Advanced MVS JCL and Utilities

Course Summary

Description

This course is designed to help intermediate to advanced system programmers, operators, and application programmers use and code JCL procedures effectively, including analyzing condition codes and system error messages that provide clues to the cause of JCL and utility control statement errors. Effective procedure coding techniques are stressed, such as use of symbolic parameters, DDNAME operands, and other coding techniques to streamline the required JCL. Use of MVS and vendor utility programs are used to demonstrate advanced program, library, and system management techniques. This course includes lecture components and hands-on labs to give each student the opportunity to understand and use JCL language for production processing.

Objectives

By the end of this course, students will be able to:

- Write and debug efficient JCL streams, which execute programs and invoke procedures.
- Apply overrides to existing procedures.
- Design, code, and debug cataloged procedures to execute applications and utilities.
- Diagnose and correct JCL errors and restart the affected jobs.
- Use the IDCAMS utility to define and manage VSAM data sets.
- Navigate the MVS documentation to locate details for running MVS utility programs
- Know which IBM and third party utilities to use to accomplish developer and MVS maintenance tasks.

Topics

- Job Control Language Essentials Review
- New Job Control Language Features
- The IEBCOPY Utility
- The Sort Utility
- Advanced Printing Techniques
- Using and Writing Procedures
- The IDCAMS Utility
- MVS Utilities
- Tape Processing
- Using the TSO TMP and REXX with Batch
- UNIX System Services
- FTP Essentials
- Miscellaneous Topics

Audience

This course is designed for Programmers

Prerequisites

Students must be familiar with basic JCL coding, as well as use of ISPF edit and an output retrieval program such as SDSF.

Duration

Three Days

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Course Outline

I. Job Control Language Essentials Review
   A. JCL Overview and Syntax Review
   B. JCL Overview and Syntax Review
   C. Classic JCL Statement Types
   D. New JCL Statement Types
   E. JCL Statement Categories
   F. JCL Syntax: Fields
   G. JCL Syntax: Parameters
   H. JCL Syntax: Comments
   I. JCL Syntax: Continuation
   J. JES (Job Entry Subsystem) Statements
   K. JES JCL Statements
   L. JOB Statement Review
   M. JOB Statement: Jobname
   N. JOB Statement: Accounting Info
   O. JOB Statement: Programmer-Name
   P. JOB Statement: Apostrophe Rules
   Q. JOB Statement: Keyword Parameters
   R. JOB Statement: CLASS Keyword
   S. JOB Statement: MSGCLASS Keyword
   T. JOB Statement: MSGLEVEL Keyword
   U. JOB Statement: NOTIFY Keyword
   V. JOB Statement: TYPRUN Keyword
   W. JOB Statement: RESTART Keyword
   X. JOB Statement: Other Keywords
   Y. More JOB Keyword Parameters
   Z. MVS Utilities: IEFBR14
   AA. Lab: Create a JOB JCL Statement
   BB. LABJOB1 Solutions
   CC. EXEC Statement
   DD. Big Picture: Compile & Link Process
   EE. EXEC Statement: Keyword Parameters
   FF. EXEC Statement: PGM Keyword
   GG. EXEC Statement: PROC Keyword
   HH. Understanding Error Types
   II. Understanding Return Codes
   JJ. EXEC Statement: COND Keyword
   KK. EXEC Statement: PARM Keyword
   LL. Using PARM in a COBOL Program
   MM. EXEC Statement: REGION Keyword
   NN. EXEC Statement: TIME Keyword
   OO. More EXEC Keyword Parameters
   PP. Lab: JCL EXEC
   QQ. Optional Lab: JCL EXEC
   RR. DD Statement
   SS. DD Statement: DDNAME
   TT. Referring to the DDNAME in COBOL
   UU. DD Statement: *
  VV. DD Statement: DATA
   WW. DD Statement: DUMMY
   XX. MVS Utilities: IEBGENER
   YY. Example IEBGENER job step:
   ZZ. LABDD1: In-stream & SYSOUT data
   AAA. LABDD1 Solution
   BBB. DD Statement: Keyword Parameters
   CCC. DD Statement: SYSOUT=
   DDD. SYSOUT Examples
   EEE. DD Statement: DSN=
   FFF. DD Statement: DISP=
   GGG. DD Statement: UNIT=
   HHH. DD Statement: VOL= & VOL=SER=
   III. DD Statement: LABEL=
   JJJ. DD Statement: RETPD and EXPDT
   KKK. DD Statement: LABEL= Examples
   LLL. DD Statement: DCB=
   MMM. DD Statement: SPACE=
   NNN. Understanding DASD Extents
   OOO. DD Statement: SPACE= Examples
   PPP. DD Statement: AVGREC=
   QQQ. DD Statement: LIKE=
   RRR. DD Statement: LIKE=, REFDD= Examples
   SSS. SMS-managed Dataset Keywords
   TTT. LABDD2: Reading from DASD
   UUU. LABDD3: Writing to DASD
   VVV. Data Set Concatenation
   WWW. Special DD Names
   XXX. JOBLIB Statement
   YYY. JOBLIB Statement: Example
   ZZZ. STEPLIB DD Statement
   AAAA. DD Statement: Backward Reference
   BBBB. IF / THEN / ELSE / ENDIF
   CCCC. Lab: JCL IF

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Course Outline (cont.)

