Introduction to Oracle SOA

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Mediator

Business Rule

Human Task

Spring context

Adapters

❖ Transactional Adapters
- o Database
- o JMS
- o Web service

❖ Non Transactional Adapters
- o File
- o FTP

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What Is Oracle Fusion Middleware

❖   Oracle Fusion Middleware is a collection of standards-based software products that spans a range of tools and services: from Java EE and developer tools, to integration services, business intelligence, and collaboration.

❖   Oracle Fusion Middleware offers complete support for development, deployment, and management of applications.

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What is SOA

❖   SOA stands for Service Oriented Architecture.

❖   SOA is an architecture for building business applications.

❖   SOA provides an enterprise architecture that supports building connected enterprise applications

SOA Diagram

Benefits of SOA

- ❖ Loose coupling

- ❖ Reusability

- ❖ Interoperability

- ❖ Scalability

- ❖ Flexibility

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Benefits of SOA Continued…

❖ Set of integrated capabilities:
   ❖ Messaging

   ❖ Service discovery

   ❖ Orchestration

   ❖ Web services management and security

   ❖ Business rules

   ❖ Events framework

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SOA Standards Continued…

❖ The standards SOA leverages are:

o Service Component Architecture (SCA) assembly model

✓ Provides the service details and their interdependencies to form composite applications.

✓ SCA enables you to represent business logic as *reusable* service components.

o Service Data Objects (SDO)

❖ Specifies a standard data method

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SOA Standards Continued…

- ❖ XSL Transformations (XSLT)
  - o Processes XML documents and transforms document data from one XML schema to another.

- ❖ Java Connector Architecture (JCA)
  - o Provides a Java technology solution to the problem of connectivity between the many application servers in Enterprise Information Systems (EIS).

- ❖ Java Messaging Service (JMS)
  - o Provides a messaging standard that allows application components based on the Java 2 Platform, Enterprise Edition (Java EE) to access business logic distributed among heterogeneous systems.

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SOA Standards Continued…

❖ Web Services Description Language (WSDL) file

   o Provides the entry points into a SOA composite application. The WSDL file provides a standard contract language and is central for understanding the capabilities of a service.

❖ Simple Object Access Protocol (SOAP)

   o Provides the default network protocol for message delivery.

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SOA Standards Continued…

❖ MDS

    o It stands for Meta Data Service

    o It is a central repository inside OFMW

    o Two types : File Based and DB based

❖ DVM

    o It stands for Domain Value Maps

    o Used at runtime to operate on actual data values

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SOA Service Components

❖ BPEL

  o BPEL stands for Business Process Execution Language

  o BPEL processes provide process orchestration and storage of a synchronous or an asynchronous process.

