

CA Database Organizer™ for IMS for z/OS

CA Database Organizer™ for IMS for z/OS (CA Database Organizer) provides high-speed prefix resolution, data extraction, unloading, loading and reorganization of IMS databases — both offline and online — improving database availability and performance.

Business Value

To gain the maximum benefit from data stored in IMS databases, organizations must be able to utilize it in multiple applications and diverse environments. However, disorganized databases can impact performance and extracting large amounts of IMS data for use in data warehouses, relational databases and outside applications can be complex and time consuming. CA Database Organizer enables fast unload, load and reorganization of IMS databases, helping you minimize the impact of database administration activities — and improve the availability of your business-critical data.

Product Overview

In addition to providing high-speed prefix resolution, data extraction and unloading, loading and reorganization of IMS databases, CA Database Organizer offers the flexibility to examine, modify and delete database segments. As such, this high-performance product enables your database administrators (DBAs) to easily and safely make structural changes, helping to improve overall database performance.

Delivery Approach

CA Services provides a portfolio of mainframe services delivered through CA internal staff and a network of established partners chosen to help you achieve a successful deployment and get the desired business results as quickly as possible. Our standard service offerings are designed to speed deployment and accelerate the learning curve for your staff. CA's field-proven mainframe best practices and training lower risk, improve use/adoption and ultimately align the product configuration to your business requirements.

What's New, What's Compelling?

Mainframe 2.0

CA Database Organizer has adopted key Mainframe 2.0 features that are designed to simplify your use of the product and enable your staff to install, configure and maintain it more effectively and quickly.

- **CA Mainframe Software Manager:** The CA Mainframe Software Manager automates CA Database Organizer installation and maintenance and removes SMP/E complexities.
 - › The Product Acquisition Service enables you to easily move product installation packages and maintenance from CA Support Online directly to your mainframe environment and prepare them for installation.
 - › The Software Installation Service standardizes CA Database Organizer installation, which includes a new, streamlined Electronic Software Delivery (ESD) method that allows the product to be installed using standard utilities. This service also provides standardized SMP/E product installation and maintenance via APARs and PTFs, and simplifies SMP/E processing through an intuitive graphical user interface and an intelligent Installation Wizard.
- **Best Practices Guide:** This guide provides information on CA Database Organizer installation, initial configuration and deployment to shorten the learning curve for staff that is responsible for the installation and management of this product.
- **Interoperability Certification:** CA Database Organizer has been tested in an environment with many other CA products as part of a dedicated effort to find and resolve interoperability problems prior to release.
- **Health Checker:** The Mainframe 2.0 Health Checker provides CA Database Organizer Health Checks that execute under the IBM Health Checker for z/OS. The health check for the CA Database Management Solutions for IMS will verify that the required components of the started task used by the products are running properly.

What's New in CA Database Organizer r12

- IMS V11 support is now provided.
- You can now use CA Database Organizer to manipulate the bitmap to alter the amount of apparent free space in an HD database.
- A primary or secondary index containing the root key can now be used to unload the database. This is useful if there is a problem with forward or backward pointers on the root segment chain.
- To help prevent database regression, you can check the RECON data sets for allocation records that have an allocation date later than the date in the unload file header record. A reload can regress the database if it was updated subsequently to the creation of the unload file.

Features

CA Database Organizer provides fast unload, load and online and offline reorganization of IMS databases, including Full Function, High Availability Large Database (HALDB) and Fast Path DEDB formats. In addition, the solution includes such features as:

- **Database Support:** SHISAM, HISAM, HIDAM, HDAM, PHDAM, PHIDAM and Fast Path DEDB structures and databases that use both VSAM and OSAM access methods are supported.
- **Online Reorganization:** With online reorganization, the database remains available for reading and updating while CA Database Organizer creates a reorganized database.
 - › Online reorganization of Fast Path DEDBs is done in place using a Unit of Work (UOW) locking mechanism. An image copy is not immediately required because the changes needed for recovery are properly logged.

