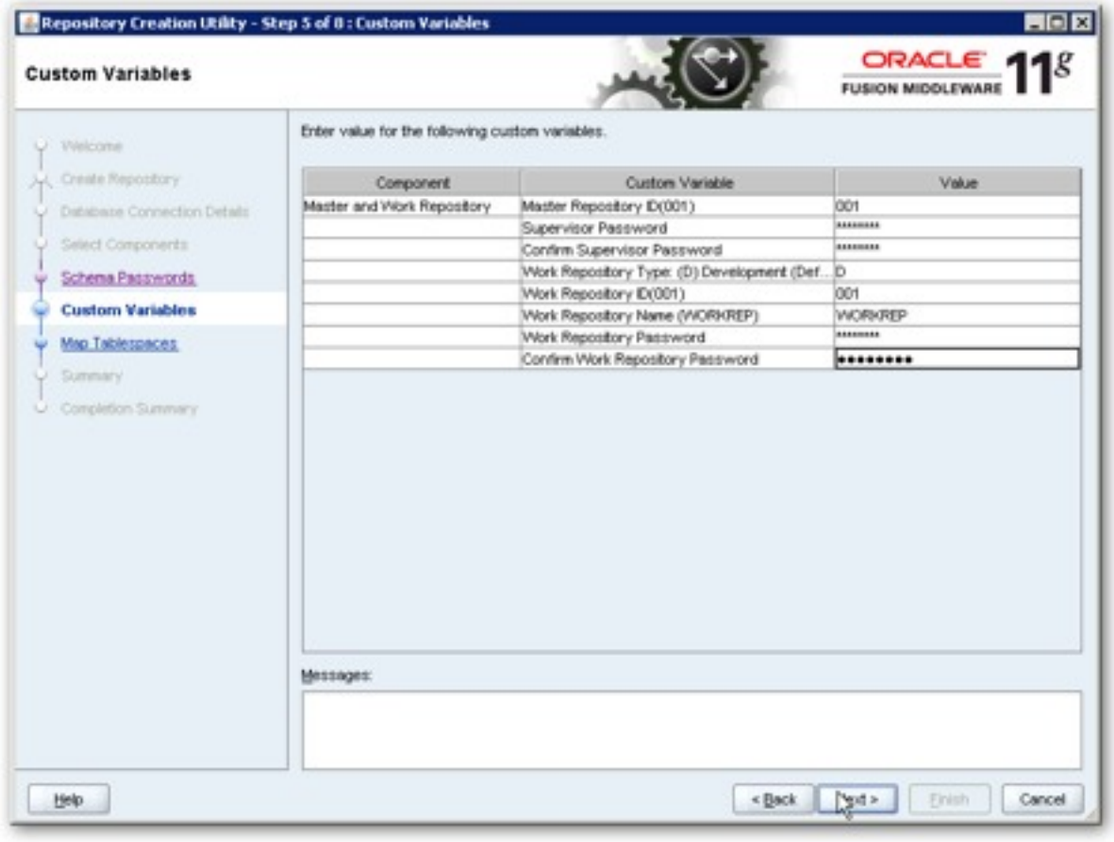
- ODI is the data integration technology within Oracle Fusion Middleware 11g
- Leverages key FMW technologies such as
  - WebLogic Server
  - Oracle Platform Security Services (optional)
  - Web Services and SOA
  - Clustering and HA



