



IBM Software Group

# Software Expo 2005

***EL RETO DE LA INTEGRACION DE  
LA INFORMACION DE FUENTES  
HETEROGENEAS***

***Luis Reina Juliá***



**ON DEMAND BUSINESS™**

Software Expo 2005

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## Agenda

- **Federación de Datos**
  - ▶ ¿Qué es Federar?
  - ▶ ¿Qué fuentes de Datos se pueden federar?
- **Demo de Federación**
- **Replicación de Datos**



## ¿Qué es Websphere Information Integrator?

Soluciones para:

- Federación
- Replicación
- Búsquedas Globales (“Enterprise Search”)
- Publicación de Eventos (“Event Publishing”)



# Federación de Datos

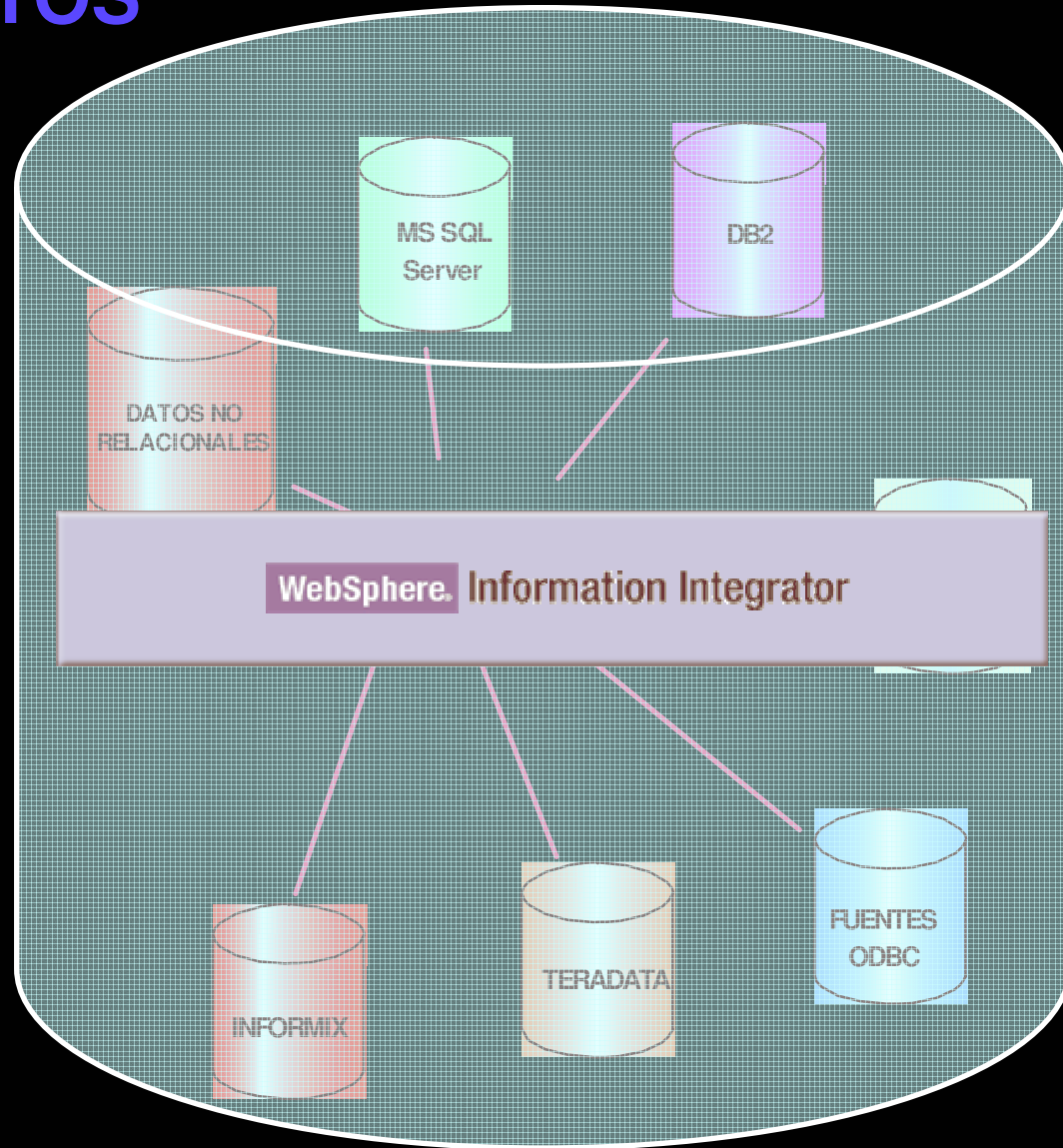


## ¿QUE ES FEDERAR?

“Ver Bases de Datos Heterogéneas (DB2, Informix, oracle, sql server, etc), que se encuentran en distintas máquinas, como si fuesen una única base de datos”



# MULTI BASE DE DATOS



## EJEMPLOS

- SENTENCIAS SQL QUE TOCAN MAS DE UNA BASE DE DATOS
  1. JOIN HETEROGENEO DE VARIAS TABLAS
  2. SELECT/INSERT
- CARGA DE DATOS DESDE OTRA BD REMOTA
  3. LOAD FROM CURSOR...



