Objective & Audience

Objective
Help you prepare to take the Oracle SOA Foundation Practitioner Exam (1Z0-451) exam by providing pointers to resources that you can use in your preparation.

Targeted Audience
- Consultants who know how to install the Oracle SOA Suite 11g and perform the tasks required to configure and manage it.
- Field experience with SOA Suite 11g in addressing customer integration opportunities is valuable.
- Up-to-date SOA Suite 11g product training is strongly recommended.
Exam Topics & Objectives

Exam Topics
The Oracle SOA Foundation Practitioner exam consists of 11 topics:
1. Service-Oriented Architecture Concepts
2. SOA Composite Applications
3. Adapters
4. Orchestrating Services with BPEL
5. Advanced BPEL Concepts
6. Working with Mediator Components
7. Human Workflow
8. Oracle Business Rules Concepts
9. Secure Services and Composite Applications
10. SOA 11g Integration Points
11. Monitoring and Managing SOA 11g Deployment

Exam Objectives
The exam objectives are defined by learner or practitioner level of knowledge:

- **Learner-level**: questions require the candidate to recall information to determine the correct answer. Example: Define the term cloud.
- **Practitioner-level**: questions require the candidate to derive the correct answer from the application of their knowledge, which can only be attained by extensive experience with the product. Example: The client requires a cloud implementation for both intranet and extranet usage. What would you recommend to address the need?
Training Options

For each exam topic there have been identified alternative training options that are available at Oracle. The training options are divided into four categories:

- **Boot Camps**
  The [boot camps](#) are designed as a "jump start" training to enhance your skills by providing role-based training on industry-leading Oracle solutions and services. The boot camps are built as concise, intensive, and real-time training to give partners a competitive advantage as they prepare to build powerful solutions for their own customer base. Partners can choose to attend these boot camps in class or in a live virtual class format to maximize the effectiveness and the time allocated to training. Partners can take any publicly-scheduled [Oracle University](#) courses at steep discounts. Benefit from hands on experience to gain real working skill and work toward Oracle certifications.

- **Online Training**
  Oracle partners are entitled free access to the [Oracle Knowledge Center](#), a vast library of recorded product courses. New courses are regularly added to the library, providing partners with the latest information and training to master new products or to increase proficiency on the new releases.

- **Documentation**
  Books, white papers, product user guides and [reference manuals](#) are available from Oracle on the web.
Topic 1: Service-Oriented Architecture Concepts

Objectives

• Describe Service-Oriented Architecture (SOA) concepts
• Identify standards that enable SOA
• Review Service Component Architecture (SCA)
• Describe Event-Driven Architecture (EDA)

Level

Learner

Training Options

• Instructor-Led Training
  – Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  – Oracle SOA Suite 11g: Essential Concepts (3 days)
  – Oracle SOA Suite 11g: Build Composite Applications (5 days)
• Online Training
  – Oracle SOA Suite 11g: New Features (84 minutes)
• Documentation
  – Getting Started with Oracle SOA Suite
  – Oracle Fusion Middleware Developer’s Guide for Oracle SOA Suite 11g: Introduction to Building Applications with Oracle SOA Suite
  – Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 1 – SOA and Its Evolution

Sample Questions

• Identify three major enablers of Oracle SOA 11g.
  A. Business Process Execution Language *
  B. WSRP
  C. SCA. *
  D. WSDL *
  E. OSGI
  F. .NET

• What three things are true about Service Component Architecture?
  A. It is an assembly model of service components in composite applications. *
  B. It provides the foundation for the orchestration of Web services.
  C. SCA is a set of specifications governed by OASIS through Open Composite Services Architecture. *
  D. The use of specific programming languages and technologies is not required with SCA.*
  E. It provides the architecture to build Java messaging applications.
Topic 2: SOA Composite Applications

Objectives

- Understand the concepts of SCA technologies  
  Learner
- Describe Oracle SOA Suite 11g components  
  Learner
- Describe the service components  
  Learner
- Define a composite application  
  Practitioner
- Describe the SOA Composite Editor  
  Learner

Training Options

- Instructor-Led Training
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)
- Online Training
  - Oracle SOA Suite 11g: New Features (84 minutes)
- Documentation
  - Getting Started with Oracle SOA Suite
  - Oracle Fusion Middleware Developer’s Guide for Oracle SOA Suite 11g: Introduction to Building Applications with Oracle SOA Suite
  - Oracle Fusion Middleware Developer’s Guide for Oracle SOA Suite 11g: Developing SOA Composite Applications with Oracle SOA Suite
  - Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 2 – Product Architecture

