

# Introducing Oracle Service Bus

# Objectives

After completing this lesson, you should be able to:

- Describe the challenges of enterprise integration
- Describe what an Enterprise Service Bus does
- List the functionality of Oracle Service Bus
- Describe Oracle Service Bus architecture and components
- Describe the relationship between Oracle Service Bus and Oracle SOA Suite
- List Oracle Service Bus installation and configuration options

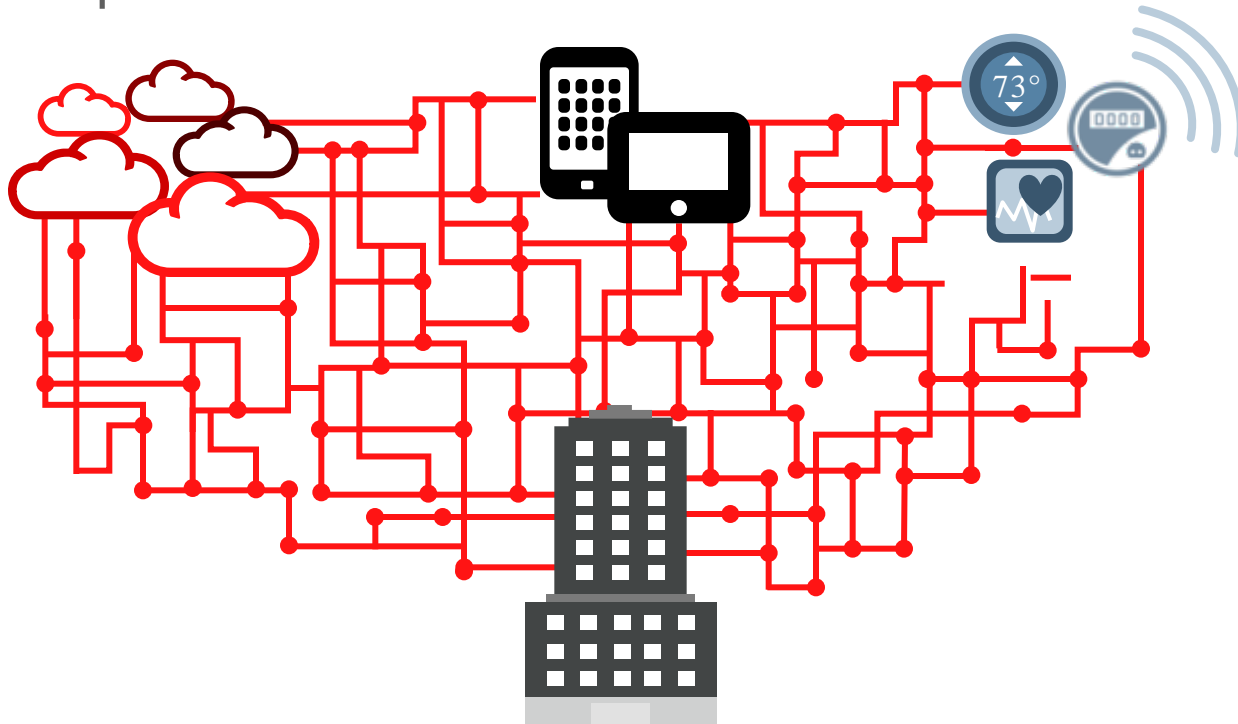


# Agenda

- Enterprise Service Bus
- Introducing Oracle Service Bus
- Oracle Service Bus and Oracle SOA Suite
- Oracle Service Bus installation

# Service Integration Can End Up as Spaghetti

- Too many point-to-point links
- Multiple transports and protocols
- No clear picture of all available services

