Oracle Application Development Framework 12c Essentials Exam Study Guide
Getting Started

The Oracle Application Development Framework 12c Essentials Exam Study Guide is designed to help you prepare for the Oracle Application Development Framework Exam (1Z1-419).

Earning this certification helps OPN members differentiate in the marketplace through proven in-depth expertise, and helps their partner company qualify for the Oracle Application Development Framework 12c Specialization.

Target Audience

Oracle Application Development Framework 12c Essentials exam audience defines the type of participants who are likely to pass the exam and targets individuals with a specific level of education and expertise:

*Job Role:*

- Technical Implementers

*Level of Competency:*

- Strongly recommended for the individuals to have at least 2-3 years implementation experience;
- Participants should possess a strong foundation and expertise in implementing solutions using Oracle Application Development Framework (ADF);
- Deep experience in at least one other Oracle product family is highly recommended.

Exam Topics

Oracle Application Development Framework 12c Essentials Exam covers 16 topics:

- Introduction to JDeveloper and ADF
- Building a Data Model with ADF Business Components
- Exposing Data to Clients
- Creating Views with ADF Faces
- Defining Task Flows and Adding Navigation
- Declaratively Customizing Business Components
- Validating User Input
- Modifying Data Bindings between the UI and the Data Model
- Adding Functionality to Pages
- Adding Advanced Features to Task Flows and Page Navigation
- Passing Values between UI Elements
- Responding to Application Events
- Building Reusability Into Pages
- Programmatically Customizing the Data Model
- Debugging and Deploying ADF Applications
- Implementing Security in ADF Applications
Levels of Knowledge

Each exam topic contains objectives and each objective is categorized by learner or practitioner level of knowledge.

**Learner** items test foundational grasp and require product comprehension (not recognition or memorization).

Example:

“When setting up price list modifiers in Advanced Pricing, which three steps must be completed in order to successfully activate surcharge and price break features?”

**Practitioner** items present on-the-job scenarios and require the ability to: integrate and apply knowledge in new contexts, analyze and troubleshoot complex issues, and solve problems.

Example:

1) “You are creating price list modifiers in Advanced Pricing. Your customer has three requirements: X, Y, Z. Identify the two steps that must be completed in order to meet those requirements.

2) “You are running a two-instance database with six redo logs defined. You decide to add a third thread to support a third database instance, on the third node of the cluster. Using command line administration, which two commands will you execute to achieve this?”

Training Options

Throughout the study guide each exam topic recommends one or several training formats:

- **OPN Boot Camps**
- **Online Training**
- **Oracle University Training**

While the Oracle PartnerNetwork facilitates free access to online training, in class trainings often require a fee.
Exam Details per Topic

This section covers details associated to all exam topics such as: exam topics overview, objectives, levels of knowledge, recommended trainings and sample questions. Specialization exams include all product functionality not only the most frequently used ones.

Topic 1: Introduction to JDeveloper and ADF

Objective

- Explain how ADF fits into the Fusion architecture  
  Level: Learner
- Describe the ADF technology stack (MVC)  
  Level: Learner
- Create applications, projects, and connections in JDeveloper  
  Level: Practitioner
- Describe how ADF is used in building Mobile applications  
  Level: Learner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- Introduction to Oracle ADF
- ADF Quick Overview
- ADF Overview
- Getting Started with the JDeveloper IDE
- Guide to the JDeveloper IDE

Documentation

- Oracle Application Development Framework Overview: White Paper
- Understanding Oracle Development Framework
Topic 2: Building a Data Model with ADF Business Components

Objective

- Describe the characteristics of an entity object
- Describe the characteristics of a view object
- Describe the characteristics of an application module
- Define a SQL statement on which to base a query for a view object
- Describe the persistence mechanism of entity objects
- Use the wizard to generate entity objects from database tables
- Create updatable view objects based on entity objects
- Link view objects to one another in a master-detail hierarchy

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Recommended Training

Classroom Training:

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training:

- Developing Rich Web Applications with Oracle ADF
- Introduction to Oracle ADF Business Components
- Deploying Reusable Components
- Building a Web Application using EJB, JPA and JavaServer Pages