Use of Repository Creation Utility

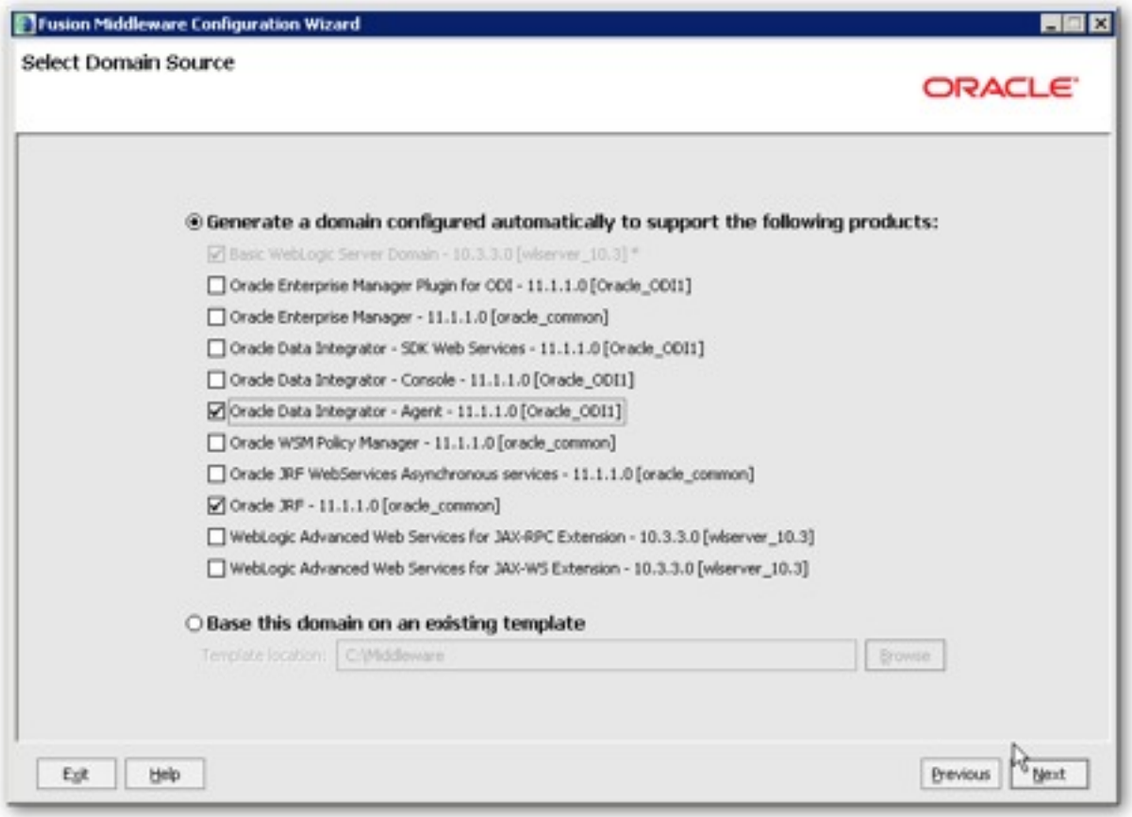
- ODI Repository can now be created using RCU, as well as direct through ODI
- No additional functionality, however aligns repository creation with rest of FMW11g

