

Red Hat Application Development I: Programming in Java EE

Course Duration: 40 Hours

Course code: AD183

1. Course Overview

Red Hat Application Development I: Programming in Java EE (AD183) introduces developers to core Java EE technologies through hands-on learning. Starting from a Java SE application, participants build a multi-tier enterprise app using EJB, JPA, JAX-RS, and CDI. The course covers JAAS for security, JMS for scalable communication, and best practices for designing robust, maintainable enterprise solutions. Ideal for aspiring Java developers aiming to advance in enterprise application development.

2. What you'll learn?

By the end of this course, learners will:

- This course is designed to provide developers with essential skills for building, deploying, and maintaining enterprise Java applications using Java EE frameworks and tools. Learners will gain hands-on experience with Java EE specifications, develop enterprise-ready components, and apply best practices for robust, secure, and scalable application development. By the end of the course, participants will be equipped to confidently develop and deploy enterprise Java applications in Red Hat environments. Ensure VM security and compliance within OpenShift environments.

3. Target Audience

- Java developers who want to build enterprise applications
- Software engineers aiming to modernize their skills with Java EE
- Application developers working on enterprise-grade solutions
- IT professionals transitioning from traditional Java SE to Java EE
- Professionals preparing for Red Hat Certified Enterprise Application Developer (RHCJD)

4. Pre-Requisites

Participants should have:

- Before taking this course, participants should have a solid foundation in core Java programming to successfully grasp the advanced enterprise concepts taught in the class. Familiarity with object-oriented design and general software development principles will ensure a smoother learning experience. Prior exposure to basic web application technologies is also helpful.
- Proficiency in core Java programming
- Understanding of object-oriented programming concepts
- Experience with basic web technologies (recommended)

5. Course content

Module 01 – Introduction to Java EE and Red Hat Environment

- Overview of Java EE Features and Architecture
- Setting Up the Development Environment on Red Hat JBoss EAP
- Understanding Multi-Tier Enterprise Applications

Module 02 – Java EE Core Concepts

- Java SE Review: Syntax, Classes, and Interfaces
- Building Enterprise Applications from a Java SE Base
- Understanding Java EE Application Structure

Module 03 – Enterprise Java Beans (EJB)

- Introduction to EJB and Business Logic Implementation
- Creating Stateless and Stateful Session Beans
- Managing Transactions and Persistence

Module 04 – Java Persistence API (JPA)

- Mapping Entities and Relationships
- Managing Data Persistence in Enterprise Applications
- Implementing CRUD Operations with JPA

Module 05 – RESTful Web Services with JAX-RS

- Introduction to REST Architecture
- Creating and Consuming RESTful Services
- Integrating APIs into Enterprise Application

Module 06 – Contexts and Dependency Injection (CDI)

- Overview of CDI in Java EE
- Injecting Dependencies for Component Management
- Managing Scopes and Qualifiers

Module 07 – Application Security with JAAS

- Introduction to Java Authentication and Authorization Service
- Implementing Role-Based Access Control
- Securing Application Components

Module 08 – Messaging with JMS

- Overview of Java Messaging Service
- Creating and Consuming Messages
- Designing Event-Driven Enterprise Applications

Module 09 – Best Practices for Enterprise Application Development

- Designing Scalable and Maintainable Applications
- Applying Design Patterns in Java EE
- Deployment and Optimization on Red Hat Platforms

