Oracle SOA Suite 10g: Services Orchestration

Duration: 5 Days

What you will learn

In this course, the participants learn the concepts of Service-Oriented Architecture (SOA) and how to implement a SOA strategy by using Oracle SOA Suite 10g (10.1.3.4) and related software.

Participants learn how to

Create composite SOA-based applications that build on Web services
Integrate services through an Enterprise Services Bus (ESB) and service adapters
Orchestrate and integrate a business process that includes human workflow management by using the Oracle BPEL Process Manager
Implement decision services with Oracle Business Rules
Secure services with Oracle Web Services Manager.

Participants use a Java EE Web-based application interface to initiate services registered and deployed in Oracle SOA Suite 10g. All practice development is performed by using Oracle JDeveloper 10g.

Learn To:

Develop composite style SOA applications
Integrate services by using an Enterprise Service Bus
Develop business process flows by using BPEL
Implement Human Workflow with a BPEL process
Secure Web and SOA Services by using Oracle Web Services Manager

Audience
Business Analysts
Java Developer
SOA Architect
Technical Consultant

Prerequisites
Required Prerequisites
Web Service standards such as WSDL and SOAP concepts
XML standards such as XML syntax, XML Schema, XSL, XPath

Course Objectives
Explain the SOA concepts and terminology as related to integration technology
Develop and deploy BPEL processes to an Oracle SOA Suite 10g environment. This includes developing a BPEL proces
Design and integrate services by using Oracle ESB to move and transform message data between service end points
Define business rules by using Rule Author of Oracle Business Rules, and implement the business rules in a BPEL process
Secure message contents and exchanges between service endpoints by using Oracle Web Services Manager
Monitor Oracle SOA Suite 10g components by using Oracle Application Server Control, Oracle BPEL Control, Oracle ESB Control

Course Topics

Introducing SOA Concepts and Design Principles
Why Service-Oriented Architectures?
Creating a Service Portfolio
Standards enabling SOA
Identifying elements of an SOA design approach
Introduction to SOA Governance

Implementing Applications with Oracle SOA Suite 10g
Overview of Oracle SOA Suite
Describing the course environment
Describing the OrderBooking practice scenario
Implementing OrderBooking with Oracle SOA Suite

Integrating Systems as Services through Adapters
Introducing Adapter Services
Describing the Adapter Framework
Identifying OracleAS Adapter Types
Describing Technology Adapters
Application and Legacy Adapters
Implementing Adapters Services in an ESB Project
Implementing Adapters Services in an BPEL Project

Configuring Oracle Enterprise Service Bus
ESB as a Foundation for SOA-based Services
Describing the Benefits of ESB
Integrating Services through the ESB
Working with the Oracle ESB Designer
Defining Routing Services and Routing Rules
Testing a Service Exposed through the ESB
Creating and using a Domain Value Map
Describing common ESB Interaction Patterns

Developing a Simple BPEL Process
Describing Oracle BPEL Process Designer
Creating a BPEL Process Project
Building expressions with the XPath Expression Builder
Deploying the BPEL Process
Working with the Oracle BPEL Control
Describing Scopes, global, and local BPEL variables

Orchestrating Services with BPEL
Assigning message types to BPEL Process variables
Invoking a synchronous service
Invoking an asynchronous service
Describing WS-Addressing and Correlation
Implementing Conditional Branching

Processing BPEL Activities in Parallel
Processing in parallel with the Flow Activity
Adding a While Activity for execution loops
Suspending a process with a Wait activity
Implementing a Pick Activity
Defining BPEL Deployment Descriptor Properties
Obtaining property values in BPEL
Updating property values at runtime

Handling Exceptions in ESB and BPEL
Exception management in ESB
Identify, locate, and handle errors in ESB
Configuring notification channels in ESB
Using trackable fields in ESB
Reporting faults in a synchronous BPEL processes
Reporting faults in an asynchronous BPEL processes
Implementing fault handling in a BPEL Process
Configuring a Catch and CatchAll branches

Managing Transformations and Transactions in BPEL
Add a Transform Activity to BPEL process
Configuring a Transform Activity
Understanding database transaction management issues
Executing transactional services from ESB and BPEL
Managing transactions with the Database Adapter
Compensation handling within a BPEL process

Monitoring and Logging ESB and BPEL Components
Incorporate sensors within a BPEL process
Monitor BPEL Processes and Sensor Information by Using the BPEL Control
Working for Oracle SOA Suite log files

Developing Business Rules
Explain business rules concepts
Describe the Oracle Business Rules architecture
Explain the role of the Rule Repository
Describe Oracle Rules Engine
Create a simple rule with Oracle Rule Author
Integrate a simple rule with a BPEL process
Describe the role of the Rules SDK

Implementing Human Workflow in BPEL
Human workflow management concepts
Implementing human workflow services in BPEL with a Human Task
Managing task assignments in the Worklist application
Generating a Task Form to display task information
Implementing an e-mail notification service in BPEL

Configuring the Oracle WSM Components
Implementing WS-Security Policies
Defining a Policy Enforcement Point
Configuring a Gateway and Agent
Defining a Security Policy by using Oracle WSM
Creating a Policy for a Gateway and Agent
Registering a Policy with a Gateway and Agent
Managing Security Policies
Defining Oracle WSM Management Roles

Securing BPEL and ESB Services with Oracle WSM
Creating and configuring a client agent to invoke a secured Web service from BPEL
Securing a BPEL Process
Enabling the BPEL process to pass Authentication Details to the Web service
Managing Security of ESB Services

Monitoring and Reporting with Oracle WSM
Monitoring Web Services
Operating the Oracle WSM Monitor
Monitoring Web Service Performance
Creating Alarm Rules and Viewing Alarm Events

Appendix: Installing Oracle SOA Suite 10g
Preparing an Oracle Database 10g for Oracle SOA Suite 10g
Installing Oracle SOA Suite 10g
Configuring Java Single Sign-On

Appendix: Designing Transformations with the XSLT Mapper
Mapping elements in an XSL Transformation
Specifying a dictionary for mapping elements
Testing XSL Transformations

Appendix: Integrating Java Applications and BPEL
Writing a Java application to invoke a BPEL process
Sending request data to a BPEL process
Obtaining response data from a BPEL process

Appendix: Integrating with Legacy Systems through Adapters
Describing Oracle Applications Adapter concepts
Configuring the run-time connections for the Oracle Application Adapter
Configuring the design-time connection for the Oracle Application Adapter
Creating and configuring Oracle Applications Adapter service
Designing BPEL activities to invoke the Oracle Applications Adapter

Appendix: Exploring Interaction Patterns
Describing various BPEL interaction patterns
Differentiating synchronous and asynchronous interaction patterns

Appendix: Web Services for SOA
Defining a service
Describing key service artifacts
Creating, deploying, and testing a Java Web service
Consuming a Web service by using Oracle JDeveloper