

# JDBC Adapters

# Objectives

After completing this lesson, you should be able to:

- Discuss the adapter architecture
- Identify the types of technology adapters
- Configure and use a Database adapter
- Describe the configuration of runtime connections for adapters



# Agenda

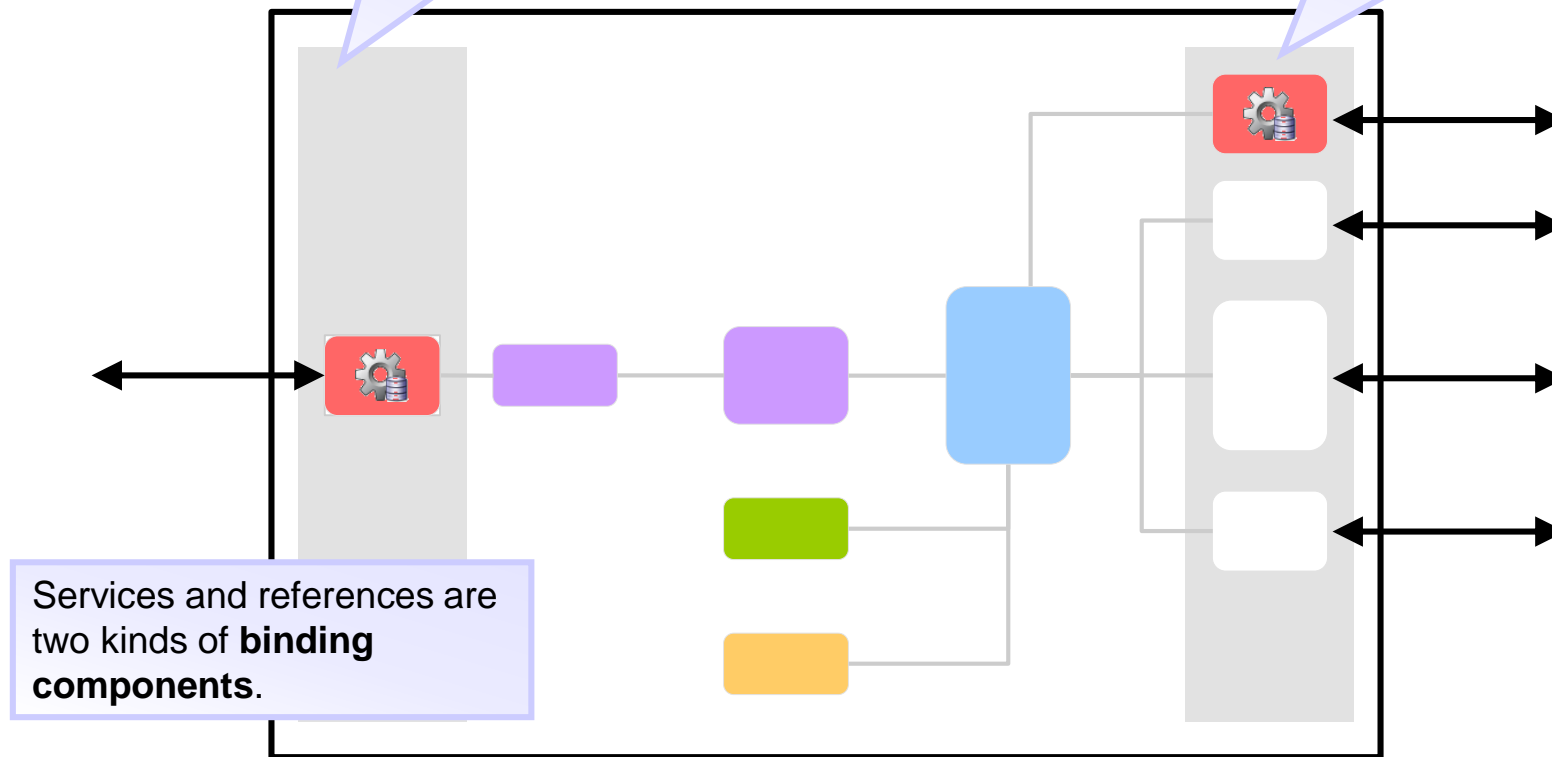
- Oracle JCA Adapters
- Database Adapter



# Binding Components

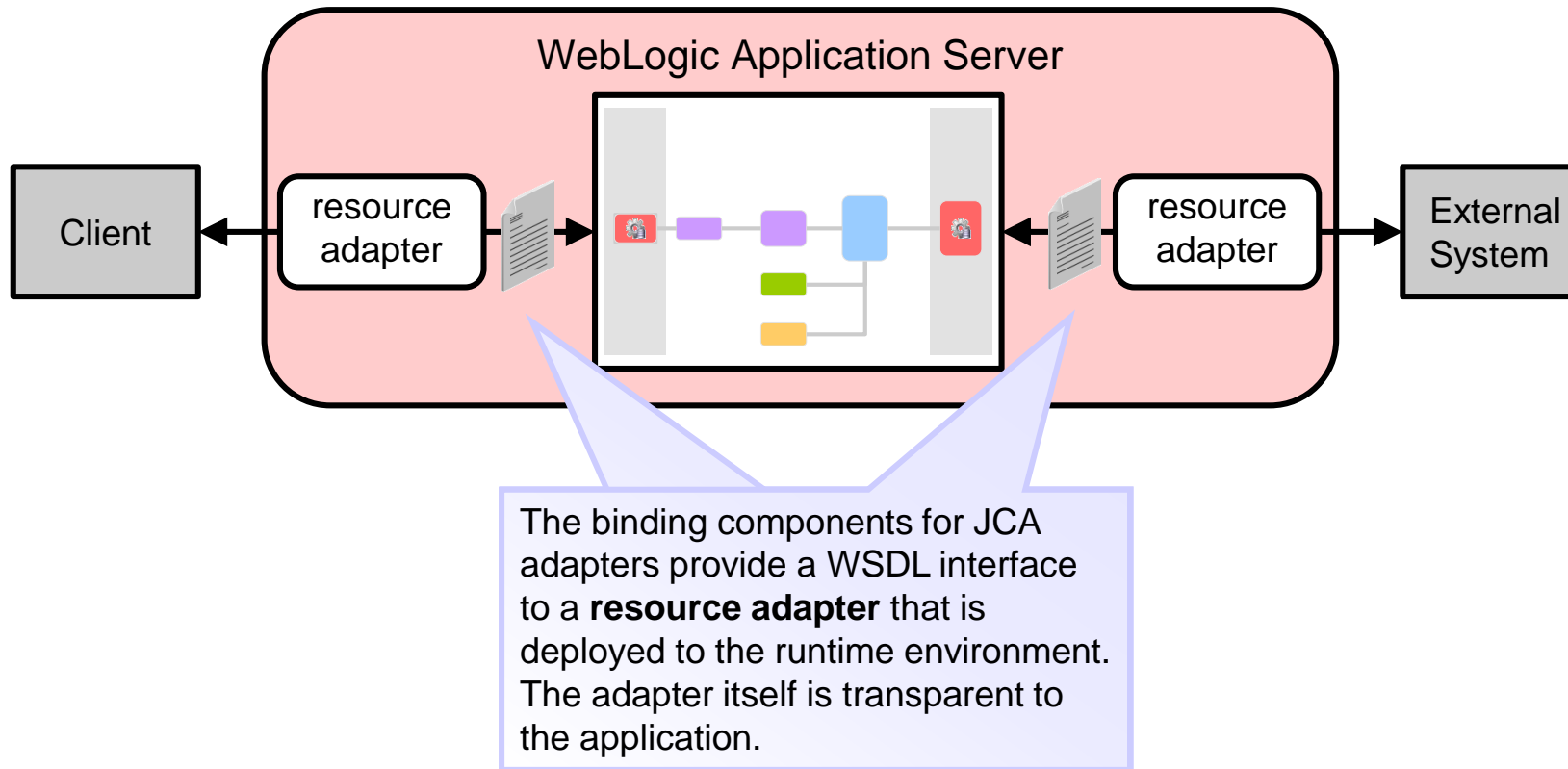
**Services** provide the outside world with an entry point to a SOA composite application.

