

ARTICLE

Modern IMS management with IMS Tools: An end-to-end business scenario

Using advanced JCL generation to automate initial product configuration and implement conditional online reorganization

Joe Sacco, Senior Director, Software Engineering, Rocket Software

Peter Spicer, IMS Tools Information Development, Rocket Software

IBM IMS Tools is the respected industry-standard family of software products that support the operation and maintenance of IMS databases used in many of the world's leading financial, insurance, medical, telecommunication, industrial, and government businesses.

Many IMS database environments rely on IMS Tools features to provide enhanced performance, improved efficiency, backup and recovery processes, security, smart analysis and reports, and a multitude of regularly required database maintenance operations.

As the IMS Tools portfolio continues to evolve to higher levels of sophistication and functional integration, there is also matching support to further ease, automate, and simplify the job of the database administrator.

For example:

- Powerful built-in JCL generation features can help streamline the construction of database configuration and maintenance jobs.
- Autonomic features can help automate database maintenance tasks with features that analyze and evaluate database conditions, issue message alerts and notifications, and provide conditional responses.
- A visually impressive graphical Web user interface logically displays all database functions and statistics, and allows full control of database management and operation.

This article explores a possible scenario that illustrates how these modern IMS Tools features can help simplify an end-to-end IMS and IMS Tools solution, beginning with initial product and environment configuration, and concluding with the implementation of conditional online database reorganization.

- 1. IMS Tools Setup:** Smart JCL generation for initial product configuration.
- 2. IMS Administration Tool:** Custom JCL using product-provided templates.
- 3. IMS Online Reorganization Facility:** Online database reorganization.

IMS Tools Setup: Automating the task of initial product configuration

The high level of software integration and sophistication now provided by IMS Tools is often accompanied by a challenging set of configuration requirements and options. For system and database administrators, these configuration tasks can be both stimulating and daunting at the same time.

The IMS Tools product portfolio is now supported by a powerful configuration utility, IMS Tools Setup, that helps administrators quickly and efficiently perform the post-SMP/E-installation customization process required for an initial installation of IMS Tools products and solution packs.

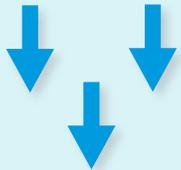
The IMS Tools Setup user interface logically guides administrators through a structured process of gathering configuration specifications required by the database environment. Administrators control the operation of their database environments and specify the appropriate settings that can enhance the performance, efficiency, and reliability of their databases.

Using the provided configuration data, IMS Tools Setup generates a consolidated list of JCL members and associated tasks. Each JCL member has its own descriptive comment section that explains the function of the job.

To complete the full customization task, the administrator runs all generated JCL members and tasks in the same order in which they were created. The result is a fully operational IMS and IMS Tools environment.

Importantly, IMS Tools Setup performs an enhanced registration of each product to IMS Tools Knowledge Base which stores product function and template information. A template is the JCL code required to run a function. The template includes variable expressions that are populated with appropriate values before and during the final build process of an actual JCL job. Registered functions and templates are now available for future use by other IMS Tools features.

Scenario key point: An online reorganization function is registered through IMS Tools Setup. The template for this function is later used by the Run IMS Utilities feature of IMS Administration Tool to generate a single custom JCL job that can implement conditional online database reorganization.



Getting started:

IBM IMS Administration Tool for z/OS V1.1 User's Guide and Reference (SC27-9011): "Initial product customization using IMS Tools Setup."

IMS Administration Tool: Generating custom JCL jobs for database maintenance tasks

Database configuration and maintenance tasks rely on the frequent construction and running of multiple JCL jobs. IMS Administration Tool—a valuable recent addition to the IMS Tools portfolio—provides an advanced JCL generation feature that can automate the building of these jobs.

IMS Administration Tool provides a comprehensive set of features to assist IMS database administrators with managing IMS environments. Its Run IMS Utilities feature provides highly sophisticated JCL generation capabilities that enable administrators to easily build custom complex and recurring utility jobs for routine and conditional IMS maintenance tasks.

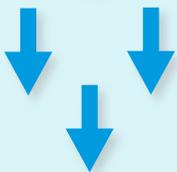
Run IMS Utilities uses a highly configurable system of object, utility, and job profiles. These profiles use the trusted JCL templates and variables that become available when individual IMS Tools products and their functions are initially registered to IMS Tools Knowledge Base by IMS Tools Setup.

To build a custom database maintenance job, the administrator uses the following sequence of profiles:

- The object profile identifies the specific database resource or resources for the IMS environment that the generated JCL job is to process.
- The utility profile represents the primary IMS maintenance task, and identifies one or more IMS Tools functions required to perform the task, plus the sequence in which the function templates need to run.
- The job profile combines the object profile and the utility profile to build a single JCL job that can perform the database maintenance task for a specific IMS environment.

The resulting JCL job is therefore a correctly sequenced concatenation of the individual templates provided by the utility profile. The JCL job is applicable for processing the IMS environment that is defined by the object profile.

Scenario key point: Run IMS Utilities uses the online reorganization template, previously registered by IMS Tools Setup, to generate a custom JCL job that can run IMS Online Reorganization Facility in conditional online database reorganization mode for a specific IMS environment.



Getting started:

IBM IMS Administration Tool for z/OS V1.1 User's Guide and Reference (SC27–9011): “Updating the product registry” and “Run IMS utilities (JCL generation).”

IMS Online Reorganization Facility: Implementing conditional online database reorganization

IMS Online Reorganization Facility (a member of the IBM IMS Database Solution Pack for z/OS) performs a one-step online reorganization of IMS databases with minimal impact to database availability.

Taking systems offline for maintenance can affect any business. In today's business environment, systems must be highly available because the cost of outage can negatively impact the financial bottom line. Online database reorganization improves overall database availability for the user and reduces planned downtime.

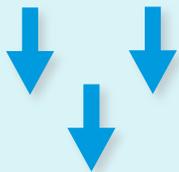
In conditional reorganization mode, IMS Online Reorganization Facility performs background capturing of database attributes and statistics that are then evaluated against user-defined policies and threshold rules. The evaluation process determines whether a database requires a reorganization and reorganizes the database only when necessary.

A conditional reorganization job can be implemented through a job scheduler that perhaps also runs other batch jobs periodically in user-defined maintenance windows.

Customer-reported benefits of running conditional online reorganization in their environments include:

- Daily reorganizations now only run on average once per week.
- Less CPU resource is utilized.
- There is less contention, and fewer abends are experienced.
- On average, there is an 85% reduction in jobs being run.

Scenario key point: A custom JCL job, using a registered IMS Tools product function template, and built by advanced JCL generation provided by IMS Administration Tool, can now be scheduled to maintain a specific IMS database environment in conditional online reorganization mode.



Getting started:

IBM IMS Database Solution Pack for z/OS V2.2 IMS Online Reorganization Facility User's Guide (SC27-9039): "Using IMS Online Reorganization Facility."