# JOIN HETEROGENEO

```
CREATE NICKNAME O_EMP FOR
ORACLE.ORAUSER3.EMP

CREATE NICKNAME S_OFFICE FOR
SYBASE.SYBUSER1.OFFICE
```

**TABLA ORACLE: EMP**

EMPNO	EMPNAME
100	Smith
200	Jones
300	Adams
400	Miller
500	Bennett

```
SELECT EMPNAME, OFFICENO
FROM O_EMP, S_OFFICE
WHERE O_EMP.EMPNO= S_OFFICE.EMPNO
```

EMPNAME	OFFICENO
Smith	C200
Jones	C202
Adams	C204
Miller	C206
Bennett	C208

**TABLA SYBASE: OFFICE**

EMPNO	OFFICENO
100	C200
200	C202
300	C204
400	C206
500	C208



# MOVIMIENTO DE DATOS

- Mediante SELECT/INSERT:

“INSERT INTO TABLA\_DB2 SELECT \* FROM TABLA\_SQLServer”



## MOVIMIENTO DE DATOS

- Mediante Load from Cursor:

```
DECLARE C1 CURSOR SELECT * FROM TABLA_SQLServer;  
LOAD FROM C1 INSERT INTO TABLA_DB2;
```



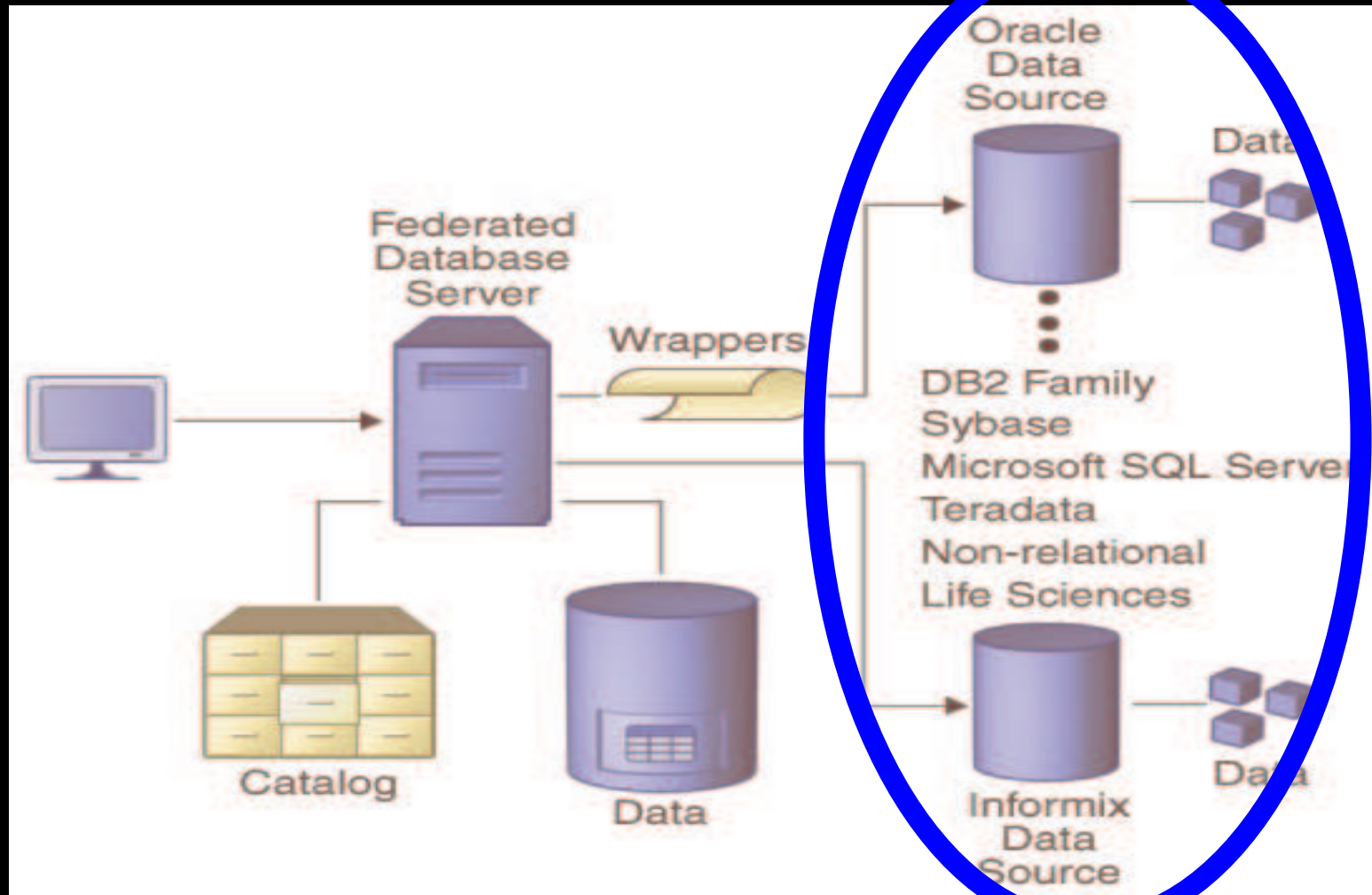
**“Carga Sin Fichero Intermedio”**

## CARACTERISTICAS

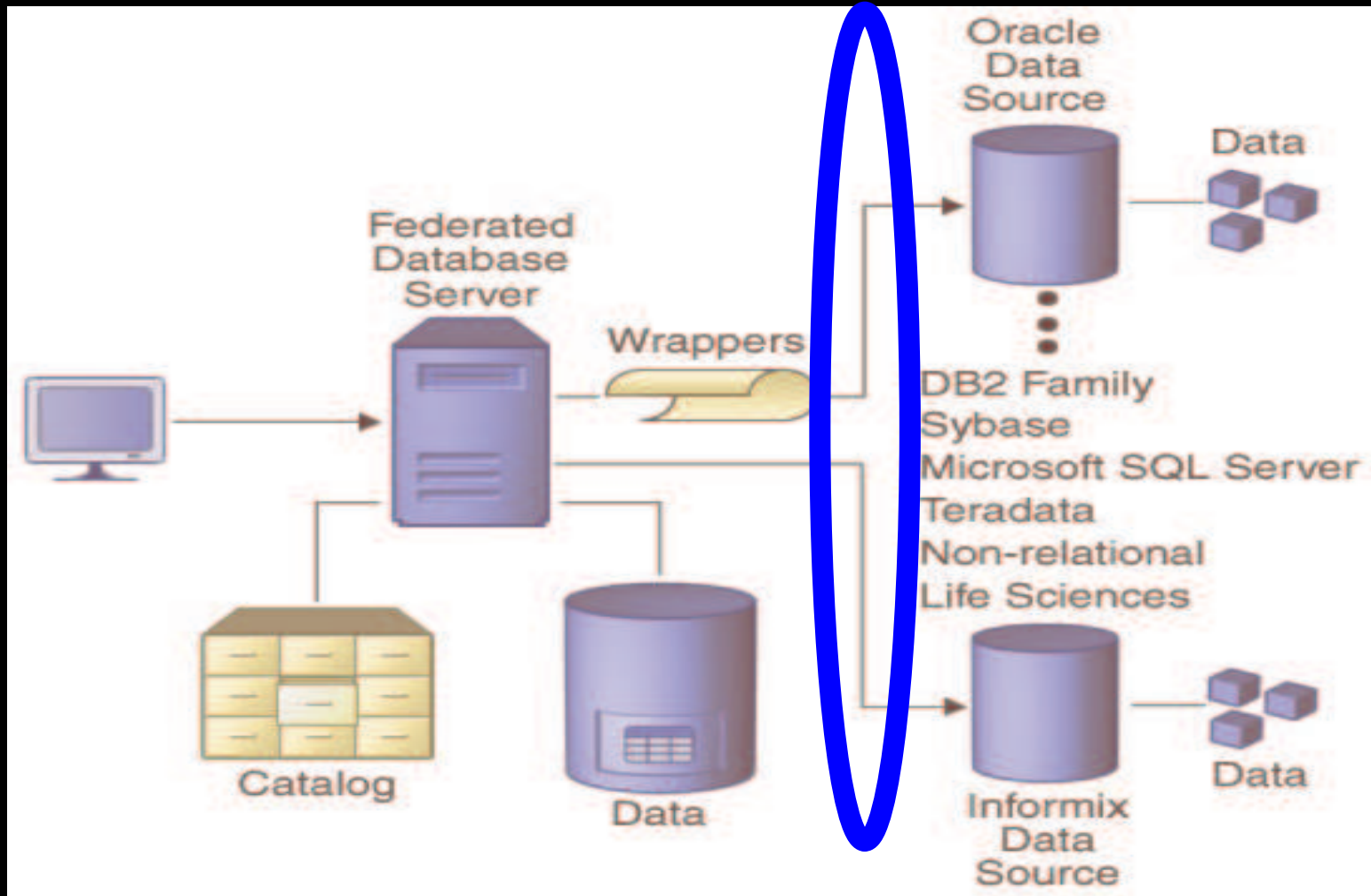
- FUENTES DE DATOS SITUADAS EN MAQUINAS REMOTAS
- ACCESO NATIVO A LAS BASES DE DATOS
- ACCESO DE FORMA EFICIENTE
- MANTENER DATOS LOCALES
- TRANSPARENTE AL USUARIO
- FACIL DE CONFIGURAR



