

Java: Under the Hood

Java Messaging

Course Outline

Course Length:

1 day

Audience:

This course is intended for experienced Java developers who want to learn about the Java Message Service and the Java Message API.

Prerequisites:

Attend the *Java: Behind the Wheel* – Introduction to Java course, or possess the equivalent knowledge of Java programming and object-oriented programming concepts.

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Module Descriptions

Module 1: An Overview of JMS

Messaging allows applications to communicate over a distributed environment that is loosely coupled. Message services exist on many different platforms, and the Java Message Service API allows for Java programs to communicate with these existing message services. Topics discussed in this module include:

- ❑ Messaging concepts
- ❑ Popular message service implementations
- ❑ Point-to-point messaging
- ❑ Publish/subscribe messaging
- ❑ The Java Message Service API
- ❑ J2EE and JMS
- ❑ Installing the necessary software and documentation.

Module 2: Programming with the JMS API

In this module, the architecture of JMS will be discussed, including the steps that are involved in writing JMS applications. Topics discussed include:

- ❑ Connection factories
- ❑ Destinations
- ❑ Connections
- ❑ Sessions
- ❑ Producing a message
- ❑ Consuming a message

Module 3: A JMS Application

Now that the components of a JMS application have been introduced, this chapter steps through a JMS program to demonstrate using the JMS API, including:

- ❑ Using JNDI to locate the connection factory and destination
- ❑ Connecting to a destination
- ❑ Creating a session
- ❑ Creating a new message
- ❑ Sending a message
- ❑ Creating a message listener
- ❑ Deploying and running the application

Module 4: Messages

This module discusses the details of the various types of messages that can be sent using the JMS API. Topics discussed include:

- ❑ Message headers
- ❑ Message properties
- ❑ Message bodies
- ❑ The `javax.jms.Message` interface
- ❑ Text messages
- ❑ Stream messages
- ❑ Object messages
- ❑ Bytes messages
- ❑ Map messages

Module 5: Common Message Programming Features

This module consists of examples of common tasks used when developing messaging applications. These common tasks include:

- ❑ Using a message selector
- ❑ Using a durable subscription
- ❑ Using transactions
- ❑ Using the acknowledgement modes
- ❑ Using the request/reply mechanism

Module 6: JMS Exceptions

This chapter discusses the exceptions of the JMS API, including:

- ❑ The `javax.jms.JMSEException` class
- ❑ The JMS standard exceptions

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Schedule

The following is a tentative schedule for the pacing of the course. The actual flow of the course may vary.

9:00 – 10:00 a.m.	Module 1: An Overview of JMS
10:00 – 10:10 a.m.	Break
10:10 – 10:30 a.m.	Module 2: Programming with the JMS API
10:30 – 10:40 a.m.	Break
10:40 – 11:30	Module 3: A JMS Application
11:30 – Noon	Lab
Noon – 1:00	Lunch
1:00 – 2:00	Module 4: Messages
2:00 – 2:10	Break
2:10 – 3:30	Module 5: Common Message Programming Features
3:30 – 4:30	Lab
4:30 – 5:00	Module 6: JMS Exceptions