Recommended Documentation

- Understanding Oracle Development Framework, ADF Business Components
- Oracle ADF Model and Business Components API Reference, Interface Entity
- About Oracle ADF Entity Objects
- Appreciating the Entity Object
- About Oracle ADF View Objects
- Creating a Master-Detail Application Using Oracle ADF
- Create Master Detail Form in Oracle ADF
Topic 3: Exposing Data to Clients

Objective

- Declaratively define the data model for an application module
- Explain how application modules can manage application state
- Create nested application modules and understand transaction considerations
- Create web service interfaces for application modules
- Explain ADF BC transaction handling

Level

Practitioner
Learner

Recommended Training

Classroom Training:

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- Introduction to Oracle ADF Faces Components
- ADF Data Binding: Using a Bean Data Control

Recommended Documentation

- Understanding the ADF Business Components State Management Feature
## Topic 4: Creating Views with ADF Faces

### Objective

- Define JavaServer Faces (JSF) and the component architecture  
  **Level:** Learner
- Describe the purpose of backing beans  
  **Level:** Learner
- Identify ADF component types included in the ADF Faces component library  
  **Level:** Learner
- Explain the purpose of a data control  
  **Level:** Learner
- Explain what stretch and flow components are and describe how to use them effectively  
  **Level:** Learner
- Define and use complex layout components  
  **Level:** Practitioner

### Recommended Training

**Classroom Training:**

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

**Online Training**

- Introduction to Oracle ADF Faces Components
- Using JavaScript in Oracle ADF Faces
- Working with Backing Beans in JDeveloper – The Right Way

### Recommended Documentation

- Developing Ajax-Based User Interfaces with ADF Faces Rich Client Components
- ADF Faces Layout Basics: White Paper
Topic 5: Defining Task Flows and Adding Navigation

Objective

- Explain how ADF extends capabilities of JSF controller
- Create task flows to define control flow in an application
- Explain how managed beans are used in an application

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- ADF Task Flow - Overview
- Now to Create Trains and Bounded Task Flows in Oracle ADF

Recommended Documentation

- Working with Bounded Task Flows, Regions and Routers
- Getting Started with ADF Task Flows
- Creating ADF Menus for Page Navigation
- Working with Navigation Components
Topic 6: Declaratively Customizing Business Components

Objective

- Modify the default behavior of view objects declaratively
- Modify the default behavior of entity objects declaratively
- Define a list of values (LOV) for an attribute
- Create a transient attribute
- Define control hints for entity object attributes

Level

- Practitioner

Recommended Training

Classroom Training

- [Oracle Fusion Middleware 11g: Build Applications with ADF I](#)
- [Oracle Fusion Middleware 11g: Build Applications with ADF II](#)

Online Training

- [Adding a Transient VO Attribute via Customization](#)
- [Oracle ADF Transient Attributes Using Groovy](#)
- [How to Add a Transient VO Attribute](#)

Recommended Documentation

- [Using List-of-Values Components](#)
- [Adding Transient and Calculated Attributes to an Entity Object](#)
Topic 7: Validating User Input

Objective

- Describe the types of validation available for ADF applications
- Add declarative validation for an entity object
- Write Groovy expressions in validation

Level

- Learner
- Practitioner
- Practitioner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- Using Groovy in Oracle ADF Applications

Recommended Documentation

- Using Validation in the ADF Model Layer
- Defining Validation and Business Rules Declaratively
Topic 8: Modifying Data Bindings between the UI and the Data Model

Objective

- Describe the relationship between UI components, data bindings, data controls, and business services
- List and define the three types of data bindings
- Create and edit data bindings
- Examine how metadata files are used to specify parameters, methods, and return values to a data control

Level

Learner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- ADF Binding Internals Part 1 and Part 2

Recommended Documentation

- An Overview of Databinding Features in Oracle ADF: White Paper
- Using ADF Data Controls
Topic 9: Adding Functionality to Pages

Objective

- Implement a list of values (LOV) to enable users to select a value from a list
- Use the table component to display structured data as a formatted table
- Display hierarchical data in trees
- Use ADF Data Visualization (DVT) components to add charts and maps to JSF pages

Level

- Practitioner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- Introduction to ADF Data Visualization Components – Graphs, Gauge, Maps, Pivot Table and Gantt
- Charting with ADF Data Visualization Components

Recommended Documentation

- Using List-of-Values Components
- Using ADF Hierarchy Viewer Components
- Using Tables, Trees, and Other Collection-Based Components
- Introduction to ADF Data Visualization Components