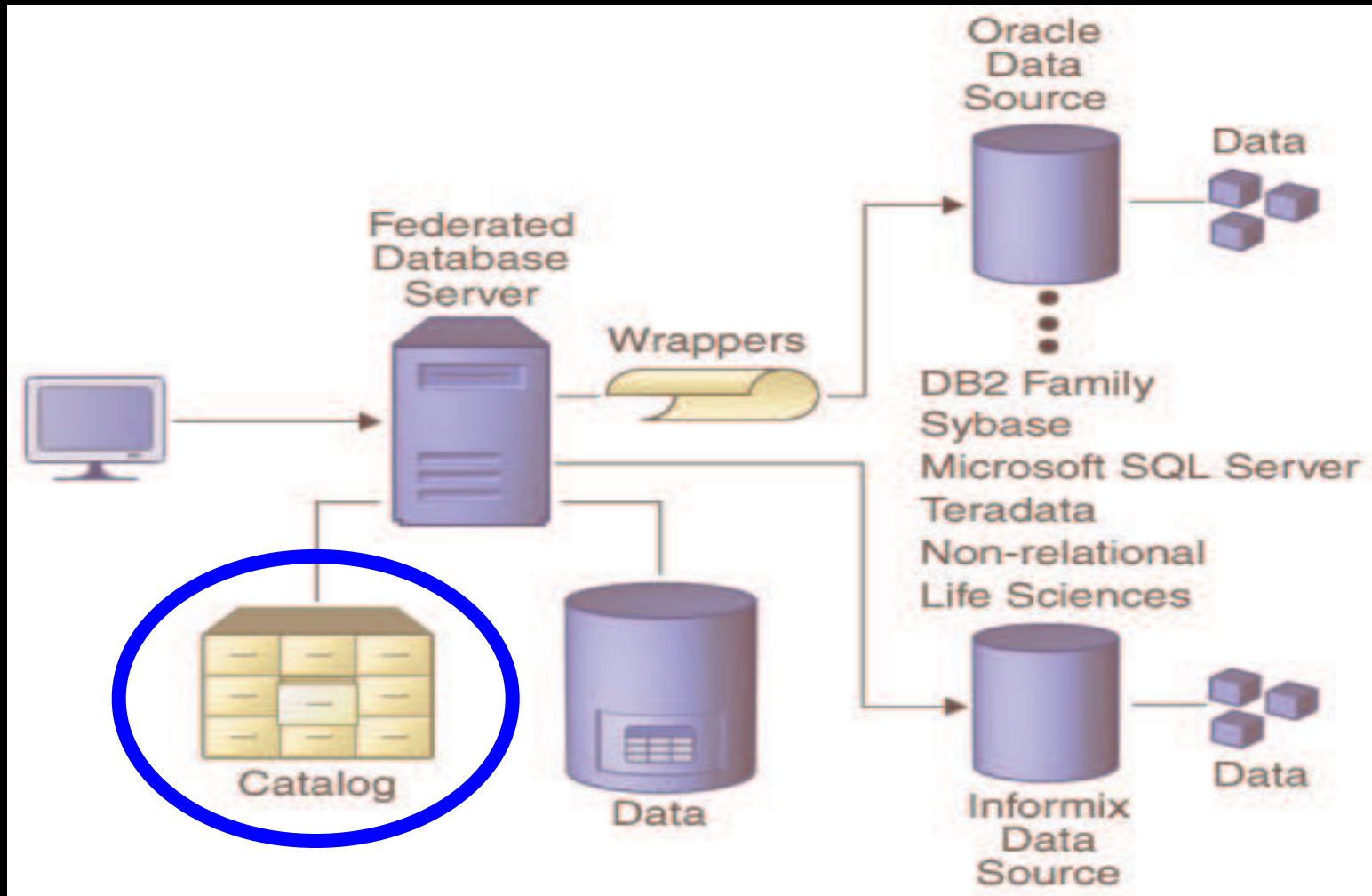
# FUENTES DE DATOS EN MAQ. REMOTAS



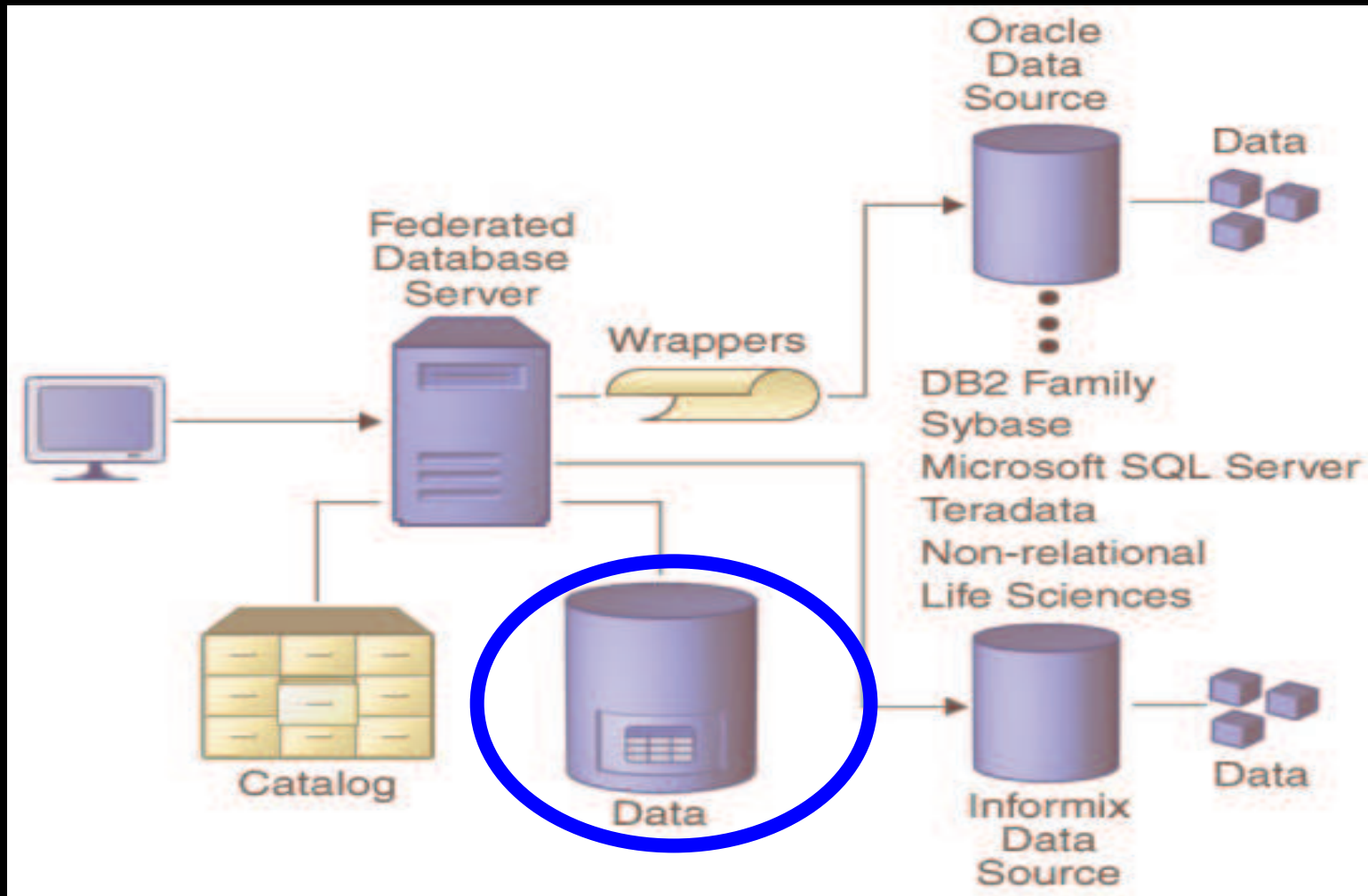
# ACCESO NATIVO A LAS FUENTES DE DATOS



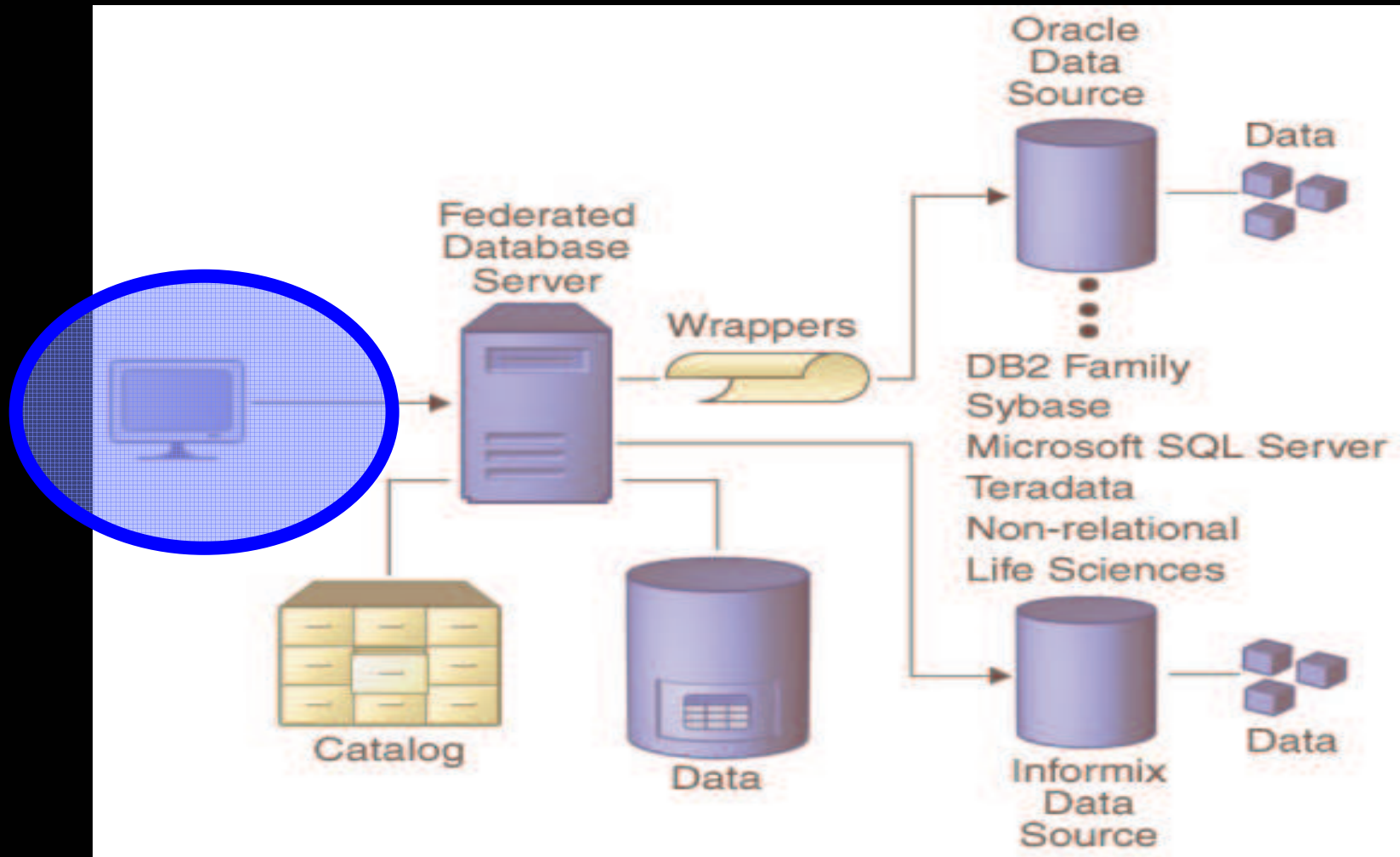
# EFICIENTE: OPTIMIZADOR GLOBAL



# TAMBIEN DATOS LOCALES

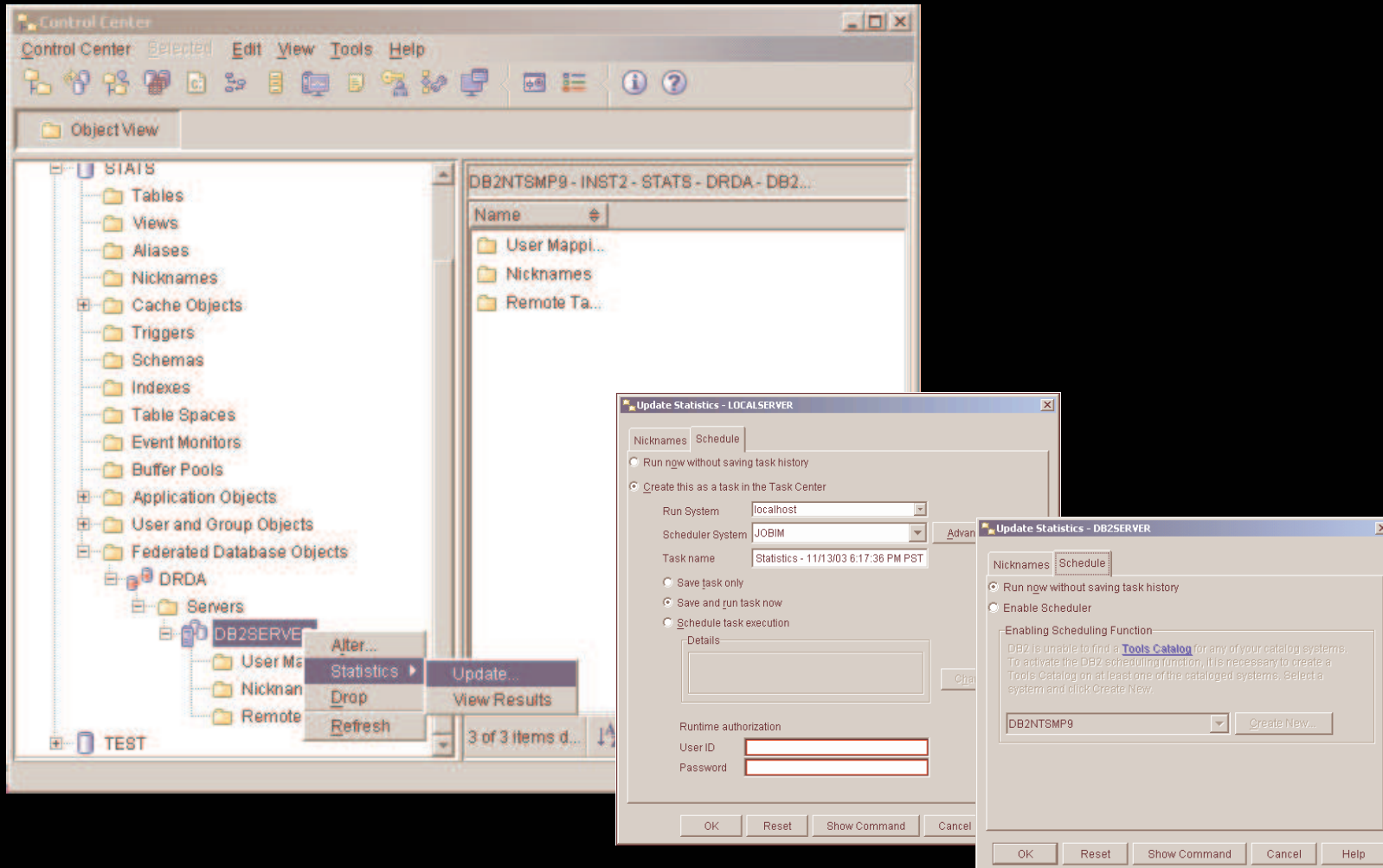


# TRANSPARENTE AL USUARIO





# FACIL DE CONFIGURAR



## BASE DE DATOS QUE SE PUEDEN FEDERAR

- DB2 UDB
- Informix
- Oracle
- Sybase
- Teradata
