

Duration: 5 days

Course Number: ISI-CICS-01

Description

This hands-on course is designed to be a comprehensive review of the IBM CICS Product. The material presented will provide a firm foundation in the procedures needed to code on-line application programs using Command Level coding features. The student will learn how to:

- Design, code, compile, and test a CICS Command Level program written in Command Level COBOL.
- Use COBOL including debugging and programming aids.
- Generate on-line screens using Basic Mapping Support.
- Test screens using CECL.
- Understand screen generators and application enabling systems.
- Use CICS supplied transactions: CEDF CEMT CSMT CEDA CMSG CEBR CECL CMAC.
- Understand important restart and recovery issues.
- Understand the components of CICS that impact application performance.
- Demonstrate a functional understanding of System Management Functions including testing, debugging, security and change control.

A series of written and lab exercises using live CICS computer regions will be used to reinforce the classroom education.

Audience

This workshop is designed for application programmers and analysts who design, code or maintain CICS Command Level COBOL programs.

Prerequisites

- **Introduction to z/OS**, or equivalent experience.
- **TSO/ISPF**, or equivalent experience.
- **Basic MVS JCL**, or equivalent experience.
- Previous experience in designing and coding COBOL application programs will enhance the results of this course.

Course Agenda

CICS Overview

- Transaction Flow
- Structure and Environment
- Management Modules and Tables
- Transaction, Program and File Definitions

CICS Service Transactions

- CEDF, CECI
- CSMT, CEMT

CICS Online Programming Structure

- Multi-tasking vs. Multi-threading
- Conversational vs. Pseudo-conversational

Shared Storage Areas

- EIBBLK Fields
- DFHAID
- DFHBMSCA

CICS Command Structure

Error Handling Conditions

- HANDLE
- IGNORE
- HANDLE ABEND
- RESP Codes

Data Communications Concepts

Screen Design Concepts

- Data Fields
- Text Fields
- Attributes and Stopper Bytes

Course Agenda (continued)

Basic Mapping Support (BMS)

- Physical vs. Logical Maps
- Coding Maps and Mapsets
- Lab 1: Building and testing BMS Map

Building and Coding Mapsets

- Build Multiple Maps Within a Single Mapset
- Code and Assemble a Mapset
- Lab 2: Link a new Mapset to CICS Region and test using CEMT and CECI commands

Data Communications (Input and Output Maps)

- Using SEND and RECEIVE MAP Commands
- Retrieving System Date/Time Using ASKTIME/FORMATTIME Commands

Map Design and Pseudo-Conversational Code

- Menu Design and Program Structure
- Passing Control Between Transaction Programs
- XCTL and LINK Commands: Differences
- RETURN Command Uses
- Lab 3: Build a Program Shell to Add, Update, Delete, and Query entries in a VSAM dataset

Building an Inquiry Application

- Dataset/Database Inquiry Concepts
- Transfer Control to/from Menu Transaction Program
- Using the READ Command, the IMS And DB2 Macro Commands

Building a Browse Transaction

- Browsing Concepts
- CICS STARTBR, READNEXT, READPREV, and ENDBR commands
- Lab 4: Build a program to browse a VSAM dataset and display results on multiple screens

Course Agenda (continued)

Diagnostic Testing Procedures

- Introduction to CEDF Transaction
- Flow of a CEDF session
- How to Initiate a CEDF session
- Use of CEDF PF Key functions
- Lab 5: Debugging and Inquiry Transaction

Building an Add Transaction

- Add Program Structure
- Map Editing Concepts
- Checking Modified Data Tags (MDTs)
- Modifying Attribute Bytes Using the DFHBMSCA Field Definitions
- Use of the CICS Communications Area (COMMAREA)
- The CICS WRITE Command Structure
- Lab 5: Build a program to edit an input screen and add a record to a VSAM dataset

Building an Update/Delete Transaction

- Update/Delete Program Structure
- Ensuring Data Integrity
- Update Commands: READ UPDATE, REWRITE, UNLOCK, DELETE
- Checking Modified Data Tags (MDTs)
- Modifying Attribute Bytes Using the DFHBMSCA Field Definitions
- Use of the CICS Communications Area (COMMAREA)
- Lab 6: Build a program to UPDATE or DELETE a record existing on a VSAM dataset

Useful Testing and Debugging Commands

- ASSIGN Command
- Interval Control
- SEND/RECEIVE (without BMS maps)
- CICS Queue Use and Management

Course Agenda (continued)

Design Summary

- CICS Resource Utilization
- Application Program Design Considerations
- Testing and Debugging Considerations
- Backup and Recovery Issues