Oracle SOA Suite 10g: Services Orchestration

Duration: 5 Days

What you will learn

This course deals with the basic concepts of Service Orchestration (SOA) and implementation of SOA based applications that incorporate Enterprise Services Bus (ESB), business process integration and human workflow management using the Oracle BPEL Process Manager product.

Participants learn how to apply the Business Process Execution Language (BPEL) standard for assembling a set of discrete services into an end-to-end process flow, and how to translate and transform data by using the Oracle BPEL Process Manager adapters, transfer data using the Oracle ESB services, and enable secure interactions by using Oracle Web Services Manager (OWSM). They deploy and test BPEL processes in the Oracle Application Server SOA Suite (10.1.3.1.0). These skills help you increase the speed and flexibility of your application. Learn more today.

Learn to:

- Explain the basic SOA concepts and terminology as related to integration technology
- Install and configure Oracle Application Server SOA Edition containing Oracle BPEL Process Manager, Oracle ESB, Oracle Rules, and Oracle Web Services Manager
- Develop and Deploy BPEL processes to an Oracle Application Server 10g environment
- Administer Oracle BPEL Process Manager and monitoring business processes
- Build a BPEL process and invoke synchronous and asynchronous business services
- Secure message contents and exchanges between service endpoint by using Oracle Web Services Manager

Audience

- Business Analysts
- SAP Administrator
- SOA Architect

Prerequisites

Required Prerequisites
- XML, XML Schema, XPath, and XSLT, Web Service basics, such as WSDL and SOAP

Suggested Prerequisites
- Oracle 10g: XML Fundamentals
- Oracle Application Server 10g R2: Administration I
- OracleAS 10g R3: Build Web Services
- Oracle SOA Suite 10g: SOA Essentials

Course Objectives

- Explain the basic SOA concepts and terminology as related to integration technology
- Install and configure Oracle Application Server SOA Edition containing Oracle BPEL Process Manager, Oracle ESB, Oracle Rules, and Oracle Web Services Manager
- Develop and Deploy BPEL processes to an Oracle Application Server 10g environment
- Administer Oracle BPEL Process Manager and monitoring business processes
Build a BPEL process and invoke synchronous and asynchronous business services
Employ Oracle ESB to move and transform message data
Secure message contents and exchanges between service endpoint by using Oracle Web Services Manager

Course Topics

Introducing Service-Oriented Architecture Concepts and Oracle SOA Suite 10g
Introducing Course Objectives and Course Environment
Describing Service-Oriented Architecture and Standards Enabling SOA
Introducing Oracle SOA Suite 10g
Describing Oracle ESB Architecture
Orchestrating Services with BPEL
Adding Business Rules and Decision Services
Securing Services with Oracle Web Services Manager
Publishing and Accessing Services with Oracle Service Registry

Installing Oracle SOA Suite 10g
Installing Oracle SOA Suite 10g and Oracle Service Registry
Oracle SOA Development Tools
Oracle BPEL Process Designer and Oracle ESB Designer
Creating Connections in Oracle JDeveloper
Creating an Application Server and Integration Server Connection
Oracle Rule Author and Oracle Web Services Manager
Managing Oracle SOA Suite 10g
Configuring a Data Source and Data Adapter by Using Application Server Control

Providing Services for SOA
Web Service Architecture and Web Service Development Approach
Developing a Web Service by Using the Top-Down Approach
Defining an XML Schema and Creating the WSDL Document
Creating the Web Service by Using Oracle JDeveloper 10g
Deploying and Testing a Java Web Service
Oracle Service Registry Consoles
Publishing a Service Provider and WSDL Service
Testing a Web Service in the Service Registry

Configuring Oracle Enterprise Service Bus
Enterprise Service Bus Architecture: Single Instance
Creating an ESB Project in JDeveloper and Creating a ESB System
Creating an ESB Service and Routing Rules in ESB
Adding Target Service to Routing Rules
Adding a SOAP Service to an ESB Project
ESBBPEL Native Integration
Registering an ESB Project
Benefits of ESB

Developing a Simple BPEL Process
Introducing Business Process Execution Language (BPEL)
Describing Oracle BPEL Process Designer
Creating a BPEL Process Project
Designing the BPEL Process and Orchestrating with BPEL Activities
Describing the Assign Activity
Using the XPath Expression Builder
Examining the BPEL Process XML Source Structure
Deploying the BPEL Process and Executing a BPEL Process

