

Java EE 7 Hands-on Lab

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Chapter 1. Introduction

The Java EE 6 platform allows you to write enterprise and web applications using much lesser code from its earlier versions. It breaks the “one size fits all” approach with Profiles and improves on the Java EE 5 developer productivity features tremendously. Several specifications like Enterprise JavaBeans 3.1, JavaServer Faces 2.0, Java API for RESTful Web Services 1.1, Java Persistence API 2.0, Servlet 3.0, Contexts and Dependency Injection 1.0, and Bean Validation 1.0 make the platform more powerful by adding new functionality and yet keeping it simple to use. NetBeans, Eclipse, and IntelliJ provide extensive tooling for Java EE 6.

This hands-on lab will build a typical 3-tier end-to-end Web application using Java EE 6 technologies including JPA2, JSF2, EJB 3.1, JAX-RS 1.1, Servlet 3, CDI 1.0, and Bean Validation 1.0. The application is developed using NetBeans 7 and deployed on GlassFish 3.1.1.

The latest version of this document can be downloaded from javaee6-hol.html¹. Please file issues or send pull requests for any updates.

1.1. Software Requirement

The following software needs to be downloaded and installed:

- JDK 6 or 7 from <http://www.oracle.com/technetwork/java/javase/downloads/index.html>.
- **Application Server:** This lab can use JBoss EAP or GlassFish 3 as the application server.
- **IDE:** NetBeans 8.0 can be used. This document provides instructions for NetBeans 8.
Download “All” or “Java EE” version from <http://netbeans.org/downloads/>. A snapshot of the downloads page is shown and highlights the exact ‘Download’ button to be clicked.

Figure 1.1. NetBeans download

¹ <https://github.com/javaee-samples/javaee6-hol/blob/master/docs/asciidoc/javaee6-hol.html>

JBoss EAP can be downloaded from jboss.org² and configured in NetBeans IDE following the instructions in ???.

² <http://www.jboss.org/products/eap/overview/>

Chapter 2. Problem Statement

This hands-on lab builds a typical 3-tier Java EE 6 Web application that retrieves customer information from a database and displays it in a Web page. The application also allows new customers to be added to the database as well. The string-based and type-safe queries are used to query and add rows to the database. Each row in the database table is published as a RESTful resource and is then accessed programmatically. Typical design patterns required by a Web application like validation, caching, observer, partial page rendering, and cross-cutting concerns like logging are explained and implemented using different Java EE 6 technologies.

This application uses a sample database that comes pre-configured in both NetBeans “All” and “Java EE” downloaded bundled versions.

Disclaimer: This is a sample application and the code may not be following the best practices to prevent SQL injection, cross-side scripting attacks, escaping parameters, and other similar features expected of a robust enterprise application. This is intentional such as to stay focused on explaining the technology. Each of this topic can take its own hands-on lab and there is enough material available on the Internet. Its highly recommended to make sure that the code copied from this sample application is updated to meet those requirements.