- Microsoft SQL Server
- ODBC



## EJEMPLOS DE FUENTES ODBC

- Red Brick Warehouse
- Ingres
- Lotus Notes
- Microsoft Access
- Microsoft Excel
- MySQL
- PostgreSQL
- Progress
- SAS
- Sybase SQL Anywhere
- U2 (UniData/UniVerse)
- Y más...

La mayoría de los datos ODBC Nivel 3.x pueden ser accedidos con WII



# FUENTES NO RELACIONALES

- **Web Services Wrapper**
- **WebSphere Business Integrator (WBI) Wrappers**
  - ▶ SAP
  - ▶ SIEBEL
  - ▶ PeopleSoft
- **Wrappers for Integrating Content Data**
  - ▶ VeniceBridge (IBM BP Solution)
  - ▶ Documentum
  - ▶ Net Search Extender
  - ▶ IBM Lotus Extended Search
- **Additional Non-Relational Wrappers**
  - ▶ Table Structured Flat File Wrapper
  - ▶ Excel Wrapper
  - ▶ XML Wrapper
  - ▶ MQ UDF
- **Life Sciences Wrappers**
  - ▶ BLAST
  - ▶ HMMER
  - ▶ BioRS
  - ▶ Entrez
  - ▶ KEGG UDF
  - ▶ Life Sciences UDF
- **Legacy Data Access via WS II Classic Federation for z/OS**
