

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

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### 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
- E. Select Information By Category
- F. Sample JCL Information: NOTIFY Keyword
- G. Looking up an Error by Message ID
- H. Example Error Message Info: IOS0001
- I. Selecting Vendor, Product, Release
- J. Selecting DASD Free Space Information
- K. Displaying DASD Hardware Characteristics

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### Course Outline (cont'd)

#### 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
- 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=

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### Course Outline (cont'd)

- 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