



PEOUG
PERU ORACLE USERS GROUP

Oracle Business Intelligence

La información al servicio del negocio

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Consultor Senior Business Intelligence

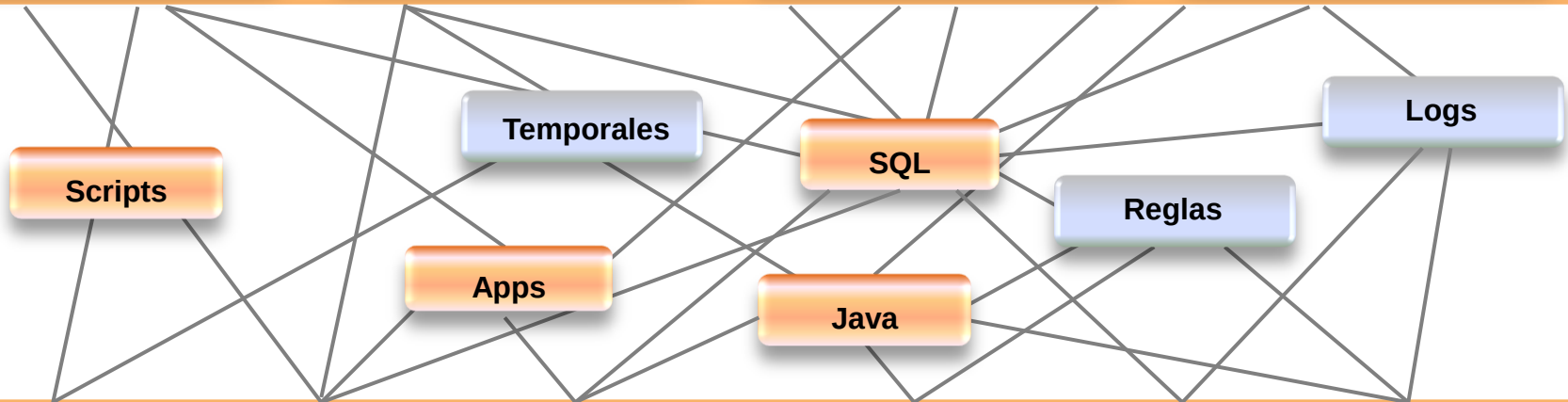
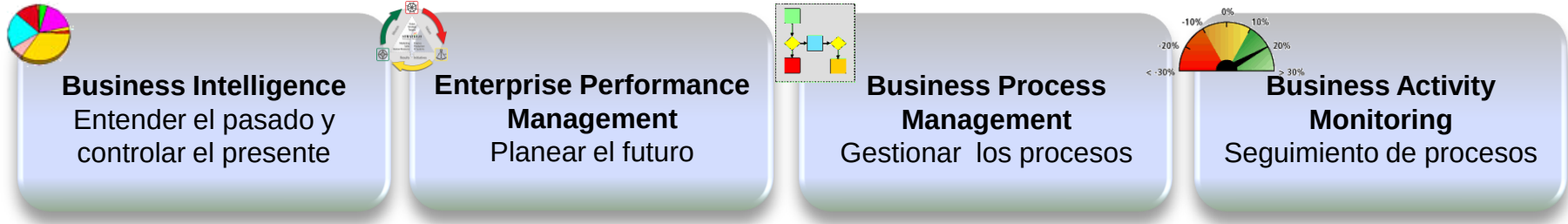
Noviembre 2009

Agenda

- Introducción
- Oracle Database
- Oracle Data Integrator
- Oracle Business Intelligence Foundation

Necesidades de información

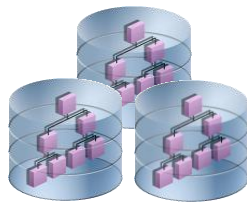
Lo que necesita la organización: agilidad, ventajas competitivas, mayor rendimiento



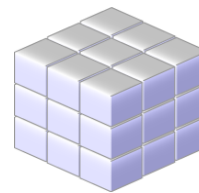
Sistemas Legacy



Bases de datos OLTP



Aplicaciones, ERP, CRM



Datamart, DW
ROLAP, MOLAP



Archivos xml,
xls, txt, csv ...



Procesos de negocio

Lo que tiene la organización: activos de información en diferentes repositorios

Necesidades de información

Lo que necesita la organización: agilidad, ventajas competitivas, mayor rendimiento



Business Intelligence

Entender el pasado y controlar el presente



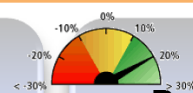
Enterprise Performance Management

Planear el futuro



Business Process Management

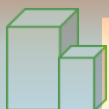
Gestionar los procesos



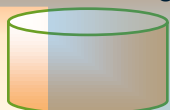
Business Activity Monitoring

Seguimiento de procesos

Migración



Data Warehousing



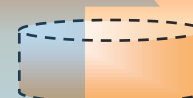
Master Data Management



Sincronización



Federación



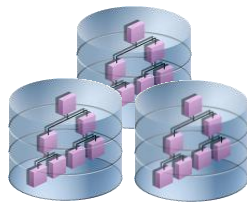
Mensajería



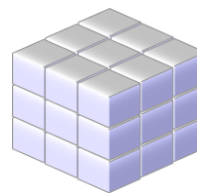
Sistemas Legacy



Bases de datos OLTP



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Procesos de negocio

Lo que tiene la organización: activos de información en diferentes repositorios

Usos de Inteligencia de Negocios

- Reporting interno y externo
- Soporte a la toma de decisiones
 - contamos con datos relevantes, exactos, completos y oportunos?
 - qué riesgos implica trabajar con datos incompletos, errados, ...?
 - cual es la calidad de los datos?
 - qué esfuerzo representa integrar la información?
- Uso de la información como ventaja competitiva
 - creación de nuevos productos o servicios
 - compartir información con clientes/proveedores

Por qué usar Inteligencia de Negocios?

- La información representa un activo:
 - Costos de recolección, almacenamiento, mantenimiento
 - Debe reducir costos, incrementar utilidades, agregar valor
- Ventajas competitivas basadas en la información:
 - Solo basada en activos fijos como plantas, maquinarias,
 - O en reconocimiento de marca, mejores capacidades de distribución, campanas de marketing eficientes
- Nivel de eficiencia para atender las demandas por información
- Toma de decisiones en base a información corporativa o en islas de información

Poniendo la información a trabajar

➤ Desafíos:

- Escalabilidad, rendimiento, seguridad, confiabilidad
- Información fragmentada, de baja calidad y vencida
- Uso y análisis limitado, impreciso, inconsistente

Poniendo la información a trabajar

➤ Soluciones Oracle:

- Escalabilidad, rendimiento, seguridad, confiabilidad

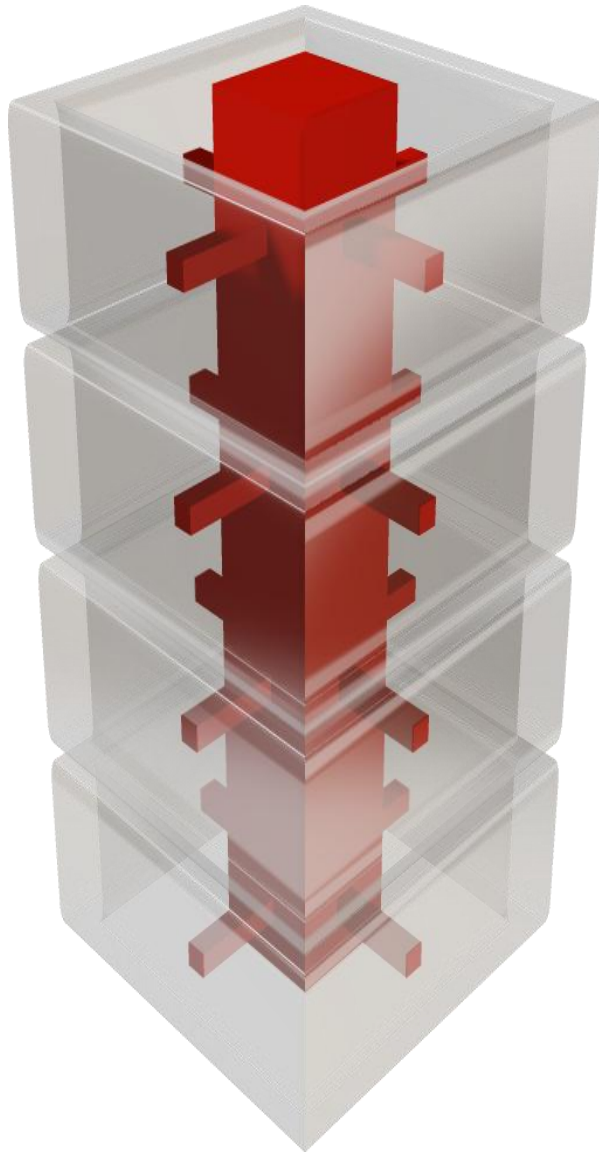
Oracle Database

- Información fragmentada, de baja calidad y vencida

Oracle Data Integration

- Uso y análisis limitado, impreciso, inconsistente

Oracle Business Intelligence

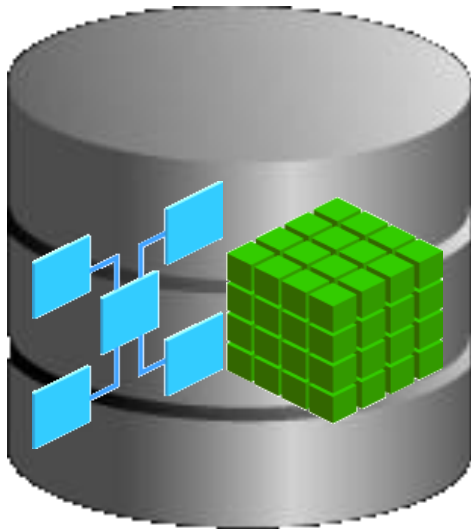


Oracle Database

Oracle Database 11g

Funcionalidades *ad-hoc* para Datawarehousing

ORACLE[®] 11^g
DATABASE



Rendimiento
Confiabilidad
Escalabilidad
Seguridad

FUNCIONALIDADES

- Extensiones SQL
- ETL y workflow embebido
- Materialized Views basado en tablas y cubos OLAP
- Query Rewrite
- Motor OLAP embebido
- Bitmap Indexes, Bitmap Join Indexes
- Star Join Transformation
- Dimensions (metadata)
- Partitioning Option
- Data Mining Option
- Compression

Extensiones SQL para Datawarehousing

SQL para agregaciones: ROLLUP, CUBE, GROUPING

```
SELECT canal, anio, semestre, SUM(ventas)
FROM ....
UNION
SELECT canal, anio, ... SUM(ventas)
FROM ....
UNION
SELECT canal, ... SUM(ventas)
FROM ....
UNION
SELECT ...., SUM(ventas)
FROM ....
```

```
SELECT canal, anio, semestre, SUM(ventas)
FROM ....
GROUP BY ROLLUP(canal, anio, semestre)
```



Canal	Anio	Semestre	Ventas
Directo	2008	I Sem	100
Directo	2008	II Sem	200
Directo	2008		300
Directo	2009	I Sem	120
Directo	2009	II Sem	190
Directo	2009		310
Directo			610
Internet	2008	I Sem	60
Internet	2008	II Sem	40
Internet	2008		100
Internet	2009	I Sem	75
Internet	2009	II Sem	55
Internet	2009		130
Internet			230
			840

Extensiones SQL para Datawarehousing

SQL para reporting y análisis

Periodo	Vtas	Acum	Var(mes ant)	%Part.	%Part.Acum	Ranking
Ene-2009	100	100		4%	4%	7
Feb-2009	200	300	100	9%	13%	4
Mar-2009	400	700	200	17%	30%	3
Abr-2009	300	1,000	-100	13%	43%	6
May-2009	200	1,200	-100	9%	52%	4
Jun-2009	500	1,700	300	22%	74%	2
Jul-2009	600	2,300	100	26%	100%	1

```

SELECT Periodo,
       SUM(Ventas) AS Vtas,
       SUM(SUM(Ventas)) OVER(PARTITION BY Periodo
                              ORDER BY Periodo ROWS UNBOUNDED PRECEDING) Acum,
       SUM(Ventas) - LAG(SUM(Ventas), 1) OVER(ORDER BY Periodo) VarMesAnt,
       SUM(Ventas) / SUM(SUM(Ventas)) OVER() * 100, "%Part.
       RANK() OVER(ORDER BY SUM(Ventas) DESC) Ranking
FROM Ventas, Periodos ....
    
```

Extensiones SQL para Datawarehousing

Pivot y Unpivot

Canal	Trimestre	Ventas
Directo	Trim I	100
Directo	Trim II	300
Directo	Trim III	700
Directo	Trim IV	600
Indirecto	Trim I	400
Indirecto	Trim II	150
Indirecto	Trim III	380
Indirecto	Trim IV	500

Canal	Trim I	Trim II	Trim III	Trim IV
Directo	100	300	700	600
Indirecto	400	150	380	500



```
SELECT *  
FROM VentasTrim  
PIVOT (SUM(Ventas) FOR Trimestre IN ('Trim I', 'Trim II', 'Trim III', 'Trim IV'))  
ORDER BY canal
```

Oracle Warehouse Builder

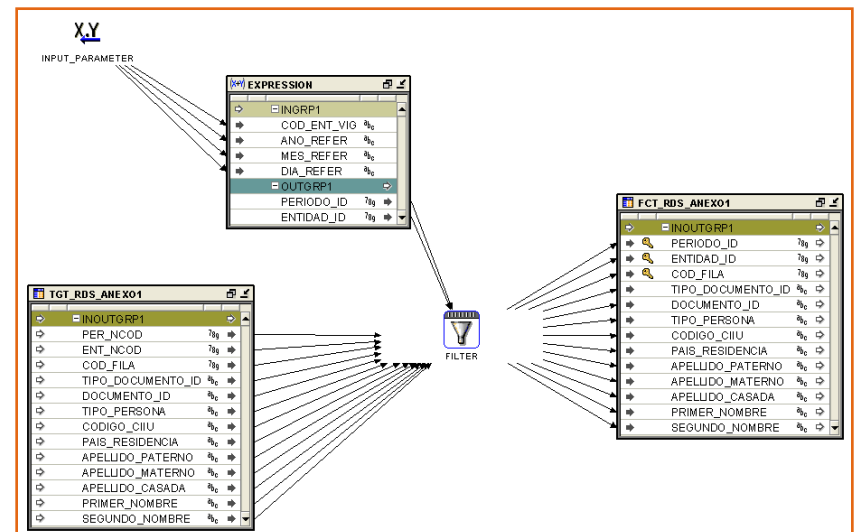
ETL embebido en la base de datos

- Alta productividad:
 - Entorno visual y declarativo
 - SQL y PL/Sql autogenerado
 - Aprovecha las últimas funcionalidades de la base de datos
 - Automatización de tareas con Oracle Workflow
- Calidad de los datos

FCT_RDS_ANEXO1	
Orden de Carga de De...	
Reglas de Datos	{}
Clave	{FCT_RDS_ANEXO1_PK, FC...
Is Temp Staging Table	☐
Nombre Enlazado	FCT_RDS_ANEXO1
Extra DDL Clauses	
Tipo de Carga	UPDATE/INSERT
Origen Primario	No
Tabla de Errores	
Truncar Tabla de Errores	No
Nombre de Tabla de Err...	
Acumular Errores	Sí
Seleccionar sólo los er...	Sí

