IBM Education Assistance for z/OS V2R2

Items: Functional Enhancements
Exploitation of zHPF

Element/Component: DFSORT

Material current as of May 2015

Agenda

- Trademarks
- Presentation Objectives
- For each item:
  - Overview
  - Usage & Invocation
  - Interactions & Dependencies
  - Migration & Coexistence Considerations
- Presentation Summary
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Trademarks

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- Hiperspace
- z/OS

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Presentation Objectives

The purpose of this session is to provide a brief overview, usage and invocation information for each of the following new z/OS DFSORT V2R2 Line Items:

- Functional Enhancements
  - Date conversion AGE function
  - Date conversion WEEKNUM function
- Exploitation of zHPF
  - Update DFSORT to prefer BSAM for SORTIN/SORTOUT/OUTFIL when zHPF is available
- Message Updates
- Joinkeys indicators in SMF data

Overview – Functional Enhancements (AGE)

- Problem Statement / Need Addressed
  - Customers often want to calculate the date duration that specifies the number of years, months, and days between an input date and current date.
- Solution
  - A date conversion function AGE for the BUILD and OVERLAY operands of DFSORT's INREC, OUTREC and OUTFIL statements can now be used to calculate the date duration in three different forms.
    - **AGE=YMD** produces a 8 byte result which has duration in years (0-9999), months (00-12), and days (00-31).
    - **AGE=YM** produces a 6 byte result which has duration in years (0-9999), months (00-12).
    - **AGE=YD** produces a 7 byte result which has duration in years (0-9999), days (00-366).
- Benefit / Value
  - This new support allows the users to perform date conversion operations and calculate the age. Previously, they would have had to code a program to achieve the same results.

Usage & Invocation (AGE)

- AGE function Usage:
  - You can use AGE function on the BUILD and OVERLAY operands of DFSORT's INREC, OUTREC and OUTFIL statements.
  - Examples:
    - `INREC OVERLAY=(35:01,7,Y4T,AGE=YMD)`
    - `OUTREC BUILD=(31,8,Y4W,AGE=YM)`
    - `OUTFIL OVERLAY=(64:52,4,Y4U,AGE=YD)`

Overview – Functional Enhancements (WEEKNUM)

- Problem Statement / Need Addressed
  - Customers often want to calculate the week of the year for an input date.
- Solution
  - A date conversion function WEEKNUM for the BUILD and OVERLAY operands of DFSORT's INREC, OUTREC and OUTFIL statements can now be used to calculate the week number that represents the week of the year.
    - **WEEKNUM=USA** returns an integer in the range of 1 to 54 that represents the week of the year. The week starts with Sunday, and January 1 is always in the first week.
    - **WEEKNUM=ISO** function returns an integer in the range of 1 to 53 that represents the week of the year. The week starts with Monday and includes 7 days.
- Benefit / Value
  - This new support allows the users to perform date conversion operations and calculate the week number. Previously, they would have had to code a program to achieve the same results.

Usage & Invocation (WEEKNUM)

- WEEKNUM function Usage:
  - You can use WEEKNUM function on the BUILD and OVERLAY operands of DFSORT's INREC, OUTREC and OUTFIL statements.
  - Examples:
    - `INREC BUILD=(1,45,10,8,Y4T,WEEKNUM=USA,46,300)`
    - `OUTREC OVERLAY=(28:66,5,Y2W,WEEKNUM=ISO)`
    - `OUTFIL BUILD=(30,55,76:1,5,Y4V,WEEKNUM=USA)`

Migration & Coexistence Considerations

- ICE288I explanation of the message is changed to show the new functions. Actual message text is NOT changed.

Overview – Exploitation of zHPF

- Problem Statement / Need Addressed
  - Customers want improved DFSORT performance.
- Solution
  - High Performance FICON for System z (zHPF) is a data transfer protocol that is optionally employed for accessing data from IBM DS8000 storage and other subsystems.
    - DFSORT normally uses EXCP for processing of basic and large format sequential input and output data sets (SORTIN, SORTOUT, OUTFIL).
    - DFSORT already uses BSAM for extended format sequential input and output data sets (SORTIN, SORTOUT and OUTFIL).
    - DFSORT will be updated to prefer the use of BSAM for SORTIN, SORTOUT, and OUTFIL when zHPF is available.
- Benefit / Value
  - This support of zHPF allows for the new System z I/O architecture, whose channel programs allow to reduce elapsed time and increase I/O rates (up to 2x).

Usage & Invocation (zHPF)

- zHPF Usage:
  - DFSORT will automatically take advantage of zHPF if it is available on your system
  - No user actions are necessary

Interactions & Dependencies

- Software Dependencies
  - None
- Hardware Dependencies
  - Presence of High Performance Ficon (HPF) hardware
- Exploiters
  - None

Message Update

- Problem Statement / Need Addressed
  - Message ICE099A issued after BLDL failed contained DD name for
  - data set but did not have member name.
- Solution
  - Message ICE099A was changed
  - From
    - ICE099A BLDL FAILED FOR (dd name) DATA SET
  - To
    - ICE099A BLDL FAILED FOR (dd name) DATA SET, MEMBER (member name)
- Benefit / Value
  - The programmer response instructs the user to verify that the member exists in the dataset. Providing the member name will simplify this process.

Joinkeys indicators in SMF data

- Problem Statement / Need Addressed
  - Customers need to identify the Joinkeys jobs
- Solution
  - Update ICESMF mapping macro to reference fields within the SMF type-16 record with Joinkeys job indicators.
    - ICEJOINM – Indicates Joinkeys Main Task
    - ICEJOIN1 – Indicates Joinkeys Sub Task1
    - ICEJOIN2 – Indicates Joinkeys Sub Task2
- Benefit / Value
  - Customers now can run reports to analyze the usage of Joinkeys jobs.

Presentation Summary

- Date conversion AGE function
- Date conversion WEEKNUM function
- Exploitation of zHPF
- Described changes to ICE099A
- Joinkeys Indicators in SMF data

Appendix

- Publications
  - *z/OS DFSORT Application Programming Guide* (SC23-6878)
  - *z/OS DFSORT Messages and Codes* (SC23-6879)
  - *z/OS DFSORT: Getting Started* (SC23-6880)
  - *z/OS: DFSORT Installation and Customization* (SC23-6881)
  - *z/OS: DFSORT Tuning Guide* (SC23-6882)

- Web site: http://www.ibm.com/storage/dfsort

- Contact: DFSORT Hotline - dfsort@us.ibm.com