SAS® Fraud Insights on G-Cloud

Service Definition

Make sense of the vast amounts of data collected by Government Departments to identify fraudulent activity efficiently and easily with SAS In-memory solution for G-Cloud.

SAS® Fraud Insights on G-Cloud

The *2024 Anti-Fraud Technology Benchmarking Report* is the third instalment of a global research study initiated by the ACFE (Association of Counter Fraud Examiners) and SAS. This edition reflects insights from nearly 1,200 ACFE members surveyed in late 2023. The survey data reveals key trends in the evolution of fraud fighting since 2019.

Interest in artificial intelligence (AI) and machine learning (ML) technology is higher than ever. Nearly 1 in 5 anti-fraud professionals (18%) currently counts AI/ML among their fraud-fighting tools. Another 32% anticipate implementing these technologies in the next two years – a peak since the study's inception. At this rate, use of AI/ML in anti-fraud programmes will almost triple by the end of next year. SAS can help Government departments in adopting AI/ML techniques to counter fraud and internal audit through user friendly interfaces for those new to the subject through to more extensive coding environments from SAS, and open-source technologies including Jupyter, Python and R for the more experienced user.

Public sector organisations produce, collect, and store an unprecedented amount of increasingly diverse data that could be used to help tackle fraud. Traditional approaches to gathering insights from data are no longer adequate given the volume, velocity, and variety of data that today's governments must manage. It is becoming increasingly critical for the Public Sector to find new ways to transform data into useful information to drive actions.

Public sector organisations all want to use this data and information anywhere, on any device, at any time, to collaborate and keep aligned to their goals. To do this, a modern data visualisation toolset is required. This toolset needs to satisfy the key requirements that support all users; is flexible, simple, and powerful; and allows information to be consumable anywhere.

SAS Fraud Insights for Government on G-Cloud helps make sense of the vast amounts of data collected by government departments to identify fraudulent and audit activities by combining data from different lines of business or departments and include external data, where available, to spot trends from a richer view of individual and social network activity. It allows teams to analyse gigabytes of data at the speed of thought, providing analysts with the necessary insight to act upon early indicators of fraud. SAS Fraud Insights is built on a foundation of SAS Viya in a hosted secure environment built on Microsoft Azure. Users can create charts, maps, flow diagrams, automated models, and apply filters and selections as well as search across the datasets and explore links through network analysis to further refine their analysis towards detecting fraudulent and audit activities and gain a consolidated view of fraud risk.

Many departments aspire to use Machine Learning and Artificial Intelligence techniques but do not know where to start. This is where SAS can help, providing low-code / no-code environments to support analysts in creating their first analytical insights. As users grow in confidence and for more experienced users these too are supported through access to pre-built and bespoke deep learning models via their interface and language of choice. Advanced users can access SAS, Python and R libraries through SAS interfaces or Jupyter Notebooks and have models deployed and monitored in a robust and auditable way, through SAS Model Manager. * {not all features are available in all fraud offerings – see list below}

With SAS Fraud Insights on G-Cloud, data scientists, statisticians and analysts can begin to solve these data and insight challenges.

- Application Fraud. Identify application fraud hot spots and the associated factors associated with that type of fraud – create models to find new cases.

- Identity Fraud. Using SAS Data Quality tools to identify individuals obfuscating their identity through variations in their name, address and other elements.
- Internal Audit. Identify exceptions and anomalies across disparate systems and processes to spot high risk activities by colleagues.
- Targeting. Use categorical, time, textual and geographic factors, free-text, geospatial, relationship, and form-based searches with filters and facets and join to other data sources to filter millions of data points down to small groups of targeted high-risk individuals.
- Detect more fraudulent activity. Apply analytics to all your relevant data, use anomaly detection and spot hidden crime rings.
- Prevent as well as detect. Through data science, predictive modelling, and anomaly detection, SAS helps you find the fraud before revenue is lost.
- Gain a consolidated view of fraud risk. Identify fraud by combining data from different lines of business or departments and include external data, where available, to spot trends from a richer view of individual and network activity.
- Facilitate full end to end investigation lifecycle. The SAS Fraud Insights solution supports the full investigation lifecycle, including planning, tasking, evidence management, and reporting, with flexible workflows and robust security controls.
- Improve your reputation. Generate fewer false positives and increase your productivity in chasing down fraud. Satisfy regulatory requirements through an enhanced fraud management model.