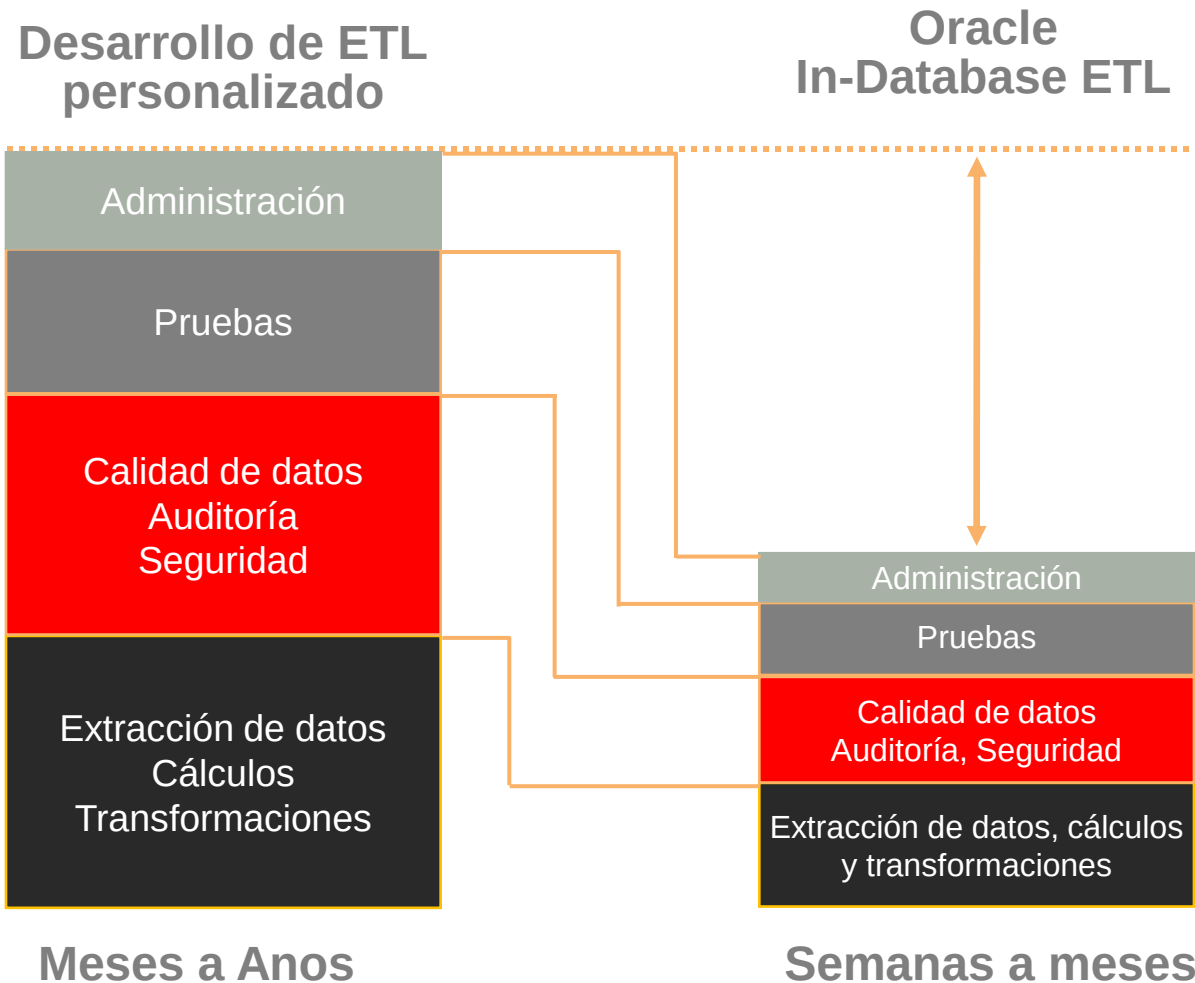
```
CREATE OR REPLACE PACKAGE "RDS_CARGA_FCT_ANEXO1" AS
OWB$MAP_OBJECT_ID VARCHAR2(32) := 'RDS_CARGA_FCT_ANEXO1';
sql_stat VARCHAR2(32767);
get_abort BOOLEAN := FALSE;
get_abort_procedure BOOLEAN := FALSE;
get_trigger_success BOOLEAN := TRUE;
get_errors NUMBER(22) := 0;
get_status NUMBER(22) := 0;
get_error_ratio NUMBER(22) := 0;
get_global_names VARCHAR2(10) := 'FALSE';
-- Status variable for Batch cursors
"FCT_RDS_ANEXO1_St" BOOLEAN := FALSE;
"COD_ENT_VIG" VARCHAR2(32767); "ANO_REFER" VARCHAR2(32767);

-- Function Main
-- Entry point in package ""RDS_CARGA_FCT_ANEXO1""
FUNCTION Main("COD_ENT_VIG" IN VARCHAR2
```



Oracle Warehouse Builder

Alta productividad



Vistas materializadas

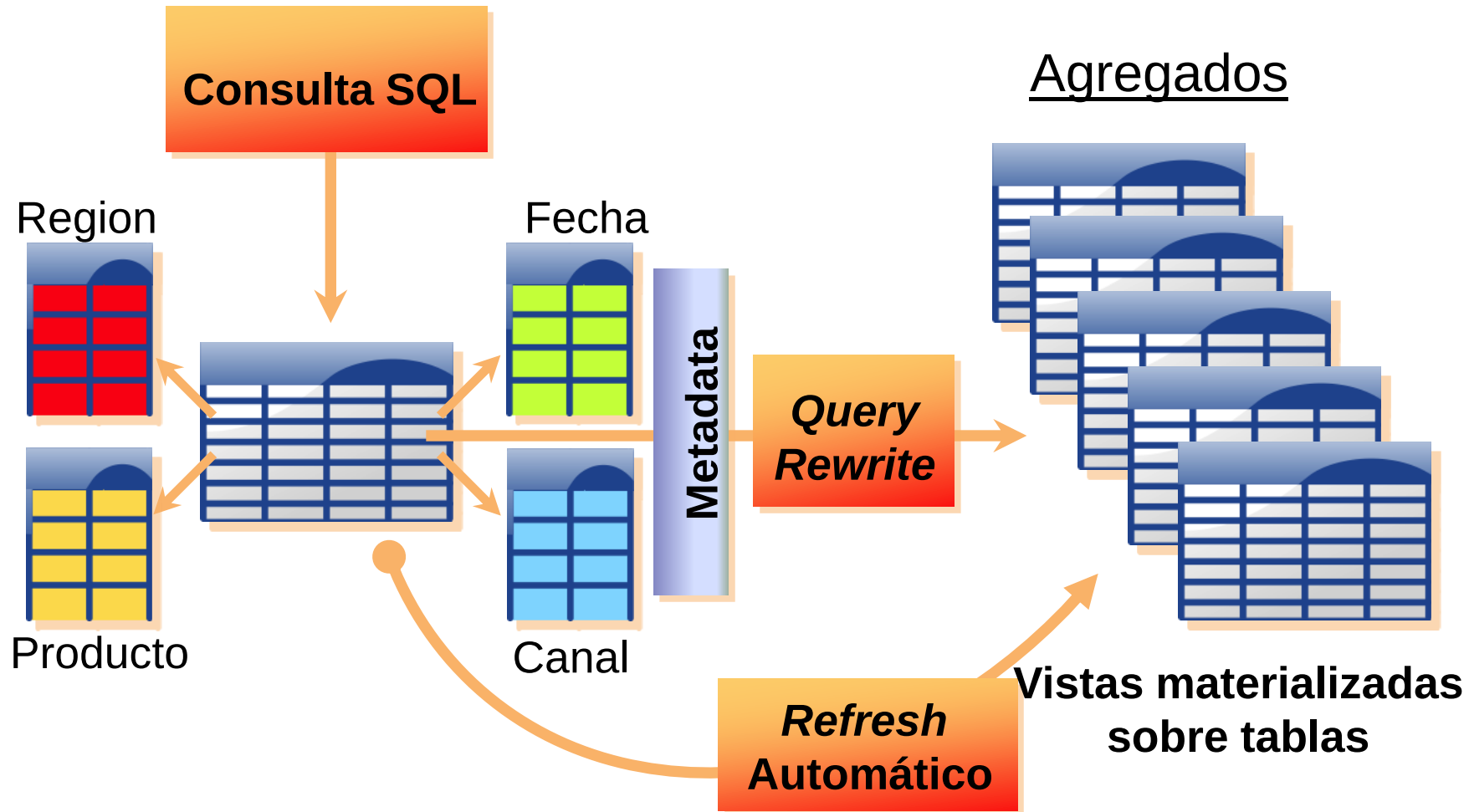
COGNOS

MicroStrategy

ORACLE

BUSINESS OBJECTS

Hyperion
The future in sight



Oracle Partitioning Option

Mayor rendimiento y disponibilidad

- Mayor rendimiento en las consultas
- Incrementa disponibilidad
- Mejora la administración
- Habilita *Information Lifecycle Management*

Oracle Partitioning Option

	Funcionalidad	Rendimiento	Administración
Oracle8	Range partitioning Global range indexes	“Static” partition pruning	Basic maintenance operations: add, drop, exchange
Oracle8i	Hash and composite range-hash partitioning	Partition-wise joins “Dynamic” pruning	Merge operation
Oracle9i	List partitioning		Global index maintenance
Oracle9i R2	Composite range-list partitioning	Fast partition split	
Oracle10g	Global hash indexes		Local Index maintenance
Oracle10g R2	1M partitions per table	“Multi-dimensional” pruning	Fast drop table
Oracle 11g	More composite choices REF Partitioning Virtual Column Partitioning		Interval Partitioning Partition Advisor
Oracle 11g R2	Enhanced REF and virtual partitioning	Multi-predicate pruning Multi-branch execution	

Oracle OLAP Option

- Embebido en la base de datos Oracle
- Servidor OLAP multidimensional
 - Excelentes tiempos de respuesta para consultas ad-hoc
- Solución para la gestión de agregados/sumarios
 - Alternativa a las vistas materializadas basadas en tablas

Vista materializada sobre cubo OLAP

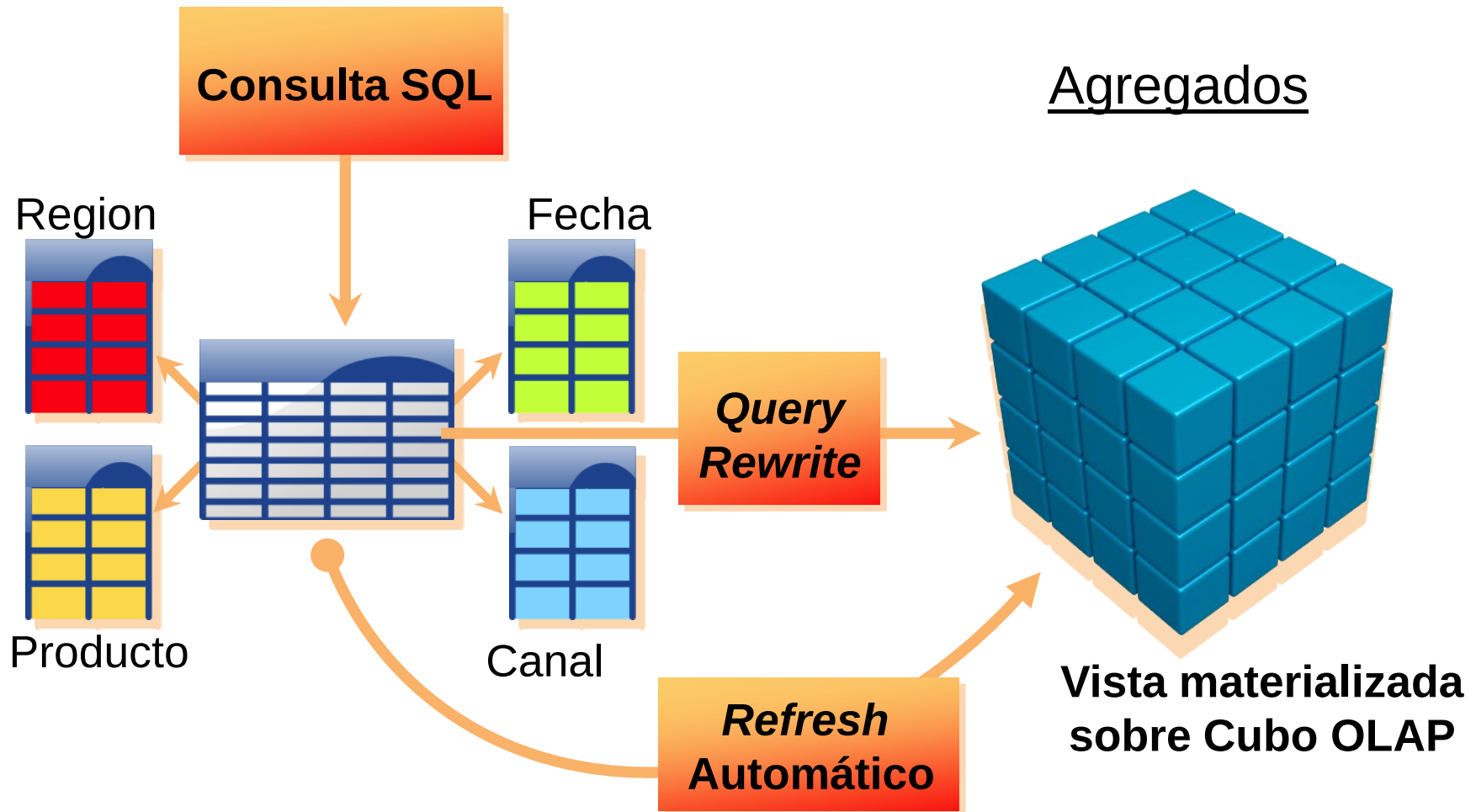
COGNOS

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Oracle Datamining Option

- Embebido en la base de datos Oracle
- Mejor rendimiento
- Más y mejor análisis de los datos
 - Aprovecha seguridad
 - Reduce complejidad
 - Agilidad

```
SELECT Id, nombres, ....  
FROM clientes  
WHERE ingresos > 10K  
AND Probability(Comprar Prod A) > 0.85;
```

Oracle Datamining Option

Distribuyendo predicciones en reportes y dashboards

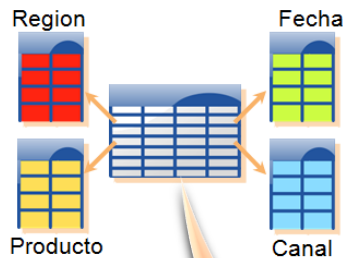


Demostración

Vistas Materializadas - Query Rewrite - Dimensiones

Demostración

Paso 1: Consulta típica de un modelo estrella



Enter SQL Statement:

```
SELECT p.prod_subcategory,  
       t.week_ending_day,  
       SUM(s.amount_sold) AS sum_amount_sold  
FROM sales s, products p, times t  
WHERE s.time_id = t.time_id  
      AND s.prod_id = p.prod_id  
GROUP BY p.prod_subcategory, t.week_ending_day
```

