



Total Utility Control for DB2 z/OS



What is TUC?



TUC automates the execution of DB2 utility jobs

- + Backups and Recovery
- + Statistics Collection
- + Reorg and Archiving
- + Unload and Load
- + Space Management
- + Scheduling
- + Logging

Utilities Automation

BACKUP, CATMAINT,
CHECK DATA, CHECK INDEX,
CHECK LOB, COPYTOCOPY,

COPY,

DIAGNOSE, LISTDEF, LOAD,
MERGECOPY, MODIFY RECOVERY,
MODIFY STATISTICS, OPTIONS,
QUIESCE, REBUILD, RECOVER,

REORG,

REPAIR, REPORT, RESTORE,

RUNSTATS,

STOSPACE, TEMPLATE, UNLOAD,
DSNJCNVB, DSNJLOGF,
DSNJU003, DSNJU004,
DSN1COMP, DSN1COPY,
DSN1LOGP, DSN1PRNT

- ✦ Identify
- ✦ Generate
- ✦ Execute

DATABASE,

TABLESPACE,

PARTITIONED BY GROWTH,
PARTITIONED BY RANGE,
MULTI-PIECE PAGESET,
MULTI-VOLUME PAGESET,
COMPRESSED, READ-ONLY

TABLE,

AUXILIARY, LOB, XML, VOLATILE,
BASE, CLONE, HISTORY, ARCHIVE,
AUDIT, ACCELERATED , CRITICAL,
EXCEPTIONS, MAPPING, EXPLAIN

INDEX,

PARTITIONING, NPI, DPSI,
CLUSTERING INDEX,

Identify Objects

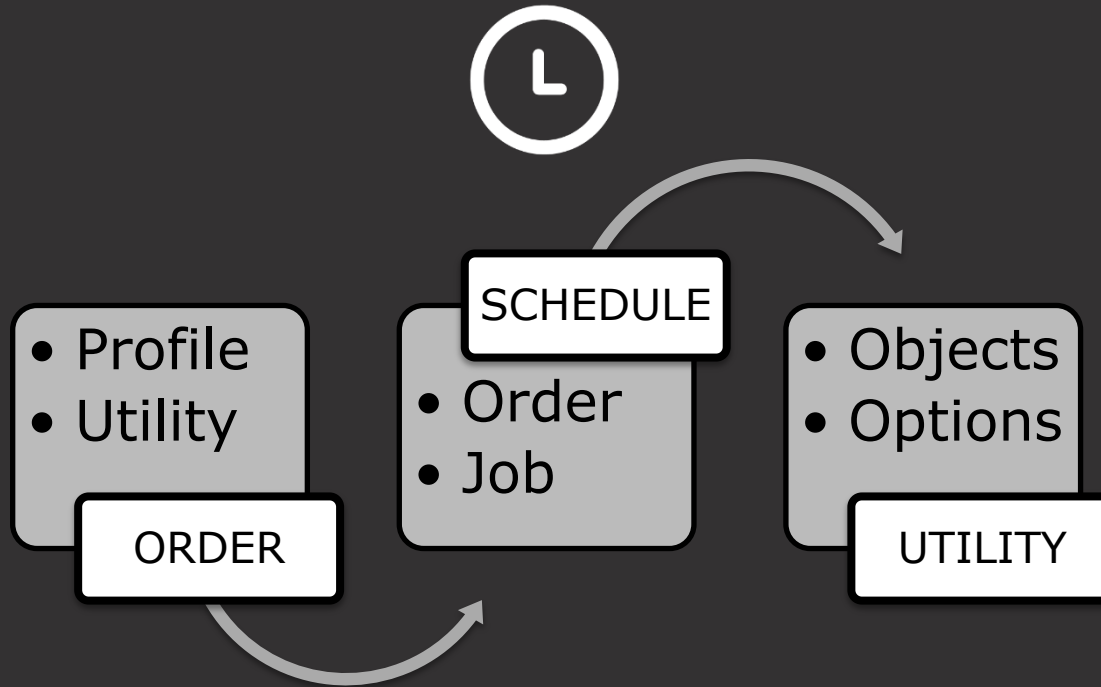
- ✦ Examine Catalog and Real Time Statistics
- ✦ Check Restricted and Advisory states
- ✦ Process objects only as needed by priority
- ✦ Ensure newly created objects are covered
- ✦ Allow excluding objects from automatic processing



Generate Utilities

- ✦ Group objects in profiles
- ✦ Set options per profile, per utility, per run
- ✦ Generate utilities and jobs using skeletons
- ✦ Refresh statements as needed
 - When objects change
 - When options change
 - When skeletons change
- ✦ Prepare utilities and objects for execution