**References** enable messages to be sent from the SOA composite application to external services in the outside world.

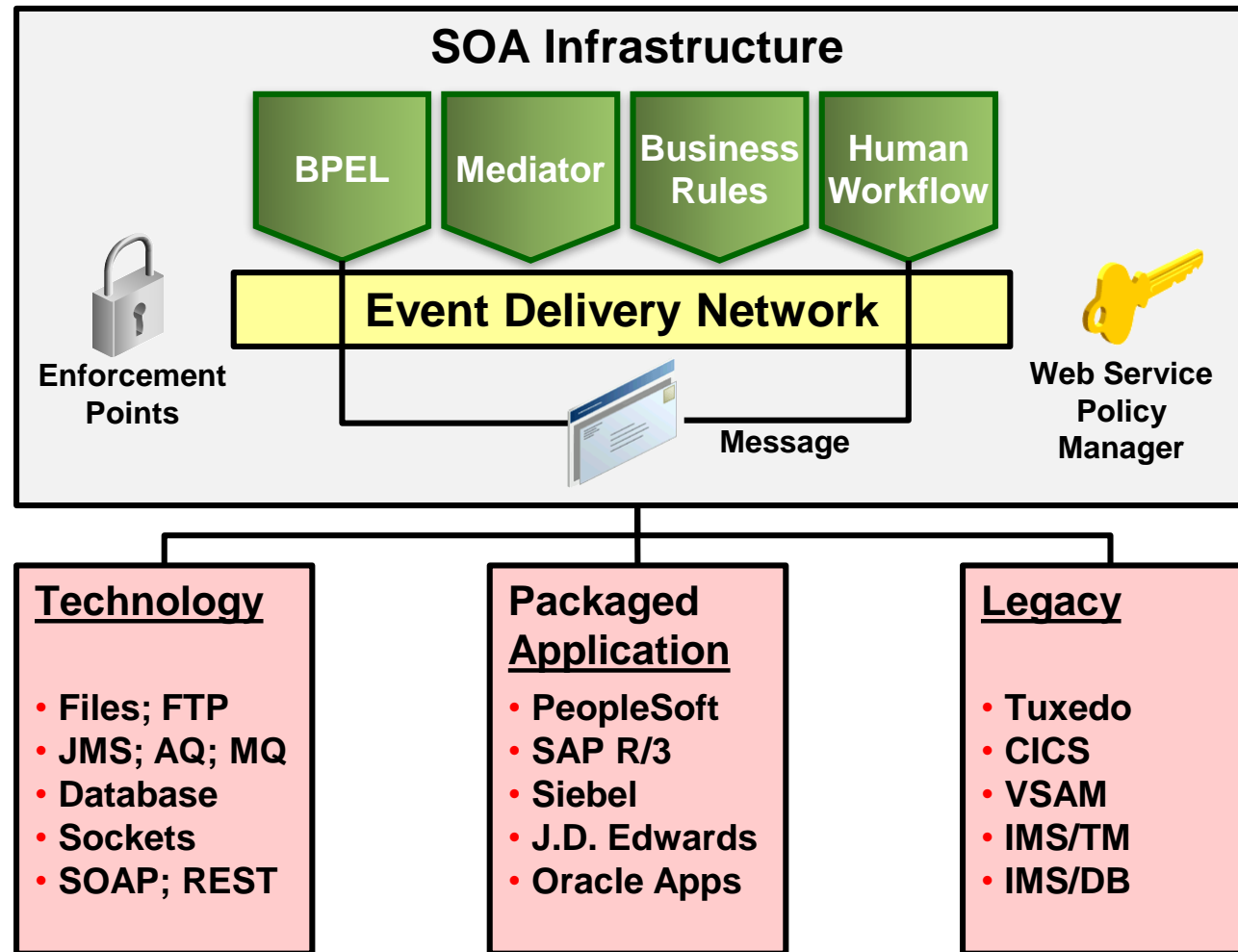


Services and references are two kinds of **binding components**.