Results | Script Output | Explain | Autotrace | DBMS Output | OWA Output

Operation	Cost	Cardinality	Bytes
SELECT STATEMENT	4681	3891	198441
HASH(GROUP BY)	4681	3891	198441
HASH JOIN	523	918843	46860993
PART JOIN FILTER(CREATE) SYS.:BF0000	18	1826	29216
TABLE ACCESS(FULL) SH.TIMES	18	1826	29216
HASH JOIN	500	918843	32159505
TABLE ACCESS(FULL) SH.PRODUCTS	3	72	1296
PARTITION RANGE(JOIN-FILTER)	493	918843	15620331
TABLE ACCESS(FULL) SH.SALES	493	918843	15620331

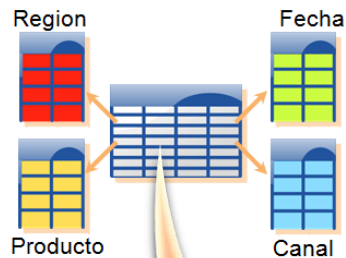
Las estadísticas indican que la tabla SH.SALES tiene 918,843 registros

El optimizador estima un costo de 4,681 unidades para resolver la consulta

SH.PRODUCTS tiene 72 registros y SH.TIMES tiene 1826 registros

Demostración

Paso 2: Creación de vista materializada



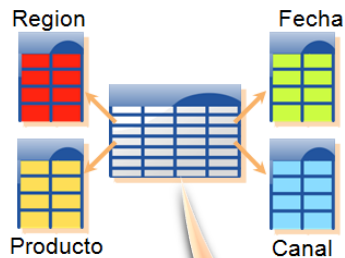
Se crea objeto de
esquema MV_PEOUG



```
CREATE MATERIALIZED VIEW mv_peoug
ENABLE QUERY REWRITE AS
SELECT p.prod_subcategory,
       t.week_ending_day,
       SUM(s.amount_sold) AS sum_amount_sole
FROM sales s, products p, times t
WHERE s.time_id = t.time_id
      AND s.prod_id = p.prod_id
GROUP BY p.prod_subcategory, t.week_ending_day
```

Demostración

Paso 3: *Query rewrite* hacia vista materializada



Vista materializada
MV_PEOUG



Enter SQL Statement:

```
SELECT p.prod_subcategory,  
       t.week_ending_day,  
       SUM(s.amount_sold) AS sum_amount_sold  
FROM sales s, products p, times t  
WHERE s.time_id = t.time_id  
      AND s.prod_id = p.prod_id  
GROUP BY p.prod_subcategory, t.week_ending_day
```

Results | Script Output | Explain | Autotrace | DBMS Output | OWA Output

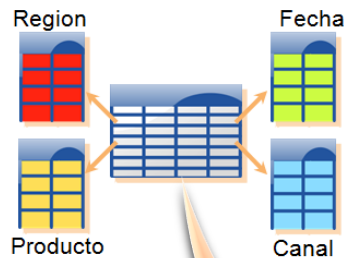
Operation	Cost	Cardinality	Bytes
SELECT STATEMENT	8	4089	200361
MAT_VIEW REWRITE ACCESS(FULL) SH.MV_PEOUG	8	4089	200361

Query rewrite
hacia MV_PEOUG

El costo se reduce a 8
unidades utilizando la
vista materializada

Demostración

Paso 4: Consulta a nivel superior de agregación



Consulta agregada por Categoría en lugar de Subcategoría

Enter SQL Statement:

```
SELECT p.prod_category,  
       t.week_ending_day,  
       SUM(s.amount_sold)  
FROM sales s, products p, times t  
WHERE s.time_id=t.time_id  
AND s.prod_id=p.prod_id  
GROUP BY p.prod_category, t.week_ending_day
```

Results

Operation	Cost	Cardinality	Bytes
SELECT STATEMENT	561	927	50058
HASH(GROUP BY)	561	927	50058
HASH JOIN	523	918843	49617522
PART JOIN FILTER(CREATE) SYS.:BF0000	18	1826	29216
TABLE ACCESS(FULL) SH.TIMES	18	1826	29216
HASH JOIN	500	918843	34916034
TABLE ACCESS(FULL) SH.PRODUCTS	3	72	1512
PARTITION RANGE(JOIN-FILTER)	493	918843	15620331
TABLE ACCESS(FULL) SH.SALES	493	918843	15620331

El costo se eleva a 561 unidades y **NO** utiliza la vista materializada

Demostración

Paso 5: Otorgando mayor información al optimizador

PROD_CATEGORY	PROD_SUBCATEGORY	PROD_NAME
Electronics	Home Audio	8.3 Minitower Speaker
Electronics	Y Box Accessories	Extension Cable
Electronics	Y Box Accessories	Xtend Memory
Electronics	Y Box Games	Adventures with Numbers
Electronics	Y Box Games	Bounce
Electronics	Y Box Games	Comic Book Heroes
Electronics	Y Box Games	Endurance Racing
Electronics	Y Box Games	Finding Fido
Electronics	Y Box Games	Fly Fishing
Electronics	Y Box Games	Martial Arts Champions
Electronics	Y Box Games	Smash up Boxing
Hardware	Desktop PCs	Envoy 256MB - 40GB
Hardware	Portable PCs	Envoy Ambassador
Peripherals and Accessories	Accessories	Deluxe Mouse

El desarrollador conoce el contenido de las tablas. En la tabla Productos se puede deducir que existe una relación jerárquica (padre-hijo) entre las columnas categoría, subcategoría y productos

El optimizador usa metadatos en la forma de: estadísticas, histogramas, constraints, parámetros de sistema/sesión, dimensiones, etc etc etc para obtener el mejor plan de ejecución

```
CREATE DIMENSION products_dim
LEVEL product IS (products.prod_id)
LEVEL subcategory IS (products.prod_subcategory)
LEVEL category IS (products.prod_category)
HIERARCHY prod_rollup
(
  product CHILD OF
    subcategory CHILD OF
      category
)
ATTRIBUTE product DETERMINES products.prod_name
ATTRIBUTE product DETERMINES products.prod_desc
ATTRIBUTE subcategory DETERMINES products.prod_subcategory_desc
ATTRIBUTE category DETERMINES products.prod_category_desc
```

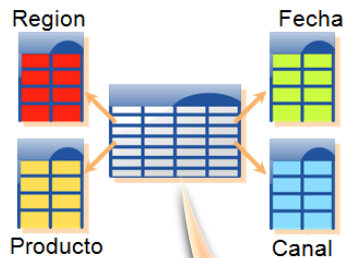
Usamos el objeto DIMENSION para informar acerca de las relaciones jerárquicas:

La cláusula HIERARCHY permite establecer relaciones 1:n

La cláusula DETERMINES define relaciones 1:1

Demostración

Paso 6: La creación del objeto Dimension permite *Query rewrite* hacia vista materializada



Vista materializada
MV_PEOUG



SQL Statement:

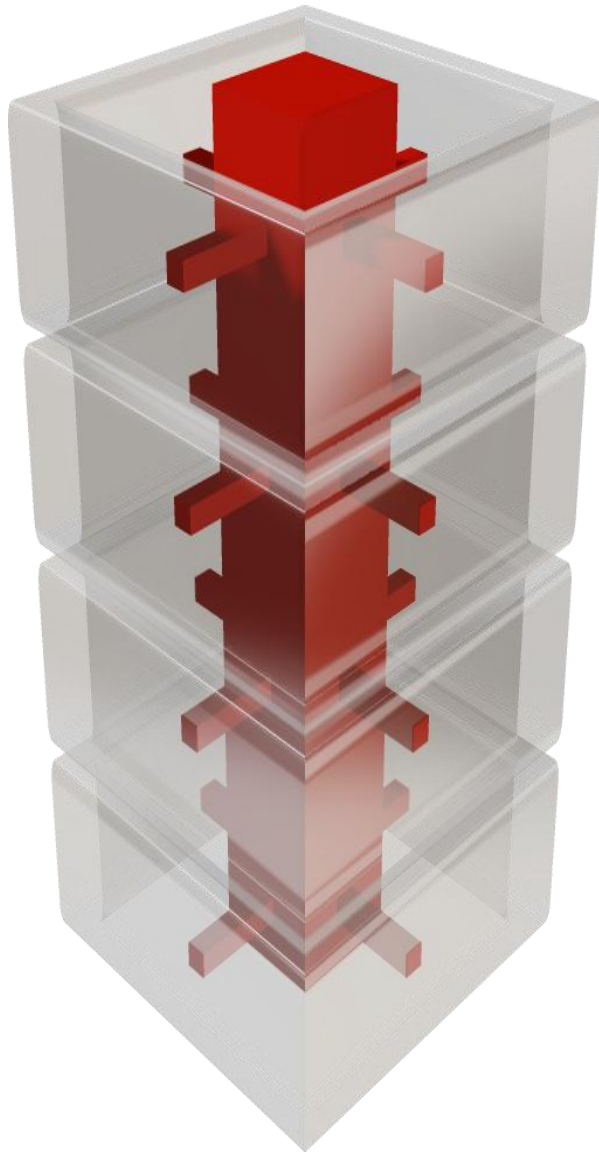
```
SELECT p.prod_category,  
       t.week_ending_day,  
       SUM(s.amount_sold)  
FROM sales s, products p, times t  
WHERE s.time_id=t.time_id  
      AND s.prod_id=p.prod_id  
GROUP BY p.prod_category, t.week_ending_day
```

Results

Operation	Cost	Cardinality	Bytes
SELECT STATEMENT	13	4	156
HASH(GROUP BY)	13	4	156
VIEW SYS.VM_NWWW_1	13	4	156
HASH(UNIQUE)	13	4	368
HASH JOIN	12	14019	1289748
TABLE ACCESS(FULL) SH.PRODUCTS	3	72	2232
MAT_VIEW REWRITE ACCESS(FULL) SH.MV_PEOUG	8	4089	249429

Query rewrite
hacia MV_PEOUG

El costo se reduce a **13**
unidades debido al uso
de la vista materializada



Oracle Data Integration

Necesidades de información

Lo que necesita la organización: agilidad, ventajas competitivas, mayor rendimiento



Business Intelligence

Entender el pasado y controlar el presente



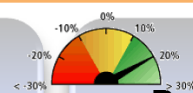
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Planear el futuro



Business Process Management

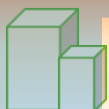
Gestionar los procesos



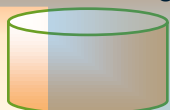
Business Activity Monitoring

Seguimiento de procesos

Migración



Data Warehousing



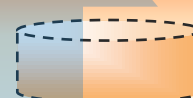
Master Data Management



Sincronización



Federación



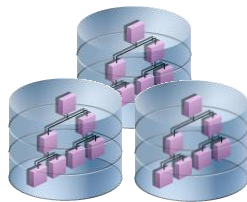
Mensajería



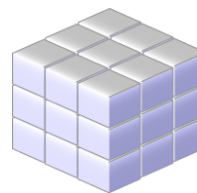
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Aplicaciones, ERP, CRM



Datamart, DW ROLAP, MOLAP



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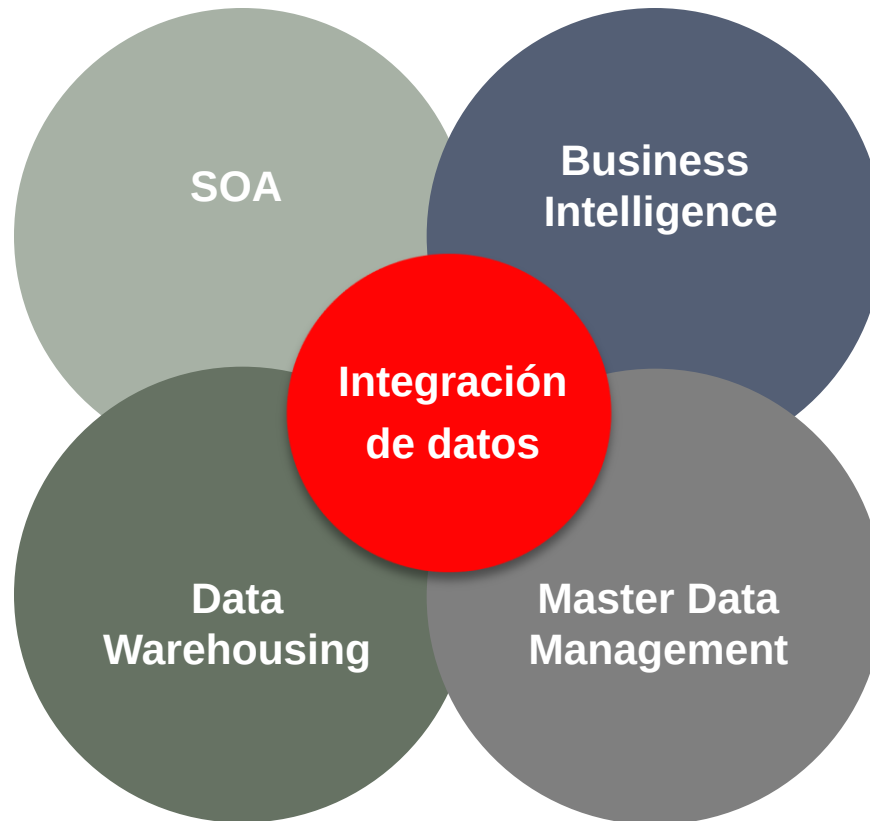


Procesos de negocio

Lo que tiene la organización: activos de información en diferentes repositorios

Casos de aplicación

- Servicios de datos e información
- Procesos de integración
- Integración basado en eventos
- Análisis de impacto



- Integración para aplicaciones BI
- BI conducido por eventos
- Fuentes de datos heterogéneos

- ETL
- Migración de datos
- Actualización de aplicaciones
- Calidad de los datos

Arquitectura E-LT

Alto rendimiento

Transformar en servidor ETL

- Solución propietaria / "caja negra"
- Pobre rendimiento
- Costo elevado (HW + SW)

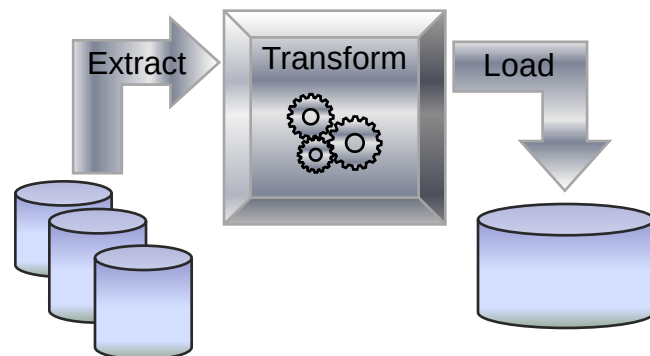
Transformar RDBMS existente

- Aprovechar recursos existentes
- Eficiente
- Alto rendimiento

Beneficios

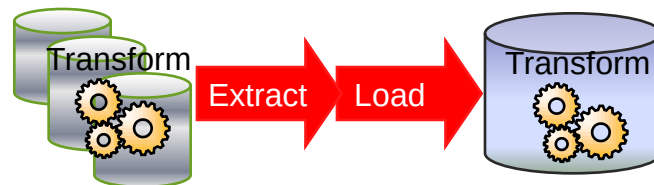
- ✓ Rendimiento y escalabilidad óptimos
- ✓ Fácil de administrar
- ✓ Bajo costo