Orchestrating Services with BPEL
Orchestrating Services Through BPEL
Developing a BPEL Process
Importing a User-Defined XML Schema
Creating and Configuring a PartnerLink
Exchanging Message Data with a Service
Grouping Activities by Using a BPEL Scope
Adding Activities to a Scope and Configuring a Scope
Configuring Branches of a Switch Activity

Processing BPEL Activities in Parallel
Processing Activities in Parallel
Processing in Parallel with a FlowN Activity
Working with a FlowN Activity
Adding a While Activity for Execution Loops
Implementing a Pick Activity
BPEL Deployment Descriptor Properties
Defining Preference Properties
Defining Deployment Descriptor Properties in JDeveloper

Integrating Services with Adapters
Describing the Adapter Framework
Identifying OracleAS Adapter Types
Technology, Application, Legacy, and Custom Adapters
File and FTP Adapter
Working with the File Adapter
Creating and Configuring a File Adapter in BPEL and ESB
Invoking a Database Adapter from BPEL
Configuring the Database Adapter

Transforming Data in ESB and BPEL
Routing Rules in ESB
Adding a Filter Expression to a Routing Rule
Synchronous or Asynchronous Execution
Transformation Services in BPEL and ESB
Adding and Configuring Transformation Services in BPEL
Using the XSLT Mapper in BPEL
Adding Transformation to an ESB Service
Dictionary and Report Generation

Administration and Exception Handling in ESB
 Managing ESB Metadata Server and ESB Runtime Server
Testing an ESB Service
Error Handling in ESB
Errors Raised in Synchronously and Asynchronously Called Services
Changing Routing Rules
Viewing Application Logs in ESB
Configuring Logging Levels
Import and Export Utilities in ESB

Handling Exceptions and Monitoring in BPEL
Reviewing the Scope Activity
Managing Faults
Throwing Exceptions in BPEL
Compensation in Transactions
BPEL compensationHandler
Monitoring BPEL Processes with Sensors
Introduction to Monitoring with Oracle BAM
Interfacing with Oracle BAM

Developing Business Rules
Introducing Business Rules Technology
Introducing Oracle Business Rules and Decision Service
Developing a Rule-Enabled Application and accessing Oracle Rule Author
Defining Oracle Business Rules Development Concepts
Creating a Rule Repository and Rule Definitions 1
Identifying the Structure of a Rule and creating a Rule
Integrating Rules with a BPEL Process
Creating a Decision Service PartnerLink

Implementing Human Workflow in BPEL
Workflow Services in Oracle BPEL Process Manager
Implementing Human Workflow Services
Workflow Exchange Patterns
Describing Workflow As a Service
Creating a Human Task in BPEL
Working with Notification Services
Configuring E-Mail Notification for a BPEL Process
Understanding XMail E-Mail Server and Configuring the E-Mail Client

Integrating Java Applications and BPEL
Invoking a BPEL Process from Java
Invoking One-Way and Two-Way Operations from Java
Invoking a BPEL Process from JSP and with the JSP Tag Library
Executing Java Code in a BPEL Process
Web Services Invocation Framework
Java Code with WSIF Bindings
WSIF Java Calls
Embedding Java Code in BPEL

Configuring the Oracle WSM Component Archit
Oracle WSM Component Architecture and Oracle WSM Server Components
Configuring a Gateway and a Server Agent
Registering a Web Service with the Gateway
Policy Management in Oracle WSM
Understanding Oracle WSM Policy Steps
Pipeline Templates
Creating a Policy Pipeline Template
Using the Pipeline Template in the Server Agents Policy
Securing BPEL and ESB Services with Oracle WSM
Securing the Endpoints of the SOA Order Booking Application
Invoking a Secured Service from BPEL
Using Oracle WSM Client and Server Agents to Enforce Security Policies
Installing and Configuring a Client Agent
Securing a BPEL Process in Oracle WSM
Invoking a Secured Web Service from BPEL
Deploying and Testing the BPEL Process
Invoking a Secured Web Service from ESB

Monitoring and Reporting Web Services by Using Oracle WSM
Oracle WSM Monitoring and Auditing
Oracle WSM Monitor Architecture
Managing the Operational Environment
Monitoring System Performance
Viewing the Message Logs
Creating Custom Views
Executing Custom Views
Creating an Alarm Rule and Alarm Processing Rule