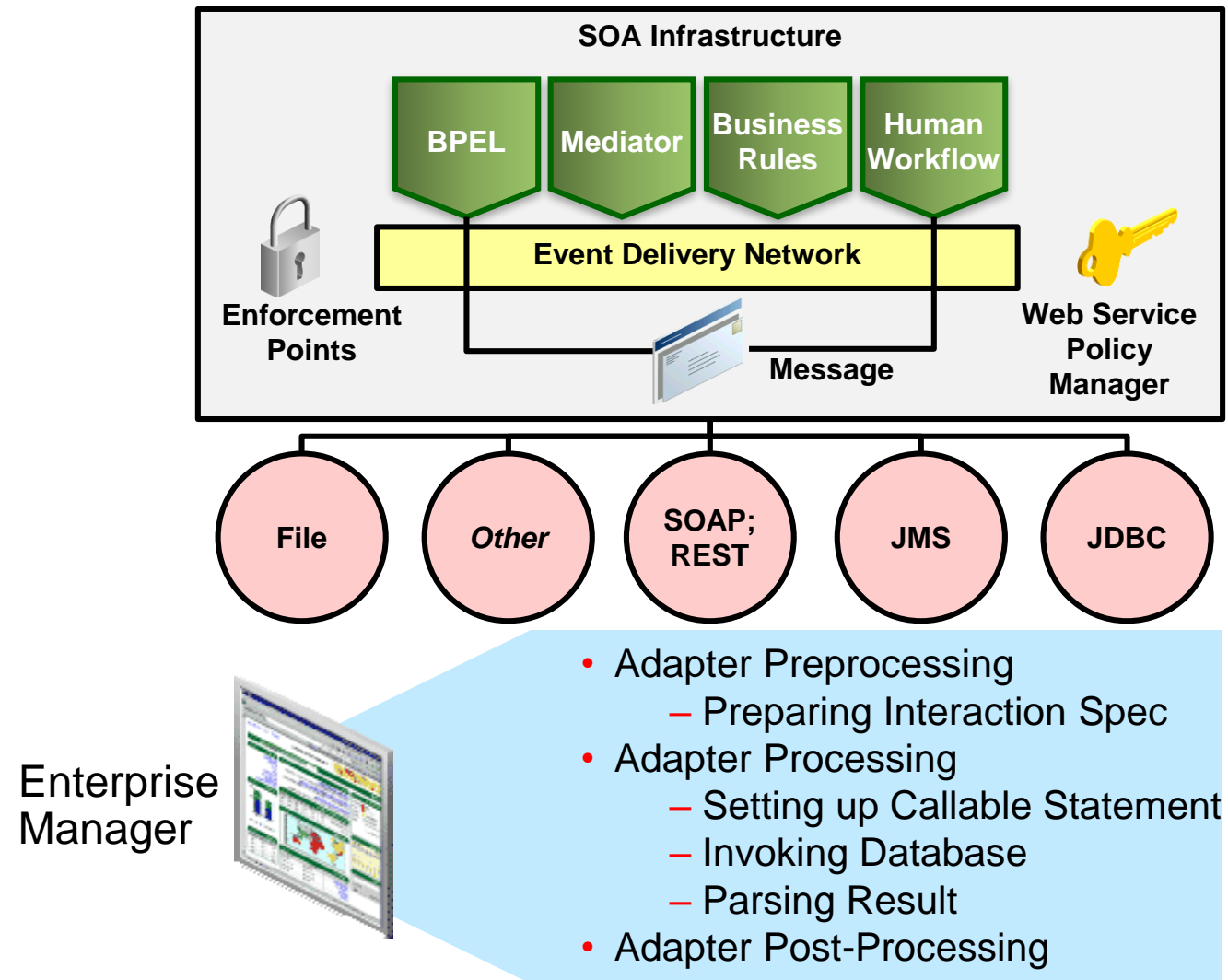
# JCA Adapters



# Oracle JCA Adapters



# Monitoring Adapters



# Quiz



Statistics about message processing are gathered by adapters, and are viewable in the Oracle Enterprise Manager console.

