

## Oracle SOA Suite 12c: Build Composite Applications

**Duration:** 5 Days

### What you will learn

This Oracle SOA Suite 12c: Build Composite Applications training teaches you how to design and develop SOA composite applications for application integration with services. You'll use a Service-Oriented Architecture (SOA) implementation approach.

Learn To:

Create a SOA Composite application using JDeveloper.

Initiate SOA composite applications using the Events Delivery Network.

Test, debug and troubleshoot a SOA composite application.

Apply security policies to service endpoints.

### Benefits to You

By taking this course, you'll learn how to integrate your organization's applications into agile, reusable, service-based connectivity to reduce risk and respond faster to business requirements. Become more effective at managing and monitoring a composite application to support your organization's integration roadmap strategy and lower its total cost of ownership.

### Oracle JDeveloper 11g Integrated Development Environment

With the Oracle JDeveloper 12c Integrated Development Environment (IDE), you'll learn how to design, develop, deploy and test SOA Composite applications. Composite applications are modeled and developed according to the Service Component Architecture (SCA) specifications.

### Secure Interactions Between Services

These applications are comprised of Mediator, BPEL, Business Rules and Human Tasks (Workflow) components. You'll also learn how to secure interactions between services using Oracle Web Services Manager policies.

### Audience

Application Developers

Business Analysts

Developer

SOA Architect

Technical Consultant

## Related Training

### *Required Prerequisites*

Knowledge of XML, XML Schema, XSL Transformations and XPath

Knowledge of web service standards, including SOAP and WSDL.

## Course Objectives

Implement Business Rule component with IF-THEN rules and decision tables

Test, debug, and troubleshoot a SOA composite application

Initiate SOA composite applications using the Events Delivery Network

Apply security policies to service endpoints to secure interactions

Implement Human workflow with Human Task components

Describe SOA concepts and related technology

Orchestrate business process flows by using BPEL

Work with Mediator components with routing rules, filters, and transformations

Create a SOA composite application using JDeveloper

## Course Topics

### **Introduction to Service Oriented Architecture**

Describing Service-Oriented Architecture (SOA)

Explaining Service Component Architecture

Reviewing of Services and Key Standards

Explaining the Oracle SOA Suite 12c Architecture and Components

Explaining Business Events and the Event Delivery Network

Installing the Oracle SOA Suite 12c Quickstart

### **Getting Started with Composite Applications**

Describing Basic Synchronous and Asynchronous Interaction Patterns

Discussing XSD and Web Services Description Language (WSDL)

Creating a Mediator Component

Defining a Routing Service

Creating XSL and XQuery Transformations with the XSLT Mapper

Introducing Working with Adapters

Creating a File Adapter Service Reference

Examining the composite.xml Source

### **Managing and Monitoring a Composite Application**

Deploying a Composite Application

- Versioning Applications
- Discussing Application state
- Using Configuration Plans
- Managing the Life Cycle of a Composite Application
- Testing a Composite Application
- Managing SOA Applications with JDeveloper
- Testing a Composite Application in Enterprise Manager

### **Working With Data**

- Discussing Data Standards
- Using Attributes
- Introducing XSL Transformations
- Using XPath Functions
- Using the Mapper in JDeveloper
- Testing Transformations
- Working with Native Format Data

### **Using the JMS and JDBC Adapters**

- Introducing Binding Components and JCA Adapters
- Monitoring Adapters
- Discussing JMS Messaging
- Discussing Adapters and the WebLogic Application Server
- Introducing the Oracle JMS Adapter
- Configuring JMS Resources with WebLogic Administration Console
- Configuring the JDBC Adapter
- Discussing Transactionality

### **Introduction to BPEL**

- Defining Business Processes and BPEL
- Introducing Parts of a BPEL Process
- Discussing Variables in a BPEL Process
- Using the Sequence and Scope Activities
- Using the BPEL Design Editor
- Testing a BPEL Process in Enterprise Manager

### **More BPEL Activities**

- Conditional Branching with the If Activity
- Processing with the Flow Activity
- Parallel and Sequential Looping with the Foreach Activity
- Suspending a Process with the Wait Activity
- Waiting for a Message with the Pick Activity
- Looping with the While Activity
- Indexing XML Arrays Dynamically
- Examining Structured and Extension BPEL 2.0 Activities

### **Handling Faults in Composite Applications**

- Introducing Faults and Fault Handling Options
- Managing Faults in Synchronous and Asynchronous Mediators
- Returning Faults from Synchronous and Asynchronous BPEL Processes
- Throwing Faults in BPEL Processes
- Introducing Compensation and Compensation Handlers
- Introducing the Fault Management Framework

Configuring Fault Policies  
Recovering Faults with Enterprise Manager Fusion Middleware Control

### **Introducing Human Tasks**

Introducing Human Tasks  
Creating and Configuring a Human Task in a Composite Application  
Adding a Human Task to a BPEL Process  
Generating and Deploying Task Display Forms  
Using the Worklist Application to View and Act on Task Information  
Introducing the Oracle User Messaging Service  
Configuring UMS Notification Properties  
Sending Notifications to User's Preferred Channel

### **Sharing Functionality**

Using the Design-time Meta Data Services (MDS) Repository to share files  
Introducing Templates  
Creating and Using Project, Service Component, and Scope Activity Templates  
Introducing BPEL Subprocesses  
Creating and Using Standalone Subprocesses  
Creating and Using Inline Subprocesses  
Describing the Differences Between Templates and Subprocesses

### **Using the REST Adapter**

Introducing REST Services  
Comparing REST and SOAP Web Services  
Creating and Configuring a REST Adapter

### **Introducing Business Rules**

Introducing the Business Rule Component  
Describing the Oracle Business Rules Architecture  
Creating Rules and Decision Tables with the JDeveloper Rule Editor  
Examining Business Rule Component Files  
Describing the Role of the Rules SDK  
Editing Business Rules at Runtime

### **Designing and Managing Business Events**

Describing the Event Delivery Network  
Creating a Business Event  
Publishing an Event  
Subscribing to an Event  
Managing Events in Oracle Enterprise Manager

### **Testing SOA Composite Applications**

Introducing the Composite Test Framework  
Defining Emulations and Assertions  
Discussing Test Suites and Test Cases  
Testing Initiation of Inbound Messages  
Emulating Outbound, Fault, and Callback Messages  
Running Test Cases  
Examining Results of a Test Run  
Using the SOA Debugger to Debug Composite Applications

## **Securing Services and Composite Applications**

Explaining Security for Services

Describing the Fusion Middleware Security Architecture

Attaching Security Policies at Design Time in JDeveloper

Attaching Security Policies Post-Deployment in Enterprise Manager