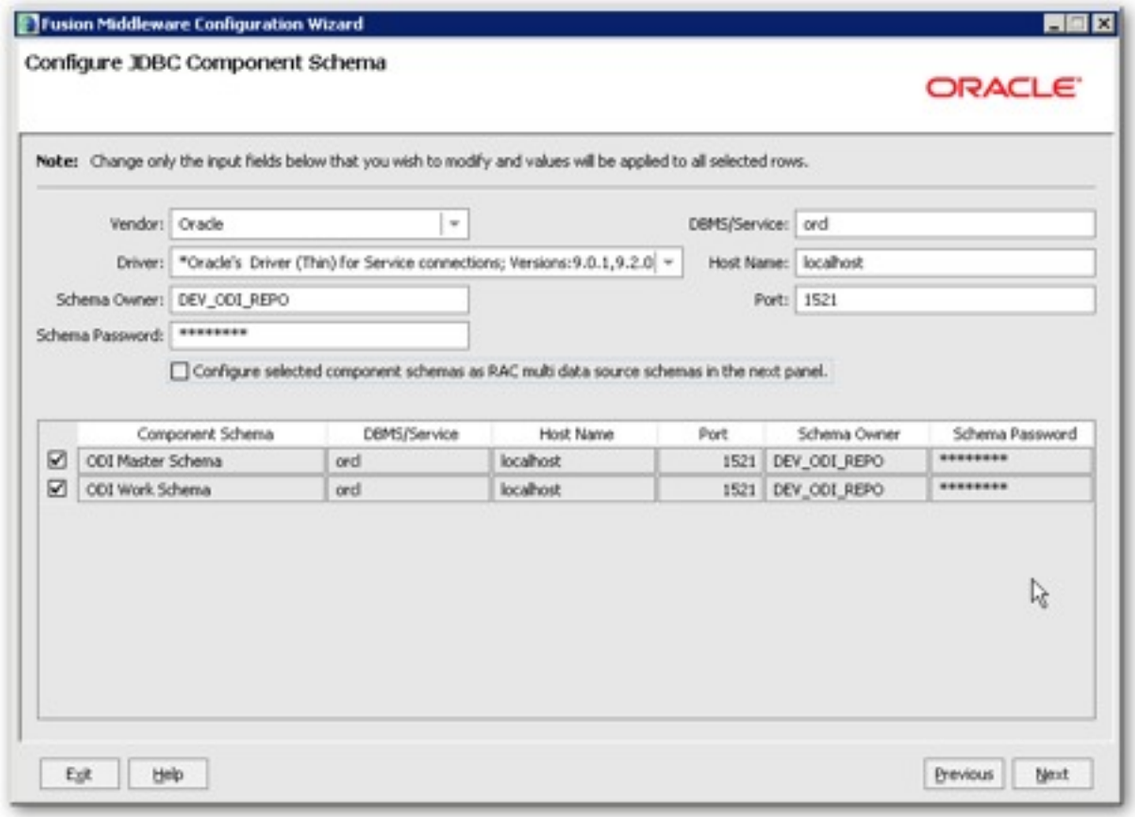




Use of Oracle WebLogic Server

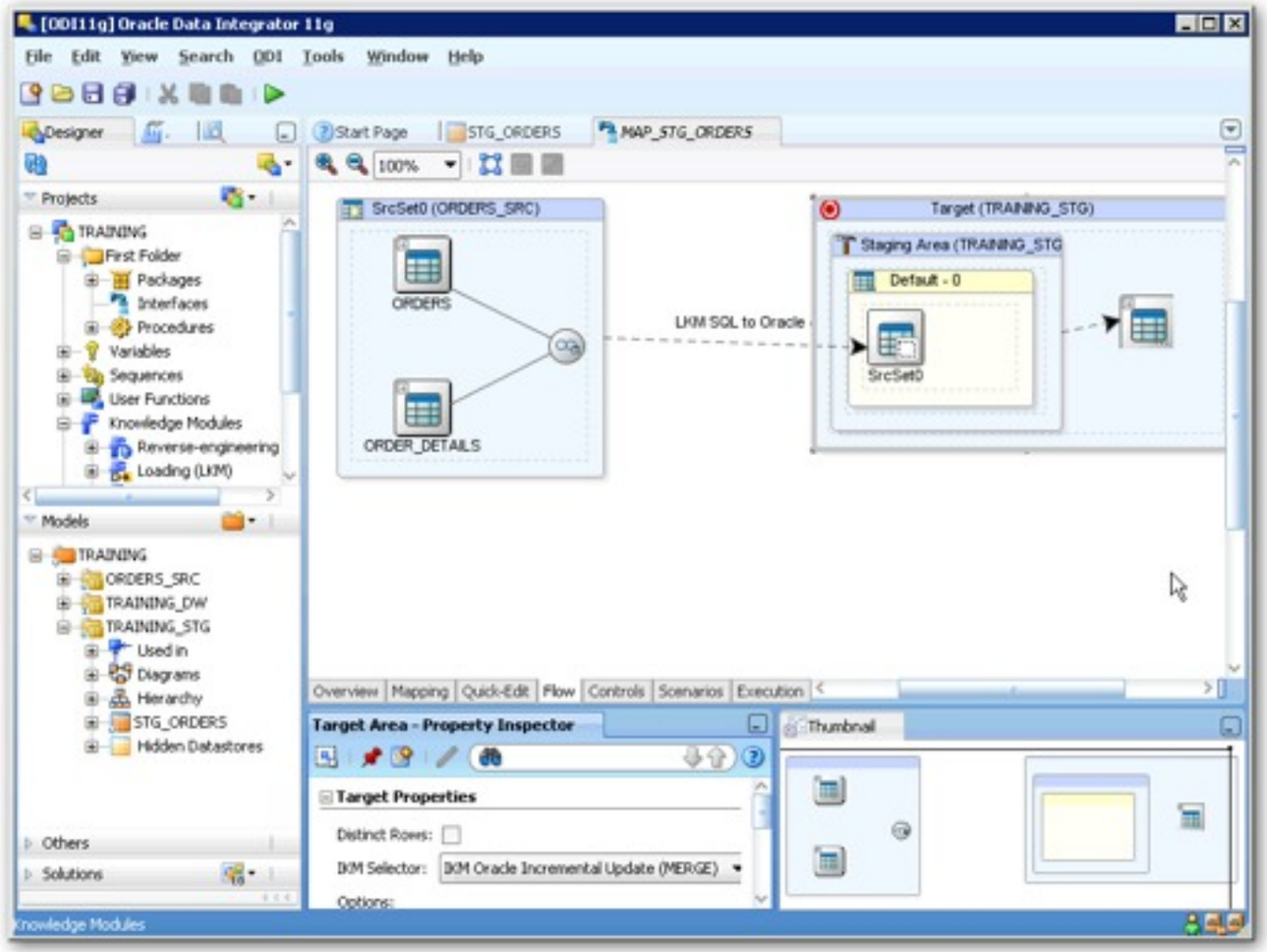
- Agent can now be deployed within WebLogic Server domain
- Allows agent to take advantage of connection pooling, HA etc
- Deploy using a WebLogic Domain template





