Course Outline

IMS Data Communications (DC) Coding with MFS

Course Summary

Description

This course is ideal for application programmers who need a detailed understanding of designing, coding, and maintaining IMS online transaction applications using IMS data communications functions and Message Format Services. This course provides five paper exercises for the attendee to complete.

Objectives

At the end of this course, students will be able to:

- Understand the IMS Data Communications technology
- Design and code a simple and a complex transaction using the DLI language interface and MFS
- Understand and use the MFS language
- Describe common pitfalls inherent in online processing along with techniques to avoid them

Topics

- Introduction to IMS
- IMS Data Communications (DC)
- Message Processing
- IMS DC Coding
- Message Format Services (MFS)
- MFS Control Statements
- Dynamic Attribute Usage
- Error Handling
- Coding Complex Transactions
- Physical and Logical Paging
- Design Considerations
- Varying Destinations

Audience

For IMS application programmers who have responsibility to design, code and maintain applications using IMS data communications and Message Format Services (MFS).

Prerequisites

Prior programming experience.

Duration

Three days

Course Outline

IMS Data Communications (DC) Coding with MFS

Course Outline

I. Introduction to IMS
- A. Characteristics of Batch and online systems
- B. Interactive environment
- C. Data Communications Software
- D. Database Software
- E. IMS DC and DB Products
- F. DB-DC Connections

II. IMS Data Communications (DC)
- A. Message Processing Program (MPP, MSG, MPR)
- B. Interactive Fast Path (IFP)
- C. IMS Batch Message Processing (BMP)
- D. Advanced Program-to-Program Communication (APPC/IMS)
- E. IMS Batch (DLI)
- F. IMS Architecture
- G. IMS DB/DC System
- H. Message Region
- I. Batch Message Region
- J. IMS Region Comparison
- K. Logical Terminals

III. Message Processing
- A. Transactions
- B. Operator commands
- C. Message switches
- D. Message Format Services (MFS)
- E. Message Queues
- F. Message Classes
- G. Transaction Scheduling
- H. Transaction Priority
- I. Priority / Limit Count example
- J. Processing Definitions
- K. Sample TRANSACT macro
- L. Output Messages

IV. IMS DC Coding
- A. Communicating with IMS
- B. IOPCB
- C. PCB Example & Information
- D. Test PSB
- E. Message calls using CBLTDLI
- F. Single segment messages
- G. Multi-segment messages
- H. Message status codes
- I. Message I/O areas
- J. Examples of above
- K. EXERCISE 1

V. Message Format Services (MFS)
- A. Terminology
- B. DIF / MID
- C. MOD / DOF
- D. Considerations
- E. Format Set
- F. DIF/DOF statements
- G. MID MOD statements
- H. Simple screen and MFS
- I. MFSGEN
- J. Using test formats

VI. MFS Control Statements
- A. FMT and FMTEND
- B. DEV
- C. DIV
- D. DPAGE
- E. DFLD
- F. Extended Attributes
- G. MSG
- H. SEG and MSGEND
- I. MFLD
- J. MFLD on output messages
- K. Sample Program with MOD
- L. MFS for simple screen
- M. Cobol with MID and MOD
- N. Numeric data
- O. Repetitive field definitions
- P. DO and ENDDO
- Q. Generated DFLDs
- R. MFS with DO-ENDDO
- S. Cobol for DO-ENDDO
- T. EXERCISE 2
- U. EXERCISE 3

VII. Dynamic Attribute Usage
- A. Output message with attribute bytes
- B. Setting the attribute bytes
- C. Attribute bit definitions
- D. Cobol definitions
- E. MFS for simple screen
- F. Cobol with attribute processing
- G. EXERCISE 4

Course Outline

IMS Data Communications (DC) Coding with MFS

Course Outline (cont'd)

VIII. Error Handling
- A. Synchronization points
- B. Abnormal termination
- C. Recovery from abend
- D. Error handling
- E. ROLLBACK
- F. ROLL call
- G. ROLB call
- H. Express PCB
- I. Alternate IO-PCB
- J. Test PSB with Express PCB
- K. Cobol with error handling
- L. SETS/SETU calls and status codes
- M. ROLS call

IX. Coding Complex Transactions
- A. Program Reusability
- B. Simple transaction flow
- C. Saving information
- D. Use of the MDT
- E. Work database usage
- F. Message processing review
- G. Scratch pad areas
- H. Coding conversational transactions
- I. Retrieving and updating the SPA
- J. Terminating a conversation
- K. More on the SPA
- L. MFS for conversational
- M. Conversational example
- N. /FOR command vs. transaction code
- O. Conversational program started with /FOR
- P. SPA processing
- Q. EXERCISE 5
- R. OPTIONAL EXERCISES: message switch and conversational

X. Physical and Logical Paging
- A. Physical paging and its limitations
- B. Operator logical paging (OLP)
- C. Paging capabilities of OLP
- D. Defining pages
- E. Enabling the OLP option
- F. Define the device page
- G. Define the message page
- H. Define multiple logical pages
- I. Define paging command field
- J. MFS for OLP
- K. Cobol for OLP

XI. Design Considerations
- A. Data enqueue
- B. Simultaneous user updates
- C. Prevention of concurrent updates
- D. Logical unit of work
- E. Use of PFKEYs
- F. MFS with PFKEYs
- G. PFKEY example

XII. Varying Destinations
- A. Changing destinations
- B. CHNG call