  - ▶ DB2 UDB
  - ▶ IMS
  - ▶ VSAM
  - ▶ Software AG - Adabas
  - ▶ CA - Datacom
  - ▶ CA – IDMS
- **Custom Wrappers**
  - ▶ C++ SDK
  - ▶ Java SDK

**Non-Relational Wrappers Support Read (Query) Only Operations**



## WS II CLASSIC FEDERATION

- DB2 UDB z/OS
- IMS
- VSAM
- CA-IDMS
- CA-Datacom
- Software AG Adabas



## Fuentes no Relacionales

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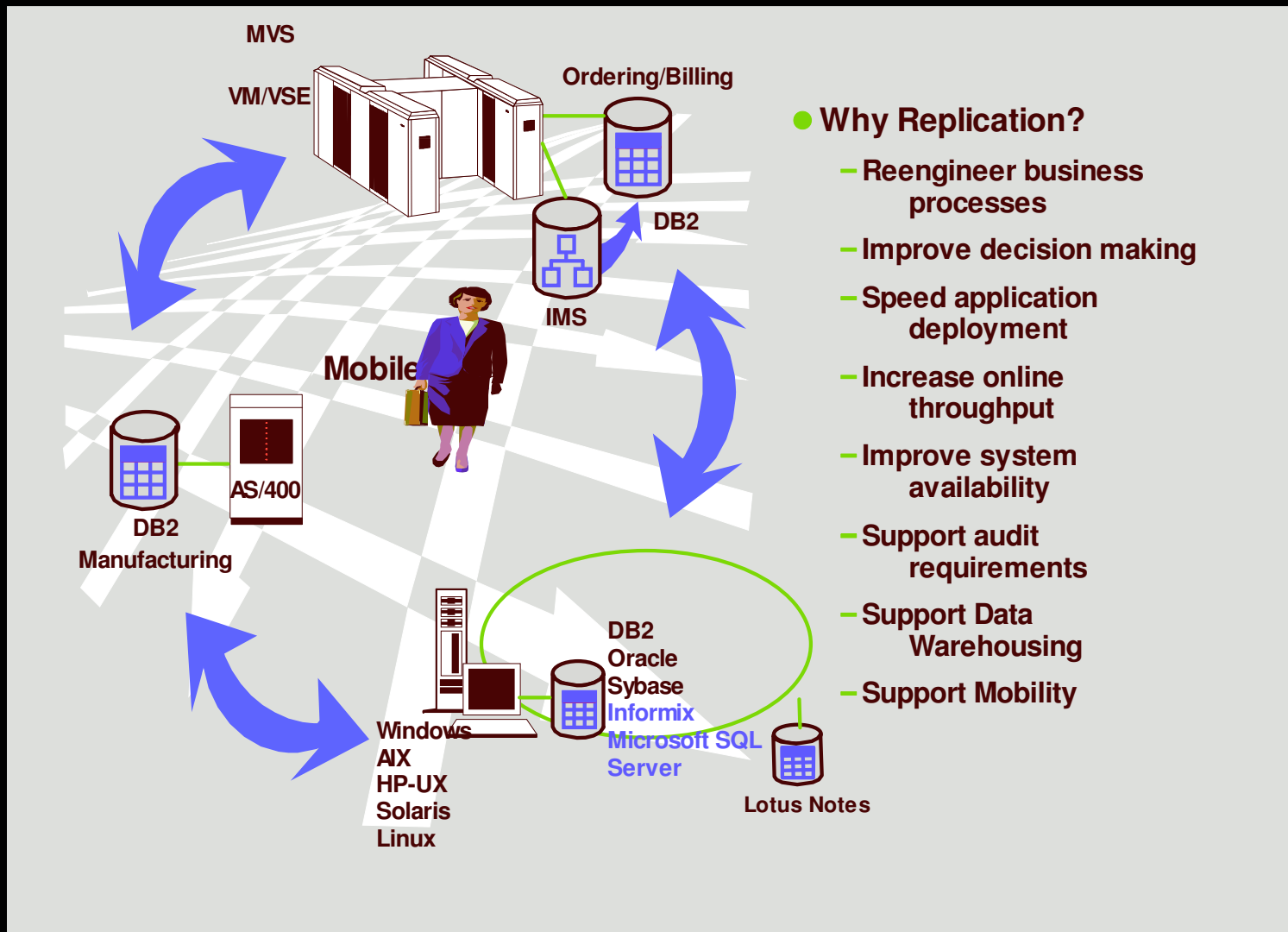
# DEMO