❖ Mediator

  o It routes events (messages) between different components

❖ Business rule

  o It enables you to design a business decision based on rules.
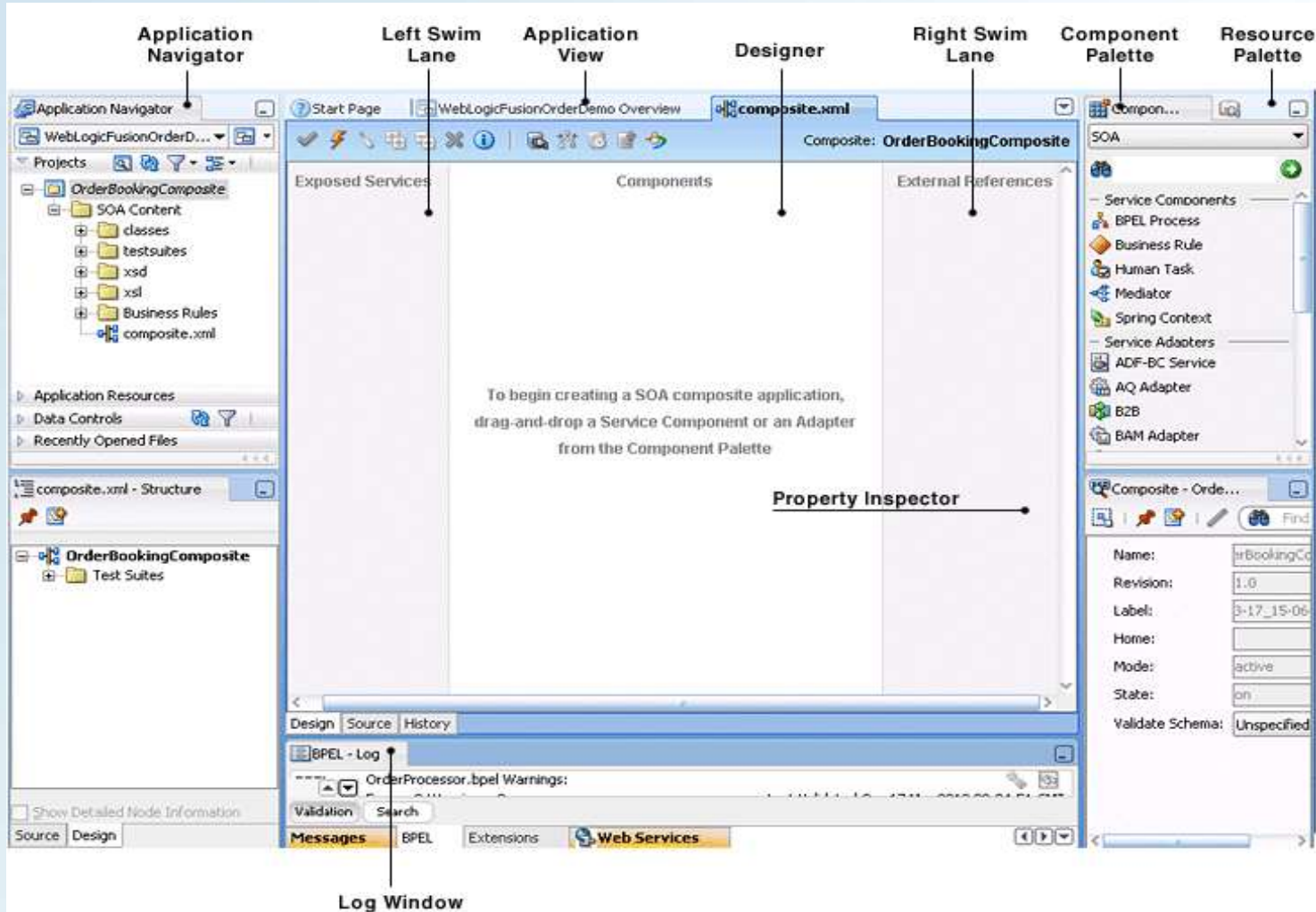
SOA Service Components Continued…

❖ Human task

  o It provides workflow modeling that describes the tasks for users or groups to perform as part of an end-to-end business process flow.

❖ Spring Context

  o It enables you to integrate Java interfaces into SOA composite applications
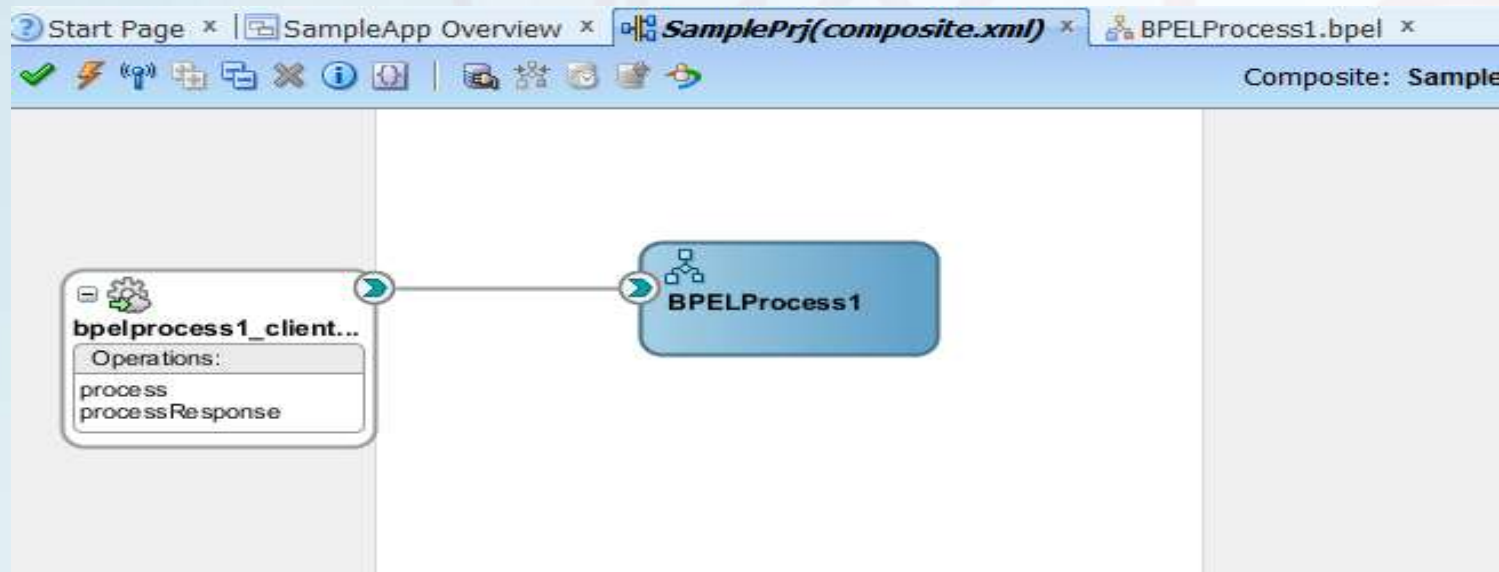
SOA Service Components Continued…

