

YOUR SAS PROGRAMS, YOUR WAY: UNLOCK FLEXIBILITY AND FUTURE-PROOF ANALYTICS IN BFSI



Introduction

In banking, financial services, and insurance (BFSI), organizations often rely on the SAS language to develop and deploy critical applications related to fraud detection, credit scoring, regulatory reporting, risk management, and compliance. Financial institutions leverage SAS to manage vast amounts of transactional data, ensuring they meet complex regulatory demands while making accurate, real-time decisions. Modernizing these environments without losing the integrity and security of existing applications is key in staying competitive and compliant. While the SAS language is effective at handling large datasets and complex analytics, its limitations in cloud scalability and integration with modern technologies have made its modernization a crucial challenge. As financial institutions look to modernize their systems while preserving legacy functionalities, several key factors are driving this transformation.

Key Drivers and Considerations for SAS Modernization

Modernization is driven by the need to enhance compliance with evolving regulatory frameworks such as Basel III, GDPR, and MiFID II, which demand improved transparency, reporting capabilities, and data protection. The increasing pressure from fintech startups and the evolving expectations of tech-savvy customers are pushing traditional financial institutions to adopt newer, more agile technologies. Additionally, financial institutions must balance the growing need for advanced data analytics with real-time risk management, fraud detection, and personalized financial products. Emerging technologies like artificial intelligence (AI), machine learning, and blockchain are being integrated into financial services for fraud prevention, risk assessment, and predictive analytics. The demand for scalable, secure, and cost-effective systems to manage large volumes of financial data and transactions is driving the need for modernization.

One of the primary challenges in SAS modernization is preserving the value of existing applications. For many organizations, SAS applications have been developed and refined over decades; they often contain proprietary algorithms, industry-specific logic, and critical business functions. Rewriting these applications can be costly and risky, especially if the new system doesn't fully replicate the performance, functionality, or compliance features of the original system. Therefore, any modernization effort must focus on maintaining the integrity of these applications while introducing new technologies. This introduces unique challenges, particularly in the highly complex, highly regulated BFSI sector.

EVALUATING AND SELECTING

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Assess Your Needs

- ▶ Analyze applications, data requirements, performance demands, and team skills.
- ▶ For large datasets or complex analytics, cloud-based solutions can offer scalability.
- ▶ A hybrid approach (on-premises + cloud) can balance flexibility and cost.
- ▶ Integrate Python and R within existing SAS language workflows and broaden users' skills base.



Key Challenges to Modernization in BFSI

- **People:** In BFSI, employees are often hesitant to move to new platforms due to concerns about data security and the complex regulatory environments they operate in. Compliance officers and risk analysts need extensive training to ensure the new technology maintains transparency and adheres to regulatory standards such as SOX, GDPR, and others.
- **Process:** The BFSI sector is subject to highly regulated processes. For instance, models used in credit scoring, fraud detection, or risk management need to be both effective and explainable to regulators. Updating systems without disrupting critical compliance workflows, such as financial audits and anti-money laundering (AML) checks, is a significant challenge.
- **Technology:** Technology challenges for BFSI organizations include maintaining data integrity, security, and regulatory compliance while migrating legacy SAS applications to modern platforms. High levels of resilience, scalability, and data security are essential, particularly when dealing with sensitive financial data and transactions that must comply with regulations like GDPR, PCI DSS, or the Bank Secrecy Act.

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Consider Cost and Scalability

- ▶ Choose a stack that fits your current budget and assists future growth.
- ▶ Control licensing, infrastructure, and maintenance costs.
- ▶ Ensure the stack can evolve with emerging technologies to avoid expensive future migrations.



Key Technology Considerations

Organizations must pay careful attention to the security and privacy of sensitive financial data. Cloud technologies, with robust encryption and compliance support, provide the flexibility needed for scalability. Additionally, for institutions involved in high-frequency trading of real-time risk assessments, it's vital to ensure the new platform can handle vast volumes of data with minimal latency.

For BFSI organizations, adopting a hybrid cloud strategy often makes the most sense; it allows them to keep sensitive financial data on-premises or in private clouds while leveraging the scalability of public cloud services for analytics, fraud detection, and other non-sensitive processes. This hybrid approach ensures compliance with industry standards while optimizing performance and cost effectiveness.