- a. True
- b. False



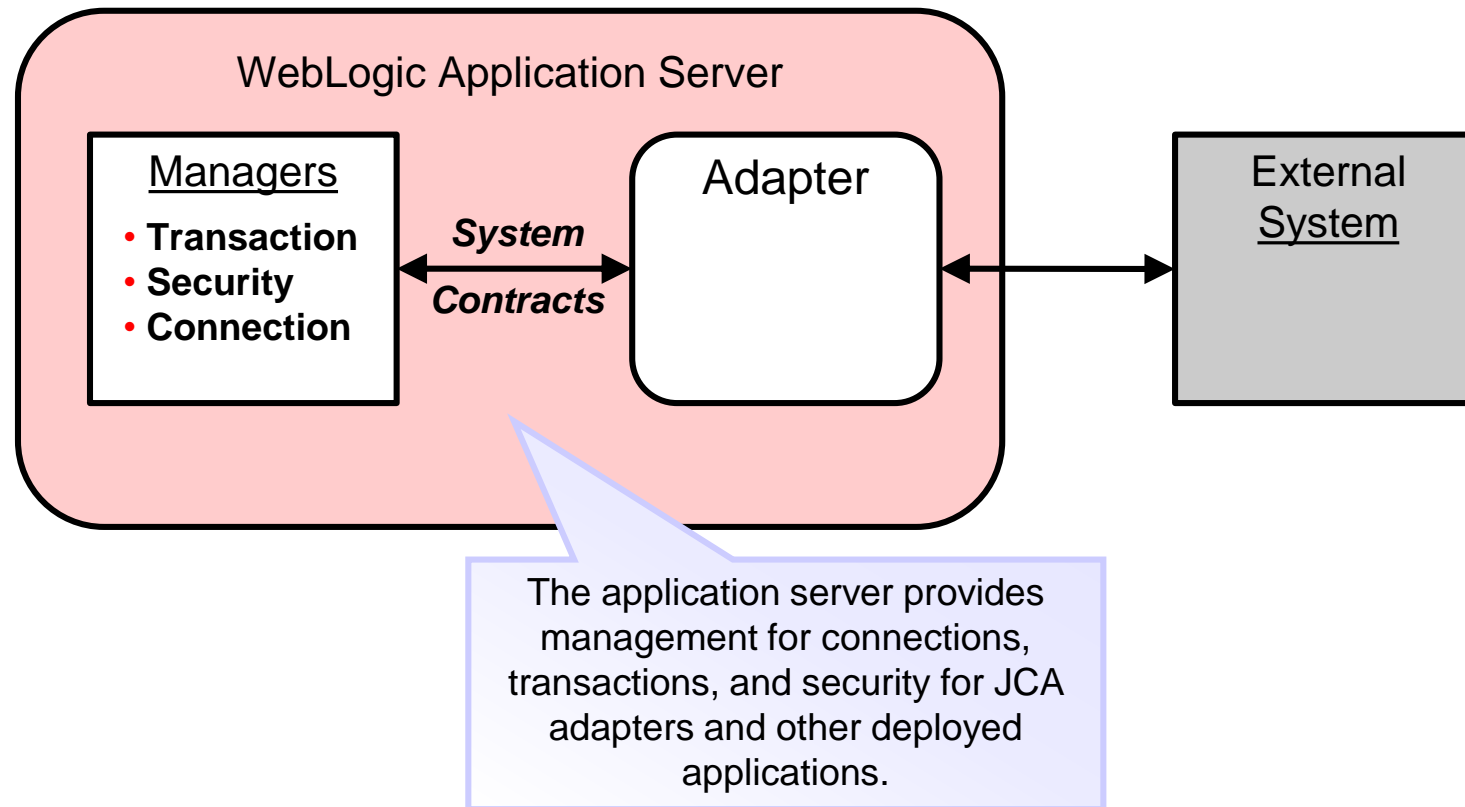


# Agenda

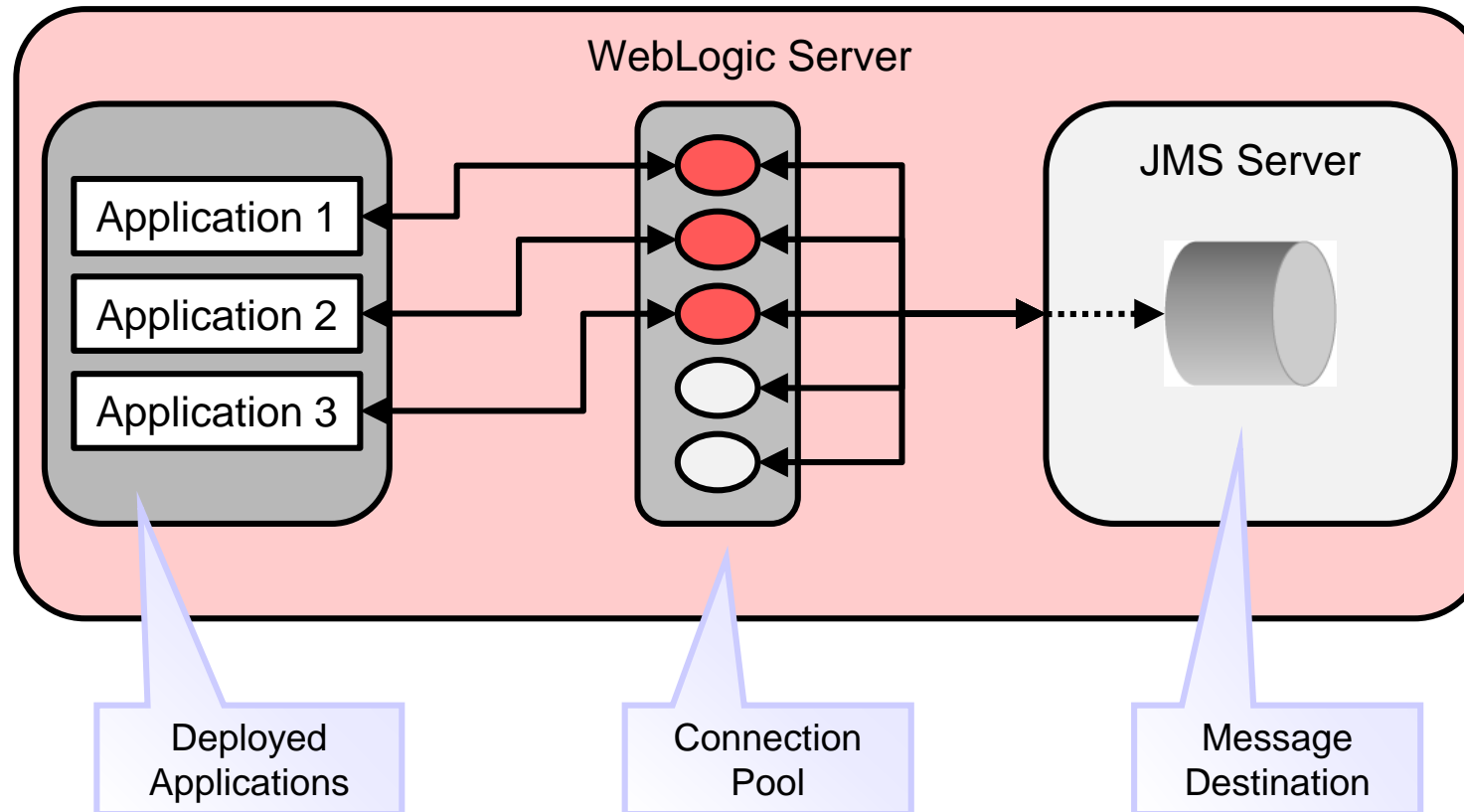
- Oracle JCA Adapters
- Database Adapter