New Fusion User Interface - ODI Studio

- New JDeveloper-based UI, same as SQL Developer, OWB 11gR2
- Now called ODI Studio, replaces separate Designer, Topology, Security etc tools
- Benefits from Fusion IDE Framework features - multi-tabs, log viewer panel etc



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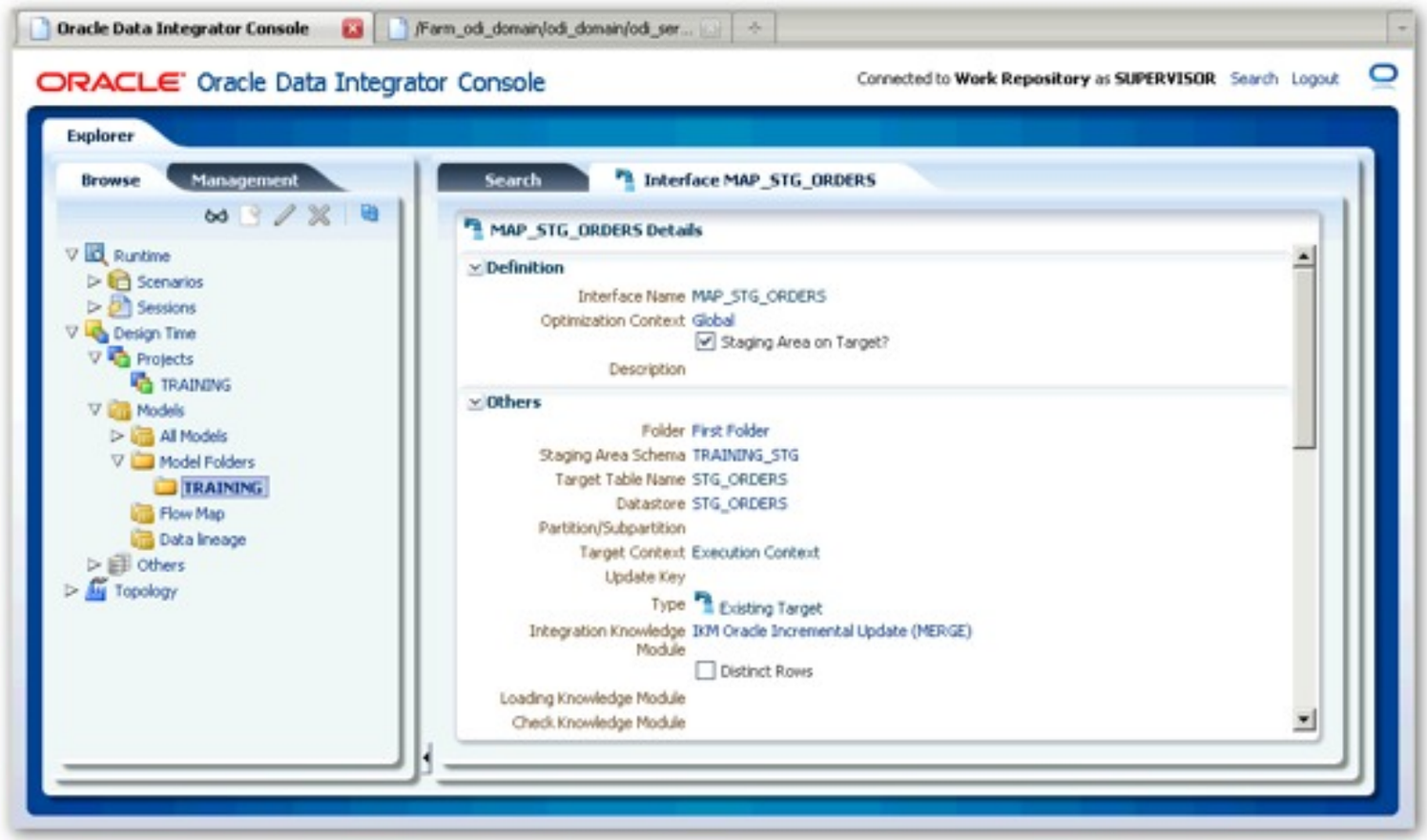
Oracle Data Integrator Console