Objective

- Describe the difference between bounded and unbounded task flows
- Create routers for conditional navigation
- Call methods and other task flows
- Create menu items, menu bars, pop-ups, and context menus
- Use a bounded task flow as a region

Level

- Learner
- Practitioner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- Working with Bounded Task Flows, Regions and Routers
- Creating ADF Menus for Page Navigation
- ADF Task Flow – Overview Part 1 and Part 2

Recommended Documentation

- Getting Started with ADF Task Flows
Topic 11: Passing Values between UI Elements

Objective

- Use a managed bean to hold values
- Access business logic from a managed bean through bindings
- Use parameters to pass values

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- ADF Region Interaction – An Overview
- ADF Region Interaction – Contextual Events
- Binding a JSF Page to a Managed Bean

Recommended Documentation

- Passing Parameters to Managed Bean Methods using EL
Topic 12: Responding to Application Events

Objective

- Describe the phases of the JSF life cycle
- List other types of server events used by ADF Faces components
- Use Partial Page Rendering (PPR)

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Recommended Training

Classroom Training

- [Oracle Fusion Middleware 11g: Build Applications with ADF I](#)
- [Oracle Fusion Middleware 11g: Build Applications with ADF II](#)

Recommended Documentation

- [Using the JSF Lifecycle with ADF Faces](#)
- [Handling Events](#)
- [Rerendering Partial Page Content](#)
Topic 13: Building Reusability Into Pages

Objective

- Identify the benefits of reusing components
- Create ADF libraries to share components within and across teams and applications
- Create a page template for reuse across the JSF pages in an application to enable a consistent look and feel
- Describe how skinning can be used to change the appearance of an ADF application

Level

- Learner
- Practitioner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- ADF Page Templates and Declarative Components
- ADF Faces Skinning

Recommended Documentation

- Creating and Reusing Fragments, Page Templates, and Components
- Creating ADF Skins with Oracle ADF Skin Editor
Topic 14: Programmatically Customizing the Data Model

Objective

- Generate Java classes for business components to modify default behavior programmatically
- Set the value of bind variables of a view object at run time
- Explain the benefits of adding service methods at the application module level
- Create a method validator for an entity object or attribute

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Recommended Documentation

- Working Programmatically with View Objects
- Working with Bind Variables
- Customizing an Application Module with Service Methods
- What Happens When You Create an Entity-Level Method Validator
- To create an entity-level method validator
- What Happens When You Create an Attribute-Level Method Validator
- To create an attribute-level method validator
Topic 15: Debugging and Deploying ADF Applications

Objective

- Identify the JDeveloper tools for logging and diagnostics
- Configure ADF logging
- Use the JDeveloper debugger
- Use JDeveloper to create deployment profiles and configure deployment options
- Describe the deployment process

Level

- Learner
- Practitioner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training

- Debugging and Logging for Oracle ADF Applications
- How to Implement Logging in an ADF Application

Recommended Documentation

- Testing and Debugging ADF Components
Topic 16: Implementing Security in ADF Applications

Objective

- Describe security aspects of an ADF application
- Add ADF security authentication and authorization to an application
- Access security information programmatically and with Expression Language (EL)

Level

- Learner
- Practitioner

Recommended Training

Classroom Training

- Oracle Fusion Middleware 11g: Build Applications with ADF I
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Online Training:

- ADF Application Security
- Enabling SSO for the ADF Application using Oracle Access Manager 11g

Recommended Documentation

- Security for Everyone
- Enabling ADF Security in a Fusion Web Application
Exam Registration Details

Full exam preparation details are available on this page Oracle Application Development Framework 12c Essentials (1Z1-419), including learning objectives, number of questions, time allowance, pricing and languages available.

The OPN Certified Specialist Exams appointments are available worldwide at Pearson VUE Testing Centers. Reservations can be made via phone or online.

Candidates must have an Oracle Web Account to access CertView and check their exam results. In order to have their certifications reflected on OPN Competency Center, both CertView and Pearson Vue accounts must be updated with the current OPN Company ID. Your Company ID can be obtained by contacting your local Oracle Partner Business Center or by signing in to your OPN account.

Additional Resources

- Oracle Developer Tools KZ
- OPN Certified Specialist Exam Study Guides