

# **IBM Integration Bus Developer**

## **Prerequisites**

This course assumes basic knowledge of XML and messaging principles. As a result, some basic knowledge of XML, XSLT, XPath and MQ concepts is assumed. Knowledge of Java is also an advantage.

## **Course Content**

### **1. Introduction to the Integration Bus Toolkit**

- Explain need for business integration and transformation
- List and explain the functions of the primary components of IIB V9

### **2. Design and Setup Considerations**

- Briefly review roles and responsibilities IIB components
- Discuss setting up IIB development environment

EXERCISE 1 - Setting up the development domain

### **3. Introduction to the Integration Bus Toolkit**

- Demonstrate the Integration Bus Toolkit
- Explain the components of Toolkit
- Demonstrate steps to create/test message flow using the Toolkit
- Review the IBM primitives
- Discuss components of IIB messages

EXERCISE 1 continued - Building and testing a message flow application

### **4. Problem Determination**

- Explain message flow behaviors
- Describe the different debugging techniques

EXERCISE 2 - Working with problem determination tools (Trace nodes, User Trace, Integrated Test Client, Debugger, Error Logs, The ExceptionList tree)

### **5. Working with Integration Bus Nodes**

- List IIB message parts and parsing
- Discuss coding basic ESQL statements
- Demonstrate using supplied nodes and describe use of most common ones

- Explore Subflows and their uses
- Explain working with databases

EXERCISE 3 - Manipulating a message using ESQL

EXERCISE 4 - Working with databases and subflows

EXERCISE 4A – Implementing deployable subflows and ESQL

EXERCISE 5 - Using the DatabaseRetrieve node

EXERCISE 5A - Updating a database using ESQL

- Explain reference variables to process message trees
- Discuss shared variables
- Describe user-defined variables
- Consider version control implementation
- Review advantages of using Environment tree
- Opaque parsing in XML messages

EXERCISE 6 – Implementing reference variables in ESQL

EXERCISE 6A – Caching a database table to improve performance

EXERCISE 6B – Using the Environment tree

EXERCISE 6C – Using Opaque Parsing for XML messages

## **6. Working with Integration Bus Nodes**

- Describe request/reply using Aggregation nodes
- Consider obtaining information from different sources – Collector Nodes
- Explain use of MQGET node to process replies

EXERCISE 7 - Sending requests and obtaining replies in a single message flow

EXERCISES 7A - Using the Collector node to process messages from different sources

## **7. Message Modelling and Mapping**

- Explain storing message layouts in the Toolkit
- Describe implementation of message models
- Explore using graphical data maps
- Demonstrate import/use of C, XML and Cobol structures in the Toolkit

EXERCISE 8 - Creating and working with a message model using DFDL

EXERCISE 8A – Importing to create a message model

EXERCISE 8B – Working with XML models

## **8. Using Java in the Integration Bus**

- Consider the JavaCompute node
- Discuss using XPATH to work with message structures
- Explain JMS nodes and implementation

EXERCISE 9 - Implementing JavaCompute in a message flow

EXERCISE 9A - Converting an MQ message to JMS

## **9. Routing data through message flows**

- Discuss Route, RouteToLabel, Label and DatabaseRoute nodes

EXERCISE 10 - Working with routing techniques.

## **10. Additional input and output options**

- Describe Timer nodes
- Explain File nodes
- Discuss Email nodes

EXERCISE 11 – Implementing a time based flow

EXERCISE 11A – Working with files in a message flow

## **11. Using SOAP and HTTP nodes (OPTIONAL)**

- Describe Web Service support for Integration Bus
- Discuss using the HTTP Nodes
- Explain using SOAP nodes

EXERCISE 12 – Implementing a SOAP message flow

EXERCISE 12A – Creating a Integration Service from a schema

## **12. Working with Patterns (OPTIONAL)**

- Using supplied patterns

- Creating patterns for reuse
- Sharing patterns

EXERCISE 13 – Implementing a supplied pattern

EXERCISE 13A – Creating a pattern

### **13. Publish/Subscribe updates (OPTIONAL)**

- Explore Pub/Sub uses
- List steps to implement a IIB V9 pub/sub flow
- Explain using filters for publish/subscribe

EXERCISE 14 – Implementing content filtering

### **14. Using the global cache and eXtremeScale (OPTIONAL)**

- Using the built-in global cache
- Connecting to an external eXtremeScale grid

EXERCISE 15 - Using the built-in globalcache/eXtreme scale functions

### **15. Working with .NET (OPTIONAL)**

- Using the .NETCompute node
- Calling .NET methods via ESQL

EXERCISE 16 – Building a simple Web service using a .NETCompute node

### **16. Integration Registry (OPTIONAL)**

- Storing MQ Service definitions and policies
- Managing workload management policies

EXERCISE 17 – Using an MQ Service definition to configure an MQ node

### **17. CICS and Integration Bus (OPTIONAL)**

- CICS and Integration Bus interaction
- Connecting to CICS
- Setting up to use CICSRequest node
- Working with CICSRequest node

### **18. IMS and Integration Bus (OPTIONAL)**

- IMS and Integration Bus interaction
- Connecting to IMS
- Setting up to use IMSRequest node

- Working with IMSRequest node