IMS Essentials

This course is the definitive and comprehensive introduction to IMS. It provides ideal cross-training for application support specialists from disciplines such as CICS, COBOL, JAVA, or DB2. The course introduces and explains all areas of IMS databases in both the Batch and Online environments, including data access using the DL/I Language Interface and the maintenance of data integrity using the DBRC feature. Practical exercises reinforce the formal tuition sessions. These include the analysis of sample applications and hands-on use of the procedures and utilities required to recover from various application and system failures. On completion of this course attendees should be able to identify a problem area prior to calling for the appropriate application support from either the DBA or Programmer support group.

Objectives

On successful completion of this course, attendees will be able to:

- describe the architecture of IMS batch and online systems
- analyse database and communication calls
- identify appropriate logical and physical database design features
- describe the structure of secondary indexes and logical relationships
- use IMS utilities to backup, restore, and reorganize the database
- discuss the facilities available in IMS to provide data integrity and system availability.
- trace the flow of a transaction through an IMS system

Who Should Attend

All those working in IMS Applications and Database Development, or any systems and operations personnel who require an understanding of the IMS environment.

Prerequisites

A general understanding of data processing and application development concepts is assumed.

Duration

4 days

Contents

Introduction to IMS
Why Use a Database?; Database types; Hierarchical terminology; Processing path; Accessing data; Database implementation; IMS online environment; Message Format Services (MFS); Utilities; Logging; Operational responsibilities.

Introduction to Batch Programming
DL/I Language Interface; Program Specification Block (PSB); IMS Call Format; Function code; Record retrieval Workshop.

Advanced Database Programming
Update processing; Command codes; PCB Addressing; Boolean SSAs; Workshop.

Database Environment
Program Specification Block (PSB); PSB statements; PCB; PROCOPTs; PSB generation; ACB generation; PSB/program relationships; Batch JCL; Workshop.

Database Implementation - 1
DBD; Database Organisation and Access Methods.

Database Implementation - 2
Secondary indexing; Secondary data structure; Stand-Alone processing; Things to consider; Logical relationships.

Database Implementation - 3
An introduction to HALDB features and processing options.

Database Backup and Recovery
Logging; Image Copy; Reorganisation; Database Recovery Control (DBRC);
associated tools and utilities.

**IMS/TM Concepts & Facilities**
IMS/DC configuration; Control (CTL) region; DL/I Separate Address Space (DLISAS); Database Recovery Control (DBRC); Message Processing Region (MPR); Batch Message Processing (BMP) region; Message scheduling; Logging.

**IMS Online Programming - 1**
Message Processing Program (MPP); Transaction codes & flow; Input message segment; Output message segment; IMS message calls; IO PCB mask; Common status codes; Workshop.

**Message Format Services**
MFS control blocks; DIF/DOF coding; MID/MOD coding; Attributes; Message management.

**IMS Online Programming - 2**
Alternate PCB; Using Alternate PCB; Transaction switching; Conversational programming; Using Checkpoint/Restart; Workshop.

**Fast Path**
General characteristics; Fast Path EMH; Data Entry Database (DEDB); Main Storage Database.

**Online IMS System Recovery and Restart**
Logging; Restart Data Set (RDS); Archiving; Contents of the Log; Normal restart; Emergency restart.

**Sharing Data and Data Sharing**
Sharing access - the problem; Sharing access - solutions; Control region / DLISAS; Program isolation; Locking; Deadlock resolution; Data sharing; Database-Level Sharing; Block-level sharing; DBCTL.

**IMS Operations**
Operational considerations; Operations planning; Starting IMS; Stopping IMS; Online change facility; Controlling IMS.

**IMS Performance Management**
DB performance; DB monitor; Database buffer pools; DC performance.