Corios® AMP

Analytics Modernization Platform

WHY MIGRATE AWAY FROM LEGACY SAS & MODERNIZE TO OPEN, CLOUD-NATIVE PLATFORMS

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The Evolution of SAS Workloads

SAS HAS LONG BEEN THE GO-TO ON-PREMISES PLATFORM FOR UNGOVERNED ANALYTICS OVER MANY ENTERPRISE ORGANIZATIONS BUT AS THEY MODERNIZE TO CLOUD-NATIVE ENVIRONMENTS, CORIOS AMP MIGRATES SAS TO NEW, GOVERNED PLATFORMS

Ask a seasoned business analyst who has traditionally been the go-to analytics solution for enterprises, and the answer will often be SAS Institute. For over forty years, most industries including financial services, life sciences, telecom, and insurance have relied upon on-premises SAS platforms and solutions.

However, times are changing. Enterprises are moving away from running conventional data and analytics workloads in traditional data centers in favor of innovative analytic engines and cloud provider services. By some estimates, over 50% of enterprises will leverage industry cloud platforms to drive business initiatives by 2028.[1]

As companies transition to the cloud, there are a number of new options, often creating a challenge among old-school data analysts about which tools, platforms, and environments are best suited for their business. Younger data and analytics practitioners and leaders have a preference for modern workspaces using the latest technology, including open-source solutions like PySpark.

In this eBook, learn how Corios AMP (Analytics Modernization Platform) improves performance, reduces cost, and increases agility by modernizing SAS assets and converting them to cloud-based platforms utilizing innovative contemporary data and analytics platforms.

Why Customers Migrate Away from SAS

The motivations driving organizations to transition away from SAS are rooted in both strategic and practical considerations, reflecting the evolving demands of today's data-driven landscape. While SAS has long been a leader in data analytics, companies increasingly recognize the advantages of modern, cloud-native platforms that enable flexibility, scalability, and integration. As organizations assess their long-term analytics strategy, they're finding that SAS's legacy structure often limits their ability to innovate, adapt, and efficiently manage resources.

The reasons organizations choose to migrate away from SAS share common threads. Key drivers include:

The uncertain future of SAS 9 platform support and SAS's ownership

The pressure to move to VIYA by SAS, compounded by the absence of migration tools, makes this shift more costly than migrating away from SAS altogether

Fixed on-premises structure, which limits scalability, elasticity, and cost optimization

Collaboration and data and asset sharing is inherently absent from legacy SAS usage due to the methods and output of the single persona working culture being outdated

Limited data governance capabilities

An aging user base, with new graduates increasingly favoring open-source tools and technologies

Why Customers Adopt Modern Platforms

Agility
The agility, scalability, and elasticity that comes with the open nature of cloud-native platforms

Talent
Talent acquisition and retention that comes with a broader talent pool, familiar with open-source tools and technologies

Cost
Avoid high licensing and infrastructure costs, reduce total cost of ownership of the data and analytic platforms, and achieve significant savings in resource costs
see page 9 for details

Data Governance
Improve data governance and compliance by taking advantage of the built-in governance and controls of modern platforms

Modernization
Transform and modernize legacy platforms by reducing data management and ETL by 70%, allowing the organization to invest more time in advanced analytics and Gen AI*

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*Corios proprietary datapoint from analyzing over two billion lines of SAS code
See page 9 for more details

Overcoming Migration Challenges

Moving away from any legacy platform is difficult, but moving away from SAS is perceived as more difficult for clients. Without the right partner, SAS migrations can be complicated, risky, and time consuming. Large consulting firms excel in Oracle, SAP, and SQL Server migrations, but only a select few know SAS intimately well, like we do.

Understanding SAS code and data requires a significant amount of tribal knowledge. Workloads authored by individual SAS analysts in most organizations typically lack documentation and governance. Most project teams are ill-equipped to handle these complexities, leading to increased risk and time-consuming migrations.

At Corios, we have combined over 200 years of SAS experience. We specialize in and have created tools to specifically make SAS migrations efficient and simple.

Turning our knowledge into software enables us to pass on this efficiency to our clients. Instead of a client having to choose between Corios and a delivery partner, we are now viewed as a software partner in collaboration with internal and external teams. This results in predictable resource planning and reduced overall project risk.

The Corios software tools and methodologies have been designed to ensure all organizations, no matter how large or small, can utilize them according to the client's preferred choice.

We address this by providing a number of ways a platform can be used by our customers, including: 1) deploying on-premises using Docker, 2) through an API gateway and its WebUI, and 3) Software as a Service (SaaS). These mechanisms allow us to deliver value to our clients following their own preferred and approved methods and choice of delivery partners.