- › Online reorganization of Full Function and HALDBs takes an existing database, reads it, writes a reorganized copy, applies any updates, takes an image copy, optionally pointer-checks it, builds needed indexes and properly notifies Database Recovery Control (DBRC). Once complete, the reorganized (shadow) database is swapped with the disorganized database.
 - › The Batch Message Processing (BMP) pause/restart functionality allows online reorganization to execute on Full Function and HALDB databases that have active BMPs without waiting for the BMP to complete. This facility pauses the BMP when the online reorganization needs control and automatically restarts the BMP after the online reorganization function relinquishes exclusive control.
 - › Database switch verification allows you to control the switch and rename process at the end of the online reorganization.
 - › Online reorganization of secondary indexes of HALDB databases is supported when all partitions of the underlying HALDB database are reorganized online. When you execute a HALDB online reorganization, you have the option to online reorganize the secondary indexes as well.
- **Offline Reorganization:** Offline reorganization enables you to address the situations where online reorganization is not possible, such as databases with logical relationships or databases that require restructuring.
 - › Unload function creates a sequential file that is used as input to the load function. In place of the actual database, an image copy can be used as input to the unload function.
 - › In addition to reorganizing the database, you can reorganize the secondary indexes of Full Function and HALDB databases.
 - › The DBD can be changed between unload and reload to accomplish structural changes or convert from one IMS access method to another.
 - › Segments can be added, modified or deleted during unloads using built-in functions. CA Database Organizer provides a user exit for customized changes.
 - › Compressed data can be expanded during unloads to create a user readable file and compressed during loads to save database space. Data can also be unloaded and reloaded in compressed format for faster operation.
 - › CA Database Organizer allows DBAs to address changing database requirements by redefining database characteristics and changing the way the data is stored. These changes include: redistribute HIDAM or HDAM segments into different data set groups with different characteristics; change the DCB attributes of an area or data set group; extend or reduce the overall size of a database data set or DEDB area; add or remove pointer types from segments; change the randomizer; change the size of the HDAM and PHDAM root addressable area or the number of root anchor points; change the size and number of UOWs; change the size of the DOVF, IOVF or SDEP part of a DEDB; add or remove segment types in the database record hierarchy, including a DEDB SDEP segment type; extend or reduce the size of segments, including DEDB SDEP segments; redistribute the roots in a DEDB into a new or different set of areas or the roots of a HALDB between partitions or add new partitions; and break up a DEDB area into multiple areas.
- **Extracting Data:** When CA Database Organizer unloads data, it appends the data with the control information needed to directly load it back into an IMS database. The data extraction process does not add any information to the extracted data, so it is properly formatted for distribution to non-IMS processes. You have the flexibility to get the set of data desired using conditional extraction criteria and to format the sequential file to your requirements.
- **Prefix Resolution:** When databases are logically related and one or both are reorganized, the pointers that link the related segments must be updated to reestablish the relationships between the databases. CA Database Organizer includes a fast prefix resolution and update capability to quickly reestablish the logical relationships and enable data access to the related databases.

- **Advanced Functionality:** CA Database Organizer includes capabilities that enable DBAs to perform complex tasks easily, increase the speed and integrity of reorganizations and provide faster database access.
 - › You can convert from one database type to another. For example, a database can be converted from a DEDB to HDAM or vice versa. In addition, you can convert a Full Function database to a HALDB structure.
 - › CA Database Organizer supports IOVF and SDEP dynamic online extensions.
 - › You can create an empty database for immediate use by IMS batch or online applications, or create empty HALDB partitions or DEDB areas.
 - › HALDB reload automatically rebuilds the ILDS, avoiding the IMS self-healing process. You can also reorganize a HALDB secondary index without the need to reorganize the database itself.
 - › Online reorganization adds capabilities to simplify the process by reorganizing a database in a single job step and invoking parallel processing to minimize elapsed time.
 - › A unique SAFETYNET capability checks that the original and shadow databases are logically identical before switching to the reorganized shadow database. This feature verifies integrity, checks that data was not missed and provides an additional level of security and confidence.
 - › CA Database Organizer includes an API mode that uses high-speed access methods to read and write databases, providing faster execution of DL/I application programs that either load or sequentially retrieve the segments in a database.
 - › The product interfaces with FAB6 and FAB7 user exits to enable creation of a load file or direct reading of an unload file.
- **IMS Information Repository (IIR):** CA Database Organizer results can be stored in the IIR. You can access this stored information to determine trends, compare threshold values to trigger actions or do historical reporting.
 - › This is an optional feature that is separately installed.
 - › Several tools are provided that report on the data stored in the IIR tables. In addition, you can extract the data in the IIR repository for use by other reporting tools.
- **Compatibility Modes:** BMC compatibility mode allows the use of existing BMC JCL and control statements with minimal or no changes. This minimizes the conversion effort for BMC replacement. The IBM utility compatibility allows execution using the same JCL as the IMS HD reorganization unload (DFSURGU0) and reload (DFSURGL0) utilities.
- **Cross-product Integration:** CA Database Organizer integrates with CA Secondary Index Builder for IMS for z/OS to automatically rebuild primary and secondary indexes after offline reorganization. The integration between CA Database Organizer and CA Database Analyzer™ for IMS for z/OS enables pointer checking during the image copy process of online reorganization. You can also create a file of root keys during unload for randomizer analysis.

Benefits

CA Database Organizer creates more opportunities to improve performance while minimizing the impact on the business, enabling virtually continuous data availability by delivering fast and efficient database and index reorganization. Leveraging the vast capabilities of CA Database Organizer, you can restructure databases — *often without requiring application programming*. What's more, segments can be moved around in the hierarchy, data can be extracted and fields can be quickly and efficiently moved or added — empowering your DBAs to increase database availability and optimize performance.

Why CA

A key component of both CA's Mainframe 2.0 initiative and Enterprise IT Management (EITM) strategy, CA Database Organizer helps you reduce the amount of time, effort and human error involved in maintaining the integrity of your IMS database environment — and ultimately unify and simplify your IT.

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