- Evolution of ODI Metadata Navigator
- View metadata information, run compiled packages
- JEE thin-client application, runs in WebLogic Server



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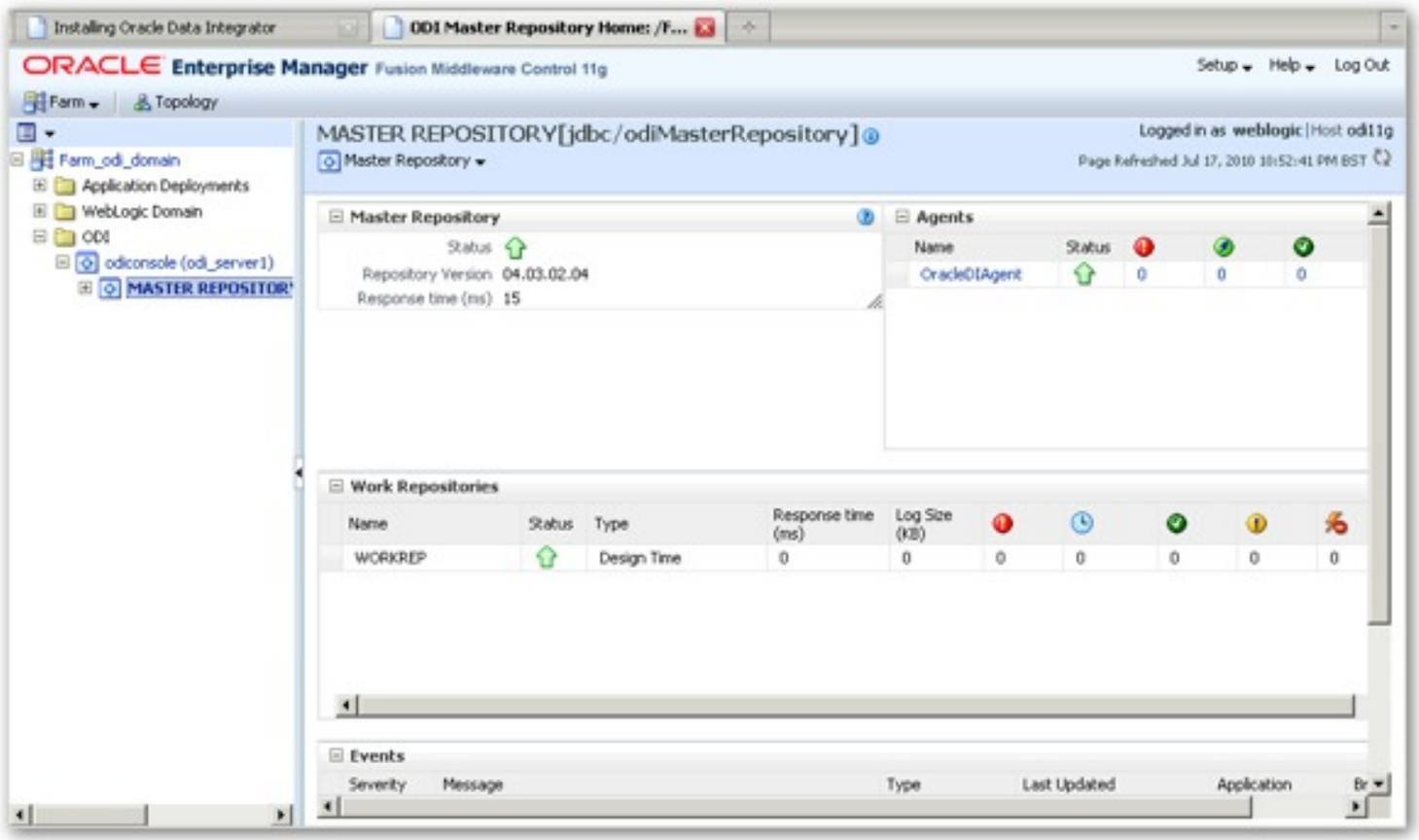
Oracle Fusion Middleware Control Integration

