z/OS Job Control Language

Duration: 5 Days

Audience:

Application Programmers with little or no previous experience with z/OS JCL who require formal training in the language features and coding techniques.

Pre-requisites:

An understanding of computer concepts is assumed.

A working knowledge of TSO/ISPF is required. This can be gained from our z/OS TSO/ISPF Workshop.

Course Objectives

This course combines the content of the Basic and Advanced courses to facilitate each delegate acquiring a working knowledge of z/OS JCL. On completion they will be able to interpret and code z/OS JCL. Good coding practice is encouraged throughout. The course starts with the basics and furthers learning with 57 hands on.

Course Content

Module 1: Background and Syntax

A brief history
What JCL looks like
Statement structure and coding rules
Keyword vs Positional operands
Sub-parameter lists
Statement continuation
Handling special characters
JCL error points
JES2 Control statements
JES3 Control statements

Module 2: JCL, the Resource Manager

Where does resource management start?
Managing processor occupancy; TIME operand
Managing memory allocation; REGION, REGIONX and MEMLIMIT operands
Managing peripherals (I/O devices)
Types of DD statement

Selecting DDNAMEs
Utility DDNAMEs and reserved DDNAMES.

Module 3: JOB statement

Influences on the JOB statement; Exits, JES, RACF and Standards
JOB Naming rules
Programmer's name field explained
Influencing JOB selection; CLASS and PRTY operands
Controlling system output; MSGCLASS and MSGLEVEL operands
Delaying JOB execution; TYPRUN operand
Changing security profile; GROUP, PASSWORD and USER operands
Displaying JOB completion status; NOTIFY operand
JES2 Job Accounting information explained

Module 4: EXEC statement

Influences on the EXEC statement; Exits, JES, RACF and Standards
EXEC statement naming rules
Executing a program vs procedure; PGM and PROC operands
Passing information to a program; PARM operand
Bypassing job steps; COND operand, and its logic

Module 5: Sequential Record File Processing

Data Set Organization (File types); DSORG
Assign an input stream data sets; *, DATA and DLM operands
Assign a print data set; SYSOUT operand
Assign an existing data set; DISP and DSN operands
Assign a new permanent disk data set; BLKSIZE, RECFM, LRECL and SPACE operands, (DCB, UNIT and VOL operands are also mentioned)
Additional operands; LABEL, EXPDT and RETPD
Assign a new temporary data set
Access an existing temporary data set

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Module 6: Impact of System Managed Storage (SMS)

Impact overview
Automatic Class Selection; DATACLAS, MGMTCLAS, STORCLAS and STORGRP routines
Amending data set attributes for a new data set; DATACLAS operand
Amending management attributes for a new data set; MGMTCLAS operand
Directing a new data set to alternative volumes; STORCLAS operand
Device independent disk space allocation; AVGREC operand
Using an existing data set as a model; LIKE and REFDD operands
Using LEKE and REFDD with VSAM clusters

Module 7: Other Miscellaneous Topics

Starting a JOB beyond the first step; RESTART operand
Automatic restart of a job after failure; RD operand
Concatenated data sets
Deferred data sets
Dummy data sets; DUMMY and DSN=NULLFILE operands
Backward references
The OUTPUT statement

Module 8: Generation Data Groups (GDGs)

What is a GDG?
GDG Terminology
Create a base entry
Create a new relative generation
Create a new absolute generation
Checking the status of generations
Alter the base entry
Dealing with ROLLED-OFF generations
How to use the version number
Deleting entries
The effect of GDGBIAS

Module 9: Conditional JCL

The COND operand and its logic
Information available for Conditional JCL
IF / THEN / ELSE / ENDIF construct
Relational expressions described
What JCL is eligible for conditional processing

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What JCL is ineligible for conditional processing
What JCL is unaffected by conditional processing
The ability to nest decision making

Module 10: JCL Procedure Overview

What is a procedure?
Catalogued vs In-stream
The default libraries; JES2 and JES3
Assigning alternative libraries; /*JOBPARM and JCLLIB
Library search order
Procedure construction, naming and content
Using nested procedures
INCLUDE groups

Module 11: JCL Procedures - Using Overrides

EXEC statement overrides
DD statement overrides
OUTPUT statement overrides

Module 12: JCL Procedures – Using Symbolic Parameters

What is a symbolic parameter?
Assigning default values
Overriding default values
Concatenating symbols
Using the SET statement

Module 13: Input Stream Symbols

Symbols within a JES2 input stream
Different symbols: JCL vs JES vs System
Using symbols in Batch
Making a symbol available; EXPORT statement
Retrieving symbols in the input stream
Passing symbols via the Internal Reader (INTRDR)

Module 14: Accessing z/OS UNIX System Services files

Condition terminology
File system overview
Security considerations
DD statement operands; PATH, PATHDISP, PATHMODE, PATHOPTS and FILEDATA

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The BPXBATCH utility
Deleting a z/OS UNIX file
Obtaining a list of z/OS UNIX files

Module 15: Utilities

This is an overview of various utilities which could be used to perform a variety of common functions. The utilities mentioned are:
ADRDSSU
IDCAMS
IEBCOPY
IEBDG
IEBEDIT
IEBGENER
IEBPTPCH
IEBUPDTE
IEFBR14
IKJEFT01 - TSO