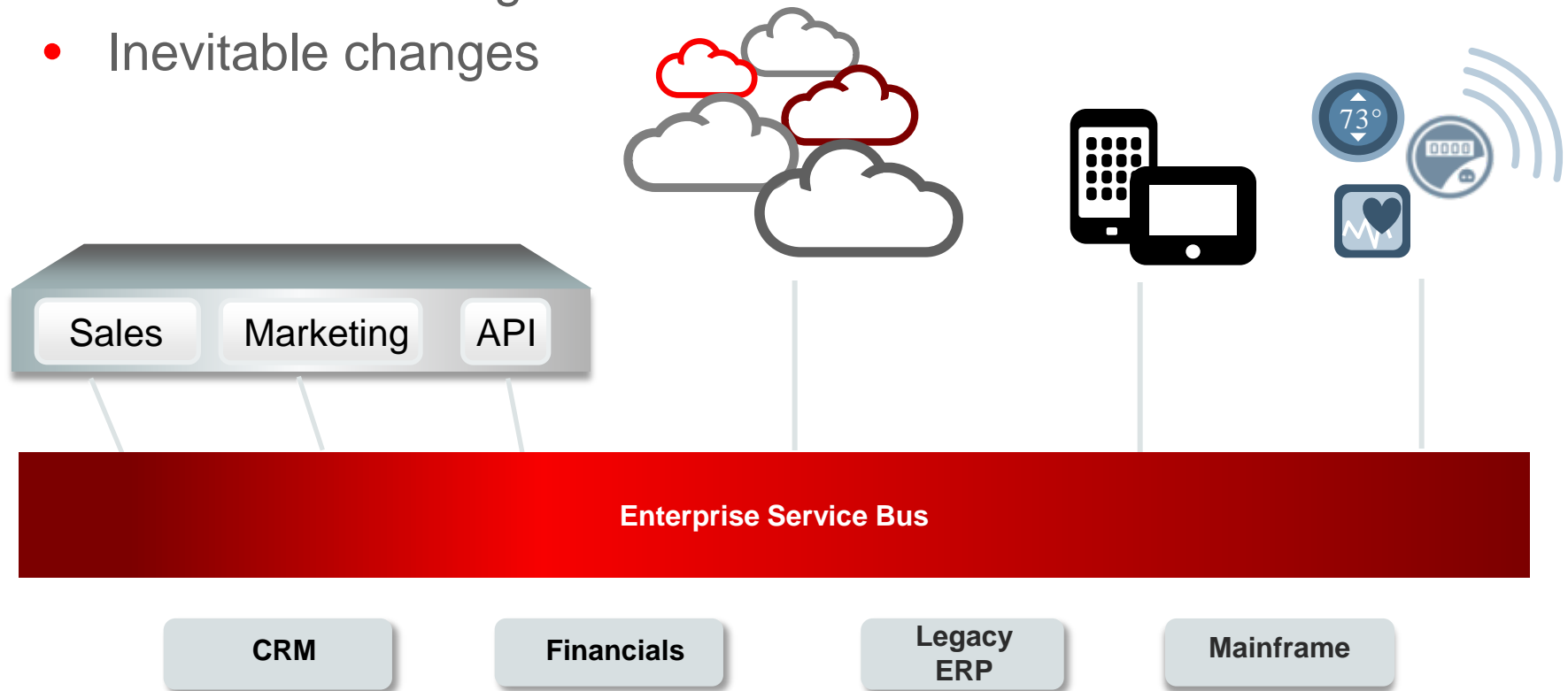


# Enterprise Service Bus Reduces Complexity and Enables Flexibility



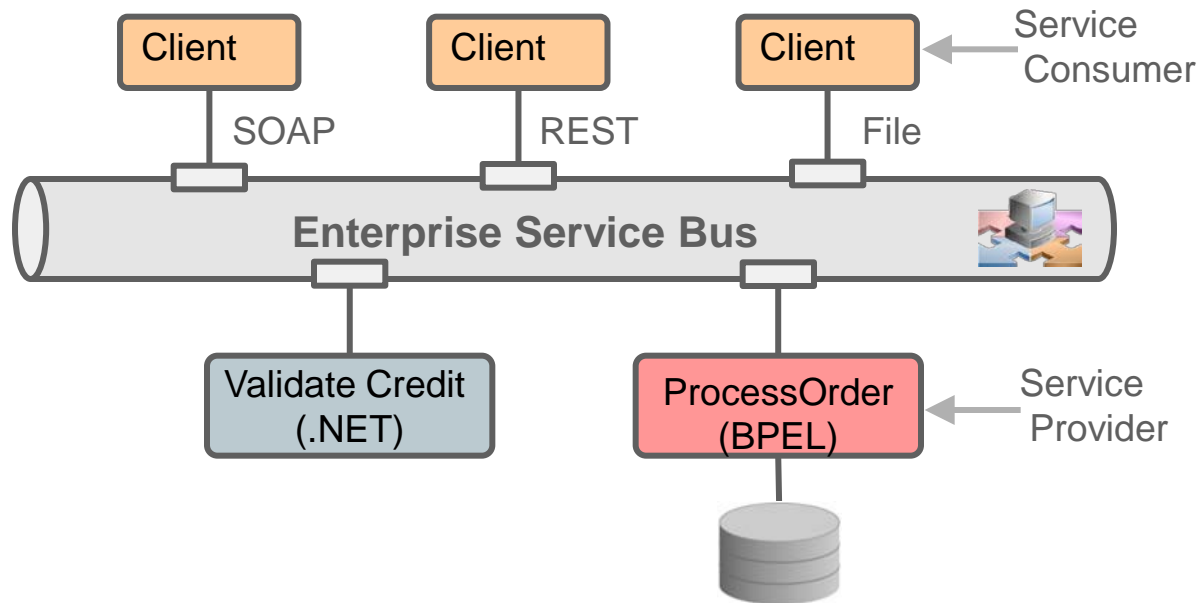
Address integration challenges:

- Distributed system
- Various technologies
- Inevitable changes



# What Does an Enterprise Service Bus Do?

- Mediate
- Abstract and decoupling
- Virtualize
- Provide a communication backbone to SOA