- Leverages Oracle Enterprise Manager Fusion Middleware Control
- View status of agenda
- View status of packages, interfaces
- Manage clustered agents
- View ODI metrics



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Oracle Data Integrator 11g

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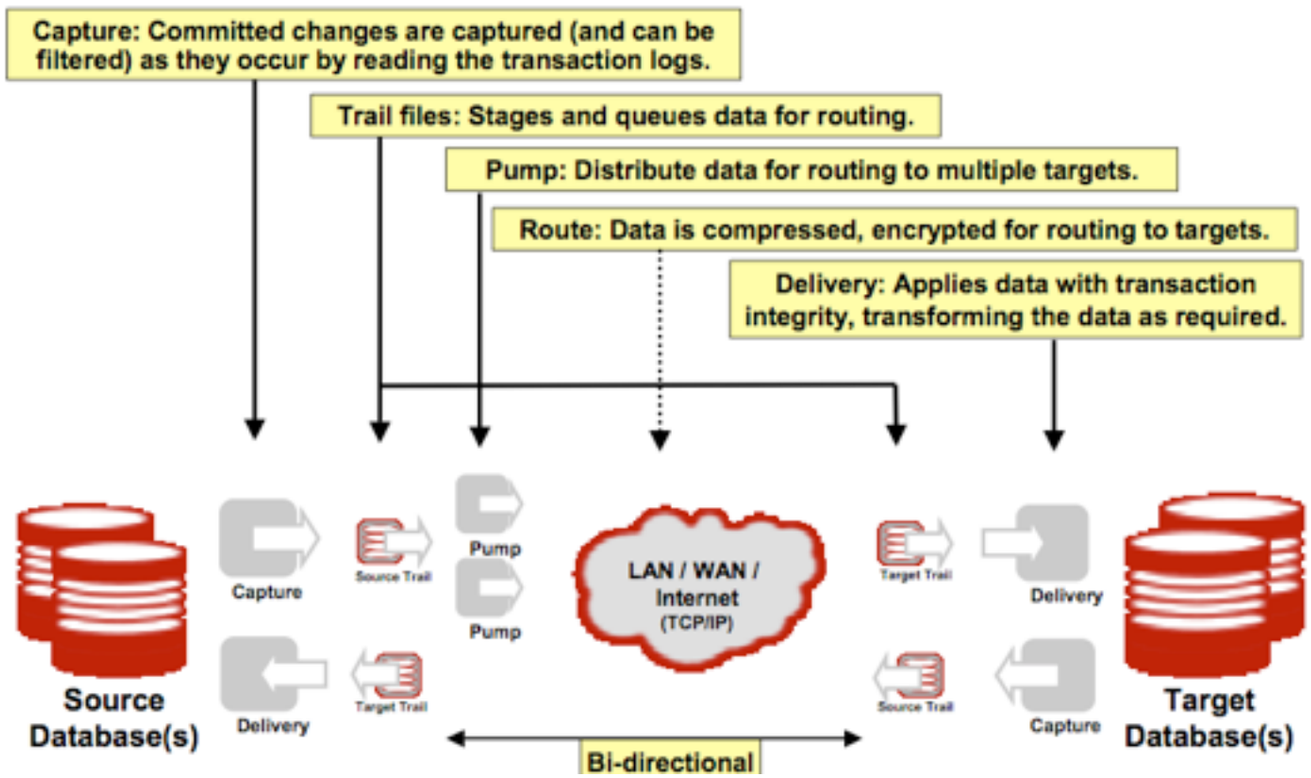
Oracle Golden Gate

