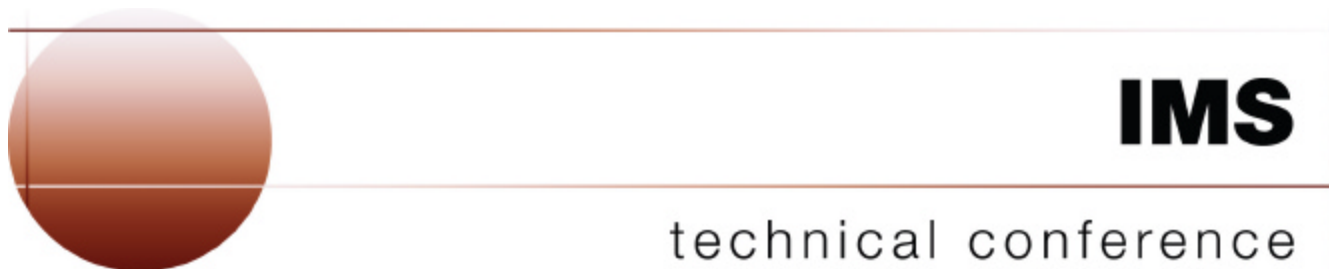


E55

New News in IMS HALDB Tooling

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Agenda

- Overview
 - HALDB Advantage
 - Changes
- Converting from Full Function to HALDB
 - How to Convert
 - Using a Tool
 - Single Databases
 - Partitioned Databases
 - Multiple Databases (User Partitioning)
- Maintaining HALDB Databases
 - Split or Consolidate Partitions
 - DBRC Specials
- Special Utilities and Functions
- Future Direction
- Demo



Overview

- **HALDB Advantage**
 - DBRC is required
 - Database size no longer limited
 - 40 TB possible today, 2560 TB by design
 - Physical description no longer in DBD
 - Adding partitions without online change
 - Changing RAA without DBD change
 - No JCL for database files
 - No longer in MDAlib
 - Partitions can be offline
 - Scheduling is on DBD, authorization on partition

Overview

- Changes
 - For Application
 - Secondary Index is used as database and has /SX
 - Logical related databases with PROCOPT=L
 - Status code “BA”, but only if partitions are offline
 - For Operations
 - Starting and stopping single partitions
 - Image copy and recovery
 - Special status and utility for ILDS and primary index
 - Copy databases to a different system
 - There is no WF1
 - Maintain data during reorganization !?!
 - Need a tool if index is set to NONRECOV

Convert from Full Function

- How to Convert
 - Select the DBD and all its related DBDs
 - Find “reasonable” high keys (including indexes)
 - Run the unload
 - Cleanup DBRC
 - Change the DBD
 - Define the partitions
 - Allocate all files
 - Run the reload
 - Do backups

Convert from Full Function

- Using a tool
 - Finds out how many partitions
 - Finds out the high keys
 - Creates the Unload
 - Changes the DBD
 - Creates the DBRC partition definitions
 - Calculates and allocates the partition files
 - Creates the Reload

Convert from Full Function

- Using a Tool
 - Creates a conversion project
 - Project connects to IMS environment
 - Ensures the right “sequence of events”
 - Checks completion of background JOBS
 - Can recreate JCL if necessary
 - Driven by setup parameter

Convert from Full Function

- Using a Tool
 - Partitioning rules
 - Number of partitions
 - Size of partitions
 - Keys of partitions
 - Partition selection exit
 - Product contains a generic selection exit (IHCPSEL0)
 - » Exit works on subset of the key
 - » Will need its “high” keys
 - Index partitions !!!!

Convert from Full Function

- Using a Tool
 - Partition names
 - Can be created from DBD name
 - Can be set by the user
 - Are checked against DBRC
 - Partition dataset names
 - User specifies “high level” qualifier
 - Can be appended with the database name
 - Allocation
 - IDCAMS statements can be saved to a PDS

Convert from Full Function

- Using a Tool
 - Changing the DBD
 - Secondary indexes are made unique
 - /SX related changes are applied to the index DBD
 - RKSIZE parameter created for index
 - Virtual paired is changed to physical paired
 - New DBD source can be saved to a PDS

Convert from Full Function

- Using a Tool
 - JCL
 - Creates all JCL and control statements
 - User is placed in ISPF VIEW to submit
 - JCL can be in single JOBS or 2 JOBS
 - Data collector can be during unload
 - DBRC
 - Create DBD and partition definition

Convert from Full Function

- Using a Tool
 - Other options
 - Change to single dataset group
 - Multiple dataset may have been used because of space constrains
 - Change from VSAM to OSAM
 - Take advantage of OSAM sequential buffering
 - Less CPU time for accessing database

Converting from Full Function

- Single Databases
 - Auto select for all related DBDs
 - Secondary indexes
 - Logical related DBDs
 - User may add other DBDs
 - Part of the same application

Converting from Full Function

- Partitioned Databases
 - One DBD with partitions defined in DBD
 - HIDAM has high keys
 - HDAM has number of partitions
 - Conversion options
 - Keep the current partitioning
 - HIDAM: high keys are reused
 - HDAM: number of partitions is used. High keys are created
 - Create new partition boundaries
 - High keys are created

Converting from Full Function

- Multiple Databases
 - Also referred to as “User Partitioning”
 - DBDs must be identical
 - No logical related DBDs
 - No secondary indexes
 - Conversion can be done in multiple iterations
 - User is responsible for
 - Changing his application interface (if needed)
 - Changing his PSBs
 - Ask for assistance (if you do not know how to handle this)



Converting from DEDBs

- Add a secondary index to the application
- May require application changes
 - Subset pointer used by application
 - Sequential dependent segment
- Randomizer conversion
 - Two phase randomizer replaced by
 - Partition selection via keys or exit
 - DFSHDC40 (or your own)
 - May require rewriting your own randomizer

Maintaining HALDB Databases

- Split or Consolidate Partitions
 - Single or multiple partitions as “input”
 - Multiple partitions must be in key sequence
 - “New” partition boundaries based on setup
 - High keys
 - New key boundaries are verified
 - Partition number
 - Partition size
 - IHCPSEL0 is supported
 - Will need “new” high keys

Maintaining HALDB Databases

- Process
 - Analyze the selected partitions
 - Unload the selected partitions
 - Partitions must be in key sequence
 - HD Unload utility
 - Define partitions to DBRC
 - Partitions may be deleted
 - Reload to the “new” partitions
 - //DFSHALDB will be used in the future

Maintaining HALDB Databases

- DBRC Specials
 - Display HALDB
 - Current Definition
 - Partitions
 - Partitions with exception Condition
 - Show subsystem allocation
 - Handle Exception Conditions
 - Create JCL to handle the exception

Copy to other RECON

- Clone HALDB definition
 - Define partitions in target RECON
 - Same definition but other DSNPREFIX
 - Data may be transported via Unload/Reload
- Copy HALDB partitions
 - Define partitions in target RECON
 - Register image copies in target RECON
 - Non fuzzy image copies only
 - Create new target datasets
 - User must do RECOVER

Special Utilities and Functions

- PSINDEX pointer healer
- DBD source generator
- Testing for partition selection exits
- Support for PROCOPT=L applications
- OSAM multi volume (non SMS)
- Status code “BA” support

Future Direction

- HALDB Analyzer
 - Create suggestions to maintain partitions
 - Create suggestions to reorg partitions
 - Create suggestions to heal EPS pointer
- Logical EPS pointer healer

Demo

- We are in the Expo
- Ask for a product demo