# Adapters and the WebLogic Application Server



# Connection Management



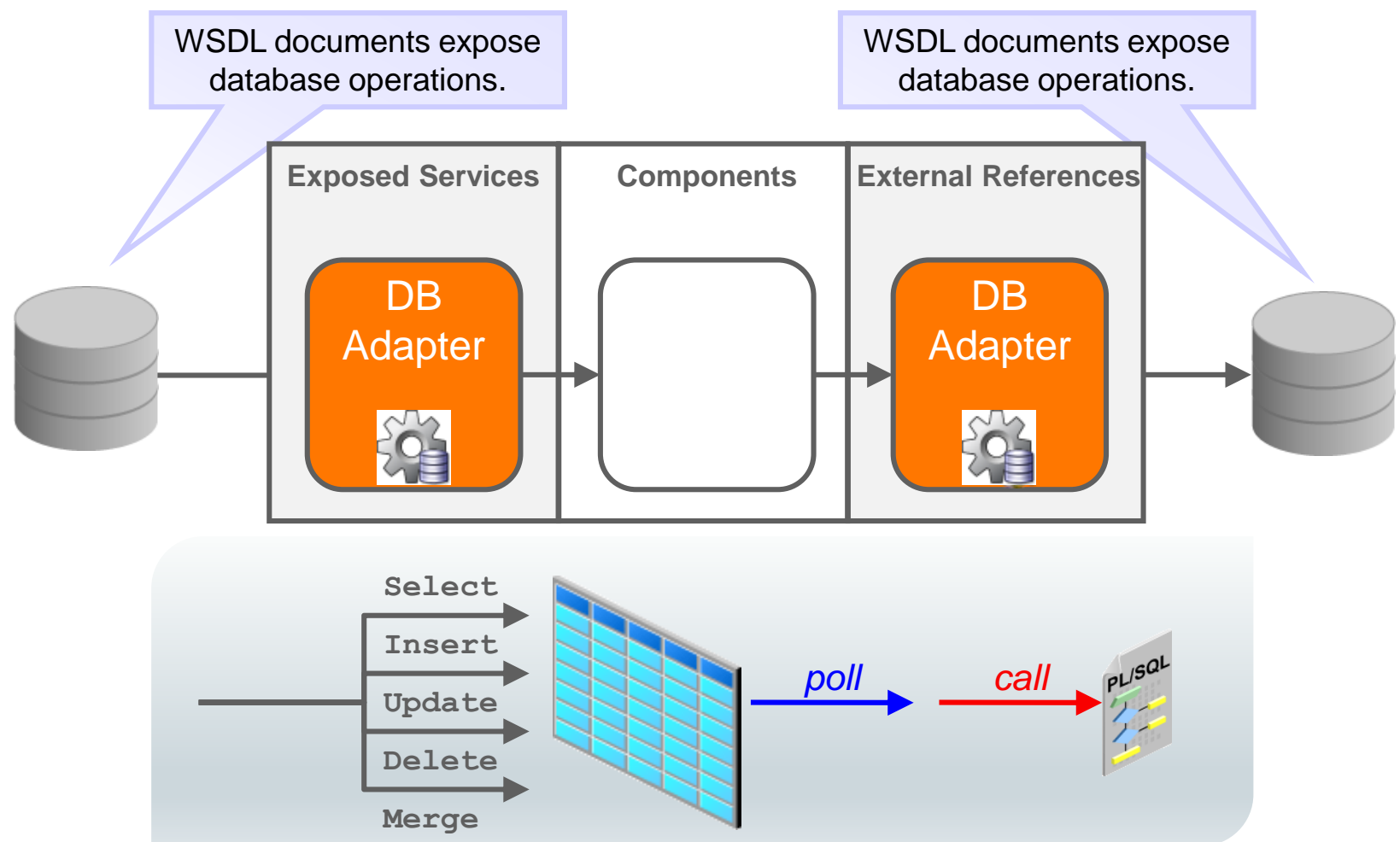
**Note:** The diagram shows the JMS Server running within the WebLogic Server, but that need not be the case.

# Agenda

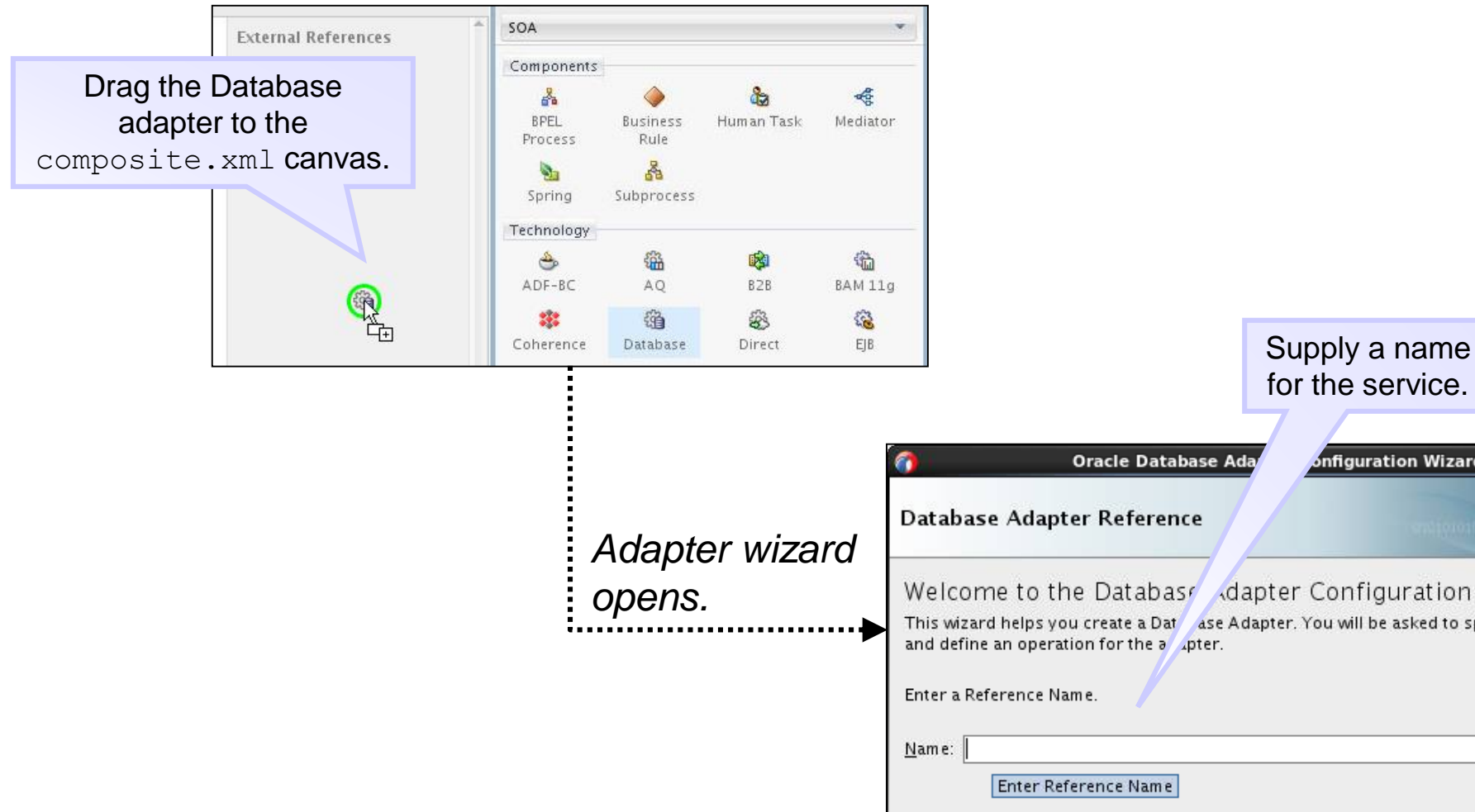
- Oracle JCA Adapters
- Database Adapter



# Database Adapter: Introduction



# Configuring a Database Adapter



# Configuring a Database Adapter Service Connection

Specify a database connection or create a new one.

design  
time

run  
time

Specify the JNDI name of the connection. This name must match the connection pool factory name configured for the runtime Database adapter.