- Acquired in 2009 from GoldenGate
- "Best-of-Breed" & "Easy-to-Deploy" product
  - Change Data Capture engine (CDC)
  - Replicate and integrate transactional data
  - Sub-second speed
  - Multi-enterprise system support
- Carry data between (heterogenous) systems
  - Oracle databases
  - DB/2
  - MSSQL
  - ... and so on



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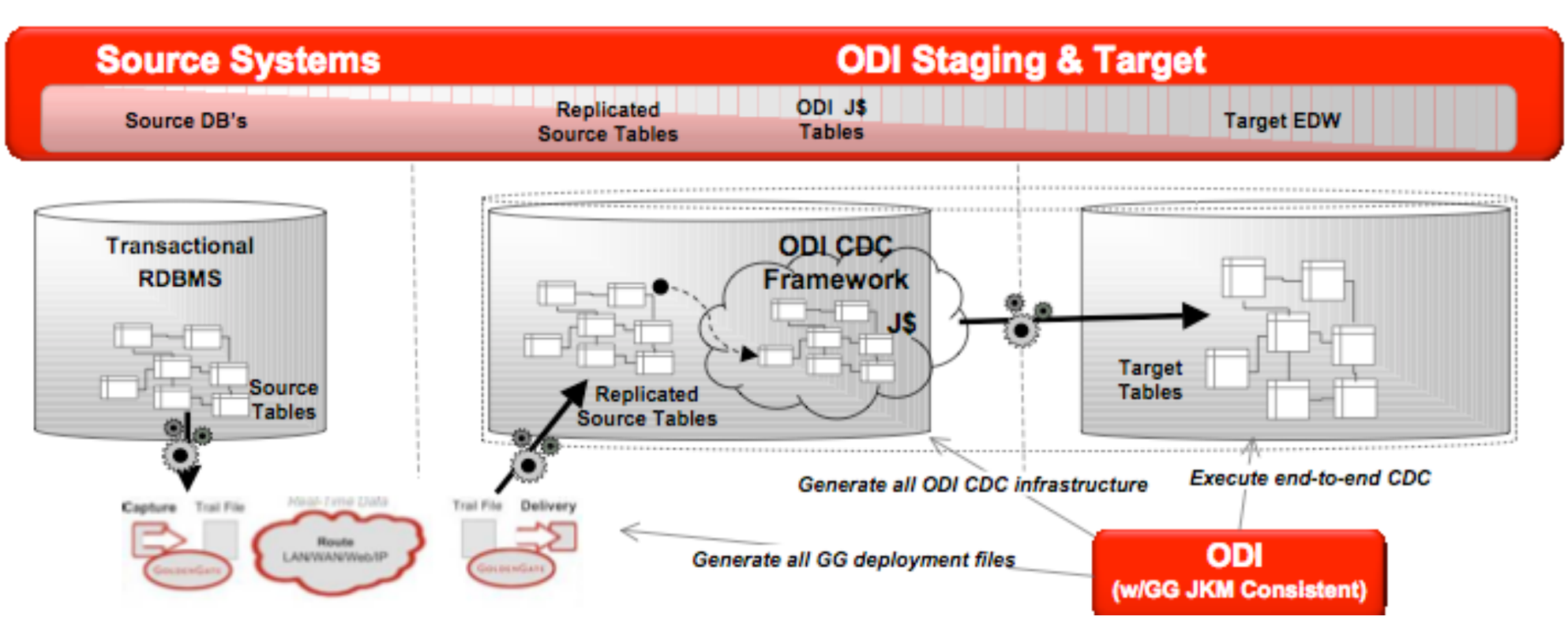
ODI 11g and Oracle Golden Gate Integration

- ODI 11g (and ODI 10g) now have knowledge module support for OGG
- Automatic deployment of OGG configuration files
- Integration with ODI CDC framework
- Uses same design and deployment approach as other ODI CDC KMs