Arquitectura convencional



Arquitectura "Next Generation"

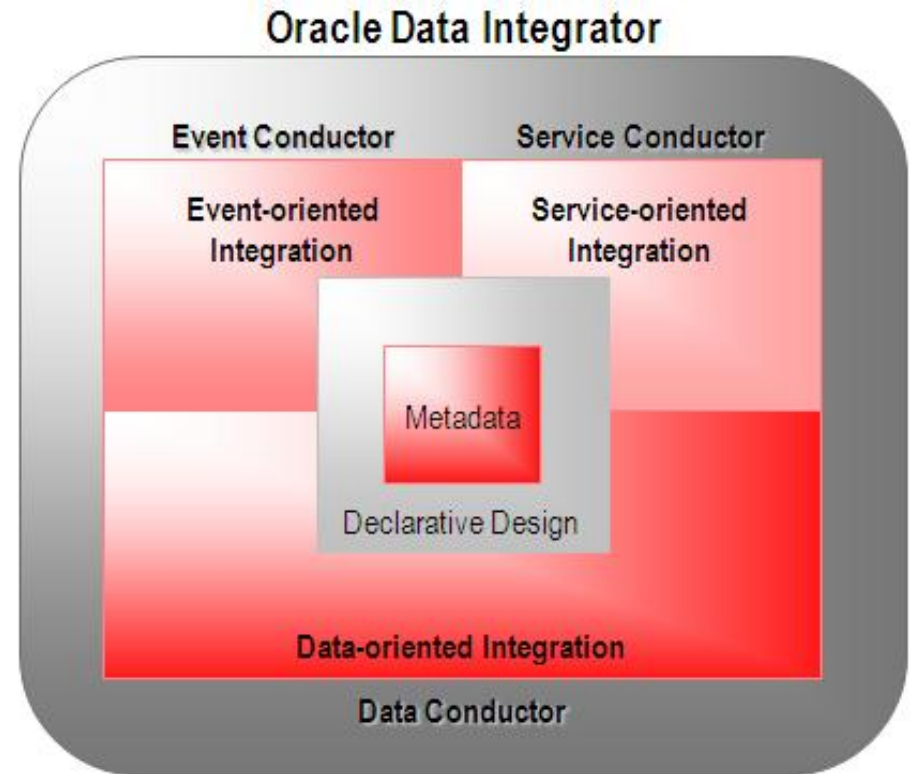
“E-LT”



2 Integración activa

Batch, Basada en eventos y SOA

- Desde soluciones Batch hasta Real-time
- Integración de islas de información
- Calidad de los datos en línea
- Publicación de servicios en arquitectura SOA



- Beneficios
 - ✓ Real-time data warehousing
 - ✓ Bus de servicios de datos operacionales
 - ✓ Servicios expuestos en Oracle SOA Suite

3 Diseño declarativo

Mayor productividad

Specify ETL Data Flow Graph

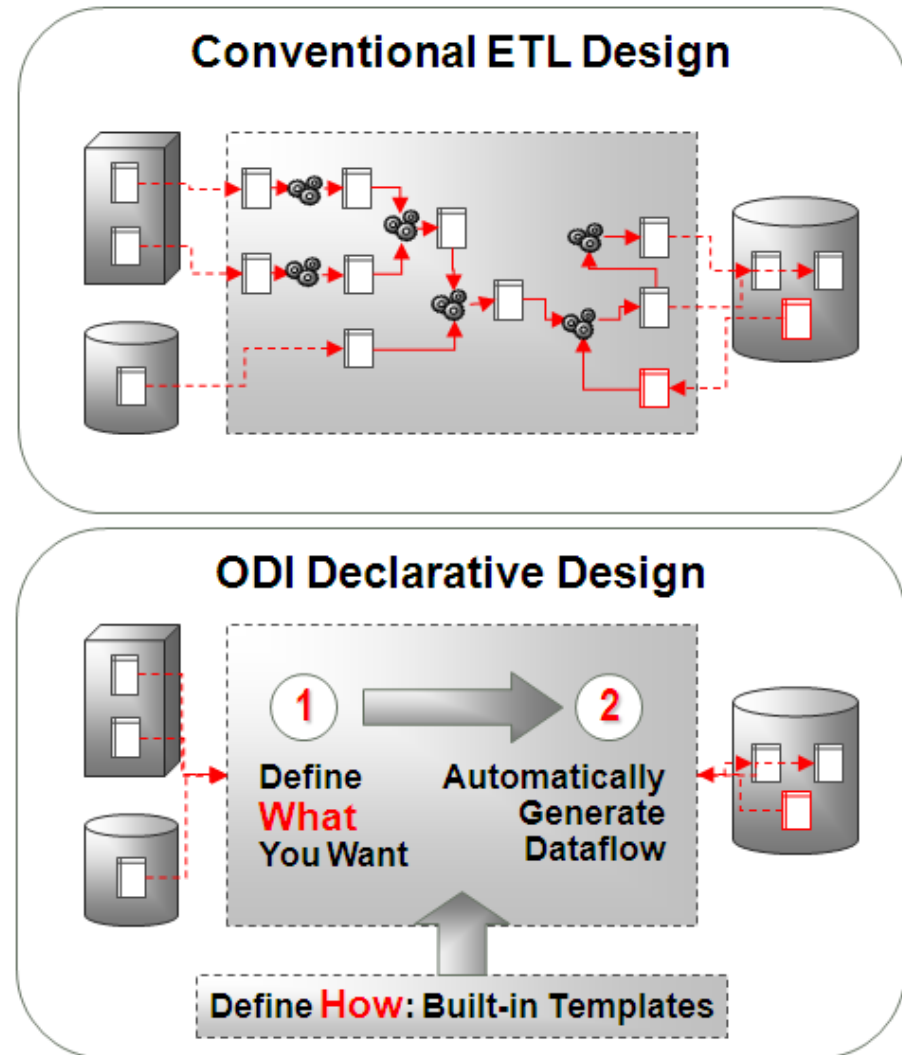
- Developer must define every step of Complex ETL Flow Logic
- Traditional approach requires specialized ETL skills
- And significant development and maintenance efforts

Declarative Set-based Design

- Simplifies the number of steps
- Automatically generates the Data Flow whatever the sources and target DB

Benefits

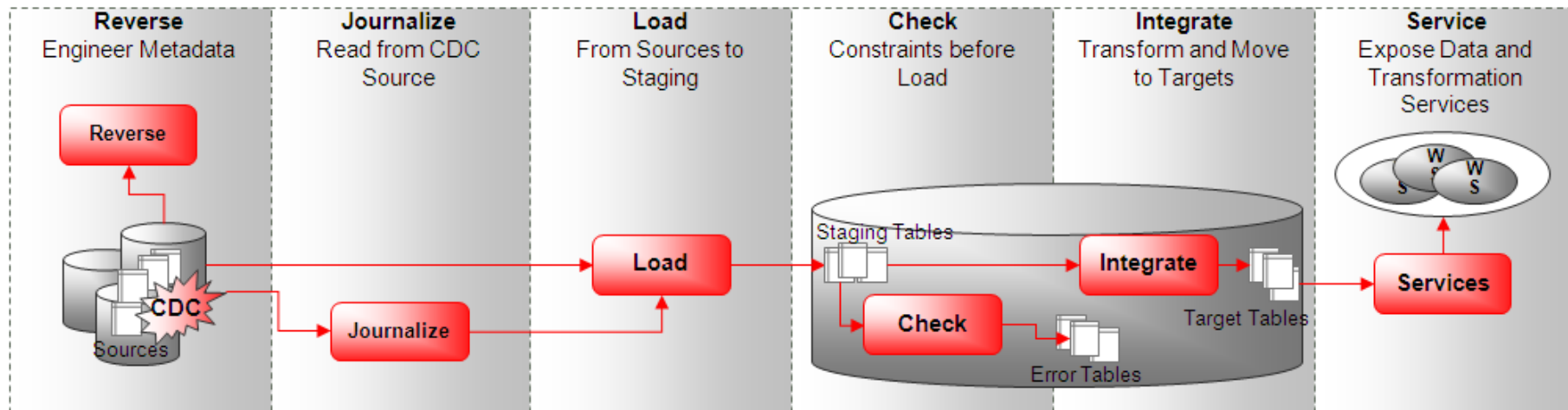
- ✓ Significantly reduce the learning curve
- ✓ Shorter implementation times
- ✓ Streamline access to non-IT pros



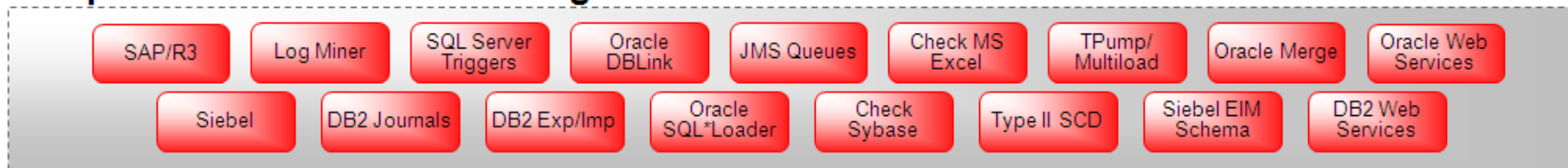
Knowledge Modules

Modulares, flexibles y extensibles

Pluggable Knowledge Modules Architecture



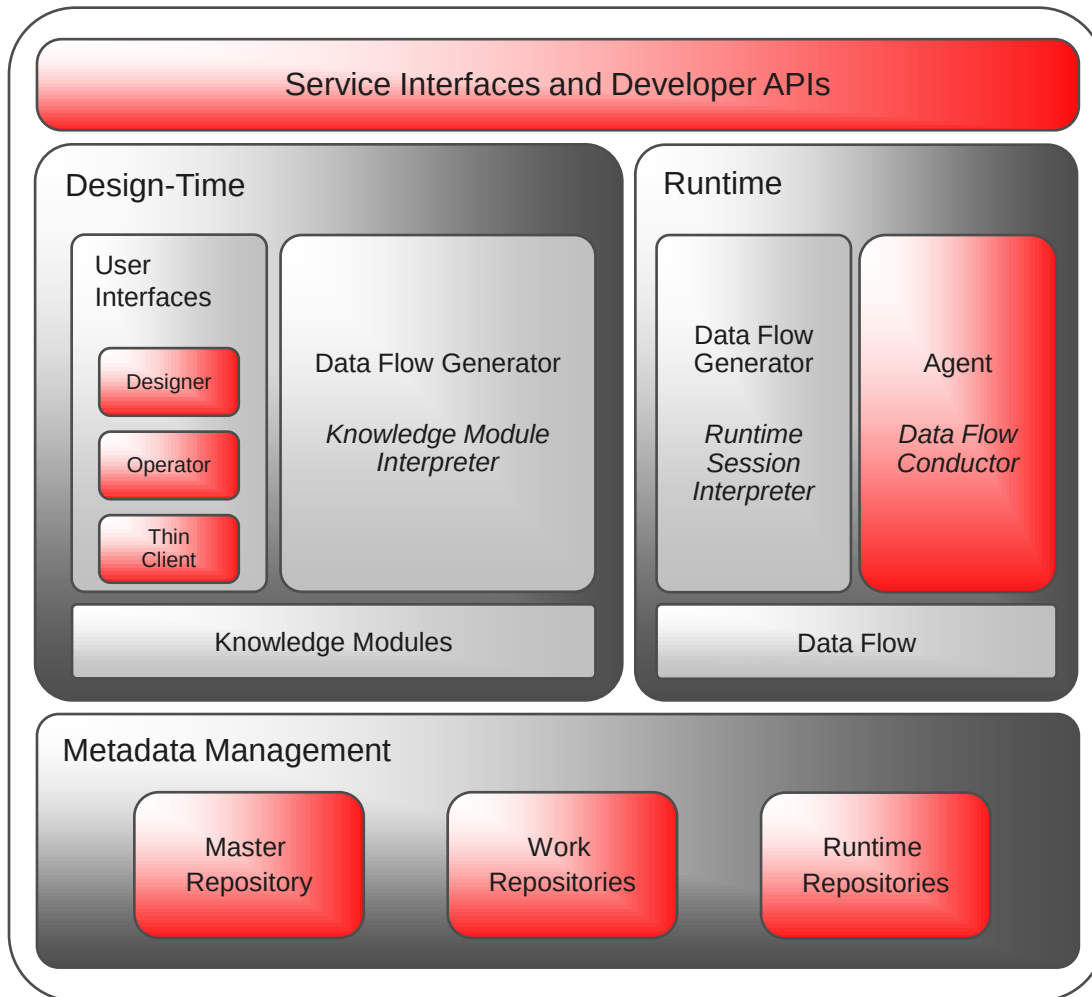
Sample out-of-the-box Knowledge Modules



Benefits

- ✓ Tailor to existing best practices
- ✓ Ease administration work
- ✓ Reduce cost of ownership

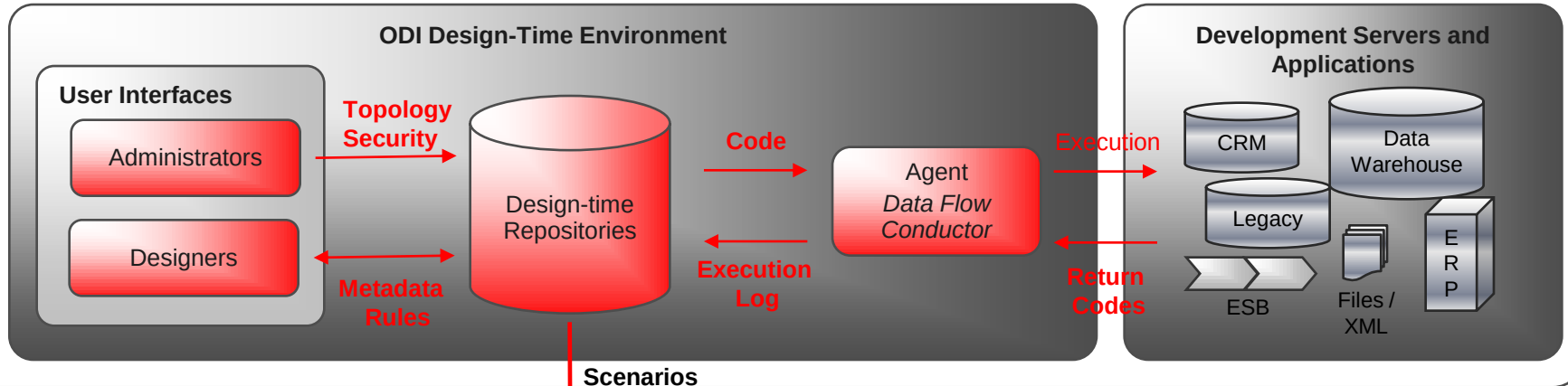
Arquitectura: vista conceptual



- **Diseño**
 - Windows, Linux, Unix
 - Browse en "*thin client*"
 - Metadata
- **Ejecución**
 - Windows, Linux, Unix ...
 - Orquestador de los flujos
- **Repositorio de metadata**
 - Sobre cualquier RDBMS
 - Ready for deployment
 - Modular and extensible metadata

