

## MVS Skill Pack for z/OS (TSO/ISPF & JCL)

### Course Summary

#### Description

This course is designed to help programmers, operations staff and managers new to the z/OS environment gain an understanding of MVS concepts, a working knowledge of TSO, ISPF and JCL. The lecture components and hands-on labs will give each student the opportunity to understand and use the basic facilities of an MVS environment.

#### Topics

- MVS operating system terminology
- Introduction to DASD, Tape, and Systems Managed Storage
- Intro to Catalogs, VTOCs, and Tape Labels
- MVS Networking: TCP/IP and SNA
- JES2 vs JES3
- MVS Security Overview
- What is a Parallel Sysplex
- What is UNIX System Services
- Program Product Overview: CICS, DB2, IMS, WebSphere MQ
- Third-party Program Product Overview
- TSO/ISPF introduction
- ISPF hierarchy
- ISPF commands
- Using SDSF to view job output
- Coding the JCL JOB and EXEC statements
- Coding JCL DD statements
- IF/THEN/ELSE/ENDIF JCL statements
- JOBLIB, STEPLIB, and JCLLIB JCL statements
- OUTPUT JCL statements
- SET and INCLUDE members
- Using cataloged and in-stream JCL procedures with symbolic overrides
- Using the IBM SORT program

#### Audience

This course is intended for personnel who are new to the MVS operating system or those who are seeking a refresher course in basic to intermediate JCL programming execution.

#### Prerequisites

There are no prerequisites for this course.

#### Duration

Five days

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### Course Outline

#### I. MVS Overview

- A. zSeries & S/390 Operating Systems
- B. A Typical zSeries Data Center
- C. Real & Virtual Memory
- D. Multiprogramming vs. Multiprocessing
- E. Interrupts
- F. Bits and Bytes
- G. EBCDIC vs. ASCII
- H. The CPU (Central Processing Unit)
- I. MVS in a TCP/IP Network
- J. Understanding the Network Controllers
- K. Understanding the 3270 Terminal
- L. S/390 Printer Hardware Categories
- M. Storage Devices: DASD
- N. Storage Device Connections
- O. Storage Subsystems
- P. MVS Address Spaces
- Q. MVS Data Spaces
- R. z/OS 64 Bit Address Space
- S. MVS HiperSpaces
- T. MVS Dispatching
- U. MVS Customization
- V. The MCS Console
- W. MVS Data Management
- X. MVS Data Set Types
- Y. Sequential Datasets
- Z. Partitioned Datasets
- AA. VSAM Datasets
- BB. Systems Managed Storage (SMS)
- CC. Catalogs
- DD. VTOC: Volume Table of Contents
- EE. Tape Labels
- FF. Recovery / Termination Mgmt
- GG. SMF - System Management Facilities
- HH. Serialization: ENQ / DEQ
- II. Shared DASD & Reserve/Release
- JJ. Security Overview
- KK. JES Overview
- LL. Job Life Cycle Phases
- MM. Job Execution Phase
- NN. JES2 vs. JES3
- OO. A Parallel Sysplex
- PP. UNIX System Services
- QQ. The UNIX Hierarchical File System

- RR. The UNIX Shell
- SS. Using the OMVS TSO Command
- TT. File Mgmt using the ISPF Shell
- UU. Program Products: CICS
- VV. Program Products: DB2
- WW. Program Products: IMS
- XX. Today's Application Architectures
- YY. Program Products: WebSphere MQ
- ZZ. What is a Job Scheduler?

#### II. TSO/E and ISPF Overview

- A. TSO/E Overview: Features
- B. TSO Operating Modes
- C. Interactive TSO Commands
- D. TSO/E Logon and Logoff
- E. TSO/E Line Mode
- F. ISPF/PDF Option 6
- G. Issuing TSO cmd from ISPF Panel
- H. TSO/E Command Syntax
- I. TSO/E PROFILE
- J. TSO/E REXX & CLIST
- K. Example REXX EXEC
- L. REXX Language Features
- M. Languages: Compiled vs. Scripting
- N. ISPF Overview
- O. What is a Panel?
- P. Menu Panel
- Q. List Panel
- R. EDIT PANEL
- S. ISPF Primary Option Menu
- T. Standard CUA Format
- U. ISPF Panel Terminology
- V. ISPF Hierarchy
- W. ISPF Panel Hierarchies
- X. ISPF Navigation
- Y. ISPF Line and Primary Commands
- Z. ISPF Primary Commands
- AA. ISPF Split Screen
- BB. ISPF Help

#### III. Navigating MVS Documentation

- A. IBM Library Reader on CD
- B. IBM Internet Library
- C. MVS/QuickRef Overview
- D. Abend Code Display

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### Course Outline (cont'd)