# What an Enterprise Service Bus Should Not Do

- Orchestration
- Workflow
- Business logic
- Complex transformations



Nonfunctional requirements



Logic and intelligence

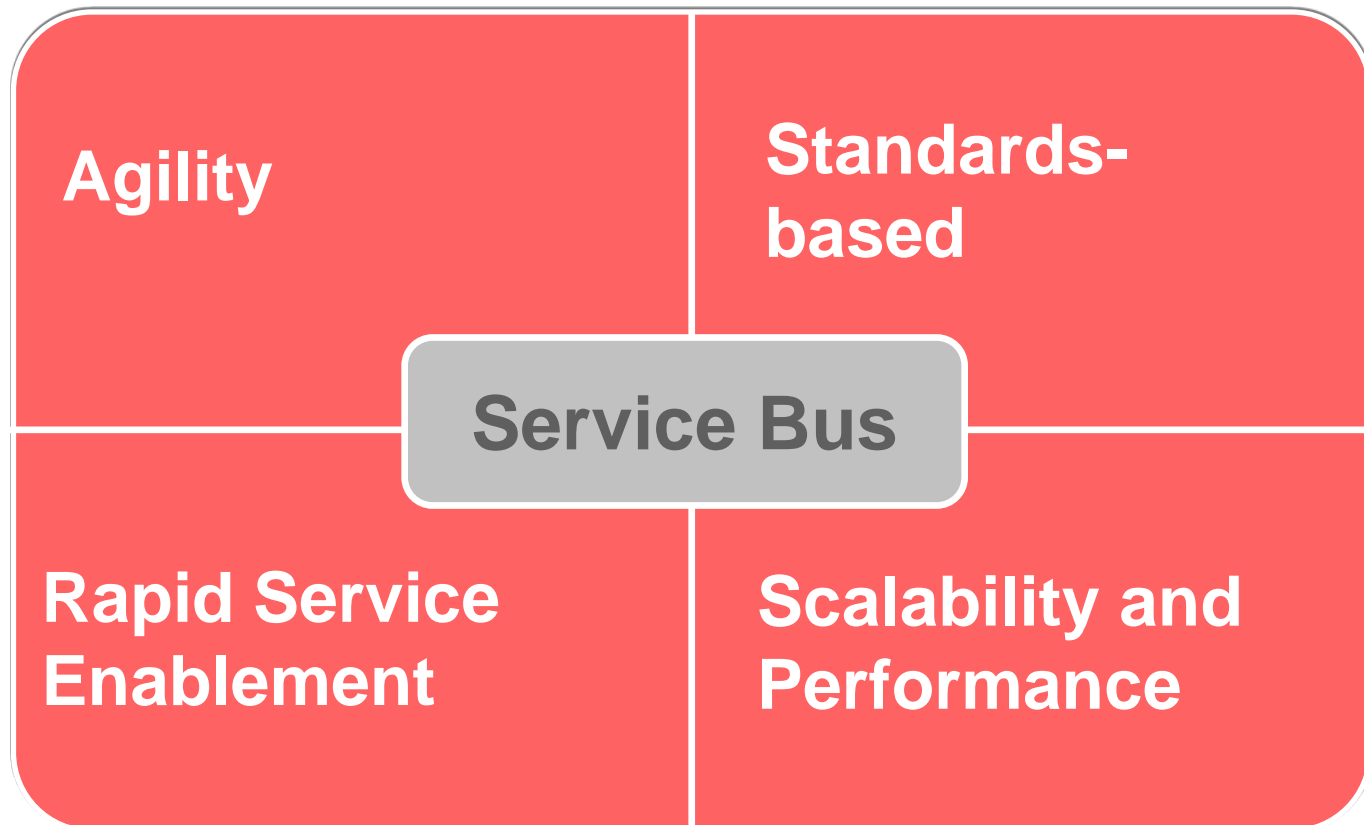
# Key Capabilities

The capabilities that an Enterprise Service Bus provide include:

- Protocol mediation
- Invocation
- Data mapping and transformation
- Routing
- Message enhancement
- Reliability
- Security
- Service management



# Benefits



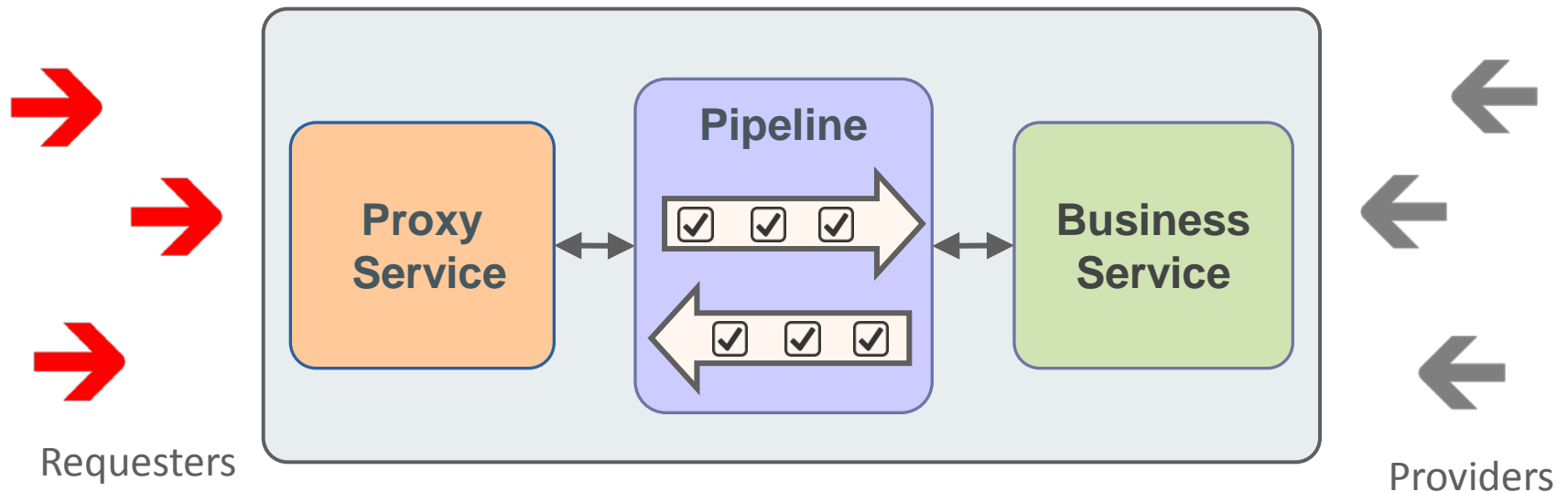
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- Enterprise Service Bus
- **Introducing Oracle Service Bus**
- Oracle Service Bus and Oracle SOA Suite
- Oracle Service Bus installation

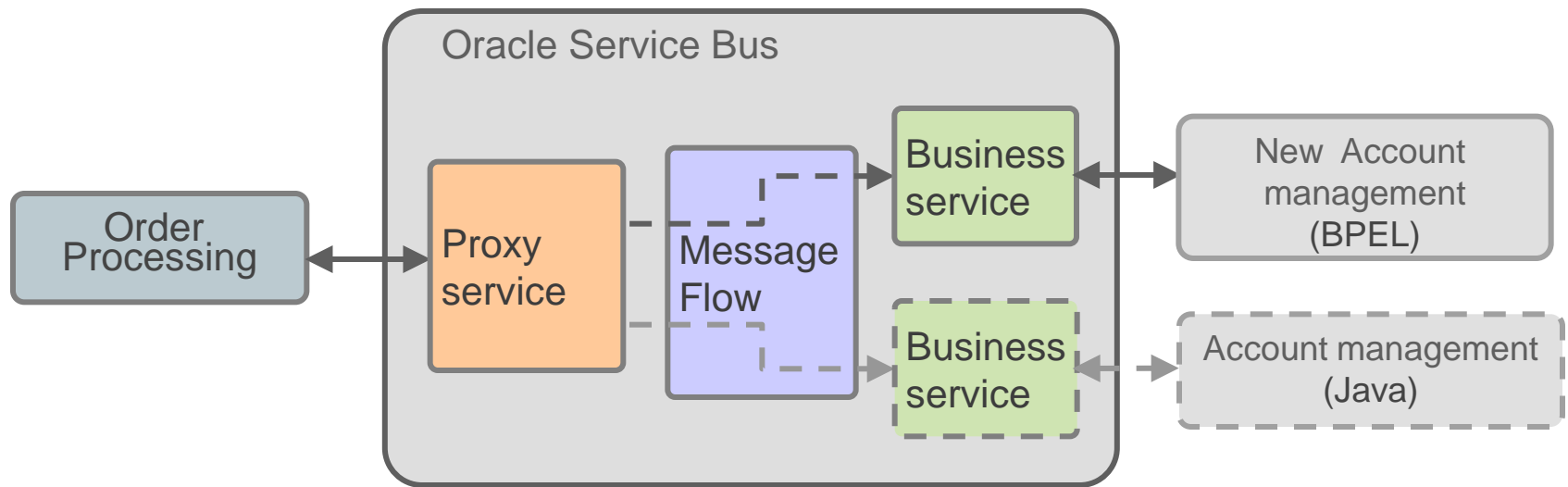
# About Oracle Service Bus

- Supports different message formats
- Provides a layer of abstraction
  - Protect consumers from deployment location changes and implementation updates
  - Scale the service: Load-balance requests to back-end systems

