

Using DFSORT and ICETOOL

Course Summary

Description

Students who complete this course will be able to code JCL and DFSORT and ICETOOL control statements to utilize the power of these utilities. This includes using these utilities instead of tedious programming languages to create reports (with up to three levels of control breaks), XML files, and HTML files from flat files, VSAM files, members of PDS or PDSE or files in the Hierarchical File System (HFS).

Objectives

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

- Write JCL and DFSORT control statements to sort, copy, and merge records in the following kinds of files as input, and to produce these kinds of files as output:
- Create symbolic name files to use in DFSORT and ICETOOL control statements
- Write JCL and DFSORT and ICETOOL control statements that enable you to perform these tasks with no need to write code in a programming language

Topics

- DFSORT control statements: INCLUDE, OMIT, INREC, OUTREC, SORT, OUTFIL, OPTION, SUM, RECORD, MERGE, JOINKEYS, JOIN, REFORMAT
- ICETOOL operators: COPY, COUNT, DEFAULTS, MERGE, MODE, RANGE, RESIZE, SORT, STATS, UNIQUE, VERIFY, DISPLAY, OCCUR, SUBSET, SELECT, SPLICE
- Supported data types
- Symbolic names, user-defined and DFSORT-provided
- Using JCL symbolics in SORT and ICETOOL control statements
- Dates and times; relative dates; dates with two-digit years
- The Century Window
- The Hierarchical File System (HFS)
- DFSORT and HFS files
- Report terminology
- Markup languages
- Introduction to XML
- DFSORT and XML
- Introduction to HTML
- DFSORT and HTML
- Joining files
- Collation sequences and locales in DFSORT
- The ICEGENER utility

Audience

This course is designed for experienced programmers and analysts who need a solid, in-depth exploration of DFSORT and ICETOOL capabilities.

Prerequisites

Before taking this course, students should have a working understanding of JCL.

Duration

Four days

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Course Outline

I. Introduction to DFSORT

- A. Background
- B. Computer Exercise: Setting up for the labs

II. The DFSORT Program

- A. DFSORT Capabilities
- B. JCL and Control Statements for DFSORT
- C. Introduction to INCLUDE / OMIT Statements
- D. Introduction to the INREC Statement
- E. Introduction to the SORT Statement
- F. Introduction to the OUTREC Statement
- G. Using SORT to do a copy
- H. Computer Exercise: Running Sorts

III. Data Types and Symbolic Names

- A. Data Types
- B. CH, AQ, ZD, ZDF, ZDC, PD, PDF, PDC, CSF, UFF, SFF, CSL, CST, CLO, CTO, FI, FL, BI, AC, ASL, AST
- C. Symbolic Names
- D. Literals
- E. Using Symbolic Names
- F. Converting values
- G. Additional symbolic name facilities
- H. Computer Exercise: Using Names

IV. A Deeper Look at INCLUDE, OMIT, and SORT statements

- A. INCLUDE / OMIT: Additional COND tests
- B. The Complete SORT Statement
- C. Computer Exercise: Using Additional Tests and SORT Operands

V. The INREC and OUTREC Statements, round 2

- A. The Roles of INREC and OUTREC
- B. The PARSE Operand
- C. PARSE and symbolic names
- D. Computer Exercise: PARSE

VI. The INREC and OUTREC Statements, round 3

- A. The BUILD operand
- B. BUILD Values
- C. Computer Exercise: Using BUILD

VII. The INREC and OUTREC Statements, round 4

- A. The OVERLAY operand
- B. The FINDREP operand
- C. Computer Exercise: OVERLAY and FINDREP

VIII. The INREC and OUTREC Statements, round 5

- A. The IFTHEN operand
- B. Computer Exercise: IFTHEN

IX. Working with Dates

- A. Dates
- B. Dates with four digit years
- C. Dates with two digit years
- D. Enhanced data processing
- E. Date Field Arithmetic
- F. Computer Exercise: Sort and Format Dates

X. Working with Times

- A. Times

XI. OUTFIL - Multiple output files

- A. Some Perspective
- B. The OUTFIL statement
- C. Computer Exercise: Using OUTFIL

XII. OUTFIL, round 2 - Reports

- A. Report terminology
- B. Report related operands of OUTFIL
- C. Headers, Trailers, Control Breaks
- D. Computer Exercise: Generating Reports

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Course Outline (cont'd)

XIII. OUTFIL, round 3 - Markup

- A. Markup Languages
- B. Introduction to XML
- C. DFSORT and XML
- D. HTML - An Introduction
- E. DFSORT and HTML
- F. Computer Exercise: Generating Markup

XIV. Working with HFS Files

- A. z/OS UNIX
- B. Introduction to the Hierarchical File System (HFS)
- C. HFS JCL Parameters
- D. JCL and HFS Files: DFSORT Usage
- E. Copying data to the HFS
- F. Computer Exercise: Using HFS Files with DFSORT

XV. Alternative Orderings

- A. Collation sequence
- B. ALTSEQ - Specifying alternative collating sequences
- C. Locales - Ordering with an awareness of languages and formatting conventions
- D. Sorting ASCII files
- E. Computer Exercise Sort an ASCII File

XVI. Additional DFSORT Control Statements

- A. DFSORT Statements
- B. Exits
- C. The SUM Statement
- D. The RECORD Statement
- E. Merge Operations
- F. The MERGE Statement
- G. The OPTION Statement
- H. JCL Statements Revisited
- I. Computer Exercise: Using Additional DFSORT facilities

XVII. Joining files for a SORT or COPY operation

- A. JOIN concepts
- B. The JOINKEYS, JOIN, and REFORMAT statements

- C. JOINKEYS Applications notes
- D. Computer Exercise: A JOINKEYS Application

XVIII. Introduction to ICETOOL

- A. ICETOOL Overview
- B. ICETOOL COPY operator
- C. ICETOOL COUNT operator
- D. Numeric editing in ICETOOL
- E. ICETOOL DEFAULTS operator
- F. ICETOOL MERGE operator
- G. ICETOOL MODE operator
- H. ICETOOL RANGE operator
- I. ICETOOL SORT operator
- J. ICETOOL STATS operator
- K. ICETOOL UNIQUE operator
- L. ICETOOL VERIFY operator
- M. Computer Exercise: Introduction to ICETOOL

XIX. The ICETOOL DISPLAY operator

- A. The DISPLAY Operator
- B. DISPLAY examples
- C. Computer Exercise: DISPLAYing Data

XX. The ICETOOL OCCUR operator

- A. The OCCUR Operator
- B. OCCUR examples
- C. Comparing ICETOOL Operators
- D. Computer Exercise: Analyzing Data Patterns

XXI. The ICETOOL RESIZE, DATASORT, SUBSET, and SELECT operators

- A. The RESIZE operator
- B. The DATASORT operator
- C. The SELECT operator
- D. The SELECT operator
- E. Computer Exercise: Using SELECT

XXII. The ICETOOL SPLICE operator

- A. The SPLICE operator
- B. Computer Exercise: SPLICE-ing Files

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Course Outline (cont'd)

XXIII. Loose Ends

- A. But Wait! There's More!
- B. The ICEGENER utility
- C. VSAM support
- D. Work data sets
- E. Sorting techniques
- F. Using JCL Symbolic Parameters and SET Symbols in DFSORT and ICETOOL control statements
- G. Tape files
- H. Performance
- I. Miscellaneous Notes