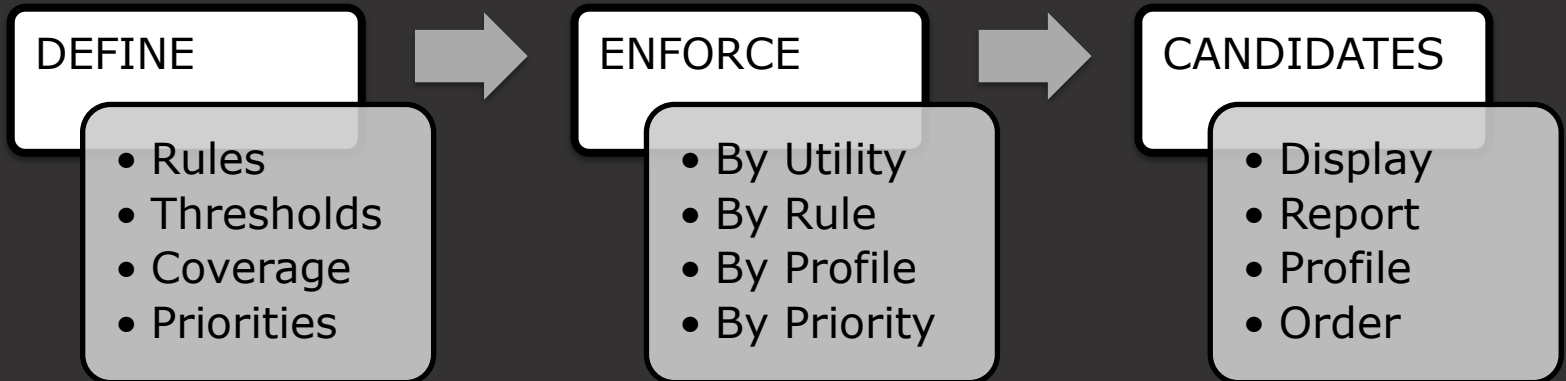
Scheduling Utilities



Processing Utilities

- ✦ Utility processing requests are placed by users and jobs
- ✦ Pending orders are processed by a waiting job.
- ✦ Order jobs are handed over to the scheduler.
- ✦ Orders status and progress can be tracked.
- ✦ Implicit orders are placed for immediate utility jobs.

Enforce Process



Policy Rules

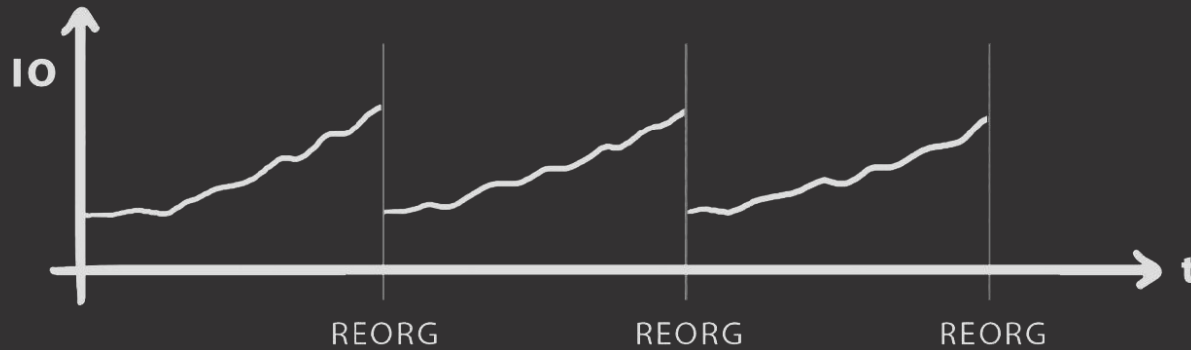
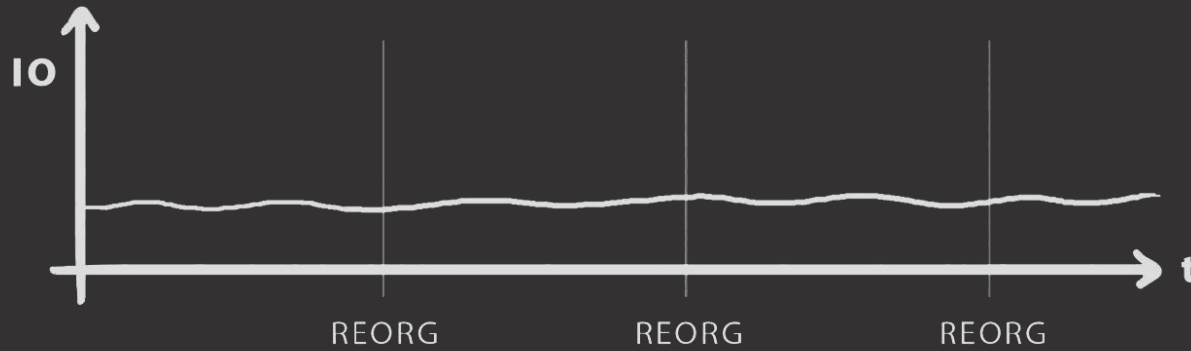
- ✦ Trigger utilities based on:
 - Real Time Statistics Tables
 - Catalog Tables
 - User Tables
 - SYSCOPY events
 - BSDS
 - Statistics trace access performance patterns
 - Rate of growth