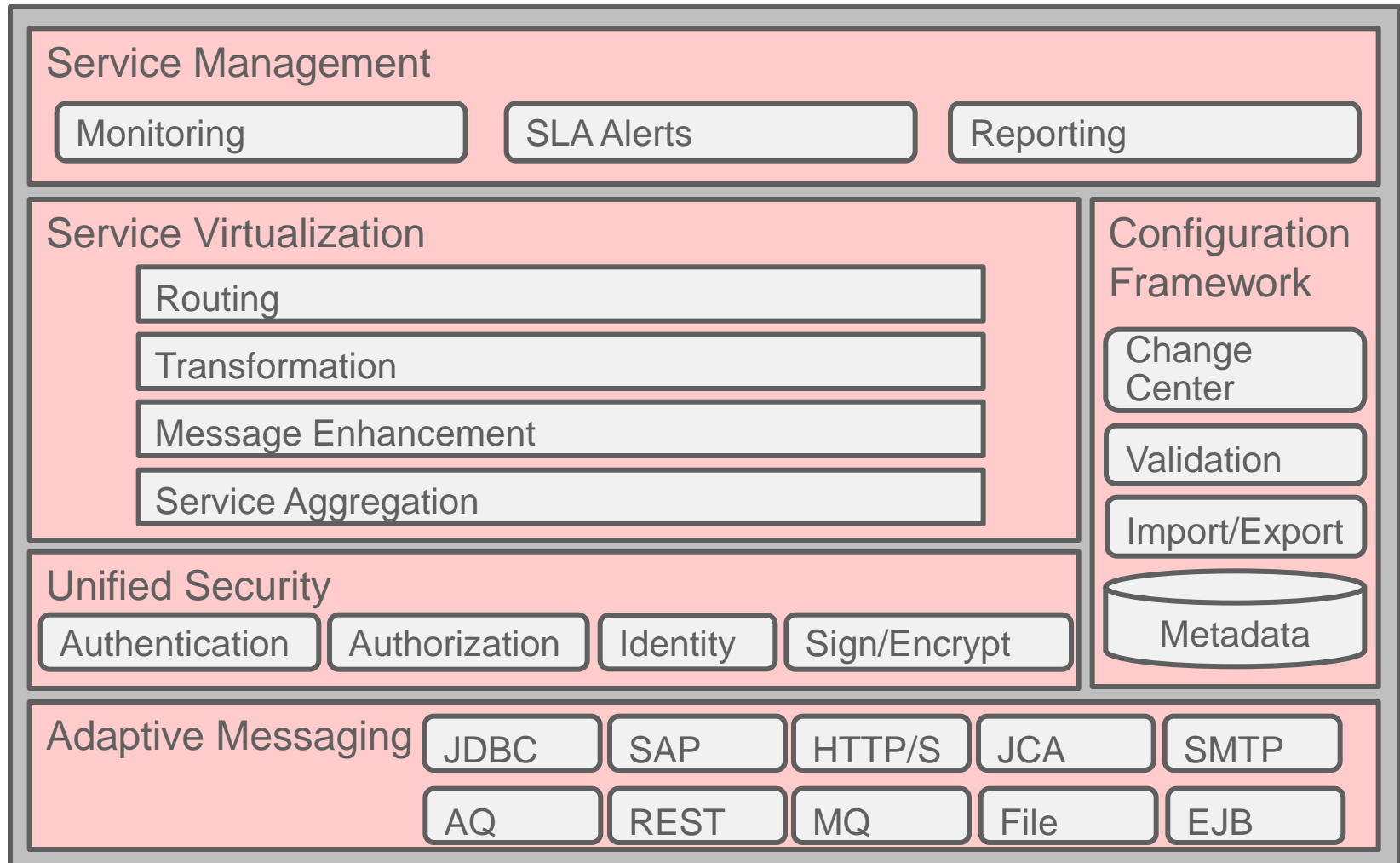
## Oracle Service Bus



# Example: Virtualizing Back-end Service

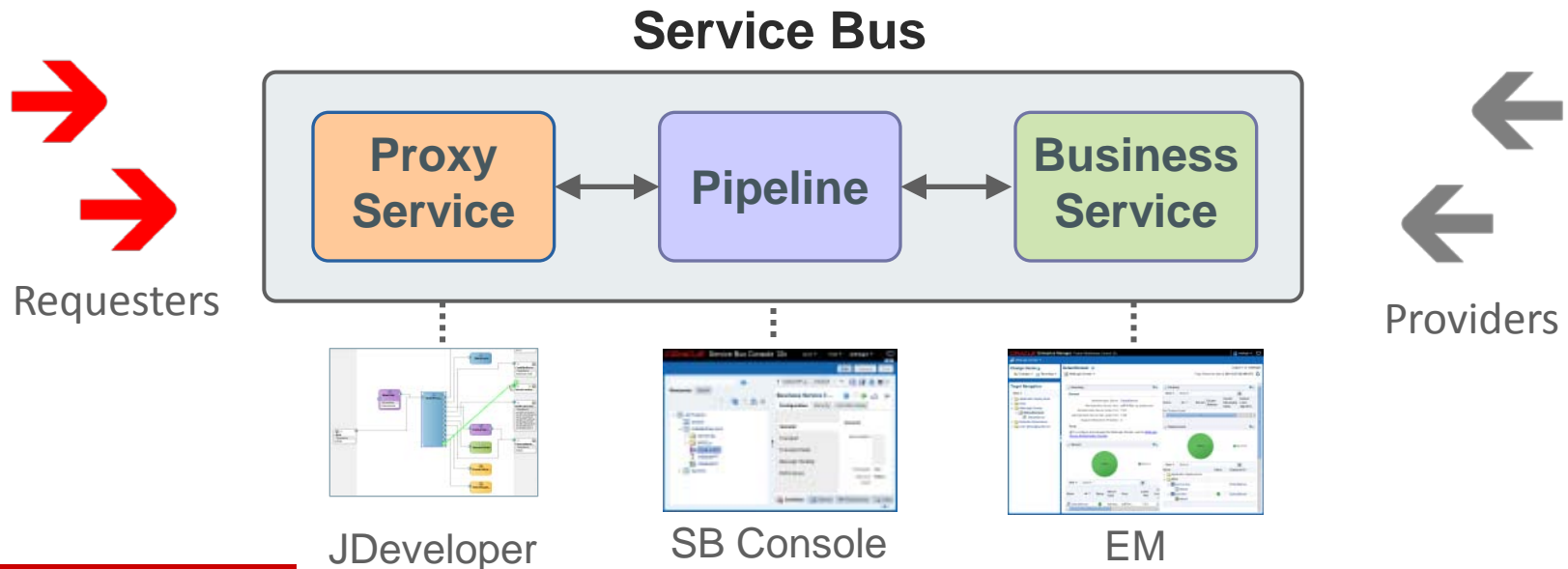


# Functional Features of Oracle Service Bus



# Features of Oracle Service Bus 12c

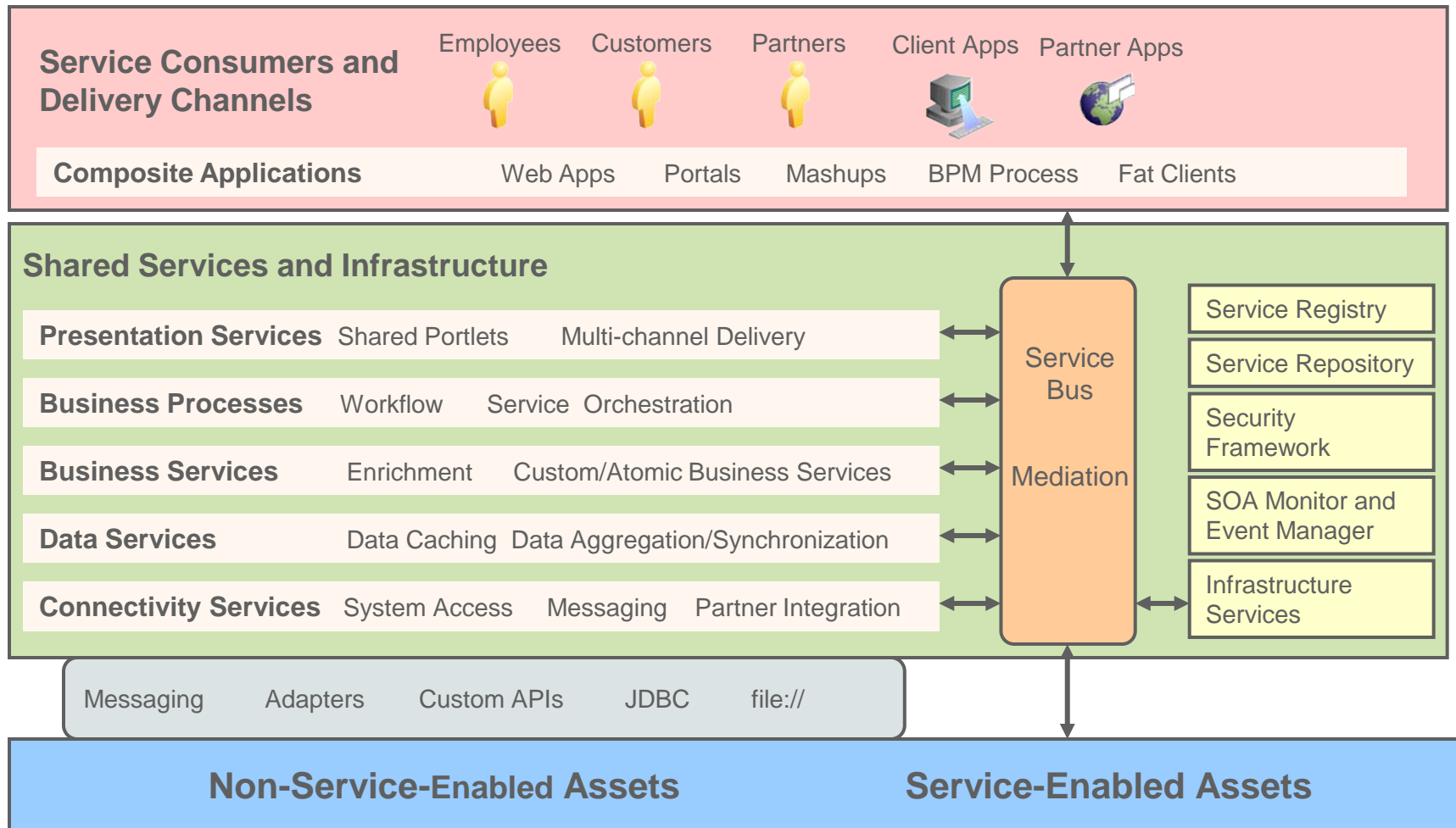
- Development in an IDE or web-based console (design time)
- Monitoring in Enterprise Manager Fusion Middleware Control (run time)
- Wide adapter portfolio to connect to many on-premise and cloud-based applications
- REST enablement for SOAP style services