Why is SAS Fraud Insights important?

Users of all skill levels can visually explore data, use automated analysis, and create visualisations, search, explore networks and carry out investigations while tapping into powerful in-memory technologies for faster computations and discoveries. This self-service solution scales to an enterprise-wide level, putting data and analytics in the hands of the analyst and data scientist. At the same time, governance capabilities help IT promote consistency and reuse.

What does SAS Fraud Insights do?

SAS Fraud Insights provides a modern, integrated environment for governed data discovery and exploration. Users, including those without advanced analytical skills, can examine and understand patterns, trends, and relationships in data. It is easy to create and share reports and dashboards that monitor business performance. Easy-to-use analytics and visualisations help everyone get insights from data to better solve complex business problems. The users can carry out free-text, geospatial, relationship, and form-based searches with filters and facets across the datasets, uncover hidden relationships using the network exploration capabilities and carry out investigation activities including planning, tasking, evidence management and reporting.

For whom is SAS Fraud Insights designed?

SAS Fraud Insights has been designed to support fraud analysts, internal auditors and data science teams at varying levels of size, maturity, and complexity and provides the software and cloud infrastructure to meet a broad set of requirements through the following solution packages.

- **Small** – uses SAS Visual Analytics and SAS Visual Investigator to provide public sector organisations with the ability to identify fraud with fast speed-of-thought filtering, selections combining maps, charts, and tables to provide the immediate response needed by busy fraud departments.
- **Medium** – this offering increases the data volumes that can be analysed and adds further analytical capability through SAS Visual Statistics providing a user interface to create advanced statistical models including decision trees, regression models, clustering, and general linear models. Data quality tools are included to help identify individuals attempting to obfuscate their identity.
- **Large** – this offering further extends the small and medium solutions adding a full suite of data science tools including optimisation, network analytics (including network pattern queries, connected components, cliques) forecasting and machine learning capabilities (including deep learning algorithms) via graphical and coding user interfaces including Jupyter. Data scientists can code in their language of choice including SAS, Python and R. Models are managed from initial development to production and retirement, including model monitoring

and performance. Models can be tested for fairness and bias to confirm whether sensitive or prohibited characteristics have been used. The large offer also includes full insight discovery automation through decision flows and streaming analytics.

- **Custom** – this offering allows fraud and audit departments to combine elements of the offerings outlined above in a bespoke way to meet their exact requirements.

Benefits

- **Find fraud and find it quickly.** Speed is of the essence when looking for repeated patterns of known fraud to minimise losses. Create data queries, models and rules and visualise the data in the most appropriate way to detect fraud. Create interactive visualisations that allow fraud analysts to identify anomalous behaviours.
- **Understand and share what is happening with dynamic visuals**. Create interactive reports and dashboards by querying data in a self-service manner. Then summarise and share key performance metrics via the web or mobile devices. Recipients can dynamically slice and dice to find answers or ask more questions as needed.
- **See the big picture and underlying connections.** Visually explore all relevant data – smartly, quickly, and easily. Interactive discovery lets you examine opportunities hiding in your data, while automated analysis highlights important relationships in data with easy-to-understand explanations. Business users can find out why something happened and identify critical drivers to make better decisions. The software discovers key relationships, outliers, clusters, trends and more, revealing insights that inspire action.
- **Drive business results with data-backed insights**. With easy-to-use predictive analytics, business users and analysts can assess possible outcomes and make better, data-driven decisions – without programming. Visualisations, smart algorithms, and automated analysis reduce the need for experimentation, and you avoid the risk of missing key insights.
- **Add geographical context to your analyses and visualisations.** Combine traditional business data with location data to understand the full picture. Location analytics adds the “where” dimension, so you can analyse data in new ways, understand location factors and identify location-specific opportunities.
- **Share and interact with insights when and where you want**. Executives and frontline staff can quickly interact and collaborate with reports, charts, and dashboards to better understand business performance, jointly interpret results, and decide on the best actions. Content can be shared with others via the web and mobile devices.

Service Model

SAS Fraud Insights is provided as Managed Cloud Software and includes software, hardware, and hosting services for a contracted period. This is an advantageous way to help public sector organisations get started with analytics and alleviate implementation problems. You load your data onto the SAS cloud environment or through the option of a SAS/ACCESS engine. SAS/ACCESS engines provide an automated way to seamlessly read, write and update access to data from a range of Cloud and non-Cloud data sources including CSV, parquet, Oracle, Snowflake, Spark, and many others before building your analytics.