As for talent, graduating college students are increasingly favoring PySpark and other open-source languages over SAS, reflecting the evolving landscape of data analytics. As the aging SAS talent pool retires, companies are proactively transitioning away from SAS to remain competitive and avoid obsolescence, embracing newer technologies for innovation and agility in data-driven decision-making and their adoption of AI.

The journey towards modernization is fraught with challenges, especially when it comes to migrating away from a platform as complex as SAS. Yet, we have embraced this challenge, developing innovative software solutions and services that simplify and accelerate the migration process. Through initiatives like the Corios Academy and Analytics Modernization Platform, Corios guides clients towards a future where data analytics are not hindered by legacy constraints but empowered by modern technologies.

Corios
AMP

ANALYTICS MODERNIZATION PLATFORM

HOW DOES CORIOS' ANALYTICS MODERNIZATION PLATFORM WORK?

Corios' AMP utilizes software accelerator tools and a unique methodology to migrate and modernize legacy SAS environments to future-proof, cloud-native ecosystems.

The first step in any migration is to provide a comprehensive assessment of a customer's SAS environment, resulting in a detailed analysis of the entire SAS environment, including workloads, data assets, and users.

The Scanner module reads every line of SAS code from all users and their workloads, enabling a detailed analysis of the SAS workloads, the dependent data sources for each workload, and their associated recency and frequency of both usage and modification.

The results of the scanning process are delivered in an interactive dashboard, enabling selection, prioritization, and overall triage of the migration scope. This essentially provides the input necessary for a detailed roadmap with the following:

- Prioritized workloads by users, department, and/or overall business value
- Data lineage of each workload with detailed listings of original input, datasets, and/or database tables
- Workflow lineage, identifying dependent workloads

- Overall grading of each workload for resource planning for all associated workstreams, such as: transpilation, functional testing, user acceptance testing, validation, and deployment for production

Much of a SAS migration is automated using the Translator module. Depending on the complexity of the underlying SAS code, certain manual activity may be required to finalize the code conversion.

Functional testing precedes user acceptance testing, both of which can be carried out by Corios, the customer, and/or other service delivery partners.

Finally, prior to deployment in production, the Validation module is used to accelerate comparing the results from the newly transpiled code and the associated new data sources with the prior SAS workloads and their associated datasets.

An essential part of any migration is ensuring the user community are sufficiently skilled in the usage of new tools, languages, and techniques. To address this often unmet need, we have the Corios Academy. A self-paced, online course equipped with hundreds of side by side code conversion examples, videos, and more, the Academy upskills the SAS programmers in SQL and modern, open-source languages like PySpark and best practices for use in the new, modern platform.

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Corios AMP

SCAN

- Comprehensive assessment of existing legacy analytic environment

- Creates a matrix by volume and complexity, which gives the ability to estimate the time and cost of a full migration

CONVERT

- Translates SAS workloads (.sas files and .egp files) into open-source languages (PySpark/SQL)

- Converts SAS data into new formats (e.g. Parquet)

VALIDATE

- After translation, validates all SAS workloads against the original SAS workloads

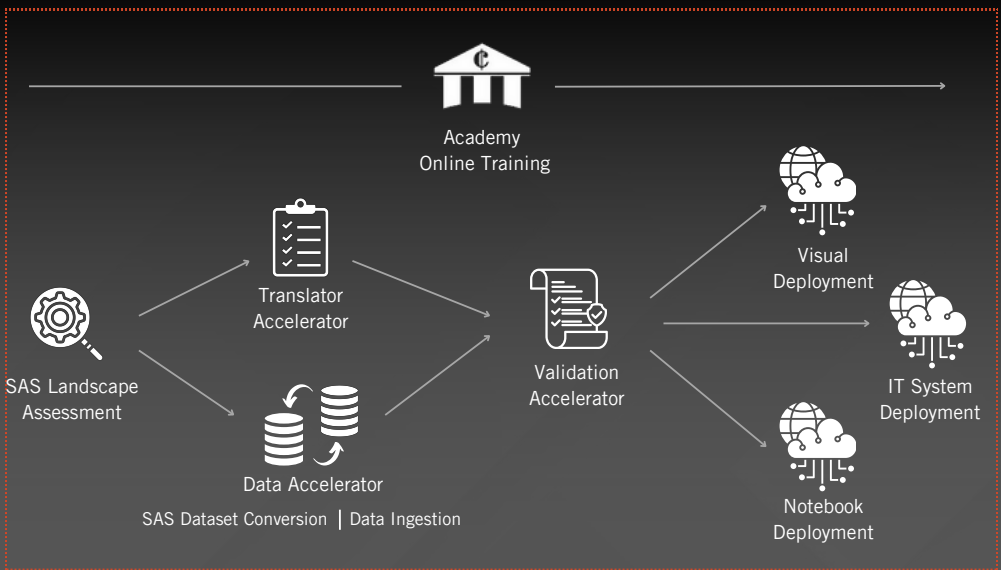- After validation, the workloads are ready to be deployed to the new environment