Oracle Database Adapter Configuration Wizard - Step 2 of 3

**Service Connection**

A Database Connection is required to configure this adapter. Select a database connection already defined in your project or create a New Connection.

Connection: SOA

User Name: soainfra

Driver: org.apache.derby.jdbc.ClientDriver

Connect String: jdbc:derby://localhost:1527/soainfra

A Database Connection is required to configure this adapter. Select a database connection already defined in your project or create a New Connection.

JNDI Name: eis/DB/SOA

< Back Next > Finish Cancel

# Configuring a Select Statement: Operation Type

Oracle Database Adapter Configuration Wizard - Step 3 of 4

**Operation Type**

Select the Operation Type and click Next to continue defining the operation.

Operation Type:

- ☐ Call a Stored Procedure or Function
- ☒ Perform an Operation on a Table
  - ☐ Insert or Update (Merge)
  - ☐ Inset Only
  - ☐ Update Only
  - ☐ Delete
  - ☒ Select
  - ☐ Select By Primary Key
  - ☐ Query By Example
- ☐ Poll for New or Changed Records in a Table
- ☐ Execute Pure SQL

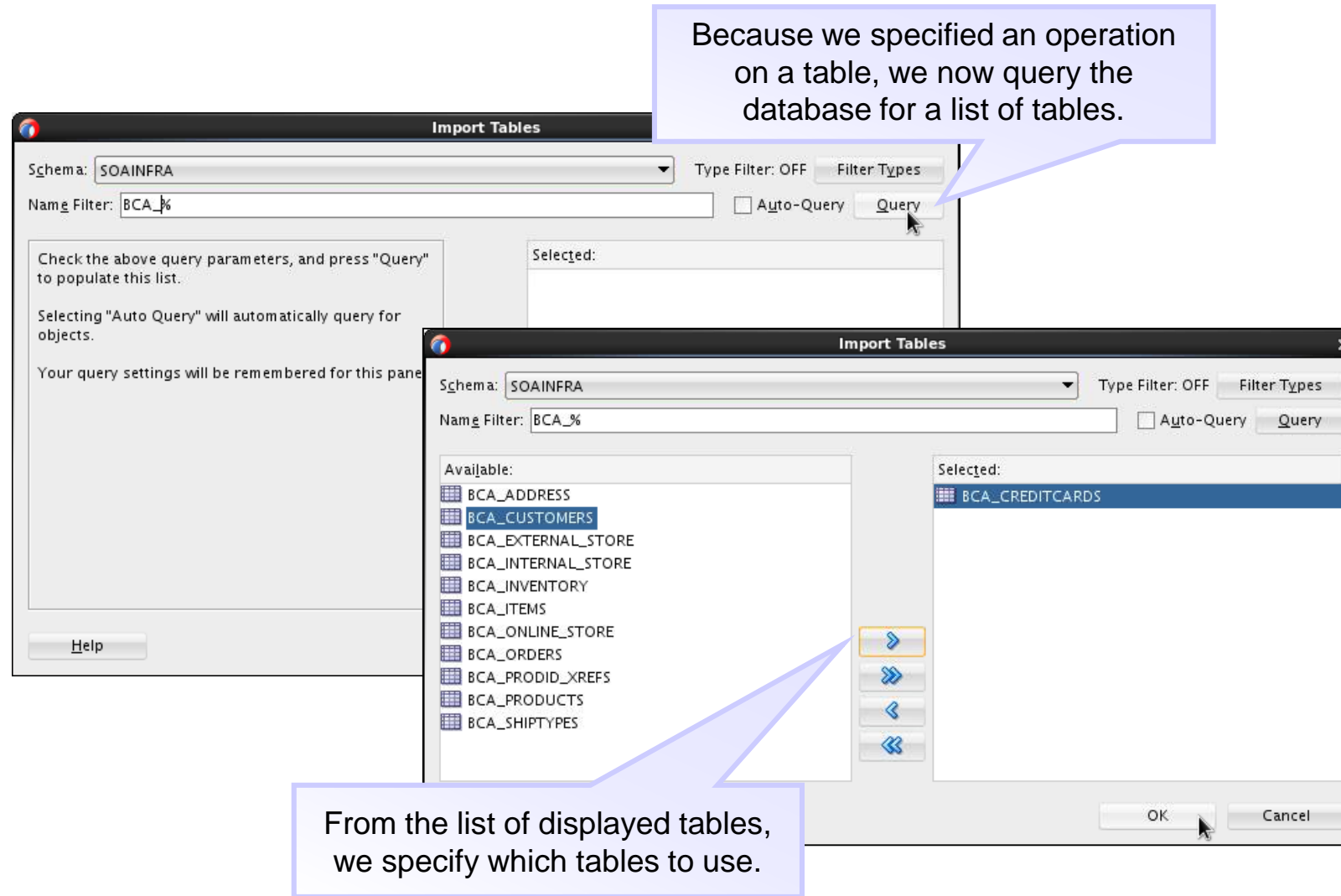
Cache Usage: none (default) ▼

Help < Back Next > Finish Cancel

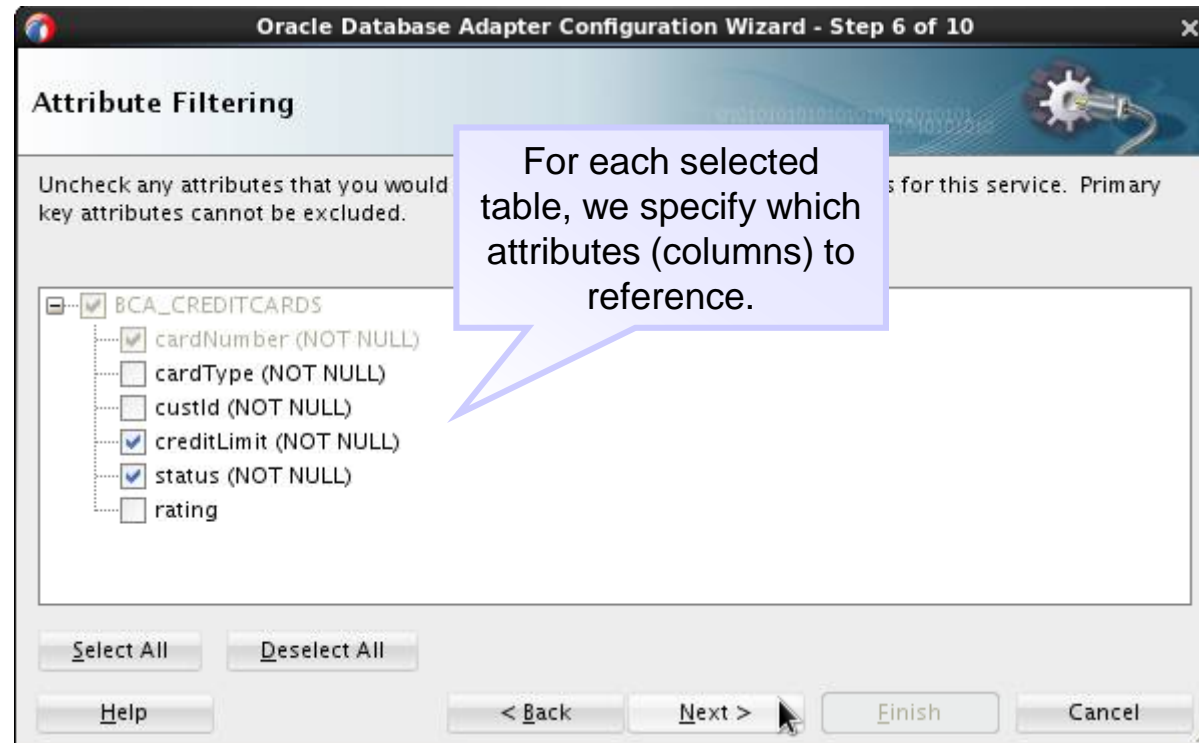
Specify what you want the adapter to do.