SAS runs a secure, cloud-based service on your behalf, giving you the benefits of our most advanced software and scalable platform architecture – managed and supported by our own experts.

- Each dedicated cloud software instance running SAS uses a predefined storage allowance to manage your data requirements and keep them secure and backed up. This solution is supported with ongoing management and administration. All these elements are backed by a 99 percent uptime warranty.
- SAS services are regularly reviewed and audited to ensure your data is secure and maintained according to national and international privacy legislation.
- Our teams know how to get the most from the SAS Platform. With experience acquired across public, financial, health care and commercial sectors, they are familiar with common regulatory compliance requirements.

Deployment options

This is primarily delivered as a SAS Managed Cloud service. In addition to the commercial bundles listed, non-standard offers are an option to meet specific customer requirements and to align to customer Cloud deployment strategies not met through SAS Managed Cloud. All non-standard options will be priced on application based on an equivalent pricing methodology. Further delivery options include:

- **On-site deployments** – Including distributed servers to meet growing data, increasing workloads and scalability requirements.
- **Alternative Cloud deployments** – Enterprise hosting; private or public cloud (e.g., BYOL in Amazon, Azure, or Google Cloud) or Platform as a Service such as Red Hat OpenShift.

In addition, our REST API provides customers an option to build or integrate external applications around SAS Viya.

Service Deliverables

The managed offerings include the following service deliverables:

- Commissioning and provisioning of the predefined hosted infrastructure, including compute, network, and storage.
- Preconfigured security and connectivity for users and data (based on the limits per tier).
- Pre-installed software.
- Ongoing support of any up-front service customisation that is implemented by SAS.
- Ongoing support with software administration and management.
- 99 percent uptime SLA.
- 30-minute incident response time for software availability issues.
- Data protection warranties and a documented data classification and handling process.
- Regularly scheduled backups.
- Patching and updates applied as part of the agreed SAS software release cadence.

Open to other programming languages

While SAS Viya is designed primarily for business users who prefer a visual interface, it does include a programming interface for those who want to write their own SAS code.

And if your programmers prefer to work in other languages, like Python, R, Lua, or Java, that is OK too. They can call SAS Viya capabilities from their preferred programming environment. In addition, public REST APIs enable developers to easily add content created with SAS Viya to other applications.

SAS Workload Management

SAS Workload Management Provides a web-based tool for monitoring and managing resources, users, and jobs and serves as an interface for configuring and managing high-availability services and defining alerts when thresholds are exceeded.

SAS Job Flow Scheduler

The Job Flow Scheduling Service enables you to monitor and schedule jobs from a variety of sources in SAS Viya and to create and schedule job flows, which can contain multiple jobs and conditions.

SAS Cloud Data Exchange

SAS Cloud Data Exchange allows SAS Viya users to connect a database which could be either co-located at SAS Viya platform, other cloud environment or located at an on-premises data centre. SAS Cloud Data Exchange enables user to securely exchange on-premises data from behind a firewall to the SAS Viya platform in the cloud. All data transfer/exchange occurs on secured standard-based communications along with sophisticated authentication and authorisation.

Pricing

SAS Fraud Insights is priced on a user basis and as an annual hosted license fee payable in advance. Fees include a one-time implementation and on-boarding charge. Each environment includes 1TB-15TB of cloud storage (based on environment sizing). The pricing is for representational purposes and is based on users that are comprised of Analytics Viewers (e.g., report consumers), Analytics Developers and Data Scientists. The Cloud infrastructure is sized based on the volume of data loaded into the system, the number of concurrent users accessing the system and the type of analytical workload that is running. During initial discussion, SAS system sizing will be made available for review and validation against requirements. Should requirements sit outside of these parameters, SAS and the customer will participate in a discovery exercise to identify and undertake the appropriate activity to re-size and recalculate costs based on the output of the exercise.

Additional analytics service such as model development, analysis, data engineering or reporting services are available via the SAS Cloud Support Service which is also available on G-Cloud.

These Service bundles are tiered by complexity and requirement – our engagement manager will work with you to work through your requirements and arrive at the correct service bundle to meet your requirements.

If customer capability, capacity and customisation requirements cannot be met via one of our pre-defined commercial bundles, SAS can of course price on application for any non-standard service required.

Learn More

To learn more please visit www.sas.com\uk\gov\fraud