Sample Questions

- Oracle SOA Suite 11g is configured with the _____ application that enables composite application components to send notifications.
  A. Workload
  B. User Messaging Service *
  C. Worklist Manager
  D. Workflow
- You are using JDeveloper’s Composite Editor to build a composite application. Which service lane will you use to define your interfaces to the composite?
  A. Reference Services
  B. Exposed Services *
  C. External Services
  D. Internal Services
Topic 3: Adapters

Objectives

- Describe adapter concepts and framework
- Describe technology adapters: File, Database, JMS
- Describe application adapters E-Business Suite, PeopleSoft, Siebel, etc.
- Explain adapter run-time configuration
- Explain adapter design-time configuration

Level

Learner

Training Options

Instructor-Led Training

- Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
- Oracle SOA Suite 11g: Essential Concepts (3 days)
- Oracle SOA Suite 11g: Build Composite Applications (5 days)

Documentation

- Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite 11g: Section 4.5 - Introduction to Adapters
- Oracle Fusion Middleware User's Guide for Technology Adapters 11g: Introduction to Oracle JCA Adapters
- Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 5 – Basic Components: Web Services Binding, Mediator and Database Adapter
- Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 6 – Accessing Files Using the File Adapter
- Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 10 – Using the JMS Adapter

Sample Questions

Choose three operations that are supported by the Oracle File Adapter.

A. Read File *
B. Fetch File
C. List Files *
D. Write File *
E. Delete File

Identify three application integration interfaces that are valid for the Oracle Applications Adapter.

A. PL/SQL API *
B. Oracle XML SOA Gateway *
C. Oracle e-Commerce (EDI) Gateway *
D. JNDI
E. Batch files
Topic 4: Orchestrating Services with BPEL

Objectives

- Explain BPEL component activities and partner links
  - Level: Learner
- Describe synchronous and asynchronous BPEL processes
  - Level: Learner
- Describe message transformations and XSLT
  - Level: Learner
- Explain parallel flow and conditional branching
  - Level: Learner
- Explain BPEL integration with Java
  - Level: Learner

Training Options

- Instructor-Led Training
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)

- Online Training
  - BPEL Component Overview (2 hours)

- Documentation
  - Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite 11g: Incorporating Java and Java EE Code in a BPEL Process

Sample Questions

- _____ specifies both an input element and an output element for an operation portType of the service WSDL.
  - A. Asynchronous service
  - B. Synchronous service *
  - C. BPEL services
  - D. JMS service

- Which two statements are true about the BPEL component when using the entity variable?
  - A. Data operations such as loading and saving data are performed automatically by the data provider service without asking to code any service invocation. *
  - B. Data operations such as explicitly loading and saving data are performed by the database adapter in the BPEL Process Manager.
  - C. Data in variables are in service data object (SDO) form. *
  - D. Data in variables are in document object model (DOM) form.
Topic 5: Advanced BPEL Concepts

Objectives
- Describe exception handling in composite applications Level Learner
- Describe the Fault Management Framework Level Learner
- Describe compensation handling within a BPEL process Level Practitioner
- Describe correlation concepts Level Learner
- Manage transactions with SDO Level Practitioner

Training Options
- Instructor-Led Training
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)
- Online Training
  - BPEL Component Overview (2 hours)
- Documentation
  - Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite 11g: Using Fault Handling in a BPEL Process
  - Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite 11g: Using Correlation Sets and Message Aggregation
  - Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 14 – Adding Exception Handling

Sample Questions
- To build a custom Java fault handler in BPEL, you provide a Java class that implements ______.
  A. IFaultRecoveryJavaClass *
  B. IFaultRetryClass
  C. IFaultBpelProcess
  D. IFaultHandlerJavaClass

- What is the best practice to define a fault handler for a BPEL process that receives input messages from a file, writes that information to the database, and invokes an external Web service to send information and publish a message to the JMS Queue?
  A. Have a global fault and compensation handler for the BPEL process to manage the faults.
  B. Define an individual scope for major activities and handle the faults at the scope level. *
  C. Define only a catchAll activity to catch any faults within this BPEL process.
  D. Define a global scope that implements the IFaultBPELProcess.
Topic 6: Working with Mediator Components

Objectives

• Explain the Mediator component and its features  
  Level: Learner
• Define business events and the Event Delivery Network (EDN)  
  Level: Learner
• Create and configure a Mediator service component  
  Level: Practitioner
• Create Mediator routing rules  
  Level: Practitioner

