MVS System Operation

Course Summary

Description

This hands-on course is designed to get z/OS and OS/390 Operators familiar with current data center hardware, MVS concepts, system control and troubleshooting, and successful interaction with the rest of the enterprise data center. Live MVS test systems will be used in hands-on demonstrations of system concepts, monitoring, and control.

Topics

- Intro to MVS Operation
- z/OS and OS/390 Overview
- Using the MCS Console
- Navigating MVS Documentation
- Job Entry Subsystems
- Monitoring and Controlling Jobs & Tasks
- VTAM Operation
- Parallel Sysplex Overview
- Parallel Sysplex Operation
- UNIX System Services Operation
- CICS Overview
- CICS Operator Basics
- Understanding System Performance
- System Problem Diagnosis
- Using OmegaMon
- System Monitoring and Diagnosis
- DB2 Problem Diagnosis

Audience

This course is intended for console operators and operations management, service desk and system support technicians who are responsible for monitoring, operating, and managing the operation of an MVS data center.

Prerequisites

There are no prerequisites for this course.

Duration

Two to three days

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Course Outline

1. Intro to MVS Operation
- A. Enterprise Data Center Roles

2. z/OS and OS/390 Overview
- A. S/390 Operating Systems vs. the Rest
- B. A Typical S/390 Data Center
- C. Real, Expanded, & Virtual Memory
- D. Multiprogramming vs. Multiprocessing
- E. Interrupts
- F. Bits and Bytes: EBCDIC vs. ASCII
- G. The CPU (Central Processing Unit)
- H. MVS in a TCP/IP Network
- I. Understanding the Network Controllers
- J. Understanding the 3270 Terminal
- K. S/390 Printer Hardware Categories
- L. Storage Devices: DASD, Tape
- M. Storage Device Connections
- N. Storage Subsystems
- O. OS/390 Address Spaces
- P. OS/390 Data Spaces & HiperSpaces
- Q. z/OS 64 Bit Address Space
- R. MVS Dispatching
- S. MVS Customization
- T. The MCS Console
- U. MVS Data Management
- V. MVS Data Set Types: Sequential, Partitioned, & VSAM Datasets
- W. Systems Managed Storage (SMS)
- X. Monitoring & Managing Catalogs
- Y. VTOC: Volume Table of Contents
- Z. Tape Labels
- AA. Recovery / Termination Mgmt
- BB. Serialization: ENQ / DEQ & GRS Ring
- CC. Shared DASD & Reserve/Release
- DD. The Deadly Embrace
- EE. Security Overview
- FF. JES Overview: JES2 vs. JES3
- GG. Job Life Cycle Phases
- HH. Job Execution Phase
- II. A Parallel Sysplex
- JJ. UNIX System Services
- KK. The UNIX Hierarchical File System
- LL. The UNIX Shell
- MM. Using the OMVS and ISPF Shell
- NN. Program Products
- OO. Program Products: CICS
- PP. How CICS Works
- QQ. CICS Transactions
- RR. Program Products: DB2
- SS. IBM DB2 Universal Database Family
- TT. Program Products: IMS
- UU. Classic MVS Applications vs. Today's Application Architectures
- VV. Program Products: MQSeries

3. Using the MCS Console
- A. OS/390 Command Aliases
- B. Setting Console Authority w/ VARY
- C. INFO, SYS, IO, CONS, and MASTER Command Groups
- D. MVS Route code (ROUTCDE) Info
- E. Controlling Msg Roll Mode & Rate
- F. Roll Delete vs. Non-roll Mode Examples
- G. Conversational Delete Mode Example
- H. Wrap Mode Example
- I. Using Console Display Areas
- J. Using & controlling Console PF Keys
- K. Message Processing Facility
- L. Displaying Console Status
- M. Managing Console Buffer Shortages
- N. Console Failure Recovery

4. Navigating MVS Documentation
- A. BookManager ISPF dialog
- B. Book Manager on CD
- C. IBM Online Library
- D. Printed Manual
- E. MVS Quick-ref

5. Job Entry Subsystem (JES) Overview
- A. JES2 vs. JES3
- B. JES2 Startup
- C. JES2 Datasets
- D. JES2 Input Processing
- E. JES2 JCL Conversion
- F. Job Execution Phase
- G. Job Output & Purge Phases
- H. Built-in & External Readers & Writers
- I. Controlling External Writers

6. Monitoring and Controlling Jobs & Tasks
- A. Types of MVS Tasks
- B. Starting a Task at the Console
- C. Stopping a Started Task
- D. Example: Start & Stop RMF
- E. Canceling a Job or Task
- F. Example: Cancel STC w/ DSN wait
- G. Forcing a Job or Task

