

# Red Hat Certified Enterprise Application Developer Exam

Course code: EX183

The Red Hat® Certified Enterprise Application Developer exam (EX183) tests if you have a basic understanding of the core enterprise Java APIs that are required to implement modern, stateless business services. By passing this exam, you become a Red Hat Certified Enterprise Application Developer. This certification can be the first step toward becoming a Red Hat Certified Architect. This exam is based on JBoss Enterprise Application Platform 7.

## Who is the course for

This course is designed for experienced JSE developers who want to extend and test their knowledge and skills in modern enterprise Java development.

## What we teach you

The exam focuses on using the default behavior of the minimal set of JEE APIs that are applicable across all modern Enterprise Java application development environments:

- Using JAX-RS for simple REST create, read/search, update, and delete APIs.
- Using JAAS to secure access to services.
- Using stateless EJBs to provide business logic.
- Using CDI to integrate components.
- Using JMS to send and receive messages.
- Using Bean Validation to ensure data format and consistency.
- Using basic JPA to create, read, update, and delete persistent objects and their relationships.

## What you need to know

### Preparation

Red Hat encourages you to consider taking Red Hat Application Development I: Programming in Java EE (JB183) to help prepare for EX183. Attendance in these classes is not required; students can choose to take just the exam. While attending Red Hat classes can be an important part of your preparation, attending class does not guarantee success on the exam. Previous experience, practice, and native aptitude are also important determinants of success. Many books and other resources on system administration for Red Hat products are available. Red Hat does not endorse any of these materials as preparation guides for exams. Nevertheless, you may find additional reading helpful to deepen your understanding.

### Exam format

The EX183 exam is a hands-on, practical exam that requires you to undertake real-world development tasks. Internet access is not provided during the exam, and you will not be permitted to bring any hard copy or electronic documentation into the exam. This prohibition includes notes, books, or any other materials. Documentation that ships with JBoss EAP is available during the exam.

### Scores and reporting

Official scores for exams come exclusively from Red Hat Certification Central. Red Hat does not authorize examiners or training partners to report results to candidates directly. Scores on the exam are usually reported within 3 U.S. business days.

Exam results are reported as total scores. Red Hat does not report performance on individual items, nor will it provide additional information upon request.

## Required skills

This exam has no formal prerequisites but candidates for this exam should:

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- Be familiar with using Red Hat JBoss Developer Studio in a Red Hat Enterprise Linux environment.
- Have a solid background with JSE, including a knowledge and understanding of the core Java concepts and APIs. For example, Exceptions, Annotations, and the Collections API are all required during the exam.
- Review the Red Hat Certified Enterprise Application Developer exam objectives and ensure that you are comfortable with all of the topics mentioned.

## Course outline

Using Red Hat JBoss EAP, you should be able to accomplish the tasks below without assistance. The tasks have been grouped into categories to assist your preparation.

### Bean validation

- Annotate a POJO to enable and set up data validation.
- Use the documentation to find useful standard validators.

### JPA mapping

- Annotate a POJO to map it to its persistent state representation in the database.
- Apply basic property mapping and be able to use the documentation to identify correct property annotations (e.g., `@Temporal`).
- Map a bidirectional OneToMany relationship between two entities, including both sides of the association.
- Understand default fetching behavior and be able to override the fetching strategy per association.

### JPA query

- Implement basic JPA queries using named parameters.
- Create and use a named query.
- Use a query to eager fetch an association.

### Messaging

- Understand point-to-point vs. publish/subscribe models.
- Understand JMS queues, topics, and connection factories.
- Understand and use the `javax.jms.MessageListener` interface.
- Implement a message-driven bean.
- Use the `@MessageDriven` and `@ActivationConfigProperty` annotations.

### REST services with JAX-RS

- Understand REST concepts, particularly the application and use of the HTTP PUT, DELETE, GET, and POST methods.
- Know and use standard HTTP return codes.
- Implement RESTful Root resource class.
- Expose a REST service using JAX-RS.
- Demonstrate ability to define `@Path`.
- Understand and use `@Produce` and `@Consume`.
- Be able to both consume and produce xml- and json-formatted content using JAX-RS.

### Security

- Understand basic JAAS terms and concepts.
- Understand the JAAS authentication details that will be provided to you.
- Secure server-side services (REST services and EJBs) using JAAS annotations.

### CDI

- Understand contextual scopes.

As with all Red Hat performance-based exams, configurations must persist after reboot without intervention.

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