Training Options

• Instructor-Led Training
  – Oracle Service-Oriented Architecture Suite11g Implementation Boot Camp (4 days)
  – Oracle SOA Suite 11g: Essential Concepts (3 days)
  – Oracle SOA Suite 11g: Build Composite Applications (5 days)
• Online Training
  – Mediator Component Overview (78 minutes)
• Documentation
  – Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite 11g: Getting Started with Oracle Mediator
  – Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite 11g: Using the Oracle Mediator Service Component
  – Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 5 – Basic Components: Web Services Binding, Mediator and Database Adapter
  – Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 17 – Event Delivery Network

Sample Questions

• Identify two features on the Event Delivery Network (EDN).
  A. aligns SOA and Event-Driven Architecture (EDA) *
  B. supports a publish-subscribe declarative model *
  C. facilitates mixing and matching of service invocations and events
  D. provides split-join Web services

• Identify two correct statements about Schematron-based validations in Oracle Mediator.
  A. XSD-based validations are more comprehensive than Schematron-based validations.
  B. Oracle Mediator uses Schematron files for semantic validation. *
  C. Schematron files usually have a .sch extension. *
  D. An error message or warning is display if the selected Schematron file is empty.
Topic 7: Human Workflow

Objectives

- Describe human workflow concepts, features and architecture  Learner
- Design human tasks and services  Learner
- Invoke a human task from a BPEL process  Practitioner

Training Options

- Instructor-Led Training
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)
- Online Training
  - Human Task Component Overview (180 minutes)
- Documentation
  - Oracle Fusion Middleware Developer’s Guide for Oracle SOA Suite 11g: Introduction to Human Workflow Services
  - Oracle Fusion Middleware Developer’s Guide for Oracle SOA Suite 11g: Getting Started with Human Workflow
  - Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 8 – Creating Human Tasks

Sample Questions

- Using the Oracle Worklist Application, a user can perform which three actions?
  A. Execute authorized actions on tasks *
  B. Create personal tasks *
  C. Define delegation rules *
  D. Define user groups
  E. Define task routing policy
- The human task service presents tasks to users via which two channels?
  A. Worklist application *
  B. Oracle Forms-based notification
  C. Actionable notifications sent via SMS
  D. Actionable notifications sent via Email *
# Topic 8: Oracle Business Rules Concepts

## Objectives

<table>
<thead>
<tr>
<th>Explain business rule concepts</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe business rules architecture</td>
<td>Learner</td>
</tr>
<tr>
<td>Describe Oracle Rules Engine</td>
<td>Learner</td>
</tr>
<tr>
<td>Create rules with JDeveloper Rules Designer</td>
<td>Practitioner</td>
</tr>
<tr>
<td>Integrate a simple rule with a BPEL process</td>
<td>Practitioner</td>
</tr>
</tbody>
</table>

## Training Options

- **Instructor-Led Training**
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)

- **Online Training**
  - Business Rule Component Overview (180 minutes)

- **Documentation**
  - Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite 11g: Getting Started with Oracle Business Rules
  - Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 9 – Business Rules

## Sample Questions

- Identify two applicable examples of business rules.
  - A. Notifications to alert interested users about a change in the state of a task during the task life cycle
  - B. **Business policies such as spending policies and approval matrices** *
  - C. **Computations such as discounts or premiums** *
  - D. Activities that are required to advance the business process

- A rule dictionary contains one or more definitions of facts, constraints, functions, and rulesets.
  - Identify the correct statement that describes facts.
    - A. Facts have a collection of fact types, global variables/ constants, functions, and rulesets.
    - B. Facts are declared in the form of “if condition, then action.”
    - C. Facts have an action like assign, assert, or call.
    - **D. Facts are data or business objects upon which the rules engine evaluates rule conditions.** *
Topic 9: Secure Services and Composite Applications

Objectives

- Explain web services and composite security
- Describe the Fusion Middleware security architecture
- Understand security policy management and identity propagation
- Describe OWSM agents

Level

- Learner

Training Options

- Instructor-Led Training
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)
- Documentation
  - Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 15 – Securing Services

Sample Questions

- Service authentication can be incorporated using _____.
  A. Signatures.
  B. Security tokens *
  C. Encryption
  D. Binding

- Which two statements are true about the Oracle WSM Policy Framework?
  A. It manages and secures Web services consistently across the organizations. *
  B. It can be used by developers at design time and also by system administrators at runtime. *
  C. It manages service orchestration and reliable message delivery.
  D. It does not leverage the Oracle Platform Security Service (OPSS) Login Module.
Topic 10: SOA 11g Integration Points

