SYSB-II

ELIMINATING VSAM BATCH BOTTLENECKS:

A Look at Common VSAM Problems and Their Solutions

H&W

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Introduction

Mainframe computing remains a cornerstone of enterprise IT infrastructure to provide robust and reliable processing power for critical applications.

CICS (Customer Information Control System) and VSAM (Virtual Storage Access Method) files are integral components of mainframe environments which enable efficient data management and transaction processing. However, managing these files in batch processing scenarios presents significant challenges, such as:

- CICS application availability
- Manual file management
- Limited access to up-to-date information

SYSB-II offers a solution to these challenges to extend VSAM data availability and improve operational efficiency.

What is SYSB-II?

SYSB-II is mainframe software developed by H&W Computer Systems that enables batch processing to occur concurrently with CICS applications without requiring the shutdown or closure of VSAM files.

SYSB-II intercepts the VSAM requests made by a batch program and sends the VSAM requests to the appropriate CICS region for processing to:

- Allow CICS regions to stay active and the files to stay open while batch programs update the VSAM files.
- Keep applications fully available, so users get current batch data on demand.
- Ensure data integrity by leveraging CICS for data processing.
- Let users run batch jobs at their convenience instead of waiting for the batch window. 24/7 batch processing means applications/jobs/users have access to the most current data

Technical Explanation

SYSB-II uses the documented MVS subsystem interface to:

1 Intercept batch VSAM requests.

SYSB-II uses VTAM or TCP/IP and cross-memory services to communicate between the batch job and CICS to ensure compatibility with future releases of CICS Transaction Server and z/OS.

2 Translate the I/O requests into EXEC CICS data set commands.

SYSB-II runs as a legitimate command-level CICS transaction and follows CICS rules and standards. CICS processes batch jobs as a regular CICS transaction and retains CICS-provided capabilities for data integrity, recovery, tools, record locking, and updating files.

3 Function ship the requests to perform the VSAM operation on behalf of the batch job step.

SYSB-II is present in the CICS address space only when file sharing batch jobs are processing. It intercepts the I/O requests only for the specified batch files. This approach keeps the CICS I/O path as short as possible, provides greater control, and preserves terminal response time.

SYSB-II accesses CICS facilities in the batch environment. Unlike CICS programs, batch programs that execute EXEC CICS commands can access batch resources. The batch code between the EXEC CICS calls executes under the batch address space instead of under CICS.

Technical Drawings

Without SYSB-II (Figure 1) an initiated batch job tries to access the VSAM file that is open and allocated to a CICS region. The VSAM file is unavailable to batch processing because it is owned by CICS. The batch job cannot process the file until it is released by CICS.