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H. Communicating to Active Programs
I. Using Modify Commands
J. Replying to WTOR Messages
K. System Activity Displays

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L. Action Message Retention Facility
M. Displaying System Requests

7. VTAM Operation
A. VTAM Control Commands
B. VTAM Resource Information
C. VTAM Debugging Information
D. APPN Information
E. VTAM Table Information
F. Displaying FEP and NCP Information
G. Displaying Major Nodes
H. Displaying Active Applications
I. Displaying Terminal for TSO User
J. TSO vs. CICS
K. Performing Node Searches
L. Displaying Resources by ID
M. Resource Status Guide
N. Displaying Local BSC or Non-SNA 3x74
O. Displaying Local 3270 I/O Address
P. Displaying TN3270 Terminal by IP
Q. Displaying NCP Major Nodes
R. Displaying VTAM Options
S. Vary Net Commands
T. Activating & Deactivating Resources
U. Displaying Pending Resources
V. Loading and Activating the NCP
W. Starting VTAM, sample VTAM Startup
X. Stopping VTAM, sample Shutdown

8. Parallel Sysplex Overview
A. Availability 101
B. Sysplex Terminology
C. Sysplex Configurations
D. Sysplex Hardware Components
E. Types of Coupling Facilities
F. Coupling Facility Microcode
G. Sysplex Timer
H. What is a GeoPlex?
I. Understanding CF Structures
J. Understanding Structure Rebuild
K. System-managed CF Duplexing
L. z/OS & OS/390 Sysplex Components
M. System Logger
N. Workload Manager
O. Understanding Enclaves
P. WLM Multisystem Enclave Mgmt
Q. Intelligent Resource Director
R. Automatic Restart Management
S. Serialization: ENQ/DEQ & Reserve/Release
T. The Deadly Embrace

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U. GRS Ring vs. GRS Star
V. Catalog Sharing
W. VTAM Generic Resources
X. Sysplex Maintenance & Design
Y. Maintenance Rollout Procedure
Z. Accessing IBM Sysplex Wizard

9. Parallel Sysplex Operations
A. Displaying System and CF Information
B. Sysplex Consoles
C. Sysplex Failure Management
D. Vary off with & without SFM Policy

10. Operating UNIX System Services in a Sysplex
A. UNIX System Services Overview
B. The UNIX Hierarchical File System
C. The UNIX Shell
D. Using the OMVS TSO Command
E. File Mgmt using the ISPF Shell
F. Shared HFS
G. The Sysplex Root HFS:
H. The System-Specific HFS:
I. The Version HFS:
J. What happens under the covers?
K. USS Operator Tools & Interfaces
L. Console Commands – D OMVS
M. Commands: SETOMVS vs. SET OMVS

11. CICS Overview
A. What is CICS?
B. How CICS Works
C. CICS Transactions
D. CICS Advantages
E. CICS History
F. The CICS Family
G. Where CICS is Going

12. CICS Operation
A. CICS Startup Types
B. CICS Startup Parameters
C. CICS Startup Messages
D. MRO and ISC
E. Entering CICS Commands
F. Master Terminal Transaction
G. CEMT INQUIRE
H. CEMT SET
I. CEMT SET FILE
J. Shutting Down CICS

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13. Understanding System Performance
- A. Unit of Work
- B. Processors
- C. Multiprocessor dataflow
- D. Processing Power
- E. Dispatchable Work

14. System Problem Diagnosis
- A. System Problem Types
- B. Abends, Loops, Wait States
- C. System Codes Manual
- D. Dumps
- E. Console Dump Command
- F. D DUMP and DUMPDS Command

15. Using OmegaMon for System Monitoring and Diagnosis
- A. Omegamon and Omegaview
- B. Omegaview Architecture
- C. Omegamon Main Menu
- D. Exception Information
- E. Operation Status
- F. Omegamon Action Commands
- G. Omegamon WHO Function
- H. Omegamon LOCATE Function
- I. Omegamon KILL Function
- J. Omegamon TIMEOUT Function
- K. Omegamon NONSWAP Function
- L. Omegamon MVS Analysis
- M. Omegamon SRM Information
- N. Omegamon Storage Information
- O. Omegamon Tape Information
- P. Long Device Response Times
- Q. Bottlenecks
- R. Task Analysis
- S. Resource Bottlenecks
- T. Enqueue Conflict
- U. Job Analysis
- V. CPU Utilization
- W. System Environment
- X. DASD Response
- Y. Paging Activity
- Z. Paging Rates
- AA. Processor Storage Utilization
- BB. TSO User's Overview

16. DB2 Problem Diagnosis
- A. DB2 Overview
- B. DB2 Architecture on MVS
- C. DB2 Triage
- D. DB2 on the SDSF Status Display
- E. Working a DB2 Error Message

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