- E. Select Information By Category
  - F. Sample JCL Information: NOTIFY Keyword
  - G. Looking up an Error by Message ID
  - H. Example Error Message Info: IOS000I
  - I. Selecting Vendor, Product, Release
  - J. Selecting DASD Free Space Information
  - K. Displaying DASD Hardware Characteristics
- IV. ISPF Hierarchy & Settings**
- A. Primary Option Menu
  - B. Utility Selection Panel (=3)
  - C. Library Utility 3.1
  - D. Data Set Utility 3.2
  - E. Move Copy Utility 3.3
  - F. Data Set List Utility 3.4
  - G. ISPF Jump Function
  - H. Allocating Data Sets w/ ISPF
  - I. Data Set Allocation
  - J. Allocation Suggestions
  - K. ISPF Settings
  - L. PF Key Definitions and Labels
  - M. Keylist Utility
  - N. FKA / PFSHOW Example
  - O. Other ISPF Settings: Color, Environ
- V. ISPF Edit and View**
- A. ISPF Edit, View, Browse
  - B. Edit Panel: Action Bar Choices
  - C. ISPF Edit Primary Commands
  - D. ISPF Edit Scroll Commands
  - E. Browse and Edit FIND command
  - F. Edit Change Command
  - G. Change Command Examples
  - H. FIND command: Advanced topics
  - I. Edit Session: Sequence Numbers
  - J. Special Editing Keys: Insert, Delete, & EOF
  - K. Line Edit Commands
  - L. Advanced Edit Line Commands
  - M. Text Entry mode
  - N. Text Flow Line Command
  - O. MASK and TS Line Command
  - P. Column and Data Shifting
- Q. ISPF Edit Primary Commands
  - R. Locate Primary Commands
  - S. Delete Primary Commands
  - T. SORT Primary Command
  - U. COPY & MOVE Primary Commands
  - V. CUT & PASTE Primary Commands
  - W. Data Movement Commands
  - X. Nesting Edit
- VI. SDSF Overview & Features**
- A. SDSF Primary Option Menu
  - B. SDSF Key End-User Commands
  - C. SDSF Input Queue Display
  - D. SDSF Input Action Characters
  - E. SDSF Active Display
  - F. SDSF Held Output Queue Display
  - G. SDSF Output Queue Display Cmd
  - H. More SDSF Commands
- VII. MVS Job Control Language**
- A. JCL Overview and Syntax
  - B. JCL Statement Types Covered
  - C. JCL Statement Categories
  - D. JCL Syntax: Fields
  - E. JCL Syntax: Parameters
  - F. JCL Syntax: Comments
  - G. JCL Syntax: Continuation
  - H. JES JCL Statements
  - I. JOB Statement
  - J. JOB Statement: Jobname
  - K. JOB Statement: Accounting Info
  - L. JOB Statement: Programmer-Name
  - M. JOB Statement: Apostrophe Rules
  - N. JOB Statement: Keyword Parameters
  - O. JOB Statement: CLASS Keyword
  - P. JOB Statement: MSGCLASS Keyword
  - Q. JOB Statement: MSGLEVEL Keyword
  - R. JOB Statement: NOTIFY Keyword
  - S. JOB Statement: TYPRUN Keyword
  - T. JOB Statement: RESTART Keyword
  - U. JOB Statement: Other Keywords
  - V. MVS Utilities: IEFBR14
  - W. EXEC Statement
  - X. Big Picture: Compile & Link Process
  - Y. EXEC Statement: PGM Keyword

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### Course Outline (cont'd)

- Z. EXEC Statement: PROC Keyword
- AA. EXEC Statement: PARM Keyword
- BB. Using PARM in a COBOL Program
- CC. EXEC Statement: TIME Keyword
- DD. EXEC Statement: REGION Keyword
- EE. EXEC Statement: COND Keyword
- FF. DD Statement
- GG. DD Statement: DDNAME
- HH. Referring to the DDNAME in COBOL
- II. DD Statement: SYSOUT=
- JJ. DD Statement: \*
- KK. DD Statement: DATA
- LL. DD Statement: DUMMY
- MM. MVS Utilities: IEBGENER
- NN. DD Statement: DSN=
- OO. DD Statement: DISP=
- PP. DD Statement: UNIT=
- QQ. DD Statement: VOL= & VOL=SER=
- RR. DD Statement: DCB=
- SS. DD Statement: SPACE=
- TT. DD Statement: AVGREC=
- UU. DD Statement: LIKE=
- VV. DD Statement: Generation Data Sets
- WW. DD Statement: Backward Reference
- XX. IF / THEN / ELSE / ENDIF
- YY. Data Set Concatenation
- ZZ. Special DD Names
- AAA. JOBLIB Statement
- BBB. STEPLIB DD Statement
- CCC. JCLLIB Statement
- DDD. OUTPUT Statement
- EEE. INCLUDE Statement
- FFF. Procedures: Symbolic Parameters
- GGG. Procedures: Statement Overrides
- HHH. Procedures: Adding In-stream data
- III. SET Statement
- JJJ. SORT Overview
- KKK. Example Sort JCL
- LLL. SORT DD Statements
- MMM. SORT control statements