# Agenda

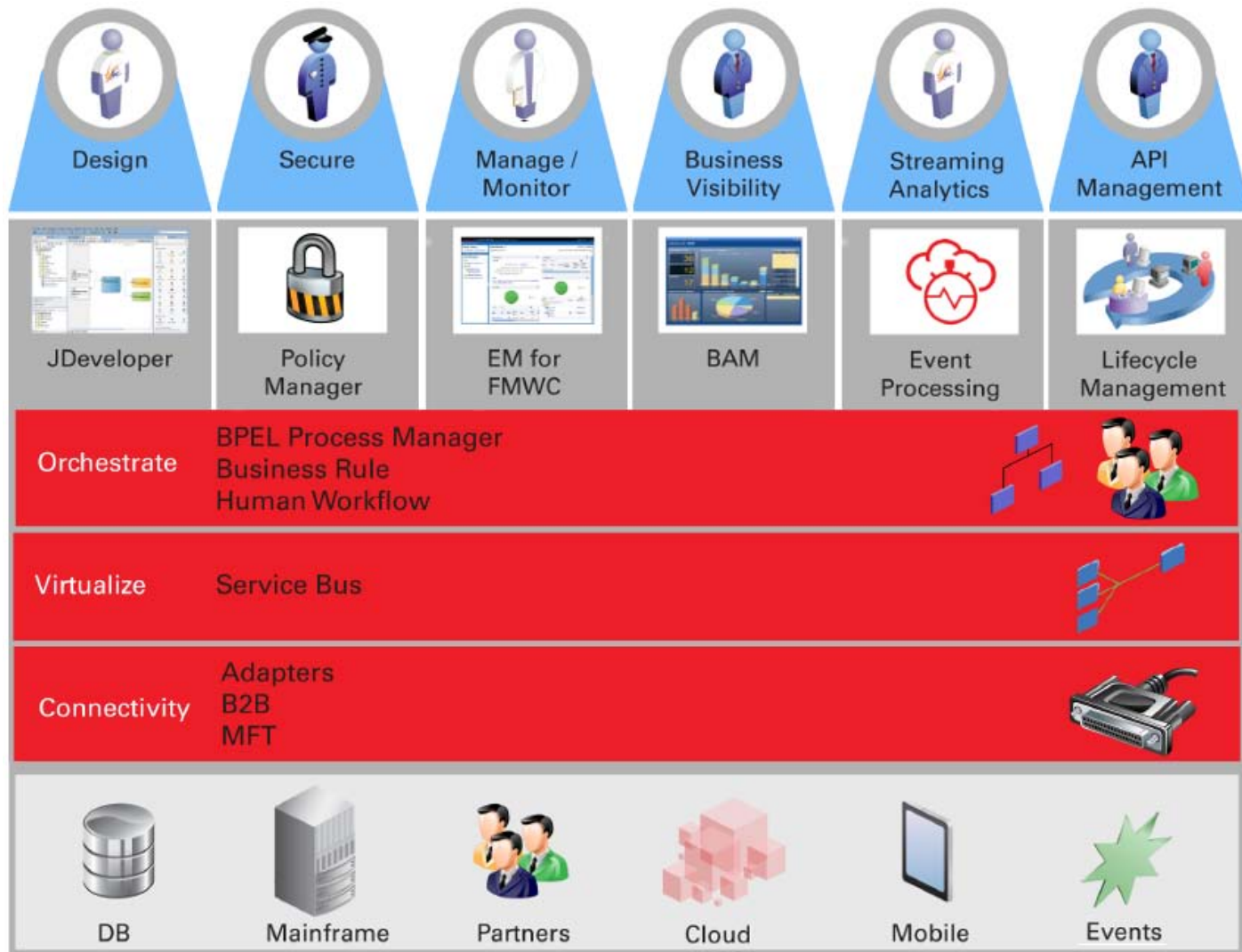
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# SOA Reference Architecture

