Red Hat Application Development I: Programming in Java EE (AD183) Training

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Duration: **4 Day**

Overview

Transition from **Java SE** to **Java EE** development with **Red Hat Application Development I: Programming in Java EE (AD183)** — a hands-on course designed for experienced Java developers who want to build enterprise-level applications.

This {*training} introduces developers to the **key specifications of Java EE** and demonstrates how to transform a basic command-line Java SE program into a **multi-tiered enterprise application**. Through guided labs, you'll learn how to build robust and scalable applications using **Enterprise Java Beans (EJB)**, **Java Persistence API (JPA)**, **Java Messaging Service (JMS)**, **JAX-RS for RESTful APIs**, **Contexts and Dependency Injection (CDI)**, and **JAAS** for application security.

> *This course is based on Red Hat® Enterprise Application Platform (EAP) 7.0.*

Prerequisites

- At least **2 years of Java SE development experience**.
- Familiarity with an **IDE** such as Eclipse or Red Hat Developer Studio.
- Experience using **Maven** is recommended but not required.

Who Should Attend

This course is intended for:

- **Java developers** who have solid experience with Java SE and want to expand into enterprise-grade Java EE application development.

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What You Will Learn

By the end of this {*training}, you will have gained knowledge and skills in the following areas:

- Build and deploy **multi-tiered Java EE applications**.
- Package and deploy projects on **JBoss EAP application servers**.
- Create **Enterprise Java Beans (EJBs)**, including **message-driven beans**.
- Manage **data persistence** with **JPA** and entity relationships.
- Develop **RESTful services** using **JAX-RS**.
- Implement **Contexts and Dependency Injection (CDI)** for modular applications.
- Use **Java Messaging Service (JMS)** to create messaging clients.
- Secure applications using **Java Authentication and Authorization Service (JAAS)**.

Impact on the Organization

This course enables organizations to:

- Transition development teams from **Java SE to Java EE**, modernizing applications.
- Improve productivity with **JBoss EAP and Java EE tools** such as Maven and Red Hat Developer Studio.
- Build **scalable, secure, and maintainable enterprise applications** with standardized frameworks.

By mastering Java EE through this course, developers can enhance enterprise software reliability and development efficiency across distributed environments.

Impact on the Individual

After completing this course, participants will be able to:

- Describe core **Java EE 7 specifications** and implement components with each.
- Convert Java SE applications into **multi-tiered enterprise applications**.
- Package and deploy applications to **Red Hat JBoss EAP**.
- Manage persistence with **JPA** and develop **RESTful web services** with **JAX-RS**.
- Implement **dependency injection (CDI)** and manage bean scopes.
- Use **JMS** to send and receive messages.
- Secure enterprise applications using **JAAS**.

This training provides the foundation for progressing to**advanced Java EE and Red Hat middleware development**.

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Outline

1. Transitioning to Multi-Tiered Applications
Differentiate between Java SE and Java EE applications and understand the core architecture.

2. Packaging and Deploying Applications
Package and deploy enterprise applications to a **Red Hat JBoss EAP** server.

3. Creating Enterprise Java Beans (EJBs)
Develop EJBs, including **session** and **message-driven beans** for business logic implementation.

4. Managing Persistence
Use **JPA entities** and **validation** for persistent data management.

5. Managing Entity Relationships
Define and maintain entity relationships using**JPA**.

6. Creating RESTful Web Services
Build and consume REST APIs with the **JAX-RS** specification.

7. Implementing Contexts and Dependency Injection (CDI)
Learn dependency injection and context management for decoupled, testable components.

8. Building Messaging Applications (JMS)
Create message producers and consumers using **Java Messaging Service (JMS)**.

9. Securing Java EE Applications
Apply **JAAS** to secure enterprise applications and control user access.

10. Comprehensive Review
Demonstrate proficiency by integrating all learned concepts into a complete enterprise application.

Note: Course content may evolve with new Java EE technologies and Red Hat product updates.