Enforce Actions

- ✦ Report all candidates in batch.
- ✦ Order jobs to process candidates.
 - Allows handing over jobs to the scheduler.
 - Allows processing a quota of jobs.
- ✦ Create a profile to include all candidates
 - Allows processing a quota of objects.
 - Allows balancing parallel jobs.

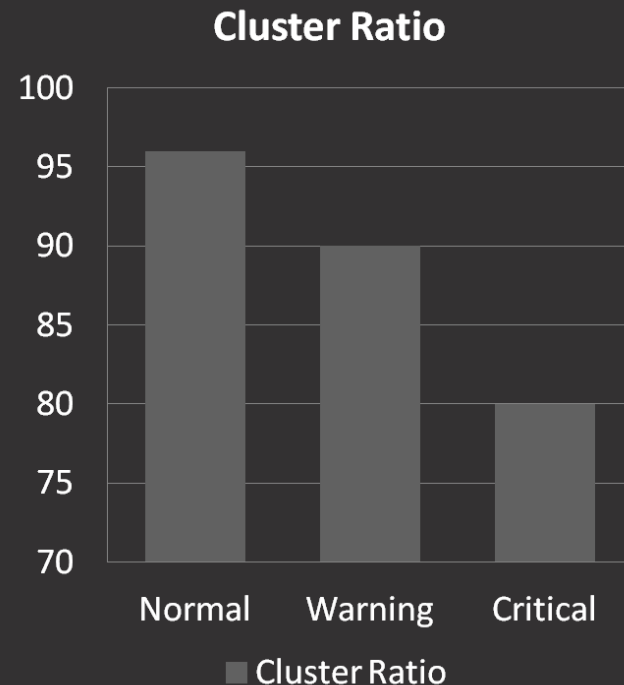
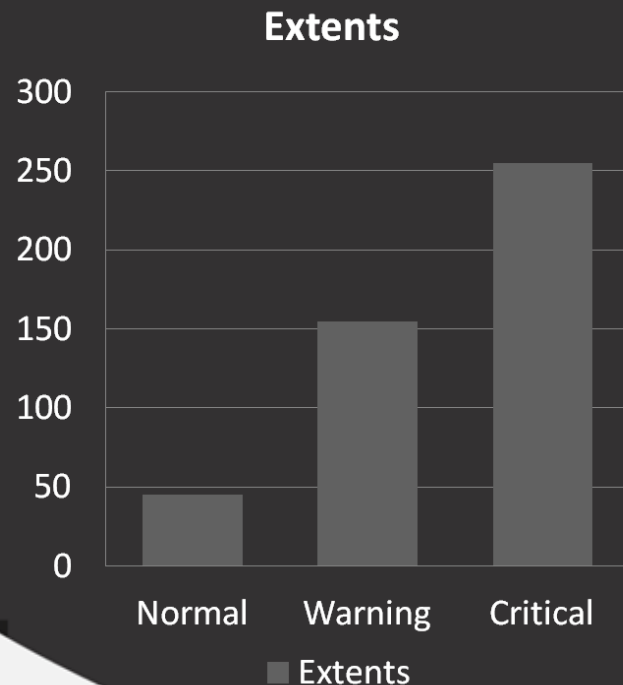