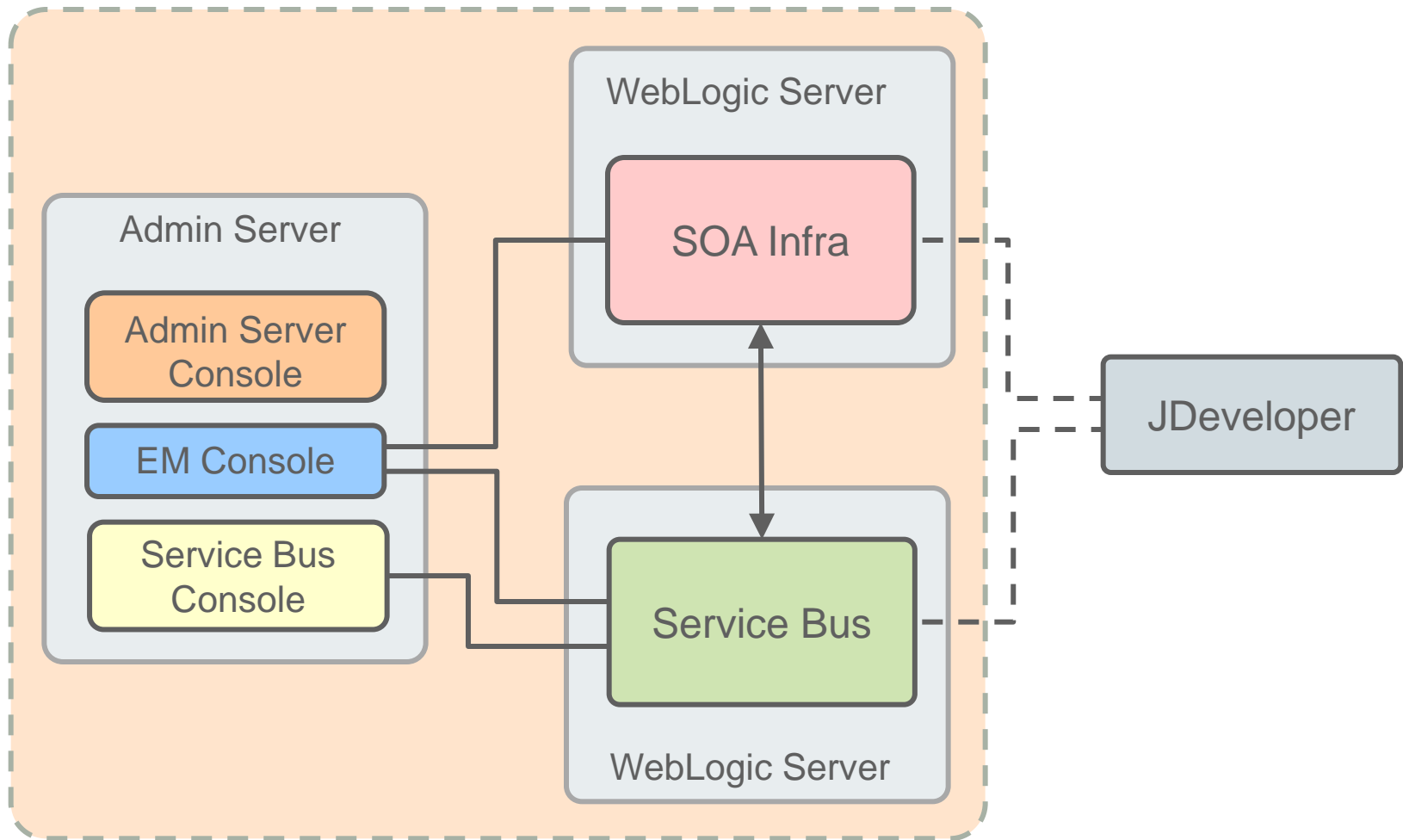




# Oracle Service Bus in Oracle SOA Suite



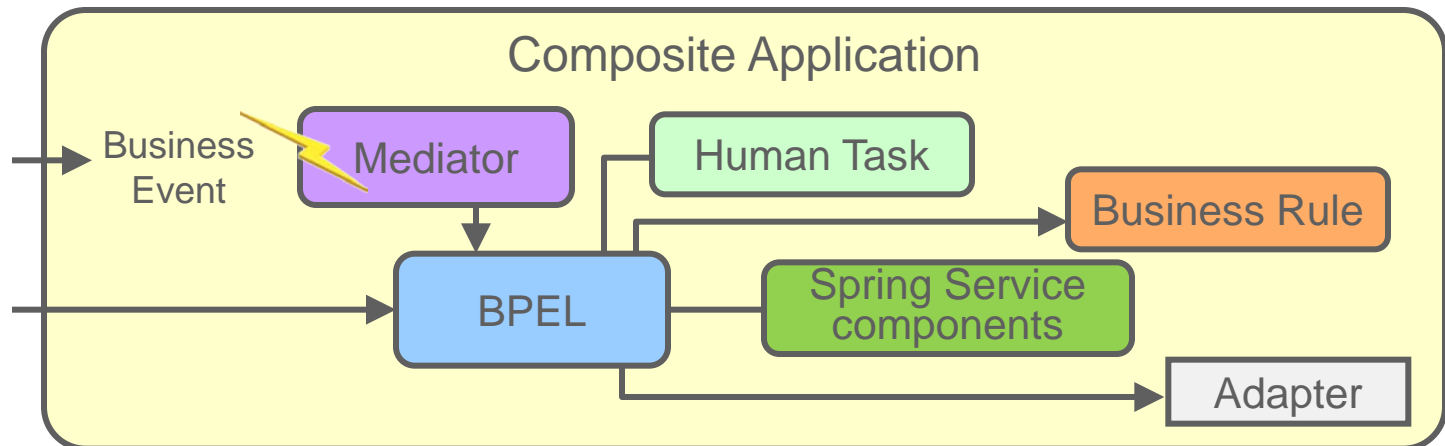
# Oracle SOA Suite and Oracle Service Bus Product Architecture



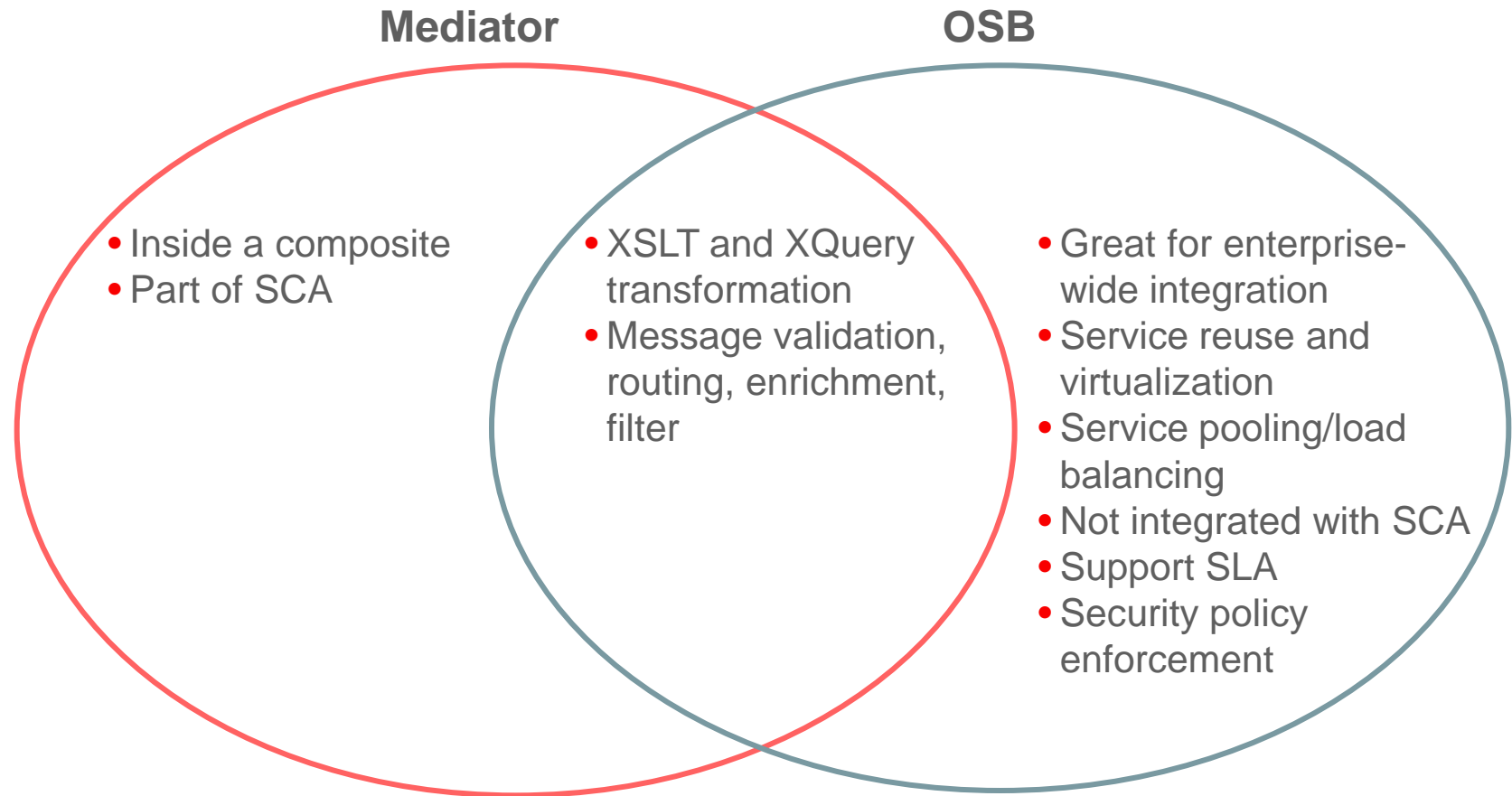
# Key Components in a SOA Composite Application

