IGATE
Speed.Agility.Imagination

Level 3 (Advanced)

Pre-requisite Courses (L3 test will have questions on L1 and L2 topics shown below)

JEE L1 (Level 1) (RDBMS/Oracle, Core Java, Servlets, JSP, XML)

JEE L2 (Level 2) (JEE Standards, Advanced XML, UML/OOAD/DP, Code Optimization, EJB, SOA & Web services)

JEE Level 3 Topics

Note: L3 has 3 Variants out of which only one variant is to be chosen for which the Certification Test will be applicable.

1) Spring Variant

Spring Framework 2.5

- Introduction to Spring Framework
- Installation and Environment Setup
- Bean Wiring, Advanced Bean Wiring
- Working with Inheritance
- Understanding Dependency Injection - Constructor and Method Injection
- Introduction to AOP. Working with Advice, Point Cuts and Join Points
- Hitting the Database – Using JDBCTemplate, Hibernate Template
- Introduction to Spring MVC
- Working with View Resolvers

AJAX

- Introduction to AJAX
- Benefits of AJAX
- Using XMLHttpRequest Object
- Working with JSON
- Using Dojo Toolkit
- Understanding DWR and GWT

JPA 1.0

- What is Persistence
- Why Persistence?
- Introduction to JPA
- Working with Entities, Persistent Fields and Properties
- Using JPA Annotations
- Working with EntityManager – persist(), find(), remove(), refresh()

- Understanding Persistence Life Cycle
- Working with IDs and Generators in JPA
- Advanced Mapping Concepts – Date/Time, BLOB/CLOB, Composite Primary Key, Component Mapping, Inheritance Mapping
- Mapping Associations – One-To-One, One-To-Many, Many-To-Many, Unidirectional / Bidirectional
- Querying the Database using JPQL

Hibernate 3.x

- Introduction to Hibernate
- Hibernate Basic and Core Architecture
- Exploring Hibernate API – SessionFactory and Session
- Writing a First Hibernate Application
- Using Session For CRUD Operations
- Advanced Mapping Strategies
- Working with Associations
- Using Hibernate Query Language
- Working with Transactions
- Optimization through Fetching and Caching Strategies
- Integrating Hibernate with Web Application

JMS and MDB (EJB 3.0)

- Introduction to Messaging
- Understanding JMS Architecture
- Messaging Types – P2P and Pub-Sub
- Working with JMS API
- Writing Pub-Sub and Point to Point applications
- Durable Subscription, Reliability, Persistence.
- Introduction to MDB
- Understanding MDB Life Cycle
- Using MDB with JMS
- Working with Transactions

Webservices on HTTP

- Introduction revisiting with WS components
- Types of WS : SOAP based WSDL Styles and RESTful WS
- Benefits of WS
- WS development frameworks – APACE AXIS and Xfire using StAX,
- WS standards

- WS implementation using AXIS2
- WS Challenges – Security, SSL
- WS Performance

2) *JSF Variant*

Java Server Faces 1.2

- Introduction to JSF
- Using JSF
- UI Component Model
- Bean Management
- Life Cycle of JSF
- Developing JSF Application
- Creating Custom UI Components
- Configuring JSF Application
- Internationalizing and localizing Web Application

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3)Struts 2 Variant

Struts 2

- Introduction to Struts 2 Framework
- Core concepts: Actions, Interceptors and Type Conversion
- Understanding Value Stack
- Working with RequestAware, SessionAware, ApplicationAware
- Working with OGNL
- Using Struts 2 Validation Framework
- Internationalization in Struts 2

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4) Application Server [JBoss 4.x/ Websphere6.1 / Weblogic10.x]

Deployment on any one of the above Application Servers

Webservices

Messaging

- Develop and deploy MDBs which consume messages from a Queue and Topic
- Configure the Connection factories and destinations
- Tune the parameters (acknowledgement, priority etc)

Configure Container Resources

- JDBC – connection pools, datasource
- EJB specific parameter tuning
- classpath, classloader configuration
- JNDI
- JMS – destinations and connection factories

Clustering

- Problem definition - scalability & availability
- Load balancing – hardware/software, techniques
- Session replication
- Clusterable components – Servlets, EJBs, JMS destinations, JNDI