Objectives

- Describe Oracle Service Bus concepts and architecture
- Describe Oracle Business Activity Monitoring (BAM)
- Describe Oracle B2B
- Describe EDA and Oracle Complex Event Processing (CEP)

Level

- Learner

Training Options

- Instructor-Led Training
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)
- Online Training
  - Getting Started with Oracle Service Bus: How to Provision a Service in Oracle Service Bus (7 minutes)
  - Oracle Service Bus Essential Concepts (60 minutes)
- Documentation
  - Oracle Fusion Middleware Concepts and Architecture for Oracle Service Bus 11g: Oracle Service Bus Architecture
  - Oracle Fusion Middleware User's Guide for Oracle Business Activity Monitoring 11g: Introduction to Oracle Business Activity Monitoring
  - Oracle Fusion Middleware Getting Started Guide for Oracle Complex Event Processing 11g: Overview of Oracle CEP
  - Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 11 Reusing and Virtualizing Services with Oracle Service Bus
  - Getting Started With Oracle SOA Suite 11g R1 - A Hands-On Tutorial: Chapter 16 – Gaining Visibility into Your Process Activities

Sample Questions

- Which two statements are true about Oracle B2B?
  A. It is part of the EDN Suite that enables Web service mediation.
  B. It is an e-commerce gateway that enables the secure and reliable exchange of business documents between an enterprise and its trading partners.*
  C. It provides the capability of Web service orchestration by implementing BPEL.
  D. It is a binding component for the SOA Suite that enables implementation of e-commerce business processes.*

- Which three statements are true about Oracle Service Bus (OSB)?
  A. It is an intermediary that processes incoming service requests, determines routing, and transforms messages for compatibility with other service consumers.*
  B. It is mainly used for Web service orchestration to build business processes.
  C. It can receive messages through a transport protocol such as HTTP, JMS, and FTP and send messages through the same or a different transport protocol.*
  D. It provides the support for long-running asynchronous Web services with correlation and compensation handlers.
  E. It processes messages based upon metadata specified in the message flow definition of a proxy service.*
# Topic 11: Monitoring and Managing SOA 11g Deployment

## Objectives
- Describe deploy and un-deploy of SOA composite applications
  - Level: Learner
- Describe management of a SOA composite application using Enterprise Manager
  - Level: Learner
- Describe Enterprise Manager Grid Control SOA Management Packs
  - Level: Learner

## Training Options
- **Instructor-Led Training**
  - Oracle Service-Oriented Architecture Suite 11g Implementation Boot Camp (4 days)
  - Oracle SOA Suite 11g: Essential Concepts (3 days)
  - Oracle SOA Suite 11g: Build Composite Applications (5 days)
- **Online Training**
  - Deploying a SOA Composite Application (6 minutes)
  - SOA Configuration Management Using Enterprise Manager Grid Control (7 minutes)
- **Documentation**
  - Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite and Oracle Business Process Management Suite 11g: Monitoring the SOA Infrastructure

## Sample Questions
- _____ is an instance of an Oracle WebLogic Server used to host deployed custom-built applications for production use.
  - A. Administration Server
  - B. Portal Server
  - C. Managed Server *
  - D. Security Server
- Oracle SOA composite applications can be deployed by using which three?
  - A. Eclipse
  - B. JDeveloper *
  - C. WLST *
  - D. CAMM
  - E. Fusion Middleware Control *
Exam Registration

• **How to register for the exam?**
  You can register for all Oracle certification exams with [Pearson VUE](https://www.pearsonvue.com). Before a registration can be submitted, a Pearson VUE profile must be created using your Company ID. Your Company ID can be obtained by contacting your local Oracle Partner Business Center or by signing in to your OPN account. Your Company ID is located in the section on the right under "Company information".

  Please follow [these instructions](#) in order to properly set-up your Pearson VUE account for the first time.

• **Have you completed an Oracle Certification Exam in the past?**
  Due to systems enhancements, each partner who has completed an Oracle Certification Exam will need to update their Pearson VUE profile in order to receive credit and for those records to appear in the [OPN Competency Center](https://www.oracle.com/certified-partners).  

• **How to get full recognition as Certified Implementation Specialist?**
  To get full recognition as a Certified Implementation Specialist you need to:
  A. Update your Pearson VUE profile with your Company ID
  B. Activate your Certview Account

  Please follow [these instructions](#) and your records will be properly recorded.
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