REORG based on performance



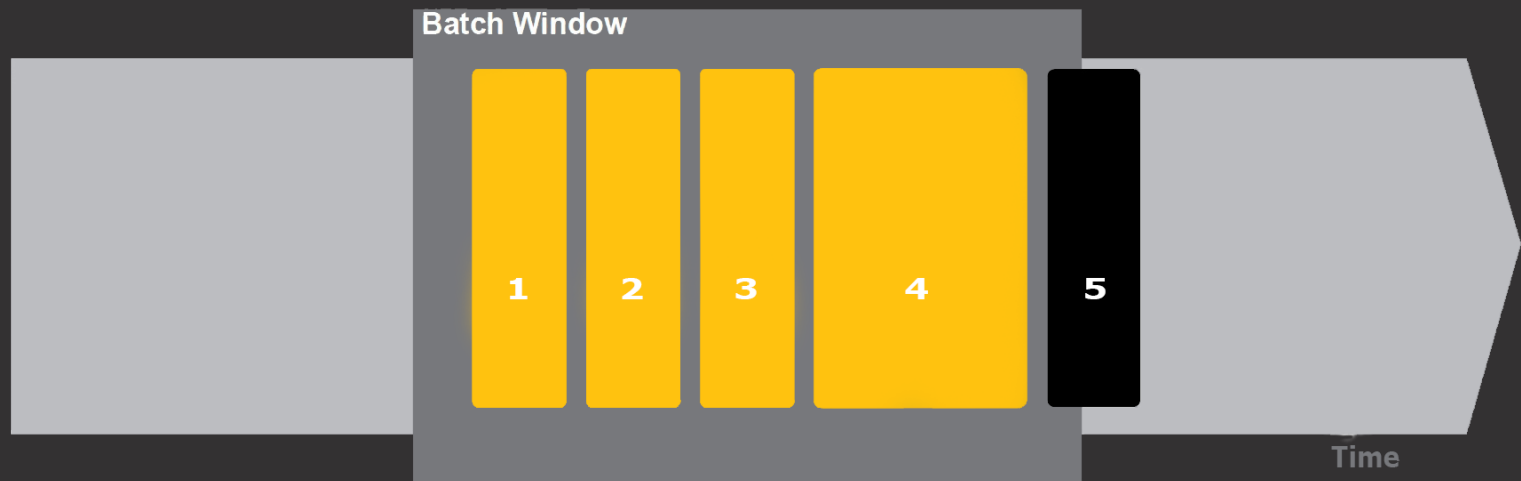
REORG priority

- + Triggers use thresholds in different scales.
- + Condition may affect performance or availability.
- + Objects in critical condition should be processed first



REORG windows

- + Avoid exceeding the batch window.
- + Use quota of objects to limit REORG
 - By number of objects
 - By objects total size



Space Management

- ✦ Estimate expected rows per table.
- ✦ Correct estimates if exceeded.
- ✦ Calculate required space for tablespace and indexes.
- ✦ Resize objects prior to REORG.
- ✦ Adjust free space based on overflows and splits.
- ✦ Automatic analysis of DSN1COMP compression rate.



Recovery Services

- + Generate recovery jobs:
 - Recover by database.
 - Recover by tablespace.
 - Recover a single table of a multi table tablespace.
 - Recover by profile.
 - Recover an entire volume.
- + Recover to a point in time.
- + Recover to a quiet time.
- + Mass Recovery for the entire subsystem.

Application SYNCPOINT

- ✦ Name log points with a meaningful name
 - For example: SYNCID='BEFORE-DAILY-BATCH'
- ✦ Ensure recoverability
 - Check for non recoverable events
 - Verify last backup availability
- ✦ Allow you to RECOVER or RELOAD
 - Identify the correct point in time or log point
 - Identify associated datasets

Implementation

- ✦ Daily refresh job generates utilities for missing objects.
- ✦ Cyclic job processes pending orders using scheduler.
- ✦ Enforce COPY job using orders.
- ✦ Enforce REORG job and RUNSTATS job using a profile.
- ✦ Collect job maps datasets, performance, growth
- ✦ Cleanup image copies job using MODIFY.

Installation

- ✦ Easy installation steps:
 - Receiving product libraries using install dialog.
 - Entering license key
 - Defining control options
 - Batch customization and initialization
- ✦ Default setup allows immediate usage.
- ✦ Changes to skeletons and procedures are preserved.
- ✦ Definitions can be deployed to other subsystems

TUC

- + Automates DB2 routine housekeeping tasks
- + Processes only the objects that require processing
- + Uses a flexible framework to generate utility jobs



Backups



Recovery



Statistics



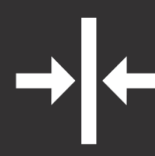
Reorg



Archiving



Unload
Reload



Space
Management



Scheduling



Log
Analysis

UTALITY
Automating DB2 utilities

Thank You

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