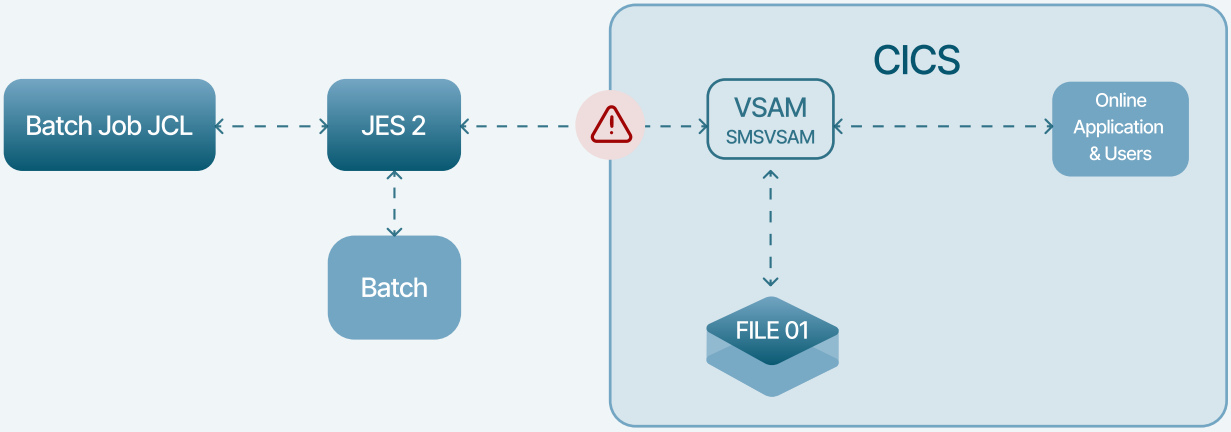


Figure 1: Batch Job Processing without SYSB-II

By using SYSB-II (Figure 2) batch jobs can process the batch open while the VSAM file remains open to CICS and online users.

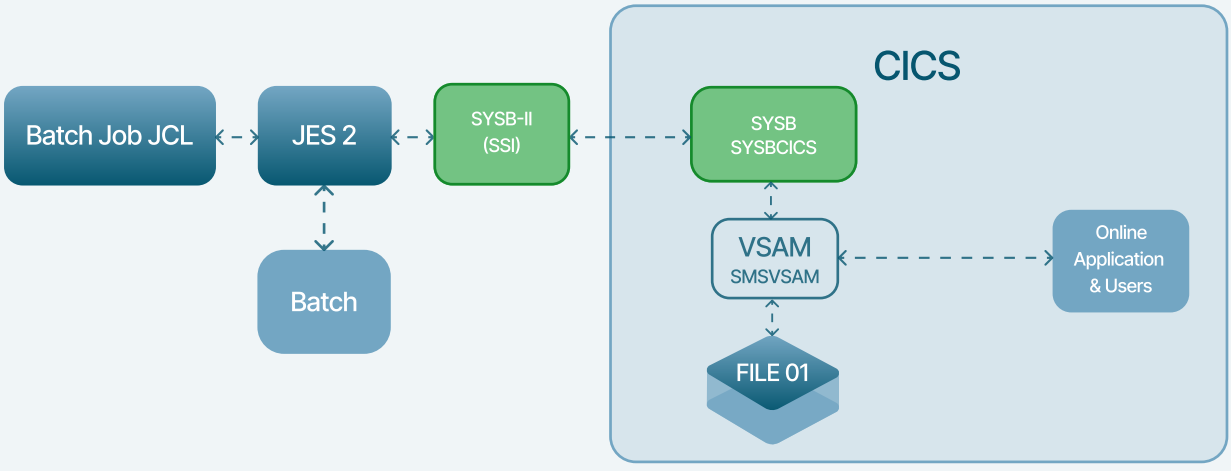


Figure 2: Batch Job Processing with SYSB-II

How does SYSB-II help organizations?

SYSB-II allows CICS stays online while batch updates the same VSAM files—safely—so you shrink or eliminate the batch window without stale data or read-only workarounds. This means that organizations can extend their business hours, expand to more time zones, and provide better customer service by ensuring that users have access to current data on demand.

Business impact

24/7 availability
Keep customer-facing apps online during batch.

Shorter critical path
Reclaim hours in nightly cycles and improve SLAs.

Daytime processing
Run high-frequency feeds/EDI without hurting response time.

Operational resilience
Journaled updates with automatic backout reduce after-hours fire drills.

Business impact

Batch I/O is executed by the owning CICS region on behalf of batch, preserving CICS locking, integrity, and tuning—see “How it works” for details.

Proof it works

Teams consistently cut batch windows by hours while keeping CICS online.

How does SYSB-II help organizations?

"We trialed multiple products and decided that SYSB-II was the most robust and provided us with everything that we needed."

Director of CICS & MQ Series
Finacial Services

"We have reduced our batch window by 2 ½ hours. On our heaviest days we are posting a million cash transactions during the day instead of at night."

Technical Manager
SME Health/Payment Services

Once we ran our jobs against SYSB-II, we actually found jobs that performed better than their prior environment.

Senior technical service analyst
Insurance

Three Main Problems SYSB-II Solves

CICS Application Downtime

Organizations often need to shut down CICS applications for batch processing, which causes downtime and reduces availability. This impacts business operations and customer satisfaction.

