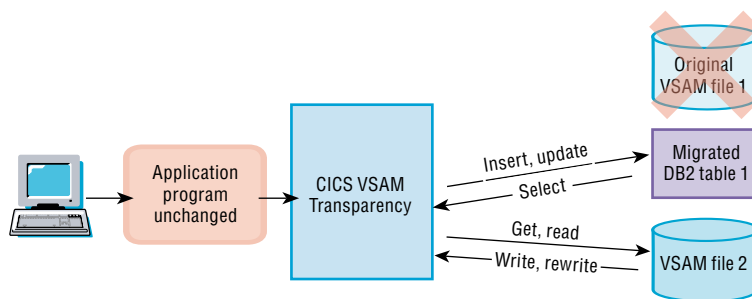**IBM**

IBM CICS VSAM Transparency for z/OS, Version 1.2

Highlights

- *Enables you to move your critical CICS and batch VSAM data to DB2 without rewriting your applications*

- *Integrates your legacy applications with new On Demand Business applications based on DB2 software*

- *In DB2, your legacy data is accessible 24x7 to rapidly support new business-intelligence requirements*

- *Provides a fast route to DB2 through automated VSAM-to-DB2 mapping*

- *Enables you to move individual VSAM files to DB2 to meet your changing business needs*

- *Avoids data-synchronization issues by enabling you to standardize databases on DB2 software*

Since the early 1970s, virtual storage access method (VSAM) has been one of the main file-management systems for IBM CICS® and batch applications. With continued enhancements to meet new technical challenges, such as statutory compliance requirements, many VSAM applications have become increasingly complex. Knowledge of these applications can be scarce. As a result, retrieving business-critical data from your VSAM files or providing Web or mobile access to your existing applications can be difficult. At the same time, the costs of application rewriting and testing to make critical data more accessible through a data-base management system (DBMS), such as IBM DB2®, can be costly and time-consuming.

IBM CICS VSAM Transparency for z/OS, Version 1.2 can help you migrate your valuable data from VSAM files to DB2 tables as your business requirements dictate, with no modification to your CICS and batch VSAM application programs and with only minimal changes to your system environment. By migrating to DB2, you can make your data available 24x7 to customers and suppliers to support real-time global operations—with the security-rich reliability and maintainability that DB2 offers.

IBM CICS VSAM Transparency for z/OS enables you to move your critical data to DB2.

ON **DEMAND BUSINESS**™

New in this release

CICS VSAM Transparency for z/OS, Version 1.2 includes several enhancements designed to speed data mapping and migration, reduce time to test and time to production, and optimize online data handling. These enhancements include:

- *Automatic mapping of PL/I and Assembler copybooks , as well as the previously existing support for COBOL copybooks.*
- *Dual-mode facility (DMF), which allows you to keep your original VSAM files active throughout your testing cycle to prove new data structures in DB2 and any exits implemented before production cutover.*
- *Performance enhancements to enable faster online data handling between your existing unchanged applications and VSAM data, that has been migrated to DB2 tables.*

Fast access to business-critical data

The perceived cost and risk of moving your critical data from VSAM to DB2 might seem daunting. It can involve rewriting and testing applications, mapping and migrating data, and disturbing existing applications that might have successfully run unchanged for years. However, moving your data to DB2 can help you add value to your data assets by enabling you to take advantage of these robust capabilities:

- *24x7 availability*
- *Integration with new applications based on DB2 technology*
- *Running ad hoc queries*
- *The ability to perform data analysis*
- *Creating visual information, such as executive dashboards*
- *Use of robust DB2 database-management tools*

With CICS VSAM Transparency, you can quickly and smoothly migrate your business-critical data from VSAM to DB2. Besides being able to use the capabilities of DB2 software, you can use CICS VSAM Transparency features, including the ability to:

- *Enable new applications to be fully DB2 technology-based — allowing database standardization, as well as Web and mobile access.*
- *Migrate individual VSAM files as required — enabling a phased, low-risk approach.*
- *Preserve investments in core applications — avoiding complex application rewrites.*

Data management and performance

CICS VSAM Transparency helps minimize overhead by helping to ensure the use of the most-efficient DB2 access paths, offsetting the higher processor consumption you can experience when using a DBMS. CICS VSAM Transparency also offers options for extensive data reengineering. For example, you can automatically convert date fields in your VSAM files to DB2 DATE columns. The increased processor usage required to process a DATE column compared to that required to process a CHAR column does not normally translate into increased elapsed times, because DB2 can more efficiently manage large volumes of data in virtual storage. After you have migrated a VSAM file, you can deploy standard DB2 system-tuning tools and techniques to help ensure optimum performance.