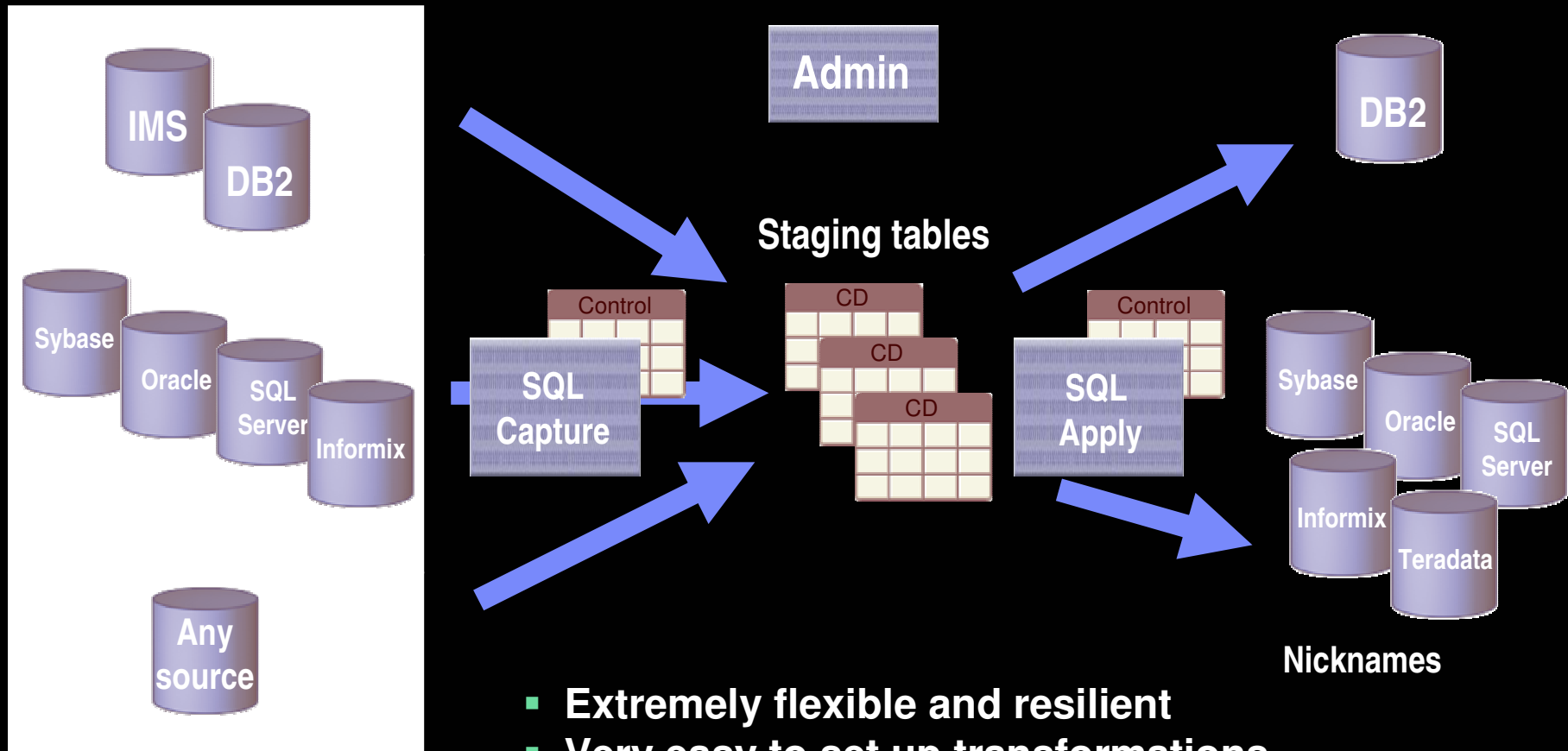
# Replicación de Datos







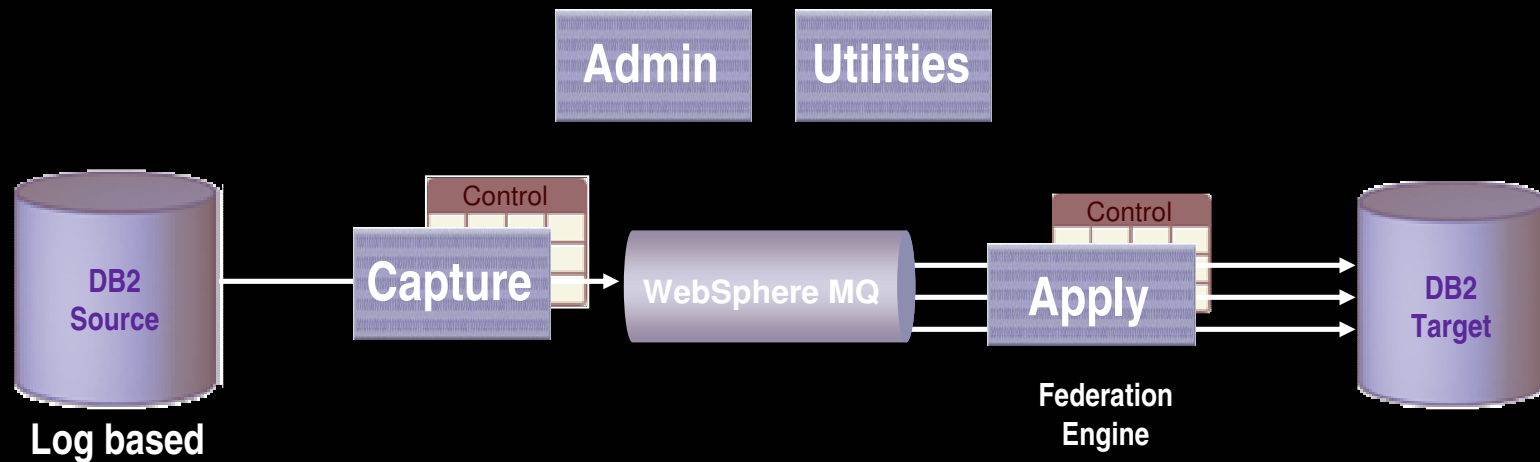
# SQL Replication Architecture



- **Extremely flexible and resilient**
- **Very easy to set up transformations**
- **Scales well to reach multiple targets**
- **Homogeneous & Heterogeneous Sources**