Problem	Impact on Business	Solution
A VSAM file is owned by a CICS job/application, and a batch job wants to update it.	When a VSAM file is owned by a CICS job, the file is locked and cannot be accessed by batch jobs. This condition causes batch jobs to wait for the CICS job to release the file, which delays processing.	SYSB-II allows batch processes to update CICS VSAM files without shutting down CICS applications to ensure continuous availability and reduce downtime.
CICS applications are not always available because they must be shut down for batch processing.	Shutting down CICS applications for batch processing results in downtime, which disrupts business operations and negatively impacts customer satisfaction.	
Prolonged data-set locks (Sync Point)	Long-running jobs often require sync points to reduce the locking of files for data consistency and integrity. Without proper sync points, data corruption and job failures can occur. Implementing sync points manually can be complex and error-prone.	SYSB-II enables sync points for long-running jobs without updating batch programs, which reduces record-locking constraints.

Three Main Problems SYSB-II Solves

Manual File Management

Managing VSAM files manually involves closing files in CICS, opening them in batch, processing them, and then reopening them in CICS.

Problem	Impact on Business	Solution
Manually managing VSAM files in CICS within batch processes	The manual process of closing and opening files between CICS and batch jobs is labor-intensive and prone to errors. It requires time, which leads to inefficiencies and increased operational costs. This manual intervention also increases the risk of data inconsistencies and job failures.	SYSB-II automates the closing and opening of files within batch processes to streamline operations and reduce manual intervention.
Batch Job failures/abends occur. Native VSAM batch job fails.	Job failures, or abends, can disrupt business operations and lead to data inconsistencies. Recovering from job failures manually can be time-consuming and resource-intensive, which impacts overall system reliability and efficiency.	SYSB-II with Journaling can be used to back out a VSAM file when a batch job fails.

Three Main Problems SYSB-II Solves

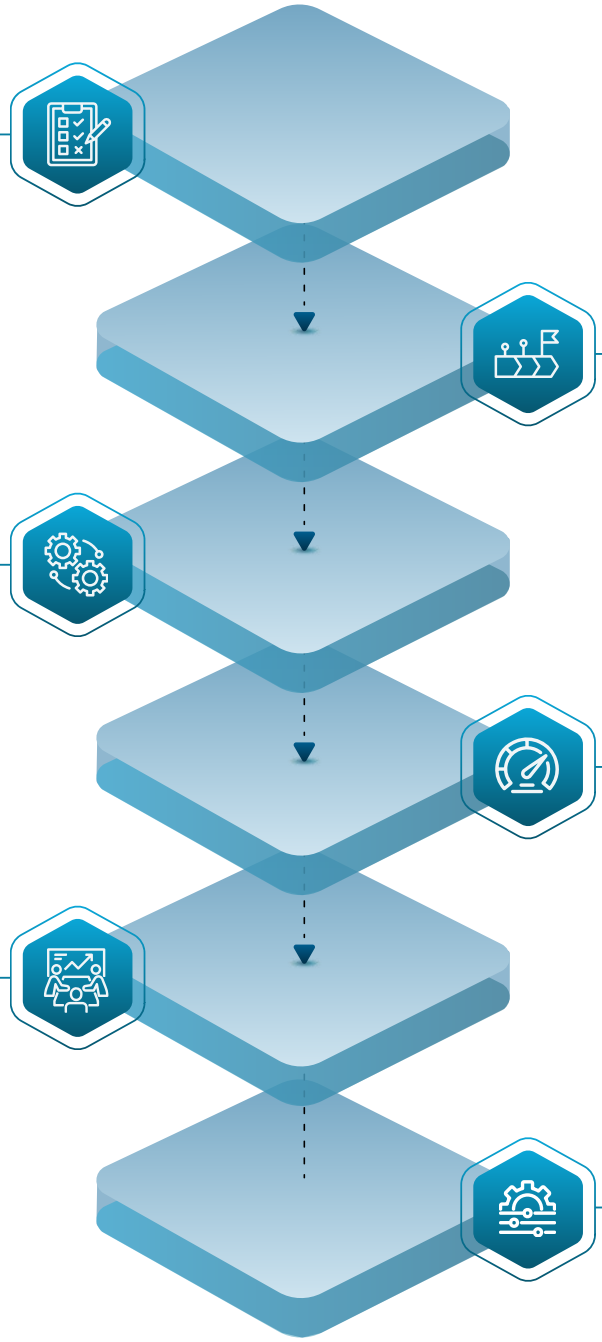
Limited Access to Up-to-Date Information