With any modernization strategy, organizations must also consider the impact on data governance and security. The migration to cloud platforms and hybrid environments can introduce complexities in data governance, especially with regulations such as GDPR. Organizations must consider risks such as vendor lock-in, loss of infrastructure control, and potential challenges in achieving full interoperability between on-premises systems and cloud services. Security protocols must be updated to ensure that sensitive data remains protected, both in transit and at rest. When selecting cloud providers or new technologies, it's essential to ensure they meet the organization's compliance and security standards. Additionally, ensuring the integrity of data throughout the migration process is key to maintaining business continuity and regulatory compliance. To address all these challenges, organizations are looking to advanced tools and technologies that offer flexibility, scalability, and security while maintaining compliance.

TOOLS AND TECHNOLOGIES

1 Hybrid Architectures

Combine the SAS, Python, and R languages for flexibility and exchange data seamlessly between different languages.

2 Cloud-Native Services

Cloud platforms can offer scalable storage and computing, as well as support for advanced analytics and machine learning.

3 Containers and Orchestration

Use Docker and Kubernetes for efficient deployment and management of SAS language workloads together with Python and R, ensuring consistency across environments.




Tools and Technologies for SAS Modernization

Hybrid architecture combining SAS with open-source languages like Python and R are used for advanced financial modeling, machine learning, and predictive analytics. Leveraging cloud-native platforms with integrated compliance management, encryption, and secure APIs allows for a seamless transition to modern architectures while safeguarding financial data.

Altair SLC™ offers a secure and compliant environment for BFSI institutions to modernize their SAS language applications without abandoning critical regulatory and risk management processes. [\[Watch our overview video here\]](#) Altair SLC allows organizations to integrate modern technologies such as machine learning models for fraud detection and real-time analytics while preserving deeply embedded legacy applications. By integrating these advanced tools and technologies alongside a comprehensive strategy, BFSI organizations can modernize their SAS language environments and tackle both present and future challenges.



ARE YOU CONSIDERING A MOVE TOWARDS OPEN SOURCE OR THE CLOUD AND MODERNIZING YOUR SAS LANGUAGE ENVIRONMENT?



Make sure you modernize in a way that lets you capitalize on the value of your existing SAS language investments.

WE'VE MANAGED THOUSANDS OF MIGRATIONS – THIS IS WHERE YOU SHOULD START:

Use Cases

Let's explore three examples of Altair SLC migrations: [\[And watch our short video on how easy it is to switch\]](#)

Example One:

Company: A tier-1 bank with mainframe, server, and workstation operations.

The Challenge: The mainframe provides critical services to many parts of the bank while consumers of data – including compliance, risk, fraud, and other business users – use workstation and server applications to process data. They're looking to slash costs and replatform workloads into the cloud with GCP as the strategic deployment target. They also want to move some workloads from the SAS language to Python.

Solution: Migrate mainframe workloads from running under SAS System software to running under Altair SLC while leaving the bank's own application code unchanged.

Outcome: Results are consistent, performance and reliability retained, and year-over-year costs are reduced by more than 50%. Server-based applications are moved to GCP; workstation and browser client users are unaffected. Certain teams with many Python skills running applications in GCP can make use of existing SAS language code libraries with their Python programs, and other teams with a majority of SAS skills are able to incorporate Python code and libraries within SAS language programs – all within the same GCP environment. Strategic alignment is successful with a long-term, low-risk move towards the cloud and incorporating more Python applications in the future.

Example 2:

Company: An insurance company with operations in multiple countries.

The Challenge: To consolidate licensing and reduce costs to fund a modernization program. The company has previously attempted to rewrite all SAS language code into Python and R; the project failed due to much greater time and cost than expected and a number of high-profile system failures.

Solution: The company is taking a more controlled approach, moving all existing SAS language applications as-is into a more modern cloud environment using Altair SLC with both desktop and VSCode browser-based user interfaces. The new environment permits users to develop in their choice of analytics language – including SAS, Python, R, and SQL – each having access to the same data repositories in Snowflake, Databricks, and S3.

Outcome: The transition towards open source and cloud is much steadier with low risk to the business and immediate cost savings. This moves their infrastructure into a strategic, managed platform.

Conclusion

Modernizing SAS language environments is essential for BFSI organizations to remain competitive, secure, and compliant in the rapidly evolving financial landscape. By balancing legacy system preservation with the integration of modern technologies such as machine learning and cloud-native solutions, financial institutions can enhance their analytics capabilities while ensuring regulatory compliance and data privacy. Embracing a flexible, scalable modernization strategy is key to meeting the industry's future challenges.