II New Job Control Language Features
   A. IEBCPY Documentation
   B. Greater than 100 characterParms in JCL
   C. PARMD1 JOB: PARMD Example
   D. Instream Symbol Substitution
   E. Job Execution Controls - Overview
   F. Simple Job Group Example
   G. JOBGROUP Statement Syntax
   H. JOBGROUP Statement Keywords
   I. GJOB Statement
   J. JOBSET Statement
   K. Dependencies: BEFORE, AFTER, CONCURRENT
   L. Dependencies: BEFORE, AFTER NAME=
   M. Dependencies: BEFORE, AFTER WHEN=
   N. BEFORE, AFTER WHEN= Operators
   O. Dependencies: BEFORE, AFTER ACTION=
   P. Dependencies: BEFORE, AFTER OTHERWISE=
   Q. Dependencies: CONCURRENT
   R. Concurrent Example
   S. Dependencies: SCHEDULE JCL Statement
   T. JOBGROUP and SCHEDULE Example
   U. SYSDSN ENQ Downgrade in JCL
   V. DSENOSSH Example
   W. JES-Independent JCL
   X. HSM Parallel Batch Recall

V Advanced Printing Techniques
   A. OUTPUT Statement
   B. OUTPUT Statement Example
   C. OUTPUT Statement: Lab (optional)

VI Using and Writing Procedures
   A. JCLLIB Statement
   B. INCLUDE Statement
   C. INCLUDE Statement: Lab
   D. Procedures
   E. Procedures: Symbolic Parameters
   F. Procedures: Statement Overrides
   G. Procedures: Order of Overrides
   H. Procedures: Adding In-stream data
   I. Procedures: Symbols Example
   J. LABPRCxx: Create a Procedure
   K. LABPRC1: Use a Procedure
   L. LABPRC2: An In-stream Procedure
   M. SET Statement
   N. SET Statement: Example
   O. SET Statement: Lab

VII The IDCAMS Utility
   A. IDCAMS Utility Program Overview
   B. IDCAMS Documentation
   C. IDCAMS Functional Commands
   D. IDCAMS Cmd Language Syntax
   E. IDCAMS Syntax Example
   F. DEFINE Command Overview
   G. VSAM Terminology Review
   H. VSAM KSAM Datasets
   I. Define Cluster command
   J. Selected Define Cluster Parameters
   K. Define AlternateIndex command
   L. Define AlternateIndex Parameters
   M. Define AlternateIndex Example
   N. Define Path Command
   O. Build Index Command
   P. Complete BldIndex Example
   Q. Delete Command
   R. Delete Examples
   S. Repro Command
   T. Print Command
   U. Listcat Command
   V. Modal Commands
   W. IDCAMS Lab LABVSAM1
   X. Optional IDCAMS Lab LABVSAM2
   Y. Generation Data Sets
   Z. DD Statement: Generation Data Sets
   AA. Example: Generation Data Sets

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Course Outline (cont.)

BB. Lab: Generation Data Sets  I. OGET Example
CC. System Programmer Tasks w/ IDCAMS  J. OPUT Example
DD. Alter Management Class Example  K. OCOPY Example
EE. Define Alias Example  L. OPUT Lab
FF. Define User Catalog Example  M. File System Maintenance - Backup
GG. Define Page Dataset Example  N. File System Maintenance – Restore
HH. Backup the IODF Example

VIII MVS Utilities
A. Typical JCL for MVS Utilities
B. IBM Data Set Utilities
C. IEBDG: Generate Test Data
D. IEBDG: Generate Test Data Example
E. IEBUPDTE: Update a PDS
F. IEBUPDTE: Update a PDS Example
G. IBM System Utilities

IX Tape Processing
A. Tape Device Fundamentals
B. Tape Device Details
C. Tape DD Statement Review
D. Tape DD Statement Example
E. DD Statement Review: UNIT=
F. DD Statement: UNIT= Examples
G. DD Statement: VOL= & VOL=SER=
H. DD Statement: VOL= Examples
I. Minimizing Tape Units in a Job Step
J. Tape Management Subsystems
K. TMS (CA-1) Overview
L. TMS JCL Considerations
M. TMS Expiration Dates
N. TMS JCL Examples
O. Mapping Utility Overview
P. Using the IBM Ditto Utility
Q. Copying a Tape Using Ditto
R. Initializing Tape Volumes

X Using the TSO TMP and REXX with Batch
A. The TSO Terminal Monitor Program
B. TSO Terminal Monitor Program Example
C. Running REXX from Batch
D. Submitting JCL From REXX

XI UNIX System Services
A. Issue UNIX cmds from BATCH JCL
B. BPXBATCH DDNAME Usage
C. BPXBATCH Example: Shell Script
D. BPXBATCH Example: Shell Cmd
E. BPXBATCH Alternatives
F. Pro’s and Con’s of USS access via Batch
G. Using the Irish Commands
H. Moving Data HFS <-> MVS

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