Online users often cannot access current data because of batch processing constraints. This affects customer experience and the ability to make timely business decisions.

Problem	Impact on Business	Solution
Online users cannot access data during the batch processing window.	When a VSAM file is owned by a batch job, online users cannot access the file, which causes delays in data retrieval and processing. This delay can impact SLAs and customer satisfaction because users cannot access the current data. Long batch windows also delays critical updates which affects business operations.	SYSB-II reduces batch windows by allowing batch jobs to run any time (24/7), which improves SLA compliance and user access to current data.
Excessive batch windows impacts service level agreements (SLAs) or online users.		
Online users cannot access current information.	Limited access to up-to-date information can hinder decision-making and affect customer experience. Users rely on real-time data to make informed decisions, and any delay in accessing current information can lead to missed opportunities and reduced competitiveness.	SYSB-II enables immediate updates to online users by allowing batch jobs to run at any time to ensure access to current data.
Most alternatives to SYSB-II either allow only read access to current data or access to old data.	Workaround solutions that only allow reading of current or old data do not provide the flexibility needed for efficient data management. These solutions can lead to data inconsistencies and limit the ability to perform real-time updates, which affects overall data integrity and reliability.	SYSB-II provides read/write access to replace workaround solutions and enhance data integrity.

Implementation Strategies

Integrating SYSB-II into existing systems involves several steps:



Assessment

Evaluate current systems and identify areas for improvement.

Planning

Develop a detailed implementation plan, including timelines and resource allocation.

Integration

Implement SYSB-II one job, one job step, or one file at a time, to ensure minimal disruption.

Testing

Conduct thorough testing to ensure compatibility and performance.

Training

Provide training for staff to ensure smooth adoption and effective use of SYSB-II.

Tuning

During the training process, H&W Engineers will teach your staff how to recognize which key statistics can be improved with one of our 50 parameters

Conclusion

SYSB-II offers a robust solution to the challenges faced by organizations using CICS and VSAM files in batch processing environments. By enhancing data availability, reducing downtime, and improving efficiency, SYSB-II enables organizations to optimize their mainframe operations and deliver better service to their customers.

The top three problems customers face include:

1 CICS Application Downtime

Organizations often need to shut down CICS applications for batch processing, which causes downtime and reduces availability.

SYSB-II allows batch processes to update CICS VSAM files while CICS applications are running, which helps ensure continuous availability and reduces downtime.

2 Manual File Management

Managing VSAM files manually involves closing files in CICS, opening them in batch, processing them, and then reopening them in CICS. This process is time-consuming, error-prone, and resource-intensive.

SYSB-II automates the closing and opening of files within batch processes, which helps streamline operations and reduces manual intervention.

3 Limited Access to Up-to-Date Information

Online users often cannot access or update current data due to batch processing constraints.

SYSB-II enables immediate updates to online users by allowing batch jobs to run at any time, which helps ensure access to current data and improves customer satisfaction.

By addressing these key problems, SYSB-II enhances mainframe efficiency, optimizes resource usage, and ensures continuous data availability.

Organizations can extend their business hours, improve customer service, and stay competitive in their respective industries. The successful implementation of SYSB-II in various organizations demonstrates its effectiveness in solving critical mainframe challenges and delivering tangible benefits. To learn more, **talk with an engineer today.**

About H&W

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