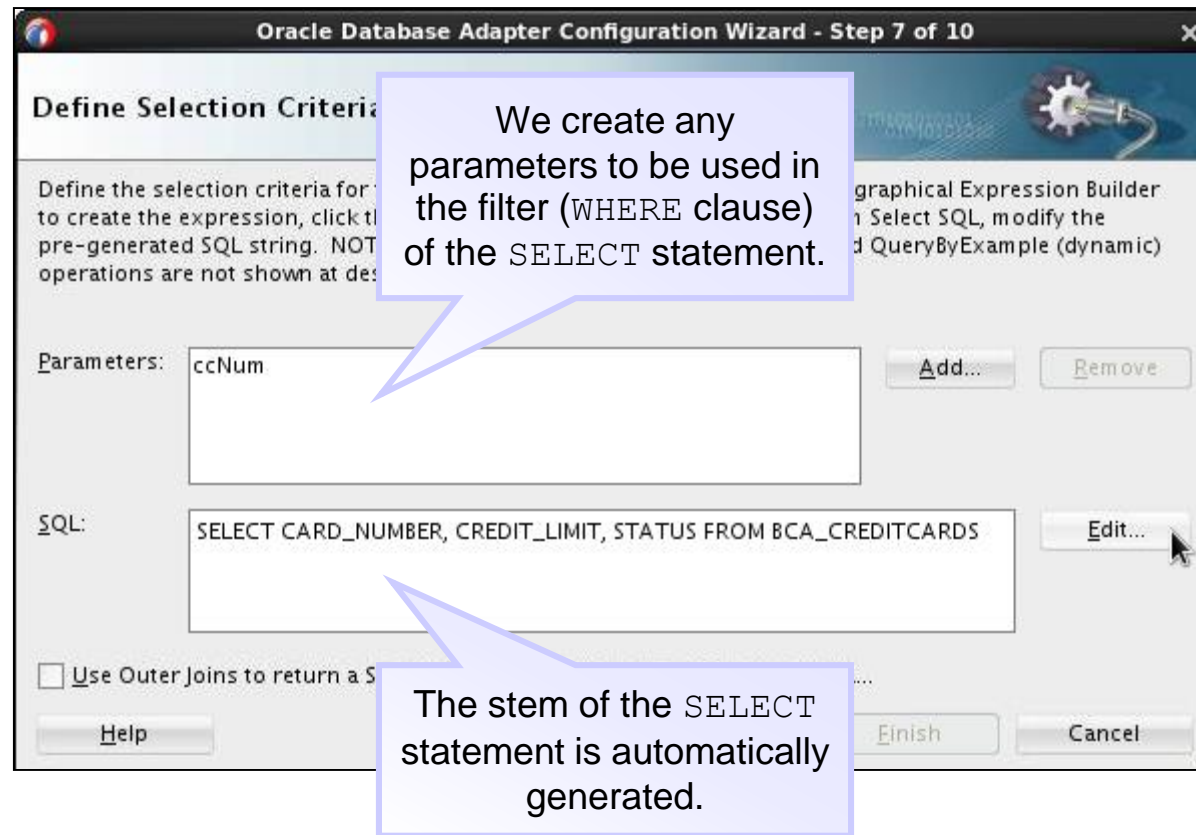
# Configuring a Select Statement: Importing Tables



# Configuring a Select Statement: Filtering Attributes



# Configuring a Select Statement: Defining Selection Criteria



# Configuring a Select Statement: Editing the Expression

The screenshot displays two overlapping windows from an Oracle database configuration tool. The 'Expression Builder' window, titled 'Create or Edit a TopLink Expression', shows a list of expressions with '1.cardNumber EQUAL ccNum' selected. Below this, the 'First Argument' is 'cardNumber' and the 'Operator' is 'EQUAL'. The 'Second Argument' is 'ccNum'. The 'Oracle Database Adapter Configuration Wizard - Step 7 of 10' window, titled 'Define Selection Criteria', shows the 'Parameters' list with 'ccNum' entered. Below this, the 'SELECT' statement is displayed: 'SELECT CARD\_NUMBER, CREDIT\_LIMIT, STATUS FROM BCA\_CREDITCARDS WHERE (CARD\_NUMBER = #ccNum)'. The 'Edit...' button next to the SQL string is highlighted. A callout box points to the 'Edit...' button in the wizard, stating: 'The Expression Builder assists in the creation of the filter expression.' Another callout box points to the 'OK' button in the Expression Builder, stating: 'The completed expression is added to the SELECT statement.'