Oracle SOA Suite 12c supports the following components in a composite application:

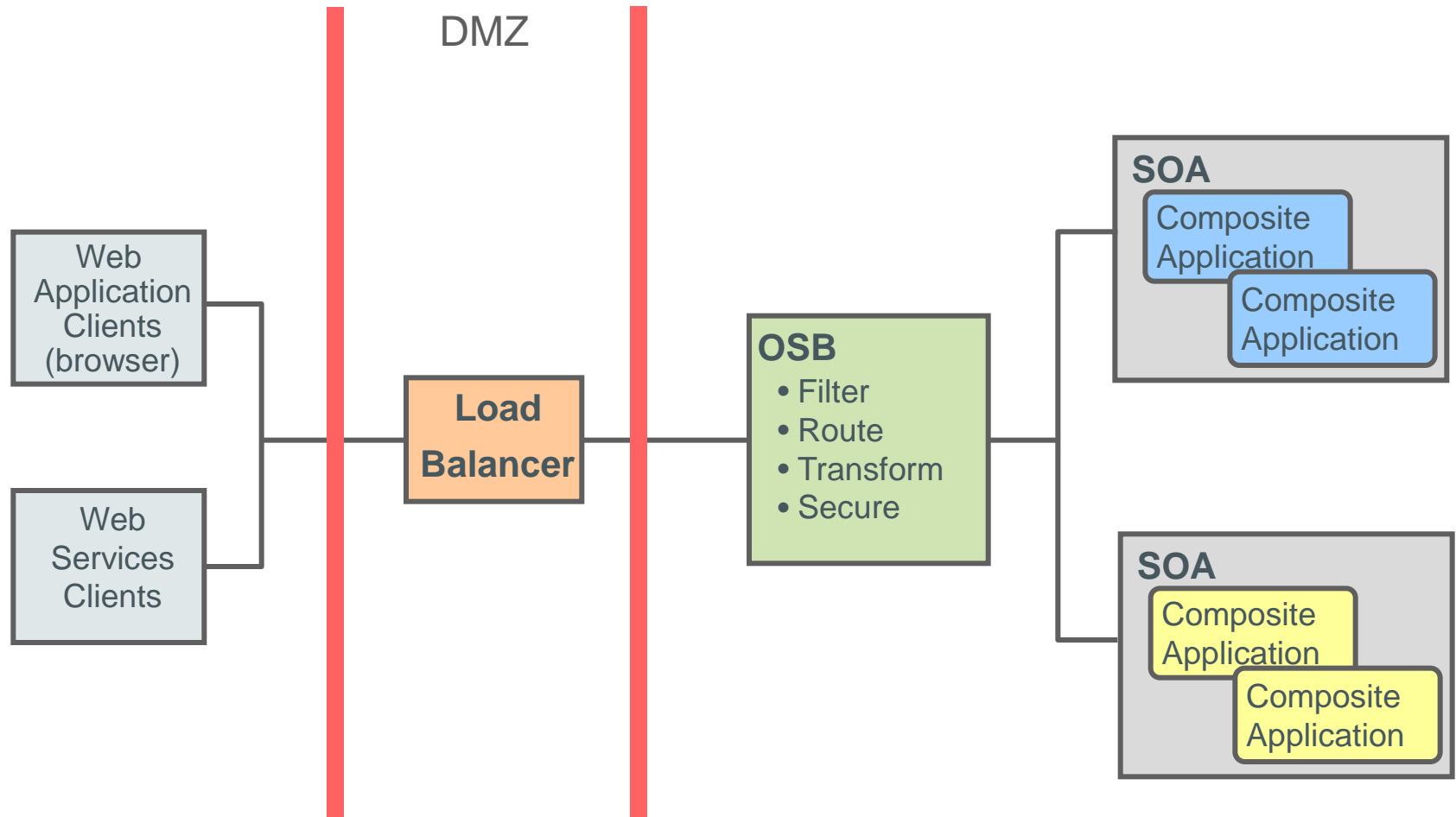
- BPEL Process components
- Mediator components
- Business Rule components
- Human Task components
- Adapter services
- Business events
- BPMN Process components
- Spring Service components



# Mediator Versus OSB



# Oracle SOA Suite and Oracle Service Bus Deployment Topology



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# Developer and Production Distributions

Developer/QuickStart	Production Distribution
<p>One single package of an integrated server includes:</p> <ul style="list-style-type: none"><li>• JDeveloper</li><li>• WebLogic Server</li><li>• SOA Suite (incl. <i>Service Bus</i>)</li><li>• JavaDB</li><li>• Enterprise Manager</li></ul>	<p>Modularity:</p> <ul style="list-style-type: none"><li>• Oracle SOA Suite Foundation</li><li>• SOA Foundation with B2B</li><li>• Oracle Managed File Transfer</li><li>• Oracle Event Processing</li><li>• Oracle Enterprise Repository</li></ul> <p>* Does not contain database, WebLogic Server, and IDE</p>

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# Domain Configuration

Domain Type	Recommended use
Default Domain	Use for demonstrations or evaluation purposes, because it: <ul style="list-style-type: none"><li>• Is configured as an Integrated WebLogic Server that runs within Oracle JDeveloper</li><li>• Shuts down when terminating Oracle JDeveloper</li><li>• Uses JavaDB for persistent data</li></ul>
Stand-alone Domain	Best for demonstrations and development purposes: <ul style="list-style-type: none"><li>• Can use Oracle Service Bus Console instead of Oracle JDeveloper</li><li>• Independently installed from JDeveloper</li><li>• Uses JavaDB for persistence</li></ul>
Compact Domain	For development, proof of concept, and demonstration purposes: <ul style="list-style-type: none"><li>• Allows adding other components, such as Enterprise Scheduler, Managed File Transfer, B2B, and Business Activity Monitoring</li><li>• Requires an Oracle (or supported) database</li></ul>



# Summary

In this lesson, you should have learned how to:

- Describe what Enterprise Service Bus does
- List the capabilities of Enterprise Service Bus
- Describe Oracle Service Bus architecture and components
- List the features of Oracle Service Bus
- Describe the relationship between Oracle Service Bus and Oracle SOA Suite
- List Oracle Service Bus installation and configuration options



# Practice 2: Overview

## 2-1: Configuring the Integrated WebLogic Server's Default Domain in JDeveloper