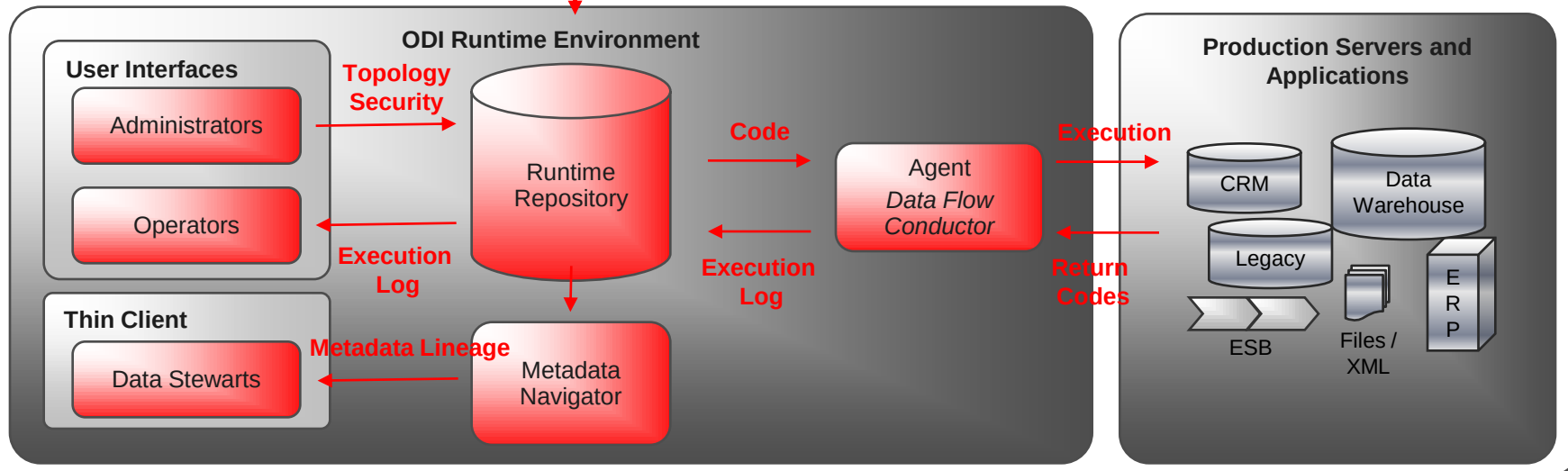
Arquitectura: componentes

Development



Scenarios
and Projects
Releases

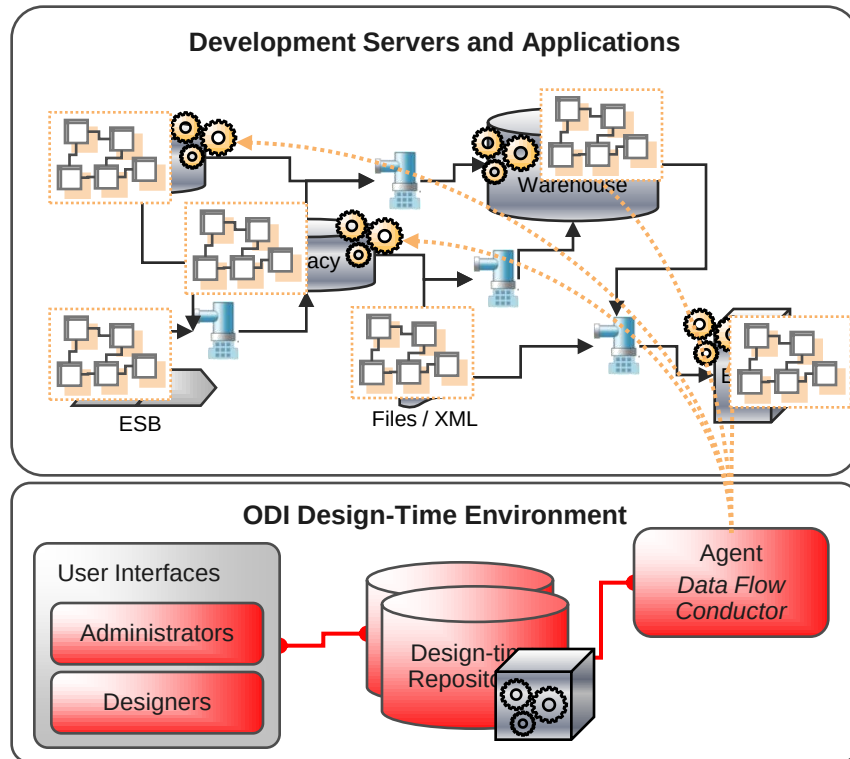
Production



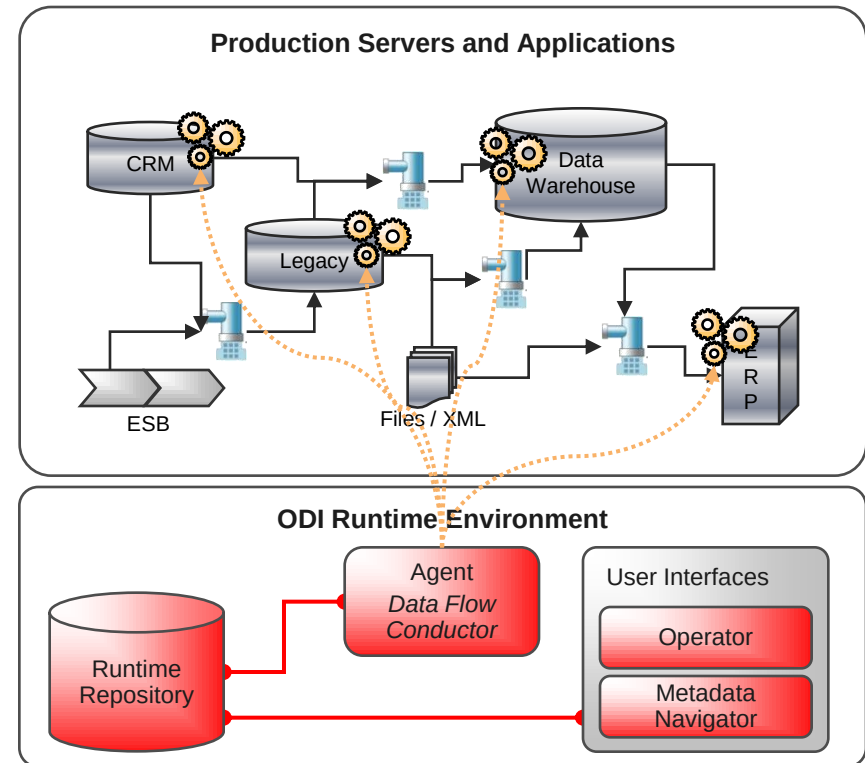
Integración de datos en 6 pasos

1. Recuperar/enriquecer metadatos
2. Diseñar las transformaciones
3. Orquestar los *data flows*
4. Generar/Implementar *data flows*
5. Seguimiento de las ejecuciones
6. Analizar impacto

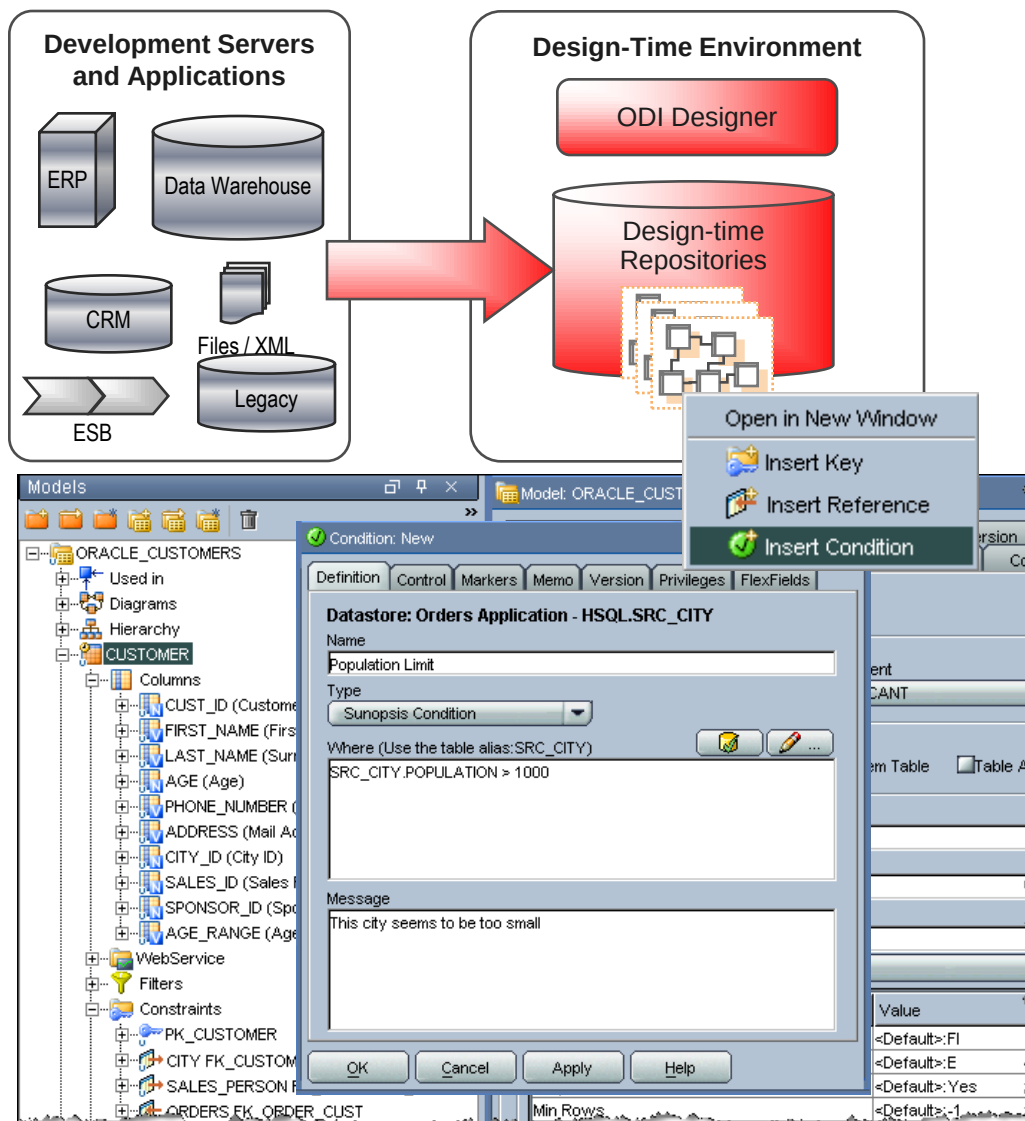
Desarrollo



Producción



Recuperar/enriquecer metadatos



1. Reverse-engineer Metadata
 - Automatic
 - Customizable
 - 40+ technologies supported
2. Enrich Metadata
 - Documentation
 - Declarative rules for Data Integrity
 - Cross-technologies references

1

Define What You Want

3

Automatically Generate Data flows

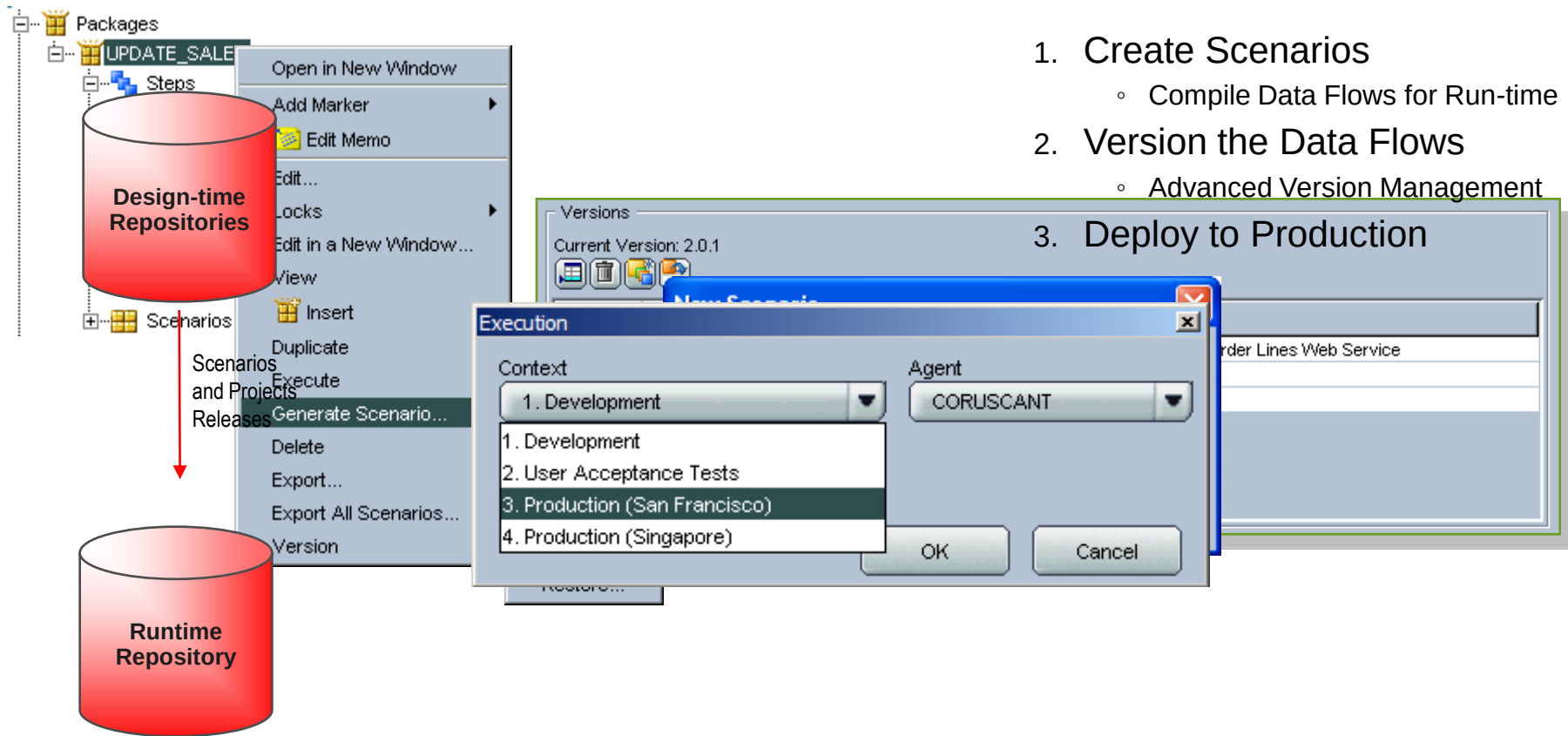
The screenshot shows the Informatica Designer interface. The main window is titled 'Interface: Populate Customer'. It has tabs for Definition, Diagram, Flow, Controls, Execution, Scenarios, Markers, Memo, Version, Privileges, and FlexFields. The 'Definition' tab is active, showing a data flow diagram with sources '1 - CUSTOMER' and '2 - CITY', and a target 'CUSTOMER'. A mapping 'AGE_RANGE' is shown with a business rule: 'when AGE_FILE.AGE_RANGE is null then UPPER(AGE_FILE.AGE_RANGE) else 'Unknown Age Range for: ' || CUSTOMER.AGE end'. The 'Projects' window on the right lists various Knowledge Modules like CKM IBM DB2, CKM MS SQLServer, CKM Oracle, CKM SQL, CKM Teradata, and IKM File to Teradata (MultiLoad).

