

IBM Software Group

DB2 Utilities Enhancement Tool for z/OS Version 2 Release 1

Thomas Hubbard - Product Specialist

tom.hubbard@rs.com 1-617-614-4143





IBM DB2 Utility Enhancement Tool for z/OS (UET)

- Problem/Background
- Analysis of Marketing Requirements
- Solution
- Requirements prioritization



UET: Problem/Background

- Backlog of requirements against the DB2 Utilities Suite product continues to grow
 - Many of these are very specific to a few customers' environment
 - Fewer of these are generic enhancements that would benefit the majority of customers
- The enhancements (implemented in priority order) cycle-time for delivery of utility function is tied to DB2's release cycle (~24 months)
- DB2 and the DB2 Utilities Suite is focused on new version support
- These enhancements are needed in competitive situations; We have missed DB2 Tool opportunities due to lack of DB2 Utilities Suite function
- We can't deliver enhancement requests for the DB2 Utilities Suite fast enough!



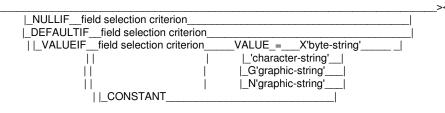
UET: Analysis of Requirements

- Many can be satisfied with pre- or post-processing of the utility statement (aka, outside of the utility code path)
 - Load constant values (nine requests)
 - Split/sort load input
 - A NORESTART option
 - ... dozens more
- The current BMC and CA utilities address many of these
- Customized scripts can be written for these tasks
 - Some customers do this already today (or hire someone to write it)
 - Few existing customers are interested in writing this supplementary code



DB2 UET: Solution

- Develop adjunct software to perform pre- and post-processing for the DB2 Utilities Suite
- Opens up ability to deliver utility function more rapidly to target complete replacement of tools with IBM products
- A long term project
 - Large number of requirements
 - Some functions may be absorbed into DB2/Utilities over time
 - Frequent releases... maybe one per year, with the opportunity to add significant new functions via the service stream
- Rename V2 of IBM DB2 Thread Expert for z/OS to IBM DB2 Utility Enhancement Tool for z/OS and add utility enhancer function
 - DSNUTILB intercept
 - Thread Expert Enhancements
 - DB2 Utility Enhancements
 - PRESORT keyword on LOAD
 - Automatic creating of mapping table and index for online REORG
 - LOAD with constant values support (CONSTANT and VALUEIF)











DB2 Utilities Enhancement Tool - Overview

- Cancel or block threads on DB2 objects to allow utility processing
 - Prevents users from accessing an object when a utility must be performed
 - Runs the utility
 - Changes status of object so users can access object again
- ISPF User Interface
 - Display and Cancel threads
- Batch Processing
 - Cancel threads
 - Block threads



DB2 Utilities Enhancement Tool – ISPF Interface

- Provides an interactive ISPF interface from which you can display a filtered list of active threads
 - View details about a thread that might be causing access problems
 - Cancel threads selectively
- View messages from cancellation processing
- Temporarily override some of the started task initialization options



DB2 Utilities Enhancement Tool – Batch Processing

- Create batch job steps for blocking and cancelling threads for REORGs and LOADs during the batch window
 - A single thread-cancellation job step can include many cancel requests, each for a different set of threads
- Intercepts the DSNUTILB program based on a user-defined policy to implement the enhancements
 - Cancels active threads on DB2 objects that are needed by DB2 online utilities at runtime.
 - Blocks new threads on these objects until after utility command processing completes
- Three modes of batch thread execution
 - 'checkparm' mode
 - 'simulate' mode
 - 'execute' mode



DB2 UET – LOAD Enhancements

- Extends the native DB2 LOAD syntax by providing the following additional options
 - The CONSTANT and VALUEIF options replace the value for a particular field in the input records with another value that you specify
 - The PRESORT option sorts rows by table object identifier (OBID) and by clustering index key (or if no clustering index key is available, by the oldest defined index).
 - Presorting data can help enhance database performance
 - Manually add the options to the LOAD utility syntax



DB2 UET – REORG Enhancements

- Enhances the native DB2 REORG TABLESPACE
 - Automatically sizes and creates the mapping table and mapping-table index that are required for the DB2 REORG TABLESPACE utility when the SHRLEVEL CHANGE option is specified
 - automatically drops these objects when reorganization processing completes to preserve space
 - No changes to the existing utility JCL are required
- Supports the standard DB2 restart of a DB2 utility for which interception is occurring or has occurred.
 - No special user intervention is required.
- Limit the duration of REORG utility jobs



DB2 UET – CHECK DATA Enhancements

- Expand discarded rows to a flat file
 - ▶ The CHECK DATA statement now supports the DISCARDTO and optional DISCARDSPACE keywords as an alternative to the USE table_name2 clause.
 - Discarded rows and a LOAD utility control statements will be written.
 - Files can optionally be managed using TEMPLATE statements.



DB2 Utilities Enhancement Tool

Terminate threads by:

- Object and Access
 - Any thread activity referencing the specified objects will be terminated
 - Any thread activity referencing indexes on tables residing within the applicable tablespaces will be terminated
- Connection and Job
- Package, Plan or Program
- DDF information
- Input masks supported (e.g., Database ABC%)



DB2 Utilities Enhancement Tool

- DB2 Utilities Enhancement Tool does not cancel the following threads:
 - Threads that have a thread token value of zero
 - CICS protected / reusable threads
 - No plan open on the thread
 - Would not be any locks or claims on DB2 objects
 - ▶ Threads for a DB2 Utilities Enhancement Tool started task
- DB2 Utilities Enhancement Tool provides:
 - Pre- and post-cancel user exits



DB2 Utilities Enhancement Tool - Summary

- Cancel or block threads on DB2 objects to allow utility processing
 - Prevents users from accessing an object when a utility must be performed
 - Runs the utility
 - Changes status of object so users can access object again
- ISPF User Interface or Batch processing
 - Display and Cancel threads, or block threads
- LOAD and REORG utility syntax enhancements
 - LOAD syntax requires manual changes
 - REORG syntax does not require manual changes



IBM Software Group

Questions?

Thomas Hubbard
Product Specialist Manager
tom.hubbard@rs.com

