

J004 - Java2 Enterprise Edition

Course Objectives

There was a time when every company would design its own infrastructure for running its applications to provide services such as scalability, security, transaction management, data access pooling etc. Now, for Java applications, this is unnecessary, as the Java 2 Enterprise Edition provides a standard to which vendors must adhere to in order to provide an environment which offers all of these services and more.

During this hands-on course, participants will gain the knowledge and skills to begin developing server-side Java applications based on the Enterprise Java component technologies; Java Database Connectivity (JDBC), Servlets, JavaServer Pages (JSP) and Enterprise JavaBeans (EJB). Emphasis is placed on techniques and practices to develop scalable, transactional and secure n-tier enterprise applications. In particular, the course does not shy away from the pitfalls of EJBs, describing in detail where this technology is appropriate, demonstrating architectural and design patterns to mitigate the effects of working in a distributed environment, and summarising some of the possible alternatives to EJB.

Who Should Attend	Prerequisites	Duration
Java Architects, Analysts and Developers	PC Fundamentals Java Programming	5 Days

Course Contents

J2EE Technologies Overview

Components & containers
N-tier architecture
How the container enables faster application development.

Java Naming and Directory Interface

JNDI overview & API
Referencable and serializable interfaces.
Using lookup(), bind(), rebind(), list(), listBindings()
Creating and using subcontexts
Using FSContext as a practical example.

JDBC

Java to accessing the database
Driver types
Statement, PreparedStatement and CallableStatement.
Retrieving and using ResultSet
Meta-data.
Scrollable/Updatable ResultSets
Batch updates
DataSource types
Connection pools

Remote Method Invocation

Working with distributed objects
Creating the interfaces, stubs and skeletons.
Creating and binding objects to the RMI registry.
Calling remote objects from the client.
RMI/IIOP for distributed applications.

Java and CORBA

What is CORBA?
Using Java IDL
Creating and running a CORBA application.

Enterprise Java Beans

A component architecture for distributed applications
Declarative middleware and container management
Session, Entity and Message-Driven EJBs.
EJB lifecycles
Writing Stateless and Stateful Session Beans
Writing Entity Beans with Bean Managed Persistence
Writing Entity Beans with Container Managed Persistence
EJB deployment

Java Message Service

The JMS API
Pub/Sub and Point to Point
The JMS interfaces
Writing a program to utilise JMS

Servlets

Using HTTP Get and Post
Lifecycle methods
Cookies and URL rewriting
Session management
Chaining servlets

Java Server Pages

Separate content and presentation
JSP Tags
Using JavaBeans to simplify JSPs
Using JSPs with servlets
MVC (Model View Controller) pattern
Java Standard Tag Library (JSTL)

Deployment

Packaging web applications
Structure of web Applications
EAR, WAR and JAR usage
Application server deployment

J2EE Design

Design considerations in a distributed environment.
Best practice with EJBs
EJB alternatives
J2EE patterns