UPSKILL

- Upskills the SAS communities in new, open-source languages and shares best practices for the new end-state environment

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Corios AMP
ANALYTICS MODERNIZATION PLATFORM

SAS MODERNIZATION ROADMAP

Academy
Online Training

Translator
Accelerator

Visual
Deployment

SAS Landscape
Assessment

Validation
Accelerator

IT System
Deployment

Data Accelerator
SAS Dataset Conversion | Data Ingestion

Notebook
Deployment

Impact on Shareholder Value After SAS Migration

Workload Usage by Task Type

Legacy SAS

↓ ↓ ↓

MIGRATION

↓ ↓ ↓

Modern Platform

Savings

35%

Data Management & ETL

BI & Analytics

Reporting

Advanced Analytics & Gen AI

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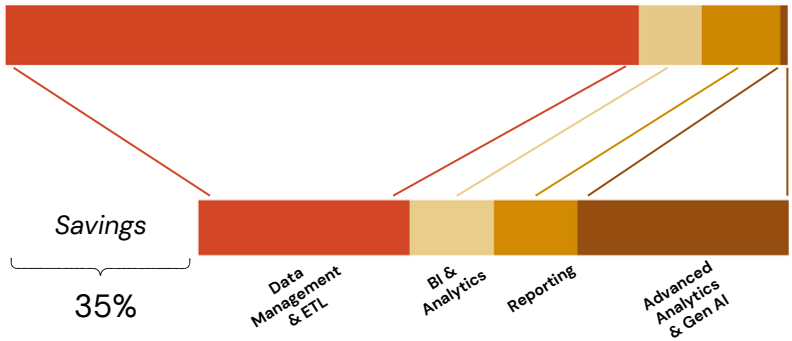
*81% of legacy SAS workloads are used for **data management and ETL**. After migrating to open, cloud–native platforms and languages, data management and ETL workloads are **reduced by over 70%** and licensing and infrastructure costs are **reduced by over 71%***

Making the Business Case:

- **4,000** legacy SAS users spent **30%** of their time using SAS.
  - The <u>average loaded FTE cost</u> of a SAS user was **$150,000/year**, so the cost of SAS usage per user was **$45,000/year**, totalling **$180 million/year**.
- **35% savings** across all users after migrating totalled **$63 million/year**.
- **71% savings** from <u>licensing and infrastructure</u> after modernization totalled over **$16 million/year**.
- Total savings equated to over **$79 million/year**, a direct impact on **earnings per share (EPS)**.
- With a PE ratio of 18.5, the overall impact on shareholder value from this business case increases by **$1.46 billion** ($79 million x 18.5).

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Corios proprietary datapoint from analyzing over two billion lines of SAS code in over 250 million SAS workloads

The Corios Advantage

HOW CORIOS COMPARES TO OTHER VENDORS

Below is a visual comparison of the actual cost ratios of a SAS migration, broken down by workstream, between Corios and another vendor (Vendor B) both engaged as migration partners for different lines of business within the same North American parent company.

For this project example, Corios consistently achieved a Green Status, while Vendor B remained in Red. Corios delivered significant cost and time savings, completing the overall migration, as seen by the columns on the right hand of the graph, at just 25% of Vendor B's per-file cost. In addition, this cost savings was accomplished in half of the overall migration elapsed time.

Comparing Cost and Time

Corios   Vendor B

Cost and Time

Code & Data Analysis | Code Transpilation | Data Ingestion | Functional Testing | UAT & Validation | Workload Deployment | Users & Migration Team Training | Summary

Workstream

Corios' migration cost was 25% of Vendor B's

Corios' migration time was 50% of Vendor B's

Case Studies

HEALTH CARE PROVIDER

Corios migrated our client's revenue integrity analytics workloads to Amazon Glue and converted all the code to PySpark. The modernized analytics application saved the client 24 FTE-months of productivity per year, reduced data processing time by 98%, improved annual time to market by 12 weeks, and improved the data integrity of regulatory filings by more than 30%.

