WebSphere MQ Application Programming and Design

(for COBOL/CICS Programmers) ***WT1145***

Learn the fundamentals of designing and developing business applications using the WebSphere MQI. This course is a thorough, comprehensive instructor lead lecture with basic system administration and application programming lab exercises designed to equip the student in real-world messaging solutions using real-world examples in a distributed environment. Programming lab exercises can be offered simultaneously on the following platforms and languages (depending upon the infrastructure available at the host facility). Students are encouraged to interoperate their lab solutions with students on other platforms (whenever practical).

Audience

- Programmers who need to learn the WebSphere MQ API (MQI) and who will develop WebSphere MQ business applications in a cross-platform, multi-language operating environment.

Prerequisites

- Students would be best prepared for this class if they have some basic WebSphere MQ knowledge.

Course Length

- Five days

Learning Objectives

- WebSphere MQ Overview
- WebSphere MQ Messaging Examples
- WebSphere MQ System Administration Overview
- MQI Introduction and Structure Overview
- MQI API: "Housekeeping Calls"
- MQI API: Message/Queuing Calls - The Basics
- MQI API: Specialized Calls
- Message Data Integrity, Triggering and Remote Queuing
- MQI API: Messaging/Queuing Calls - There's More
- Version 5 Features
- Security
- Channel Exits and Programmable Command Formats (PCF)
- WebSphere MQ Application Design Discussion

Course Outline

WAC4

WebSphere MQ Overview

- What Is Messaging?
- What is WebSphere MQ?
- What Is A Message?
- What Is A Queue?
- What Is A Queue Manager?
- What Is the MQI?
- MQI Supported Languages
- Distributed Queuing Basics
- WebSphere MQ Clients
- WebSphere MQ Platforms and Versions
- WebSphere MQ Information Sources

WebSphere MQ Messaging Examples

- The "Money Transfer" Example
- The "Loan Request" Example
- The "Travel" Agent Example
- The "Insurance Rep" Example
- The "Pub/Sub" Example

WebSphere MQ System Administration Overview

- Roles and Responsibilities
- Common System Admin Tasks
- Queue Manager Setup
- Managing QMGR Objects
- Defining QMGR Objects
- Suggested Object Naming Conventions
- Channels
- The Command Server
- Dead Letter Queue
- MVS WebSphere MQ Adaptors/Bridges
- Trigger Monitors
- Queue Types Overview
- Third Party Monitoring Tools

MQI Introduction and Structure Overview

- MQI Basics
- Common MQI Calls
- Specialized MQI Calls
- Call Formats
- Elementary Data Types
- C Data Type MQI Structures
- Program Preparation - Stubs and Libraries
- Structure Overview
- MQGMO Fields

MQI API: The "Housekeeping Calls"

- MQCONN
- MQOPEN
- MQCLOSE
- General Programming Recommendations

MQI API: Message/Queuing Calls - The Basics

- Messaging Calls Overview
- MQMD Structure
- MQPUT
- MQPUT
- MQPUT1
- MQGET Putting/Getting To/From An Alias Queue
- Types
- Request/Reply Basics
- Msgid and Correlid Basics

MQI API: Specialized Calls

- MQCONNX
- MQINQ
- MQSET
- Transaction Processing Basics
- MQBEGIN
- MQCMIT
- MQBACK

Data Integrity, Remote Queuing, Triggering

- Data Integrity
- Remote Queuing
- Triggering

MQ API: Message/Queuing Calls - There's More

- Message Manipulation
- Browsing
- Set Signal
- Message Expiration
- Reports
- Data Conversion

Version 5 Features

- MQMDE
- Distribution Lists
- Message Groups/Segments
- Reference Messages

WebSphere MQ Security

- MQOD - Relevant Fields
- MQMD - Relevant Fields
- Security Overview
- Security Considerations
- Identification vs. Authentication
- Access Control Authorization
- Where Are Security Checks Made?
- Message Context
- Confidentiality
- Data Integrity/Non-Repudiation
- Security - Some Final Points

Channel Exits and PCF

- Channel Exits
- Server Channel Authentication
- Client Channel Authentication
- Programmable Command Formats

WebSphere MQ Application Design Discussion

- Common QMGR Topologies
- WebSphere MQ Design Discussion
- "Money Transfer" Example
- "Load Request" Example
- "Travel Agent" Example
- "Insurance Rep" Example
- "Pub/Sub" Example