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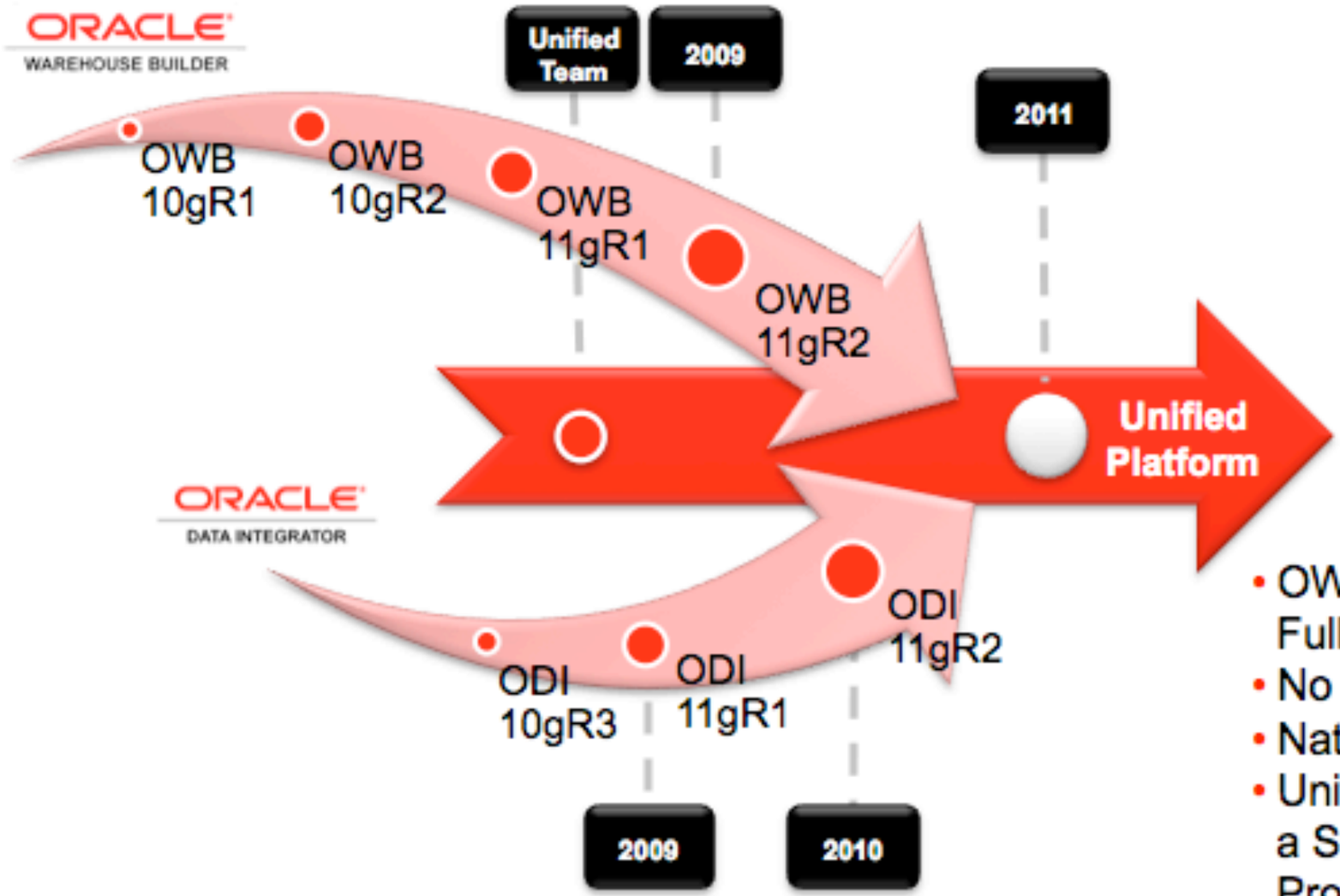
OWB / ODI Product Roadmap (Sep 2010)



- OWB/ODI Investments are Fully Protected
- No Forced Migrations
- Natural Upgrade Path
- Unified Platform aims to be a Superset of Existing Products – no regression

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Conclusions

- OWB11gR2 introduces a number of key new features
- Code Templates integrates technology from Oracle Data Integrator
- Code Template Mappings and Native Connections extends OWB capabilities across many more platforms
- Native change data capture now possible for Oracle, SQL Server and DB/2 sources
- Oracle BI EE integration now possible
- Publish and consume web services
- ODI 11g also comes with new interface
- Integration with FMW11g
- Integration with Oracle Golden Gate

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Oracle Business Intelligence 11g Masterclass

ETL Integration using OWB11gR2 and ODI 11g

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