2

Define How to Do It: Select Template

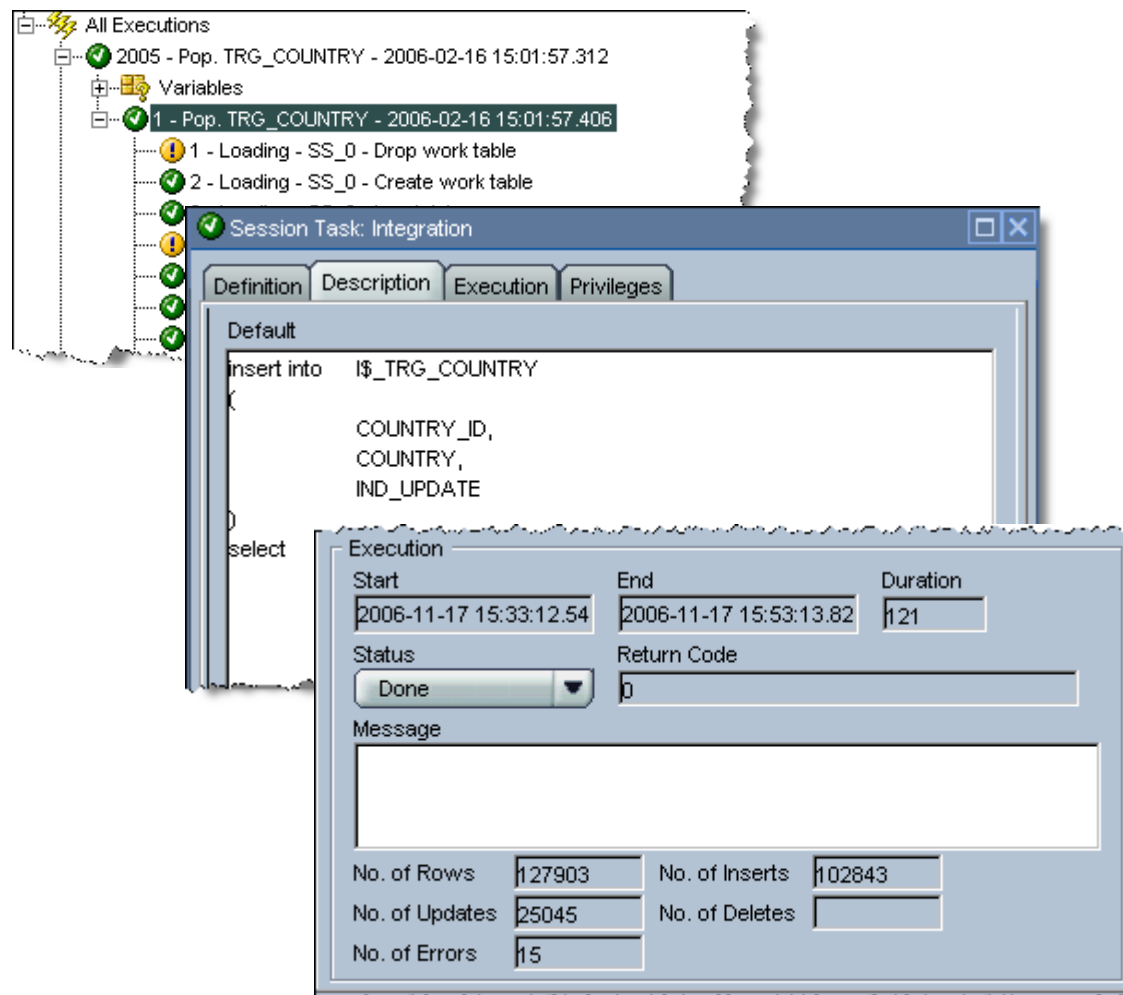
Bulk Load • Changed Data Capture • Incremental Update • Slowly Changing Dimension

Orquestar los *data flows*

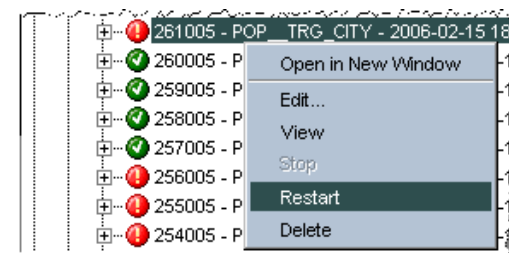


1. Create Scenarios
 - Compile Data Flows for Run-time
2. Version the Data Flows
 - Advanced Version Management
3. Deploy to Production

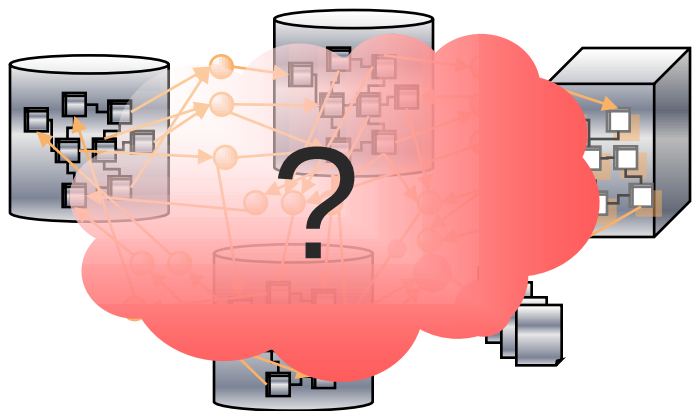
Seguimiento de las ejecuciones



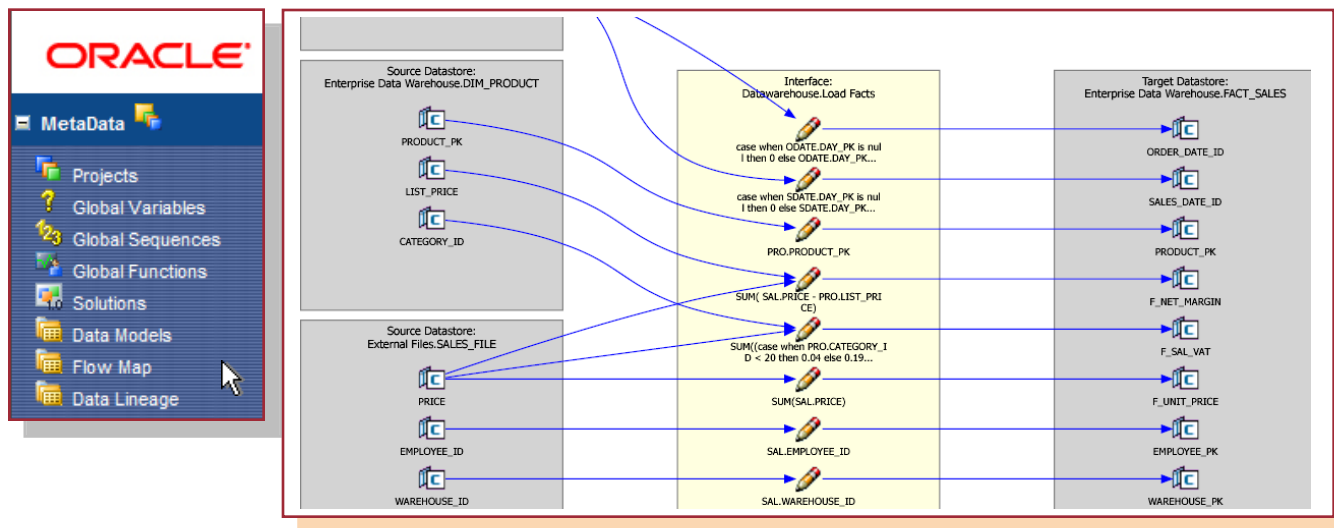
- View sessions running in real-time
- Review generated code
- Detailed run-time statistics
- Restart failed sessions



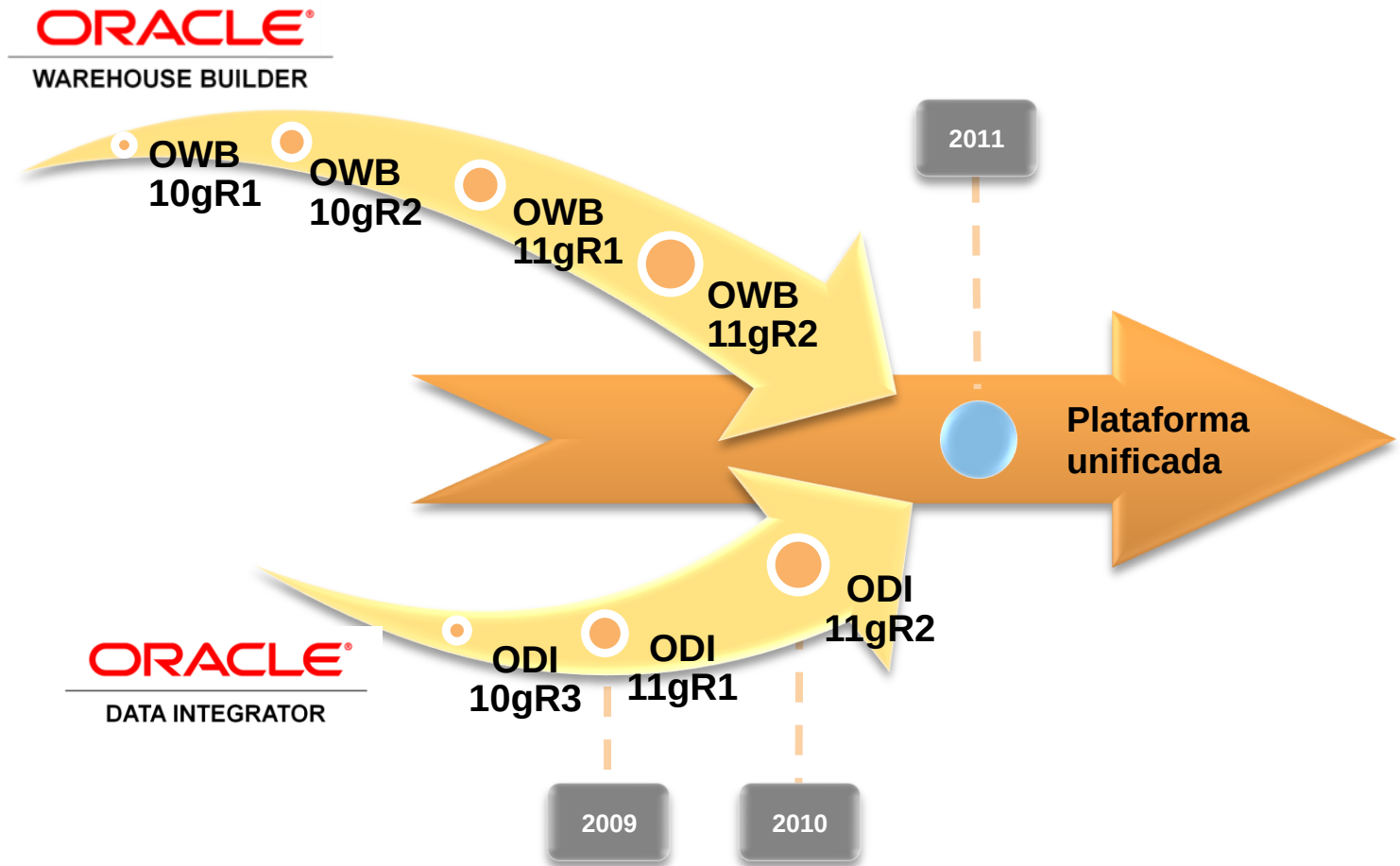
Analizar impacto



- Maintain a large number of data flows in a complex environment
- Web-based end-to-end data lineage
- Understand your data flows
- Follow the path of data
- Drill-down to transformations



Oracle Data Integrator Enterprise Edition Roadmap



Demostración

Oracle Data Integrator

Demostración

Captura de metadatos desde diferentes tecnologías

The screenshot displays the Physical Architecture tool interface. On the left, a list of technologies is shown, including Attunity, Axis2, BTrieve, DBase, Derby, File, Hyperion Essbase, Hyperion Financial Management, Hyperion Planning, Hypersonic SQL, IBM DB2 UDB, IBM DB2/400, Informix, Ingres, Interbase, JMS Queue, JMS Queue XML, JMS Topic, JMS Topic XML, Java BeanShell, JavaScript, Jython, LDAP, Microsoft Access, Microsoft Excel, Microsoft SQL Server, MySQL, NetRexx, Netezza, Operating System, Oracle, Oracle BAM, Paradox, and PostgreSQL.

The central pane shows the 'Designer [WORKREP]' window with a model tree. The tree structure includes 'ArchivosPlanos' (containing 'Used in', 'Diagrams', 'Hierarchy', and 'Vendedores (SRC_SALES_PERSON.txt)' which has sub-items like 'Columns', 'Filters', 'Constraints', 'Used to Populate', 'Populated By', and 'Used in'), 'Hidden Datastores', 'TABLAORACLE' (containing 'Used in', 'Diagrams', 'Hierarchy', and 'TRG_SALES_PERSON' which has sub-items like 'Columns', 'Filters', 'Constraints', 'Used to Populate', 'Populated By', and 'Used in'), and 'Hidden Datastores'.

The right pane shows the 'DataStore: TRG_SALES_PERSON' window. It displays a table with columns: Order, Name, Type, Logical length, Scale, and Not Null. The table contains the following data:

Order	Name	Type	Logical length	Scale	Not Null
1	SALES_PERSON_ID	NUMBER	6	0	☒
2	FIRST_NAME	VARCHAR2	80	0	☐
3	LAST_NAME	VARCHAR2	80	0	☐
4	DATE_HIRED	VARCHAR2	80	0	☐
5	DATE_UPDATED	DATE	7	0	☒

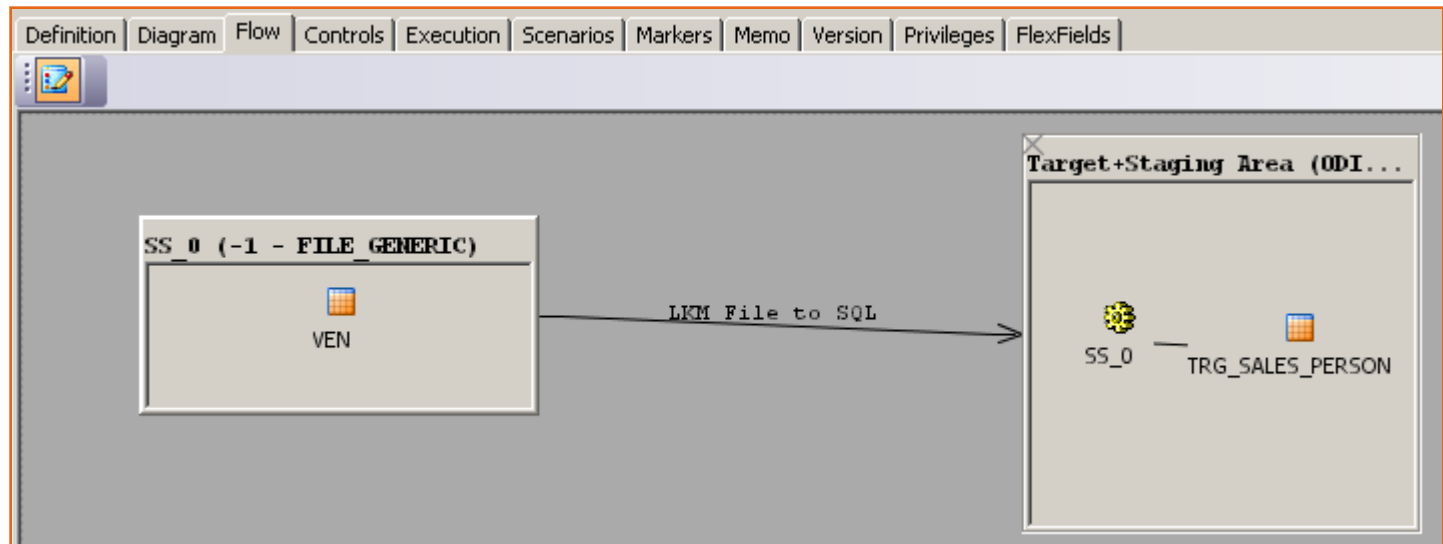
The window also includes tabs for Definition, Columns, Control, Journalizing, Markers, Services, Memo, Version, Privileges, and FlexFields. At the bottom, there are buttons for OK, Cancel, Apply, and Help.