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SOA Service Components Continued…

❖ BPEL

o What is BPEL

o Interaction Patterns

o BPEL Activities.

o Partner link

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BPEL Continued…

❖ Using BPEL, you design a business process that integrates a series of discrete services into an end-to-end process flow.

BPEL Continued…

❖ **Activities**

- ○ Receive

- ○ Pick

- ○ Assign

- ○ Switch or If

BPEL Continued…

❖ Activities Continued..

o While loop

o Invoke

o Throw

o Scope

o Reply

BPEL Continued…

❖ Interaction Patterns
  o One Way Messages
    ✓ Only request will be sent. It doesn't expect any response.

  o Synchronous
    ✓ It waits for response of each request.

  o Asynchronous
    ✓ It sends a request and response can come later.

  o Define Service Later

BPEL Continued…

Interaction Patterns Continued…

BPEL Continued…

❖ Partner link

  o It is a link or reference to other SOA service components

  o It defines a relationship between two services.

SOA Installation

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SOA Installation

❖ Jd eveloper

❖ Web logic Server

❖ RCU

❖ SOA

SOA Installation Continued….

❖ **Memory and Disk Space Requirements**

   o At least 1GHz CPU

   o 5.15 GB of disk space to install

   o Minimum 3 GB of RAM for smooth running of SOA suite

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SOA Installation Continued….

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SOA Installation Continued….

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Adapters

Database Adapter

❖ What is Database Adapter

❖ Different operations

❖ How to configure it for different operations

❖ DB Adapter BPEL configuration

❖ How to create a JNDI

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JMS Adapter

❖ What is JMS Queue and Topic

❖ What are JMS Server, Persistence Store, JMS Module, Sub deployment, Connection Factory

❖ How to create JMS server, Persistence Store, JMS Module, Sub deployment, Connection Factory

❖ How to create a JMS Queue in Web logic server

❖ How to create a JMS Topic in Web logic server

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JMS Adapter Continued…

❖ Consuming a message from JMS Queue using BPEL

❖ Consuming a message from JMS Topic using BPEL

❖ Producing a message to JMS Queue using BPEL

❖ Producing a message to JMS Topic using BPEL

❖ Where and how to see the produced message in Weblogic server

Web Service

❖ What is Web Service Adapter

❖ How to configure a Web Service Adapter using JDeveloper

File Adapter

- ❖ What is File Adapter

- ❖ Different operations in File Adapter

- ❖ Directory settings

- ❖ How to configure a File Adapter using JDeveloper

FTP Adapter

❖ What is FTP Adapter

❖ Different operations in FTP Adapter

❖ Directory settings

❖ How to create a FTP Adapter using JDeveloper

❖ How to create a outbound connection for FTP adapter in Web logic server

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Questions?

KernelTraining.com
From Experts

THANK YOU

for attending Demo of Oracle SOA

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