Data migration

CICS VSAM Transparency provides a set of conversion tools and a run-time driver control component. The conversion tools include an Interactive System Productivity Facility (ISPF) dialog interface and support data mapping from VSAM key-sequenced data set (KSDS) structures and relative record data set (RRDS) structures to DB2 tables. When the mapping is defined, CICS VSAM Transparency generates data-migration processes and drivers containing static Structured Query Language (SQL) calls. The CICS VSAM Transparency run-time component uses these generated drivers to access DB2 data, returning the results to the calling application in the original VSAM format.

The CICS VSAM Transparency DMF assists with testing data.
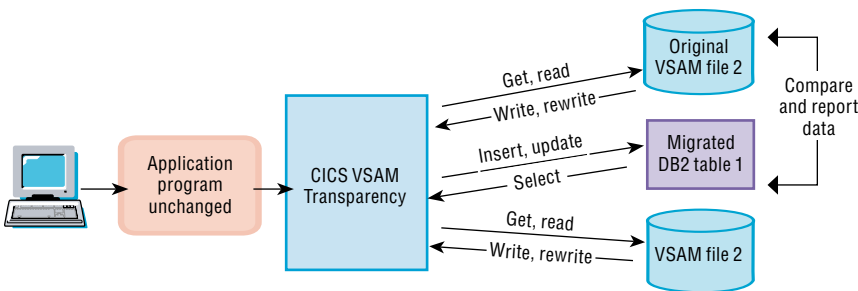
CICS VSAM Transparency components

CICS VSAM Transparency consists of five major components.

Installation tailoring and customization

CICS VSAM Transparency is installed using System Modification Program/ Extended (SMP/E) and is customized for the local environment using standard ISPF dialogs. Updates to existing system libraries are performed to define the CICS VSAM Transparency subsystem. Installation verification programs are run to help ensure that the product has been successfully installed and enabled in CICS and batch environments.

Mapping

This component maps the relationship between data in a VSAM file and its proposed form in DB2. Mapping is performed using a CICS VSAM Transparency ISPF application. When a VSAM file is to be migrated to a single DB2 table, and a COBOL, PL/I or Assembler copybook is available, the automated mapping facility generates the DB2 SQL drivers and mapping information with minimal or no intervention. CICS VSAM Transparency provides a manual mapping feature for more-complex files that map to multiple DB2 tables and potentially employ user-exit application programming interfaces (APIs). Some files might require a combination of the two mapping methods. The automated mapping facility can help significantly reduce the effort and time needed to map the majority of VSAM files to DB2, helping free your valuable database administration resources to focus on overall database design.

Data migration

Data migration is achieved through a combination of CICS VSAM Transparency and DB2 utility programs. CICS VSAM Transparency utilities unload and convert VSAM data to fixed-length sequential datasets. The data is then loaded using the DB2 LOAD utility. CICS VSAM Transparency then verifies that the mapping and data-migration processes were completed success-fully. Testing is performed at this stage to help ensure that the mapping is correct.

Data mapping and migration testing
In this release, the DMF is provided to assist with the testing of the mapped and migrated data that the data-migration component performs. The DMF can also assist in the testing of any user-developed exits. When you enable this facility, application program calls (either CICS or batch) are processed in DB2 as well as in VSAM. CICS VSAM Transparency automatically compares the data areas and response code and closes the application program if a difference is encountered. This capability helps you to conduct testing faster, with less risk.

Run-time VSAM call evaluation
During application launch, CICS VSAM Transparency evaluates VSAM calls to determine if the requested VSAM file has been migrated to DB2. If it has, the original call is redirected to DB2 using the drivers generated during the mapping process. If the data is still in VSAM, the call is passed directly to the standard VSAM handling routines.

For more information
To learn more about how IBM CICS VSAM Transparency for z/OS can help you unlock the value of data used by your existing applications and extend its use to new DB2 applications, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/htp/cics/vt

To learn more about how the rest of the CICS tools portfolio can improve resource usage and enhance the functionality and efficiency of your CICS systems, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/htp/cics/tools

IBM CICS VSAM Transparency for z/OS, Version 1.2 at a glance

Hardware requirements

Any IBM S/390® or IBM @server® zSeries® system

Software requirements

Supported platforms
- IBM z/OS®, Version 1.4 or later
- IBM CICS Transaction Server for OS/390, Version 1.3 or IBM CICS Transaction Server for z/OS, Version 2 or later
- IBM DB2® Universal Database™, Version 7 (for z/OS and IBM OS/390® operating systems); and IBM DB2 Universal Database, Version 8 (for the z/OS operating system)

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