Demostración

Definir los flujos de datos en entorno visual

The screenshot shows the Oracle Data Integrator (ODI) interface with the 'Interface: DEMOFILEORACLE' window. The 'Definition' tab is active, and the 'Columns' checkbox is checked. The 'Sources' pane on the left shows a source named '1 - VEN (Ven...' with columns: ID (null), FIRST NAME (n), LAST NAME (nu), and DATE HIRED (n). The 'Target Datastore' pane on the right shows a target named 'TRG SALES PERSON' with columns: *SALES PER..., FIRST NAME, LAST NAME, DATE HIRED, and *DATE UPDATED. The mapping table is as follows:

Ind	Name	Mapping
v	*SALES PER...	VEN.ID
v	FIRST NAME	VEN.FIRST NAME
v	LAST NAME	VEN.LAST NAME
v	DATE HIRED	VEN.DATE HIRED
d	*DATE UPDATED	SYSDATE



Demostración

Elegir el Knowledge Module

ODI genera automáticamente los flujos de datos

SS_0 (-1 - FILE_GENERIC)

Name

LKM Selection

LKM

Option	Value
DELETE_TEMPORARY_OBJECTS	<Default>:Yes

LKM Description

- Loads data from an ASCII or EBCDIC File to any ISO-92 compliant database.
- This module uses Sunopsis Agent to read selected data from the source file and write the result in the target temporary table created dynamically.

Restrictions:

- Source file must be physically accessible by Sunopsis Agent.
- This Knowledge Module is NOT RECOMMENDED when using LARGE VOLUMES. Other specific modules using Bulk utilities (SQL*LOADER, BULK INSERT etc) are usually more efficient.

Target+Staging Area (ODI_STAGE2)

☐ Distinct Rows

IKM Selection

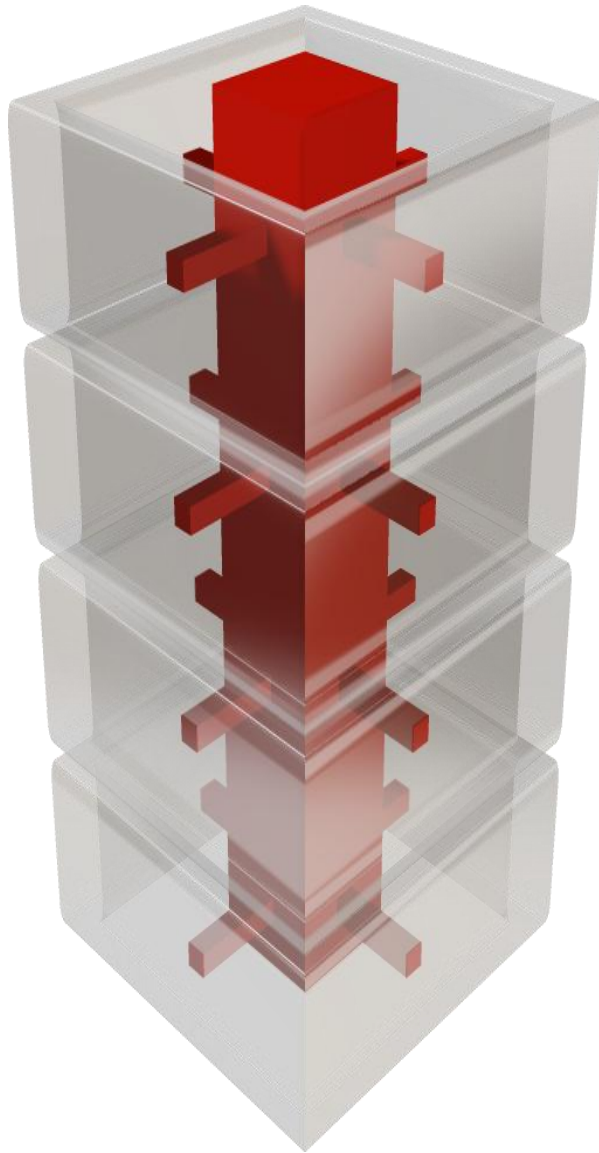
IKM

Option	Value
INSERT	<Default>:Yes
UPDATE	<Default>:Yes
COMMIT	<Default>:Yes
SYNC_JRN_DELETE	<Default>:Yes
FLOW_CONTROL	No
RECYCLE_ERRORS	<Default>:No
STATIC_CONTROL	<Default>:No
TRUNCATE	<Default>:No

IKM Description

regardless of the COMMIT option

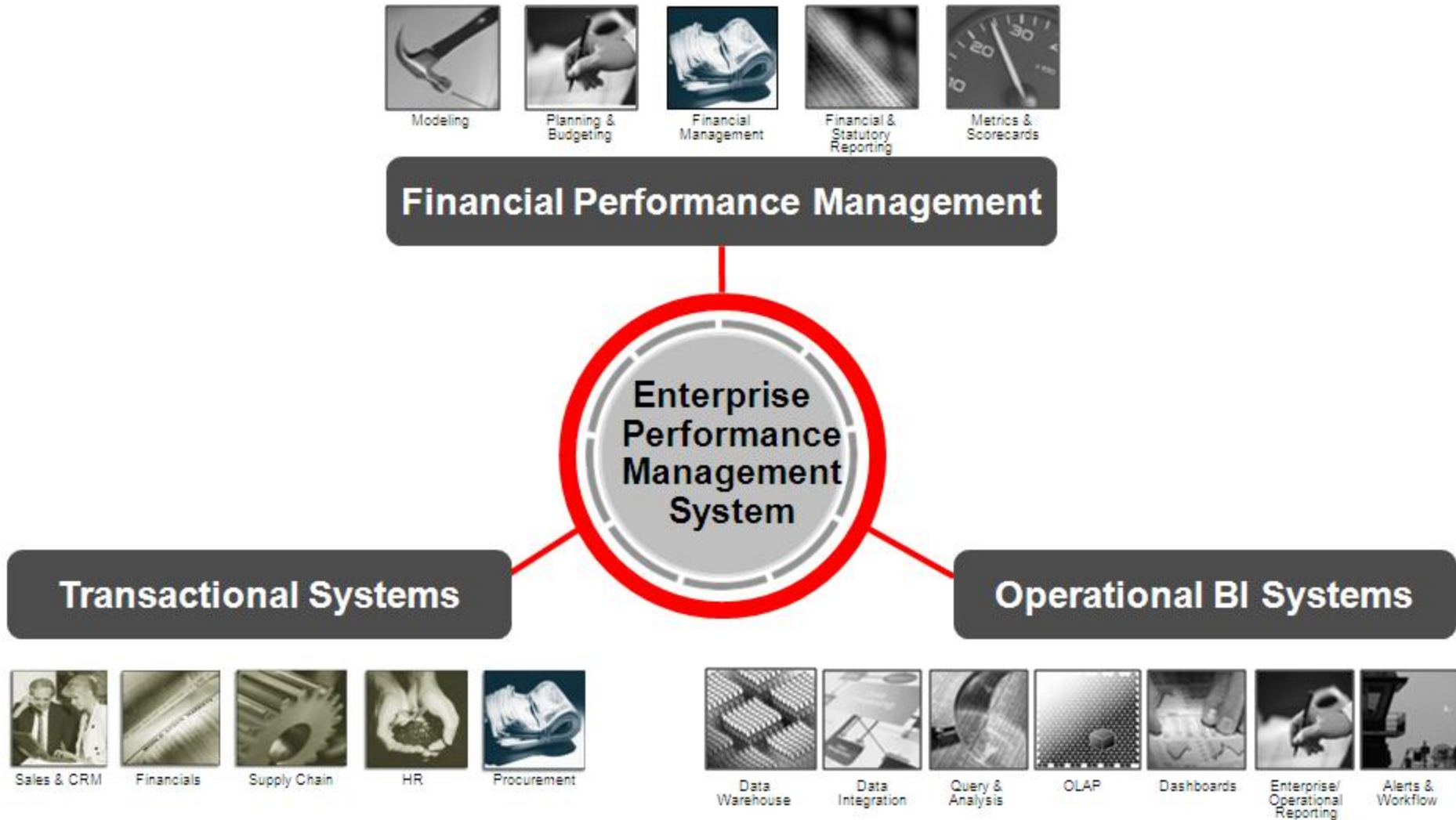
- Comparison of data is made using the Update Key defined in the interface. It has to be set.
- The TRUNCATE option cannot work if the target table is referenced by another table (foreign key)
- The FLOW_CONTROL and STATIC_CONTROL options call the Check Knowledge Module to isolate invalid data (if no CKM is set, an error occurs). Both options must be set to NO in the case when an Integration Interface populates a TEMPORARY target datastore.



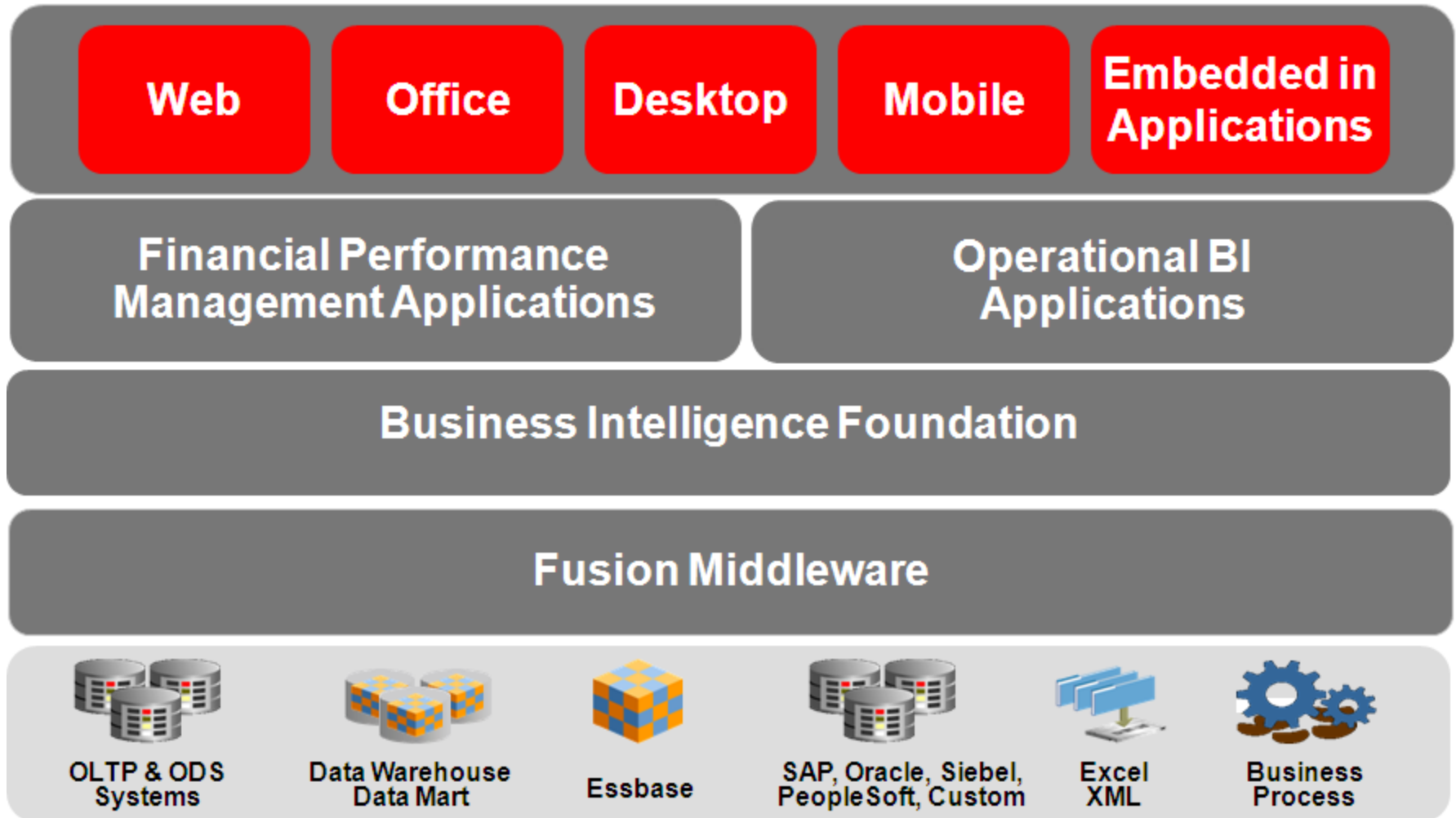
Oracle Business Intelligence

Enterprise Performance Management System

Integra OLTPs, aplicaciones financieras y aplicaciones BI



Oracle Enterprise Management System



Infraestructura tecnológica

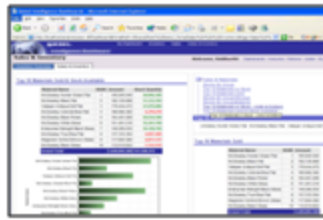
Integración completa con tecnologías existentes

Portals



Any JSR 168 Portal

Data Mining



Oracle Data Mining,
SPSS, SAS

Applications



Oracle EBS, Siebel, SAP,
PeopleSoft, JD Edwards ..

Desktop Tools



Excel, Outlook,
Lotus Notes ..

Oracle Enterprise Performance Management System Oracle Business Intelligence Foundation

Security



Oracle
Kerberos
iPlanet
MSFT AD
Novell
Custom
Others ..

Data Access



Oracle RDBMS
Oracle OLAP Option
Microsoft SQL Server &
Analysis Services
IBM DB2
Teradata
Essbase
SAP BW
XML, Excel, Text
Others ..

Data Integration



Oracle Data Integrator
(Sunopsis)
Oracle Warehouse Builder
Informatica
Ascential
Others ..

