



Web sphere Enterprise Service Bus Course Content:35-40hours

Course Outline

Enterprise Service Bus (ESB) Pattern

- SOA and the ESB Pattern
- Loose Coupling
- Service Invocation and Composition
- Message Flow and Business Process
- Data Integration
- ESB in Action
- The ESB Patterns
- Service Virtualization Patterns
- Service Enablement Patterns
- Message Based Integration Patterns
- Summary

Introduction to WebSphere Integration Developer (WID) v6.2

- WebSphere Integration Developer (WID) v6.2
- SCA Basics
- Wiring Example
- Items Developed in WID
- The Project Structure
- Working With Shared Components
- Using the IDE
- The Test Server
- The Build Process
- Exporting Applications
- Module Versioning
- Summary

Introduction to Mediation Flow

- What is Mediation Flow?
- Source and Target Operations



- Message Flow Logic
- Mediation Primitives
- Anatomy of a Message
- Developing a Mediation Flow
- Routing Primitives
- Transformation Primitives
- Other Primitives
- Subflow
- Summary

Service Component Architecture (SCA)

- Need For a New Programming Model
- SCA Vendor Support
- SCA Basics
- SCA Components
- A Service Component
- References and Wires
- Wiring Example
- Service Assembly Model
- Example Assembly
- Imports
- Export
- Example Import and Export
- Summary

Business Objects

- What is a Business Object?
- Creating a New Business Object
- Editing a Business Object
- Setting Field Multiplicity
- Refactoring Business Objects
- Private Business Object
- Data Type Inheritance
- SimpleType Inheritance
- Abstract Business Object
- Schema Wildcards
- Specify Schema Restrictions
- Business Object Validation
- Best Practices
- Accessing Business Objects Using SDO API
- Using the SDO API
- Summary

Service Interface Design

- What is a Service Interface?
- Uses of an Interface
- The Structure of an Interface
- Creating an Interface
- The Interface Editor
- SMO Body Type
- Refactoring Interfaces
- Summary

Binding and Protocol Translation

- The Import Component
- The Export Component
- Introduction to Binding
- Supported Binding Types
- Implementing Protocol Translation Pattern
- The Web Service Binding
- Creating a Web Service Import
- Creating a Web Service Export
- Creating a New web Service
- Summary

Data Mapping

- Introduction to Mapping
- Choosing a Type of Mapping
- Embedded or Standalone Mapping
- Using Data Maps from a Mediation Flow
- Create Embedded Map for Mediation Flow
- Root of a Map
- Mapping Editor
- Mapping Header and Context
- Header Setter Primitives
- Types of Data Transformations for XML Maps
- Types of Array Data Transformations for XML Maps
- Types of Data Transformations for Business Object Maps
- Automatic Mapping
- Creating a Standalone Map
- Adding Objects to the Standalone Map
- Substitution Groups
- Mapping Schema Wildcards
- Set Message Type Mediation Primitive
- Message Element Setter Primitive

- Need for Reverse Maps
- Summary

Service Invocation and Composition

- Service Invocation and Composition
- Service Invoke Mediation Primitive
- Service Invoke Mediation Primitive
- Using a Service Invoke Primitive
- Augmentation/Enrichment Pattern - Example
- Retry the Same Service Pattern
- Retry the Same Service Pattern – Example
- Retry an Alternate Service Pattern
- Retry an Alternate Service Pattern – Example
- Sequencing Pattern
- Sequencing Pattern – Example
- Callout Node vs. Service Invoke Primitive
- Dynamic Service Invocation
- Dynamic Import Name
- Dynamic Endpoint URL
- Summary

Content-Based Routing

- Routing in Mediation
- Reasons to Perform Content-Based Routing
- Routing Pattern
- Refactoring to Implement Routing
- Routing Primitives
- Message Filter Primitive
- Type Filter Primitive
- Type Filter Output Format
- Routing to Other Primitives
- Summary

Looping, Splitting and Aggregation

- Introduction
- Implement Looping
- Access Iteration Element
- Implementing Splitting and Aggregation
- Setting up the Fan Out
- Setting up the Fan In Primitive
- Ending Fan In Wait Early
- Aggregating Service Responses

- Saving Response in Shared Context
- Mapping Body to Shared Context and Vice Versa
- Doing Things in Parallel
- Summary

Messaging Bindings

- Messaging Binding Choices
- Publishing a JMS Message
- Consuming a JMS Message
- JMS Import Binding Configuration
- Message Correlation in Import
- JMS Export Binding Configuration
- Message Correlation on Export
- Working with Native MQ Binding
- MQ Import Configuration
- MQ Export Configuration
- Messaging in WebSphere Environments
- Default Messaging
- Service Integration Bus
- WebSphere MQ
- Which To Use?
- Default Messaging JMS Configuration
- Relationship Between Default Messaging Components
- WebSphere MQ JMS Configuration
- Relationship Between MQ Messaging Components
- Summary

Transaction and Error Handling

- Transaction Basics
- Transaction in Mediation Flow
- Transaction Context Propagation
- Controlling Context Propagation
- Basics of Error Handling
- Error Handling in a Service
- Designing Faults
- Catching Errors in a Message Flow
- Returning a Fault from a Message Flow
- Raising an Exception
- Stopping a Flow Path
- Summary

Adapters

- What is an Adapter?
- Adapter and SOA
- Adapter Example
- The Adapter Pattern
- Adapter Support from WID
- Adapter Based Services
- Advantages of Adapter Based Services
- Generating Adapter Based Services
- Outbound Processing
- Inbound Processing
- Enterprise Discovery
- Case Study
- Flat File Adapter
- Inbound File Adapter
- Configuring the Inbound Service
- Outbound File Adapter
- Configuring Outbound Service
- Adapter Administration
- Summary