PROPERTY & CASUALTY INSURANCE

Our client was looking to migrate their 800 SAS users, workloads, and data to a modern cloud analytics platform. Utilizing AMP, we reallocated 150TB of our client's data storage, saving ~$0.5M annually. Right-sizing their software licenses saved another $800K annually, and consolidating duplicate processes and staff led to $4M in expenses savings annually.

EXPECTED CREDIT LOSS (CECL)

A large US Regional Bank was faced with a pending end-of-life solution and the decision between migrating to an alternative SAS solution based on VIYA or modernize while still preserving analytic and IP. Corios converted the bank's legacy SAS Expected Credit Loss (CECL) Solution, including all data and code, to run in the Dataiku Credit Loss Solution for CECL. This also leveraged Databricks for workload execution, data storage, and governance.
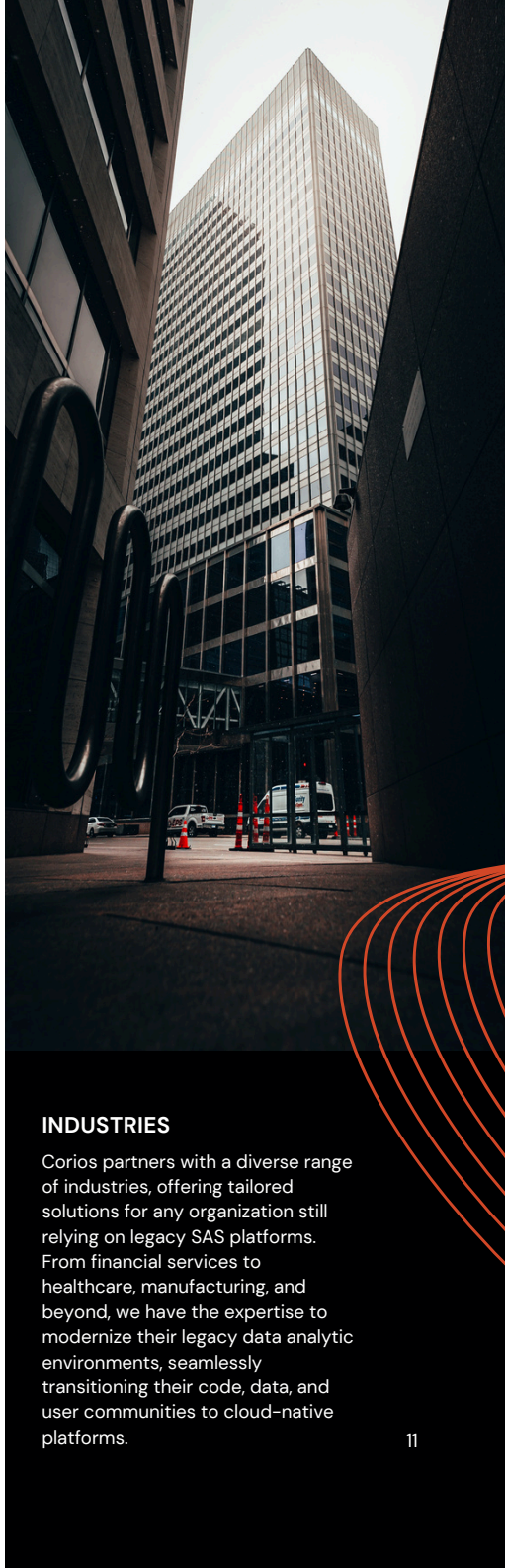
INDUSTRIES

Corios partners with a diverse range of industries, offering tailored solutions for any organization still relying on legacy SAS platforms. From financial services to healthcare, manufacturing, and beyond, we have the expertise to modernize their legacy data analytic environments, seamlessly transitioning their code, data, and user communities to cloud-native platforms.

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Partners
in Modernization

DATAIKU

Dataiku is the Universal AI Platform, uniting the technology, teams, and operations needed for companies to build intelligence into their daily operations, from modern analytics to Generative AI. Together, they design, develop and deploy new AI capabilities, at all scales and in all industries.

DATABRICKS

Databricks is a lakehouse company. More than 7,000 organizations worldwide – including Comcast, Conde Nast and 50% of the Fortune 500 – rely on the Databricks Lakehouse platform to unify their data, analytics and AI. Corios partners with Databricks to simplify and humanize the migration of legacy SAS assets to the Databricks Lakehouse platform and onto the modern cloud.

AMAZON WEB SERVICES

Corios is an Amazon Web Services (AWS) Services Partner at the Advanced Tier. Corios builds and migrates data repositories, analytics workloads and business solutions on the AWS platform for enterprise clients. To streamline access, Corios AMP is available for licensing through the AWS Marketplace.

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