# Q-Replication Architecture



- Each message represents a transaction
- Highly parallel apply process
- Differentiated conflict detection and resolution
- DB2 – DB2 (homogeneous) replication only in V8.2

# GUI GRAFICO FACIL

**Replication Center Launchpad**

Welcome

1. Create the Capture Control Tables
2. Register a Source Table
3. Create the Apply Control Tables
4. Create a Subscription Set
5. Start the Capture Program
6. Start the Apply Program

This launchpad guides you through the required tasks to create and operate a basic [DB2 replication environment](#). Move your mouse over a task on the left to see task information. Click a task to open a task window.

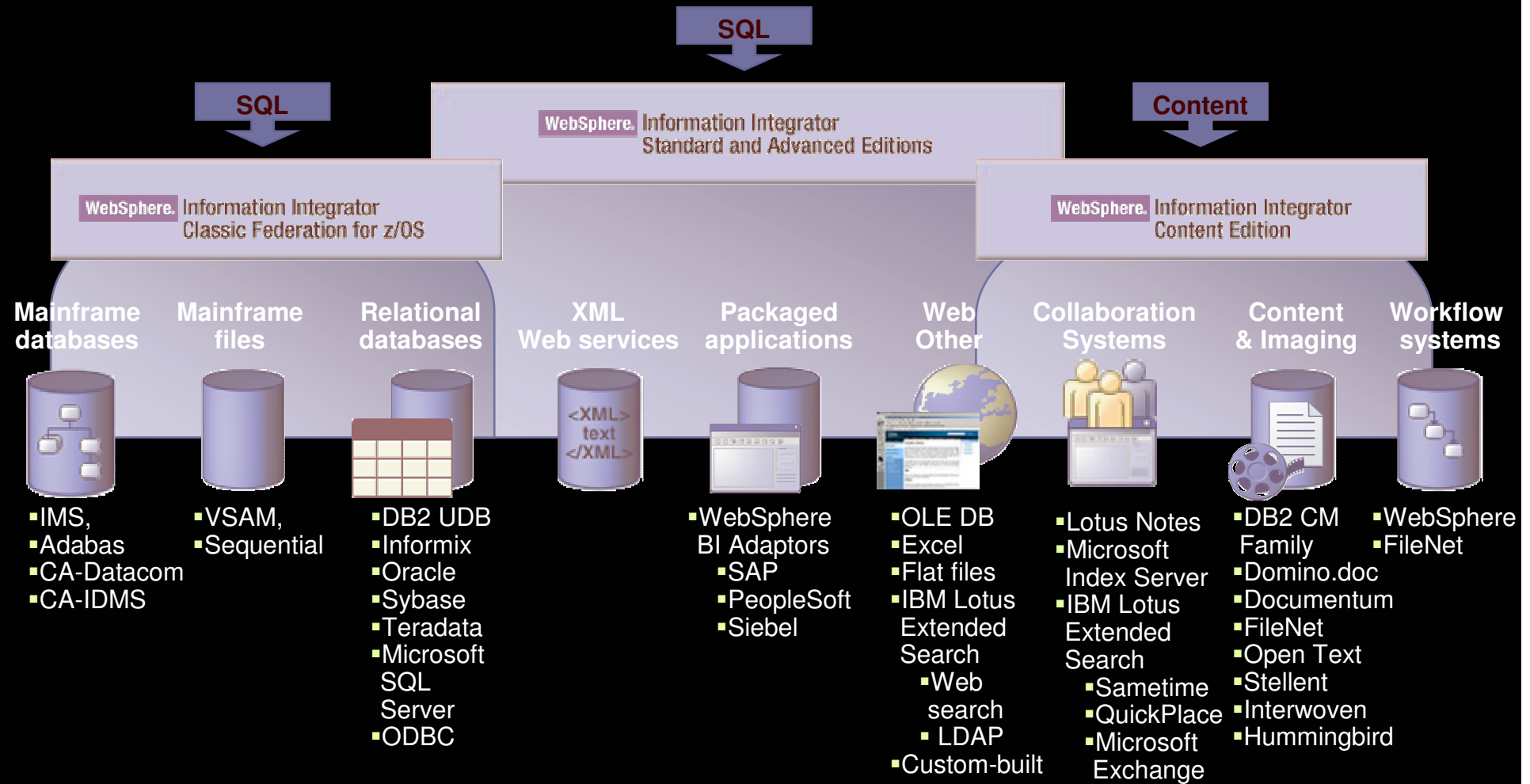
The graphics that you see on this launchpad emphasize some of the steps that you can follow to begin replicating data from one table to another table. As you move your mouse over a different task on the left, you see different phases of the replication process highlighted in the bottom of your screen. There is also related text for each task. If you need additional explanations, click on the hypertext links available throughout the text.

The diagram illustrates the replication process flow across four servers:

- Source server:** Contains a **Source table**.
- Capture control server:** Contains **Control tables** and **CD tables**. A **Log** is generated from the source table, which is processed by a **Capture program** to create the **Log**.
- Apply control server:** Contains **Control tables** and a **Subscription set**. The **Log** is processed by an **SQL** engine and an **Apply program** to replicate data to the target server.
- Target server:** Contains a **Target table**.

Do not show the launchpad again when the Replication Center opens

# WebSphere II Federation Portfolio



Plus partner tools and custom-built connectors extend access to more sources

**THANK YOU**