Oracle BI Foundation

Acceso generalizado a la información

Desktop
Gadgets



Ad-hoc
Analysis



Interactive
Dashboards



Search



Reporting &
Publishing



Proactive
Detection and
Alerts



Disconnected
& Mobile
Analytics



MS Office
& Outlook
Integration



Common Enterprise Information Model

Integrated Security, User Management, Personalization

Multidimensional Calculation and Integration Engine

Intelligent Request Generation and Optimized Data Access Services



OLTP & ODS
Systems



Data Warehouse
Data Mart



Essbase



SAP, Oracle
PeopleSoft, Siebel,
Custom Apps



Files
Excel
XML



Business
Process

Oracle BI Suite Enterprise Edition Plus

Acceso y distribución consistente de la información

Interactive Dashboards



Ad hoc Analysis



Proactive Detection and Alerts



Microsoft Office



Reporting & Publishing



BI Publisher

Financial Reporting

Interactive Reporting

SQR Production Reporting

Web Analysis

Common Enterprise Information Model

Oracle BI Server



OLTP & ODS Systems



Data Warehouse Data Mart



SAP, Oracle PeopleSoft, Siebel, Custom Apps



Files Excel XML



Business Process



Financial Performance Management Applications



Hyperion Essbase

Common Enterprise Information Model

Consistencia, Seguridad, Reusabilidad, Flexibilidad

Presentation Layer

- 
- User roles, preferences
 - Simplified view
 - Logical SQL interface

Role-based views of the information

Semantic Object Layer

- 
- Dimensions
 - Hierarchies
 - Measures
 - Calculations
 - Aggregation Rules
 - Time Series

Consistent definition of business measures, metrics, calculations

Physical Layer

- 
- Map Physical Data
 - Connections
 - Schema

Model once, deploy anywhere

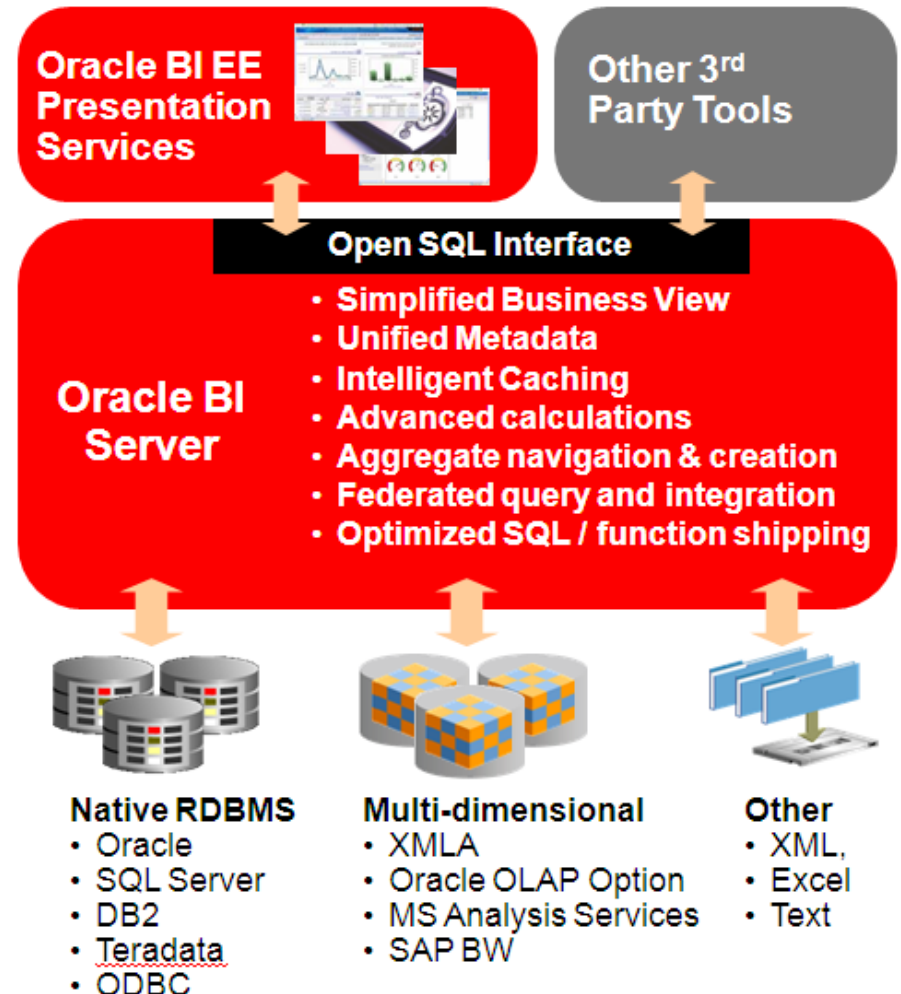


Across any data sources

Oracle BI Server

Acceso simple e inteligente a diversas fuentes de datos

- Simplified business model view
- Advanced calculation & integration engine
- Intelligent request generation and optimized, distributed data access
- Mission critical scalability and performance
- Foundation for all OBIEE presentation services



Abierto en entornos heterogéneos

Completo, abierto e integrado

- Open to Data from Multiple Sources
- Open to Business Applications
- Open to Access from Familiar Clients
- Open to Technology Infrastructure
- Open to different Styles of Analysis
- Yet Integrated across Entire System



**Oracle & Non-Oracle DBMS,
Relational & Multi-Dimensional**



**E-Business Suite, Peoplesoft,
Siebel, JD-Edwards, SAP, Others**



**Web, MSFT Excel, MSFT Office,
Desktop Gadgets, Outlook, Mobile**



**App Server, Single Sign-On,
Directory Servers, Schedulers, ...**



Relational, R-OLAP, M-OLAP



**Common Metadata, Measures,
Dimensions, Calculations**

Capacidades avanzadas de distribución

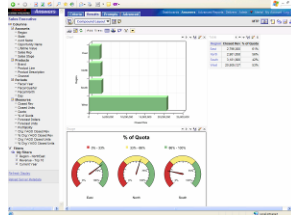
Inteligencia de negocio masiva

Oracle Interactive Dashboards



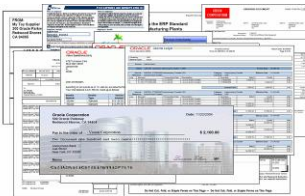
Fácil de usar, intuitivo, dashboards personalizados
Análisis guiados que representan los procesos decisorios
y conducido por eventos
100% Web HTML

Oracle Answers



Análisis ad-hoc a través de 100% Web UI
Crear y modificar reportes en distintas presentaciones:
tabulares, tablas dinámicas, gráficos.
Autosuficiencia del usuario

Oracle BI Publisher



Reporting “pixel-perfect”
Diseño mediante herramientas Word o Adobe
Soporte a todo tipo de documento: pedidos, formularios,
cheques, memorias, balances, estados financieros, etc.

Oracle BI Foundation

La información al servicio del negocio

Desktop
Gadgets



Ad-hoc
Analysis



Interactive
Dashboards



Search



Reporting &
Publishing



Proactive
Detection and
Alerts



Disconnected
& Mobile
Analytics



MS Office
& Outlook
Integration



Common Enterprise Information Model

Integrated Security, User Management, Personalization

Multidimensional Calculation and Integration Engine

Intelligent Request Generation and Optimized Data Access Services



OLTP & ODS
Systems



Data Warehouse
Data Mart



Essbase



SAP, Oracle
PeopleSoft, Siebel,
Custom Apps



Files
Excel
XML



Business
Process

Demostración

Oracle BI Foundation

Common Enterprise Information Model

Smart View

Demostración

Representación de tres fuentes de datos: Essbase, Oracle y Excel

The screenshot displays the Oracle BI Administration Tool interface with three panels: Presentation, Business Model and Mapping, and Physical. The Physical panel shows a tree structure of data sources. Three yellow arrows point from the Physical panel to three separate 'Connection Pool - Connection Pool' dialog boxes, each representing a different data source.

Base de datos multidimensional Essbase

Base de datos relacional Oracle

Hoja de cálculo MS Excel

Connection Pool - Connection Pool (Essbase)

- General tab
- Name: Connection Pool
- Call interface: Essbase
- Maximum connections: 10
- Essbase Server: localhost
- Connection properties:
 - ☒ Shared logon
 - User name: admin
 - Password: [masked]
 - ☒ Use session
 - ☒ Use multithreaded connections

Connection Pool - Connection Pool (Oracle)

- General tab
- Name: Connection Pool
- Call interface: OCI 10g/11g
- Maximum connections: 10
- ☐ Require fully qualified table names
- Data source name: orcl
- ☒ Shared logon
- User name: hr
- Password: [masked]
- ☒ Enable connection pooling
- Timeout: 5 (minutes)
- ☒ Use multithreaded connections

Connection Pool - Connection Pool (Excel)

- General tab
- Name: Connection Pool
- Call interface: ODBC 3.5
- Maximum connections: 10
- ☐ Require fully qualified table names
- Data source name: VentasCorporacion

Demostración

Federación Horizontal

Tabla			
Region	State	Sales	SalesCorp
Central	Colorado	23,459	33,559
	Illinois	34,118	54,218
	Iowa	28,098	28,798
	Missouri	12,002	32,052
	Ohio	16,000	19,875
	Wisconsin	16,100	16,578
East	Connecticut	12,411	15,411
	Florida	18,341	20,341
	Massachusetts	14,857	17,857
	New Hampshire	7,291	7,291
	New York	34,698	134,698
South	Louisiana	11,316	12,316
	New Mexico	7,786	17,786
	Oklahoma	13,441	23,441
	Texas	18,303	38,303
West	California	47,442	47,442
	Nevada	29,156	29,156
	Oregon	19,992	19,992
	Utah	17,305	17,305
	Washington	19,036	19,036

Los resultados del reporte provienen de dos fuentes distintas:

- **Sales** proviene de Essbase (usa MDX)
- **SalesCorp** se extrae de la hoja de cálculo

```
SET VARIABLE QUERY_SRC_CD='Report';SELECT Market.Region saw_0, Basic.Sales saw_1, Basic.Sal

+++Administrator:450000:450005:----2009/12/02 00:57:42

----- General Query Info:
Repository: Star, Subject Area: PEOUG, Presentation: PEOUG

+++Administrator:450000:450005:----2009/12/02 00:57:42

----- Sending query to database named localhost (id: <<55076>>):
With
    set [Market2] as '[Market].Generations(2).members'
select
    { [Measures].[Sales]
    } on columns,
    NON EMPTY {[Market2]} properties ANCESTOR_NAMES, GEN_NUMBER on rows
from [Sample.Basic]

+++Administrator:450000:450005:----2009/12/02 00:57:42

----- Sending query to database named VentasCorporacion (id: <<55108>>):
select sum(T8156."SalesCorp") as c1,
       T8156."Region" as c2
from
    "VentasCorporacion" T8156
group by T8156."Region"
```

Demostración Federación Vertical

Essbase contiene información a nivel State y Oracle representa el OLTP con datos a nivel City

Si se hace "*drill-down*" a nivel City:

- Ahora **Sales** proviene de Oracle (usa SQL)
- **SalesCorp** se sigue consultando desde la hoja de cálculo

Region	State	CITY	Sales	SalesCorp
Central	Colorado	Denver	23,559	33,559
	Illinois	Chicago	54,218	54,218
	Iowa	Des Moines	6,798	28,798
	Missouri	St. Louis	32,052	32,052
	Ohio	Cleveland	19,875	19,875
	Wisconsin	Milwaukee	16,578	16,578
East	Connecticut	Stamford	15,411	15,411
	Florida	Miami	28,341	28,341
	Massachusetts	Boston	24,657	24,657
	New Hampshire	Manchester	7,291	7,291
	New York	Buffalo	8,000	8,000
		New York	26,698	26,698
South	Louisiana	New Orleans	11,316	11,316
	New Mexico	Santa Fe	7,786	7,786
	Oklahoma	Tulsa	13,441	23,441
	Texas	Dallas	18,303	38,303
West	California	Los Angeles	27,442	27,442
		San Francisco	20,000	20,000
	Nevada	Las Vegas	29,156	29,156
	Oregon	Portland	19,992	19,992
	Utah	Salt Lake City	17,305	17,305
	Washington	Seattle	19,036	19,036

```

----- Sending query to database named orcl (id: <<57039>>):

select D1.c2 as c1,
       D1.c3 as c2,
       D1.c4 as c3,
       D1.c1 as c4
from
  (select D1.c1 as c1,
         D1.c2 as c2,
         D1.c3 as c3,
         D1.c4 as c4
   from
     (select sum(T8120.SALES) as c1,
            T8120.REGION as c2,
            T8120.STATE as c3,
            T8120.CITY as c4,
            ROW_NUMBER() OVER (PARTITION BY T8120.CITY ORDER BY T8120.CITY ASC)
      from
        SALES T8120
     group by T8120.CITY, T8120.REGION, T8120.STATE
    ) D1
   where ( D1.c5 = 1 )
  ) D1
order by c3
  
```

+++Administrator:450000:45000b:-----2009/12/02 01:16:18

```

----- Sending query to database named VentasCorporacion (id: <<57163>>):

select sum(T8156."SalesCorp") as c1,
       T8156."Region" as c2,
       T8156."State" as c3,
       T8156."City" as c4
from
  "VentasCorporacion" T8156
group by T8156."Region", T8156."State", T8156."City"
  
```


Demostración

Smart View

The screenshot displays the Microsoft Excel interface with a Smart View data table. The table has columns for various financial metrics and a Smart View Data Source Manager pane on the right.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1			Margin	Total Expenses	Profit	Inventory	Ratios	Measures						
2	100	Qtr1	14378	7330	7048	29448	57.40178857	7048						
3	100	Qtr2	15574	7702	7872	29860	57.28473167	7872						
4	100	Qtr3	16383	7872	8511	36461	57.39559978	8511						
5	100	Oct	4771	2454	2317	35811	57.0489059	2317						
6	100	Nov	4684	2437	2247	36410	56.98296837	2247						
7	100	Dec	4996	2523	2473	37412	56.95394437	2473						
8	100	Qtr4	14451	7414	7037	35811	56.99467561	7037						
9	100	Year	60786	30318	30468	29448	57.27288145	30468						
10	200	Qtr1	14748	8027	6721	33000	55.38738874	6721						
11	200	Qtr2	15207	8177	7030	31361	55.49797453	7030						
12	200	Qtr3	15387	8382	7005	35253	55.06764011	7005						
13	200	Oct	5196	2691	2505	32760	56.52741514	2505						
14	200	Nov	5046	2655	2391	32373	56.43032879	2391						
15	200	Dec	5002	2700	2302	32347	55.68915609	2302						
16	200	Qtr4	15244	8046	7198	32760	56.21773123	7198						
17	200	Year	60586	32632	27954	33000	55.53966595	27954						
18	300	Qtr1	12987	7058	5929	28865	54.11926491	5929						
19	300	Qtr2	14087	7318	6769	30334	54.7365558	6769						
20	300	Qtr3	14297	7599	6698	37331	53.64727955	6698						
21	300	Oct	4456	2415	2041	38142	53.84243596	2041						

The Smart View Data Source Manager pane on the right shows the following structure:

- APS: http://localhost:13080/aps/SmartView
- Oracle BI Server
 - Oracle Essbase
 - w2003gbs.clase.com
 - ASOsamp
 - Demo
 - DMDemo
 - Sampeast
 - Sample
 - Basic - w2003gbs.clase.com_5
 - Internl
 - Xchgrate
 - Sample_U
 - Samppart
- Oracle Hyperion Planning



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