The Expression Builder assists in the creation of the filter expression.

The completed expression is added to the SELECT statement.

# Configuring a Select Statement: Advanced Options

**Oracle Database Adapter Configuration Wizard - Step 8 of 10**

**Advanced Options**

Specify any additional advanced options. To use the recommended, default values, click Next.

**JDBC Options:**

Query Timeout:

Max Rows:

**Interaction Options:**

☐ Get Active UnitOfWork

[Help](#)

These properties are specific to the Database adapter.

Specify a query timeout.

Configure the number of retries before flagging an error.

**Oracle Database Adapter Configuration Wizard - Step 9 of 10**

**JCA Endpoint Properties**

Specify Adapter framework level properties for this service. To use the recommended, default values, click Next.

**Auto-Retries:**

Attempts:

Interval (s):

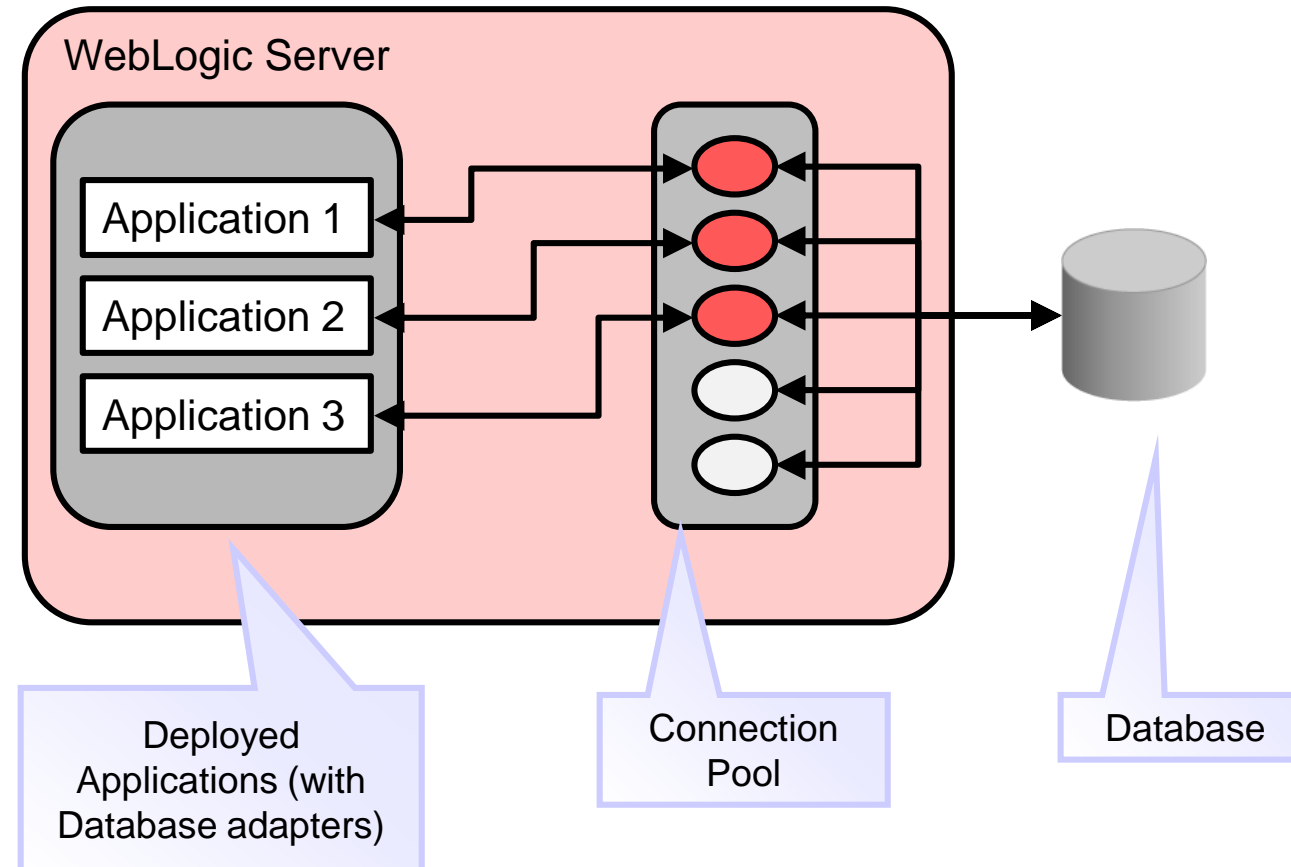
Backoff Factor: x

Max Interval (s):

[Help](#) [< Back](#) [Next >](#) [Finish](#) [Cancel](#)

These properties are common to all JCA adapters.

# Database Adapter Runtime Connections



# Transactionality

The Database adapter and JMS adapter are both transactional (as are the AQ adapter and Java web services).

- In general, a transaction is started by a service when it is invoked by a client, and ends when the service operation completes. If the invoked service completes successfully, the transaction started is committed; otherwise errors roll back the transaction.
- Transactional boundaries depend on the context, configuration, and environment of the services that are implemented and invoked.
- Transaction semantics are different for services that are invoked synchronously than for services that are invoked asynchronously.

# Quiz



The \_\_\_\_\_ exposes the database operations that can be invoked by the components in a composite application.

- a. File adapter
- b. Socket adapter
- c. Database adapter
- d. Oracle Application adapter





# Summary

In this lesson, you should have learned how to:

- Discuss the adapter architecture
- Identify the types of technology adapters
- Configure and use a Database adapter
- Describe the configuration of runtime connections for adapters



# Practice 5-1 to 5-4 Overview

